

Daniel L. McCurry

Assistant Professor
University of Southern California
213-740-0762

DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
920 Downey Way, BHE 220, Los Angeles, CA 94305
dmccurry@usc.edu
mccurrylab.com

EDUCATION

Stanford University	Ph.D., Civil and Environmental Engineering <i>Minor: Chemistry</i> Advisor: Prof. William A. Mitch Thesis Title: Nitrogenous Disinfection Byproducts: Identifying Formation Pathways and Developing Engineering Controls in Impaired and Recycled Water	June 2016
Yale University	M.S., Environmental Engineering	May 2013
University of Cincinnati	B.S., Civil Engineering	June 2011

PROFESSIONAL EXPERIENCE

UNIVERSITY OF SOUTHERN CALIFORNIA Los Angeles, CA Assistant Professor <i>Astani Department of Civil and Environmental Engineering</i>	(January 2017-)
STANFORD UNIVERSITY Stanford, CA Postdoctoral Associate <i>Department of Civil and Environmental Engineering</i>	(July 2016 – December 2016)
Graduate Research Assistant <i>Department of Civil and Environmental Engineering</i>	(July 2013 – June 2016)
YALE UNIVERSITY New Haven, CT Graduate Research Assistant <i>Department of Chemical and Environmental Engineering</i>	(August 2011 – June 2013)
U.S. ENVIRONMENTAL PROTECTION AGENCY Cincinnati, OH Undergraduate Research Assistant <i>Office of Research and Development</i>	(January 2008 – July 2011)
UNIVERSITY OF CINCINNATI Cincinnati, OH Undergraduate Research Assistant <i>Department of Civil and Environmental Engineering</i>	(Summer 2007)

PUBLICATIONS

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

1. 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.
2. *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 and Technology Letters*, **2018**, *5*, 154-159.
(Cover Article of March 2018 Issue of ES&T Letters)
3. **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.
4. **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 Prefomed Monochloramine. *Environmental Science: Water Research and Technology*, **2016**, *2*, 502-510.
(Editor's Choice Paper for 2016)
5. **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.
6. 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.
7. **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.
8. **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.
9. 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.
10. 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.
11. 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.
12. **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.

13. 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.

Technical Reports

1. Krasner, S.W.; Shirkhani, R.; Westerhoff, P.; Hanigan, D.; Mitch, W.A.; **McCurry, D.L.**; Chen, C.; Skadsen, J.; von Gunten, U. "Controlling the Formation of Nitrosamines During Water Treatment." Final Report of Water Research Foundation Project #4370, **2015**.

PRESENTATIONS

Invited Lectures

"*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.*, Huang, S., Huang, M.E. "Nitrosamine Formation Pathway Re-visited: 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.

AWARDS

Outstanding Young Engineer Award from Orange Country Engineering Council	2018
Editor’s Choice Paper in <i>ES:WRT</i> (McCurry et al., <i>ES:WRT</i> , 2016, 2, 502.)	2017
Outstanding Reviewer for <i>Environmental Science: Water Research and Technology</i>	2017
NSF Graduate Research Fellowship	2012-2015
3 rd Place Student Oral Presentation, DBP Symposium, ACS National Meeting	2014
Student Poster Award, GRC Conference on Disinfection Byproducts	2012
Charles Deere Wiman Memorial Fellowship, Yale University	2011-2013
Yale University Fellowship	2011-2012
USEPA Traineeship	2008-2011
Civil and Environmental Engineering Departmental Scholarship	2008
1st place Civil Engineering NSF-REU Project at U. Cincinnati	2007

TEACHING

COURSES

- Aquatic Chemistry** (ENE 562) University of Southern California (Spring 2018)
Enrollment: 18; Evaluations: *TBD*
- Environmental Organic Chemistry** (ENE 599) University of Southern California (Fall 2018)
Enrollment: 12; Evaluations: *Instructor: 4.6/5, Course: 4.5/5.*
- Aquatic Chemistry** (ENE 562) University of Southern California (Spring 2018)
Enrollment: 16; Evaluations: *Instructor: 4.9/5, Course: 4.8/5.*
- Aquatic Chemistry** (ENE 599) University of Southern California (Spring 2017)
Enrollment: 27; Evaluations: *Instructor: 4.8/5, Course: 4.7/5.*

RESEARCH MENTORSHIP

CURRENT PhD STUDENTS

- Zakiyyah Brown (USC ENE Ph.D Student)** (Fall 2018-)
Project: Development of an ICP-MS based total organic halogen method and application to potable reuse of wastewater.
Current position: Ph.D. Student, ENE, USC
- Euna Kim (USC ENE Ph.D Student)** (Fall 2018-)
Project: Catalytic treatment of water with metal catalysts and molecular oxygen.
Current position: Ph.D. Student, ENE, USC
- Jiaming (Lily) Shi (USC ENE Ph.D Student)** (Fall 2017-)
Project: Transformation of stimulant drugs during wastewater reuse
Current position: Ph.D. Student, ENE, USC

CURRENT UNDERGRADUATES

- Xinle (Grace) Yao (USC CEE B.S. Student)** (Spring 2018-)
Project: 1) Transformation of parabens during greywater reuse. 2) Development of a new combined THM/HAA GC/MS analytical method.
Current position: Research assistant, CEE, USC
- Miranda Leibig (USC CEE B.S. Student)** (Fall 2018-)
Project: Transformation of stimulant drugs during wastewater reuse.
Current position: B.S. Student, CEE, USC
- Codi Weisz (USC CEE B.S. Student)** (Fall 2018-)
Project: Transformation of parabens during greywater reuse.
Current position: B.S. Student, CEE, USC
- Katarina Stanley (USC ChemE B.S. Student)** (Spring 2019-)
Project: Catalytic treatment of water with metal catalysts and molecular oxygen.
Current position: B.S. Student, ChemE, USC

PAST

Shiyang (Gary) Huang (USC ENE M.S. Student) (Summer 2017-Spring 2018)
Project: Clarifying the formation mechanism of nitrosamines during chloramination
Current position: Ph.D Student, University of New South Wales, Sydney, AU.

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

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

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

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
Current position: Ph.D. Student, Carnegie Mellon University

Kala Viswanathan (Stanford M.S. Student) (Spring, Fall 2014)
Project: Formation of oxidative byproducts of histidine
Current position: Energy Fellow, NRDC, San Francisco

PROFESSIONAL REGISTRATION

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

RESEARCH SUPPORT

Orange County Water District, 7/1/19 – 6/20/20, \$30,000 (pending final approval by OCWD board)

Foundation for Cross-Connection Control and Hydraulic Research, 1/1/18 – 12/31/19, \$39,452 (est.)

NSF GRFP, 6/1/12 – 5/31/15, \$120,000

ACADEMIC SERVICE

Within USC

PhD Screening Exam Committees:

Euna Kim [Advisor: McCurry] (2019)

Maria Morvillo [Advisor: de Barros] (2019)

Jinwoo Im [Advisor: de Barros] (2018)

Lily Shi [Advisor: McCurry] (2018)

Lauren Crawford [Advisor: Childress] (2017)

PhD Qualifying Exam Committees:

Siming Chen [Advisor: Smith] (2018)
Yamrot Amha [Advisor: Smith] (2018)
Ryan Gustafson [Advisor: Childress] (2017)
Chris Morrow [Advisor: Childress] (2017)

PhD Thesis Defense Committees:

Ryan Gustafson [Advisor: Childress] (2019)
Chris Morrow [Advisor: Childress] (2018)

CEE Standing Curriculum Committee	(2019-Present)
Faculty Advisor for USC Engineers Without Borders	(2017-Present)
Curriculum and Practical Training (CPT) advisor for Shuyang Kao	(2017-2018)
Organizer, USC CEE PhD Student Recruiting Weekend	(2017-2019)

Outside of USC

NSF Proposal Review Panelist for SBIR (5×) and ECS programs (1×)	(2016-Present)
Journal Reviewer (~12/yr): <i>Environ. Sci. Technol.</i> ; <i>Environ. Sci. Technol. Letters</i> ; <i>Water Research</i> ; <i>J. Separation Science</i> ; <i>Chemosphere</i> ; <i>J. Haz. Mat.</i> ; <i>Environmental Science: Water Research & Technology</i> ; ; <i>J. Am Water Works Assn.</i> ; <i>Water, Environmental Pollution</i> ; <i>Separation and Purification Technology</i> ; <i>Current Opinion in Environmental Science & Health</i> .	(2014-Present)
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, <i>ACS Books</i>	(2014)
Graduate Recruiting Committee, Yale Chemical and Environmental Engineering	(2012)
Organizing Committee, 9 th Annual Robert M. Langer Research Symposium at Yale	(2011)