

DAVID L. SEDLAK

Plato Malozemoff Professor
Department of Civil & Environmental Engineering
University of California at Berkeley
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EDUCATION

University of Wisconsin , Madison, Wisconsin Water Chemistry Dissertation Title: Abiotic Oxidation of Polychlorinated Biphenyls (PCBs)	Ph.D. June 1992
Cornell University , Ithaca, New York Environmental Science	B.S. June 1986

EXPERIENCE

October 1994-Present: **Distinguished Professor (2023-present), Malozemoff Chair Professor (2013-present), Professor (2004-present), Associate Professor (2000-2004) and Assistant Professor (1994-2000)**, Department of Civil & Environmental Engineering, University of California, Berkeley

January 2010-March 2010: **Visiting Academic**, Advanced Water Management Centre, University of Queensland, Brisbane, Australia

July 2003-June 2004: **Visiting Associate Professor**, School of Civil and Environmental Engineering, University of New South Wales, Sydney, Australia

April 1992-June 1994: **Postdoctoral Fellow**, Swiss Federal Institute for Environmental Science and Technology, Dübendorf, Switzerland

July 1986-June 1988: **Staff Scientist**, ENVIRON Corporation, Princeton, New Jersey

AWARDS AND HONORS

Argentine Center of Engineers Honorary Fellow, 2021
Fulbright Specialist Award for New Zealand, 2019
Strategic Environmental Research Defense Program Project of the Year, 2017
Bay Area Hero Award, Oro Loma Horizontal Levee Project, 2017
US National Academy of Engineering Elected Member, 2016
Francqui Chair, Ghent University, 2015
Rydell Distinguished Visiting Professor, Gustavus Adolphus College, 2014
Athalie Richardson Irvine Clarke Prize for Excellence in Water Research, 2014
American Publishers Awards for Professional and Scholarly Excellence, 2014
US National Academy of Engineering Gilbreth Lecturer, 2010
Fulbright Alumni Initiative Award, 2010
Fulbright Senior Scholar Award for Australia, 2003
Paul L. Busch Award for Innovation in Applied Water Quality Research, 2003
National Science Foundation CAREER Development Award, 1998
Hellman Family Fund Faculty Award, 1995
Graduate Student Award, ACS Division of Environmental Chemistry, 1991
Graduate Student Paper Award, ACS Division of Environmental Chemistry, 1990

Carl Ladd Scholarship, Cornell University, 1985
New York State Regents Scholarship, 1982-1986

PROFESSIONAL AFFILIATIONS AND SERVICE

Associate Editor, *Environmental Science & Technology*, 2009-2014
Associate Editor, *Water Research*, 2008-2014
Chair, Water Science & Technology Board, National Academies, 2023-
Chair, Gordon Research Conference Environmental Sciences: Water, 2004 & 2012
Chair, Japan-America Frontiers of Engineering, National Academy of Engineering, 2018
Editor-in-Chief, *Environmental Science & Technology* 2015-2019
Editor-in-Chief, *Environmental Science & Technology Letters* 2015-2019
Member, Water Science & Technology Board, National Academies, 2018-2022
Member, Potable Reuse Expert Panel, California Department of Public Health, 2014-2016
Member, US EPA Board of Scientific Counselors Drinking Water Subcommittee, 2005
Member, US EPA Science Advisory Board, Drinking Water Committee, 2002-2009
Member, National Research Council Research Committee on Water Reuse, 2008-2011
Member, American Chemical Society, 1990-
Member, Association of Environmental Engineering Professors, 1995-
Review Panel Member, National Science Foundation (1998, 2002, 2003, 2006)
Review Panel Member, USEPA Ecosystem Research Division Peer Review, 2007

MAJOR UNIVERSITY SERVICE

Chair, CEE Strategic Planning Committee, 2014-2017
Chair, Research Advisory Council, National Alliance for Water Innovation, 2020-
Co-Director, Berkeley Water Center, 2010-2020
Director, Berkeley Water Center, 2021-
Deputy Director, NSF Center on Reinventing Urban Water Infrastructure, 2010-2022
Executive Committee, UC Toxic Substances Teaching & Research Program, 2002-2009
Group Leader, Environmental Engineering Program, 2003-2006
Lead Cartographer, National Alliance for Water Innovation, 2020-
Member, Committee on Undergraduate Prizes, 2003-2007
Member, Committee on Undergraduate Scholarships and Honors, 2000-2003
Organizing Committee, California Colloquium on Water, 2001-2009
Vice Chair Graduate Studies CEE, 2023-

COURSES TAUGHT (PARTIAL LIST)

CE 111: Introduction to Environmental Engineering (3 semester units)
CE 115: Water Chemistry (3 semester units)
CE 217: Environmental Chemical Kinetics (3 semester units)
ESPM/LS C46: Climate Change & the Future of California (4 semester units)

RESEARCH SUPERVISION

Ph.D.

“Metal speciation in polluted waters and the role of EDTA,” Doctoral research topic of William W. Bedsworth, 2000.

“Prevention of the formation of N-nitrosodimethylamine (NDMA) during wastewater chlorination,” Doctoral research topic of William A. Mitch, 2003.

“Uptake of metal-EDTA complexes by *B. Juncea* implications for the free-ion activity model and phytoremediation design,” Doctoral research topic of Laurel A. Schaidler, 2003.

“The detection and fate of the estrogenic hormones 17 β -estradiol and 17 β -ethinyl estradiol in engineered treatment wetlands,” Doctoral research topic of James L. Gray, 2003.

“The effect of iron addition on the net methylation of mercury in engineered and constructed wetlands,” Doctoral research topic of Anna S. Mehrotra, 2003.

“The effect of ferric chloride addition on the speciation and removal of metals in municipal wastewater treatment plants,” Doctoral research topic of A. Christianne Ridge, 2003.

“The fate of pharmaceutically active compounds in water reuse systems,” Doctoral research topic of Karen E. Pinkston, 2003.

“Complexation of mercury(II) by reduced sulfur-containing ligands in municipal wastewater effluent and surface waters” Doctoral research topic of Helen Hsu-Kim, 2004.

“The fate of wastewater-derived organic nitrogen in the aquatic environment,” Doctoral research topic of Elif Pehlivanoglu, 2004.

“The occurrence and environmental fate of steroid hormones with endocrine and pheromonal activity in fish,” Doctoral research topic of Edward P. Kolodziej, 2004.

“The use of wastewater-derived chemical tracers to assess unintentional water reuse,” Doctoral research topic of Lorien Fono, 2006.

“Fate of wastewater-derived contaminants in surface waters,” Doctoral research topic of Mong Hoo Lim, 2008.

“Reactive oxidant generation by nanoparticulate zero-valent iron: contaminant oxidation and toxicity” Doctoral research topic of Christina Keenan, 2009.

“Control of mercury methylation in restored wetlands by addition of iron,” Doctoral research topic of Patrick Ulrich, 2011.

“Low-molecular weight organic contaminants in reverse osmosis systems,” Doctoral research topic of Eva Agus, 2011.

“Activation of hydrogen peroxide by iron-containing minerals and catalysts in circumneutral pH solutions: implications for ex situ and in situ treatment of contaminated waters and soils,” Doctoral research topic of Anh L. Pham, 2012.

“Fate of endogenous steroid hormones in runoff from cattle feedlots,” Doctoral research topic of D. Scott Mansell, 2012.

“Removal of organophosphate pesticides in wetlands,” Doctoral research topic of Ekrem Karpuzcu, 2013.

“The occurrence and fate of precursors to perfluorinated acids in the aquatic environment,” Doctoral research topic of Erika Houtz, 2014.

“Removal of wastewater-derived organic contaminants in an engineered periphyton system,” Doctoral research topic of Justin Jasper, 2014.

“Heterogeneous oxidation of organic contaminants by in situ chemical oxidation with sodium persulfate,” Doctoral research topic of Thomas Bruton, 2017.

“Modular Advanced Oxidation Processes Enabled by Cathodic Hydrogen Peroxide Production,” Doctoral research topic of James Barazesh, 2017.

“Passive treatment of chemical contaminants in urban runoff,” Doctoral research topic of Joseph Charbonnet, 2018.

- “Multi-criteria decision support for control of nutrients in San Francisco Bay,” Doctoral research of Sasha Harris Lovett, 2018.
- “Mechanisms of chemical transformation reactions with persulfate,” Doctoral research topic of Jean van Buren, 2020.
- “The Removal of Nutrients from Wastewater Effluent in Horizontal Levees,” Doctoral research of Aidan Cecchetti, 2020.
- “Formation and Fate of Carbonyl Compounds in Potable Water Reuse Systems” Doctoral research of Emily Marron, 2020.
- “Open-Water Wetlands for the Treatment of Reverse Osmosis Concentrate Generated by Potable Water Reuse Systems,” Doctoral research of Rachel Scholes, 2020.
- “Trace Organic Contaminant Removal in Subsurface Flow Treatment Wetlands,” Doctoral research of Angela Perantoni, 2022.
- “Electrochemical Advanced Oxidation Processes for Distributed Water Treatment,” Doctoral research of Yanghua Duan, 2022.
- “Harnessing Electrochemical Technology for Decentralized Drinking Water Treatment,” Doctoral research of Daniel Ocasio, 2023.
- “Valorization and treatment of reverse osmosis concentrate,” Doctoral research of Emily Kraemer, ongoing research.
- “Treatment of reverse osmosis concentrate in a subsurface wetland,” Doctoral research of Griffin Walsh, ongoing research.
- “The Use of Diatom Biomats for the Treatment of Metal Contaminated Waters,” Doctoral research of Scarlet Kilpatrick, ongoing research.
- “Treatment of Poly- and Perfluoroalkyl Substances in a Subsurface Wetland System,” Doctoral research of Anthony DeSalvo, ongoing research.
- “Fate of Copper and Nickel in a Subsurface Wetland System,” Doctoral research of Jonathan Uhler, ongoing research.

Postdoctoral

- “Speciation of nickel and copper in wastewater effluent and effluent-impacted surface waters,” Postdoctoral research topic of Jonathan Phinney, 1995-1997.
- “The effect of chelating agents on the speciation of copper in the aquatic environment,” Postdoctoral research topic of Kenneth Weissmahr, 1996-1998.
- “Detection of steroid hormones and pharmaceuticals in municipal wastewater effluent and recycled water,” Postdoctoral research topic of Ching-Hua Huang, 1997-1999.
- “Formation of NDMA during chloramination of surface waters and wastewater effluent,” Postdoctoral research topic of Andreas Gerecke, 2002.
- “Steroid hormones and endocrine-disrupting contaminants in agricultural runoff,” Postdoctoral research topic of Edward Kolodziej, 2004-2006.
- “Fate of steroid hormones and endocrine-disrupting contaminants in California’s inland waters,” Postdoctoral research topic of Jorge Loyo Rosales, 2006-2008.
- “Formation and effects of oxidants produced by zero-valent iron nanoparticles,” Postdoctoral research topic of Changha Lee, 2007-2009.
- “Uptake of wastewater-derived organic nitrogen by algae,” Postdoctoral research topic of Joonseon Jeong, 2009-2010.

- “Heterogeneous activation of persulfate by minerals in the subsurface,” Postdoctoral research topic of Haizhou Liu, 2010-2012.
- “Removal of trace organic contaminants in engineered infiltration systems,” Postdoctoral research topic of Janel Grebel, 2011-2013.
- “Electrochemical treatment of chemical contaminants,” Postdoctoral research topic of Thomas Hennebel. 2013-2015.
- “Fate of low molecular organic contaminants in advanced wastewater treatment systems”, Postdoctoral research of Florence Bonvin. 2014-2016.
- “Passive treatment of urban stormwater” Postdoctoral research of Marc Planes. 2015-2020.
- “Engineered geomedia for stormwater treatment” Postdoctoral research of Jessica Ray. 2015-2018.
- “Formation and toxicity of ring cleavage products from the oxidation of trace organic contaminants” Postdoctoral research of Carsten Prasse. 2016-2018.
- “Oxidative treatment of hydrophobic organic contaminants” Postdoctoral research of Amy Cuthbertson. 2019-2021.
- “Reductive transformation of halogenated aromatic compounds by persulfate” Postdoctoral Research of Tae-Kyoung Kim. 2021-present.
- “Application of Stainless Steel Electrodes to Electrochemical Advanced Oxidation Processes” Postdoctoral Research of Yanghua Duan, 2022-present.
- “Effect of Surface Chemistry and the Performance of Electrochemical Water Treatment Systems” Postdoctoral Research of Natalia Sergienko. 2022-present.
- “Use of Molybdenum Disulfide as a Sorbent and Reductant for Hexavalent Chromium” Postdoctoral Research of Anushka Mishra. 2023-present.

PEER-REVIEWED PUBLICATIONS

- Kim T.K., Lee D., Walsh G., Lee C. and Sedlak D.L. (2024) Unwanted loss of volatile organic compounds (VOCs) during in situ chemical oxidation sample preservation: mechanisms and solutions. *Journal of Hazardous Materials Letters* 5: 100102. doi: 10.1016/j.hazl.2024.100102
- Duan Y. and Sedlak D.L. (2024) Electrochemical hydrogen peroxide generation and activation using a dual-cathode flow-through treatment system: enhanced selectivity for contaminant removal by electrostatic repulsion. *Environ. Sci. Technol.* 58: 14042-14051. doi: 10.1021/acs.est.4c05481
- Jiang W., Duan Y., Bandaru S.R.S., Radjenovic J., Sedlak D.L. and Baoxia M. (2024) Inhibition of chlorinated byproducts formation by boron-doped rGO electrodes during electrooxidation of trace organic contaminants. *Applied Catalysis B: Environment and Energy* 357: 124303. doi: 10.1016/j.apcatb.2024.124303
- Cook E.K., Olivares C.I., Antell E.H., Tsou K., Kim T.K., Cuthbertson A., Higgins C.P., Sedlak D.L. and Alvarez-Cohen L. (2024) Sulfonamide per- and polyfluoroalkyl substances can impact microorganisms used in aromatic hydrocarbon and trichloroethene bioremediation. *Environ. Sci. Technol.* 58: 8792-8802. doi: 10.1021/acs.est.3c09715
- Wanzek T., Hawley E., Merril J., Deeb R., Sedlak D.L., Field J. and Higgins C. (2024) A multiple lines of evidence approach to demonstrate effectiveness of PFAS remediation

- technologies. *Groundwater Monitoring & Remediation* 44:30-38. doi: 10.1111/gwmr.12657
- Tsou K., Duan Y., Parks A., Olivares C.I., Dixit F., Sedlak D.L. and Alvarez-Cohen L. (2024) Per- and polyfluoroalkyl substance release from aqueous film-forming foam impacted solids exposed to stormwater and saltwater. *ACS ES&T Water* 4: 661-668. doi: 10.1021/acsestwater.3c00670
- McGachy L. and Sedlak D.L. (2023) From theory to practice: leveraging chemical principles to improve the performance of peroxydisulfate-based in situ chemical oxidation of organic contaminants. *Environ. Sci. Technol.* 58: 17-32. doi: 10.1021/acs.est.3c07409
- Yalin D., Craddock H.A., Assouline S., Mordechay E.B., Ben-Gal A., Bernstein N., Chaudhry R.M., Chefetz B., Fatta-Kassinos D., Gawlik B.M., Hamilton K.A., Khalifa L., Kisekka I., Klapp I., Korach-Rechtman H., Kurtzman D., Levy G.J., Maffettone R., Malato S., Manaia C.M., Manoli K., Moshe O.F., Rimelman A., Rizzo L., Sedlak D.L., Shnit-Orland M., Shtull-Trauring E., Tarchitzky J., Welch-White V., Williams C., McLain J. and Cytryn C. (2023) Mitigating risks and maximizing sustainability of treated wastewater reuse for irrigation. *Water Research X*. 21: 100203. doi: 10.1016/j.wroa.2023.100203
- Stiegler A.N., Cecchetti A.R., Scholes R.C. and Sedlak D.L. (2023) Persistent trace organic contaminants are transformed rapidly under sulfate-and Fe(III)-reducing conditions in a nature-based subsurface water treatment system. *Environ. Sci. Technol.* 57: 16616-16627. doi: <https://doi.org/10.1021/acs.est.3c03719>
- Kim T. and Sedlak D.L. (2023) Mineralization of a fully halogenated organic compound by persulfate under conditions relevant to in situ reduction and oxidation: reduction of hexachloroethane by ethanol addition followed by oxidation. *Environ. Sci. Technol.* 57: 13691-13698. doi: <https://doi.org/10.1021/acs.est.3c03489>
- Tsou K., Antell E., Duan Y.H., Olivares C.I., Yi S., Ruyle B.J., Kim J.T., Dixit F., Steffens S.D., Cook E.K., Olivares C.I., Alvarez-Cohen L. and Sedlak D.L. (2023) Improved total oxidizable precursor assay for quantifying polyfluorinated compounds amenable to oxidative conversion to perfluoroalkyl carboxylic acids. *ACS ES&T Water* 3:2966-3003. doi: 10.1021/acsestwater.3c00224
- Antell E., Yi S., Olivares C.I., Ruyle B.J., Kim J.T., Tsou K., Dixit F., Steffens S.D., Cook E.K., Olivares C.I., Alvarez-Cohen L. and Sedlak D.L. (2023) The total oxidizable precursor (TOP) assay as a forensic tool for per- and polyfluoroalkyl substances (PFAS) source apportionment. *ACS ES&T Water* 4: 948-957. doi: 10.1021/acsestwater.3c00106
- Brady A.R., Vega M.A.P., Stiegler A.N., Scholes R.C., Riddle K.N., Peel H.F., Sedlak D.L. and Sharp J.O. (2023) Pharmaceutical attenuation differs within woodchip-based lignocellulose bioreactors across nitrate- and sulfate-reducing conditions. *ACS ES&T Water* 3: 1352-1363. doi: 10.1021/acsestwater.3c00030
- Vega M.A.P., Scholes R.C., Brady A.R., Daly R.A., Daly R.A., Narrowe A.B., Vanzin G.F., Wrighton K.C., Sedlak D.L. and Sharp J.O. (2023) Methane-oxidizing activity enhances sulfamethoxazole biotransformation in a benthic-constructed wetland biomat. *Environ. Sci. Technol.* 57: 7240-7253. doi: 10.1021/acs.est.2c09314
- Steffens S.D., Antell E., Cook E.K., Olivares C.I., Rao G., Britt R.D., Sedlak D.L., and Alvarez-Cohen L. (2023) An artifact of perfluoroalkyl acid (PFAA) removal attributed to sorption processes in a laccase mediator system. *Environ. Sci. Technol. Letters* 10:337-342. doi: 10.1021/acs.estlett.3c00173

- Duan Y., Jiang W. and Sedlak D.L. (2023) Surface processes control the fate of reactive oxidant generated by electrochemical activation of hydrogen peroxide on stainless-steel electrodes. *Environ. Sci. Technol.* 56: xx:xxx doi: 10.1021/acs.est.2c08404
- Lammers L.N., Duan Y.H, Anaya L., Koishi A., Lopez R., Delima R., Jassby D. and Sedlak D.L. (2023) Electrolytic sulfuric acid production with carbon mineralization for permanent carbon dioxide removal. *ACS Sustainable Chemistry & Engineering* 11:4800-4812. doi: 10.1021/acssuschemeng.2c07441
- Teixido M., Charbonnet J.A., LeFevre G.H., Spahr S., Luthy R.G. and Sedlak D.L. (2022) Use of pilot-scale geomedia-amended biofiltration system for removal of polar trace organic and inorganic contaminants from stormwater runoff. *Water Research* 226: 119246. doi: 10.1016/j.watres.2022.119246
- Cook E.K., Olivares C.I., Antell E., Yi S., Nickerson A., Choi Y.J., Higgins C.P., Sedlak D.L., and Alvarez-Cohen L. (2022) Biological and chemical transformation of the six-carbon polyfluoroalkyl substance N-dimethyl ammonio propyl perfluorohexane sulfonamide (AmPr-FHxSA). *Environ. Sci. Technol.* 56: 15478-15488. doi: 10.1021/acs.est.2c00261
- Stiegler A.N., Cecchetti A.R., and Sedlak D.L. (2022) Plant Uptake of Trace Organic Contaminants in Effluent-Dominated Streams: An Overlooked Terrestrial Exposure Pathway. *Environ. Sci. Technol. Letters* 9: 929-936. doi: 10.1021/acs.estlett.2c00543
- Vega M.A., Scholes R.C., Brady A.R., Daly R.A., Narrowe A.B., Bosworth L.B., Wrighton K.C., Sedlak D.L. and Sharp J.O. (2022) Pharmaceutical biotransformation is influenced by photosynthesis and microbial nitrogen cycling in a benthic wetland biomat. *Environ. Sci. Technol.* 56: 14462-14477. doi: 10.1021/acs.est.2c03566
- Yi S., Harding-Marjanovic K.C., Houtz E.F., Antell, E., Olivares C., Nichiporuk R.V., Iavarone A.T., Zhuang W.Q., Field J.A., Sedlak D.L., and Alvarez-Cohen L. (2022) Biotransformation of 6:2 fluorotelomer thioether amido sulfonate in aqueous film-forming foams under nitrate-reducing conditions. *Environ. Sci. Technol.* 56: 10646-10655. doi: 10.1021/acs.est.2c00063
- Ocasio D. and Sedlak DL. (2022) Membrane-assisted electrochlorination for zero-chemical-input point-of-use drinking water disinfection. *ACS EST Engg.* 2: 1933-1941. doi: 10.1021/acsestengg.2c00116
- Garrido-Baserba M., Barnosell I., Molinos-Senante M., Sedlak D.L., Rabaey K., Schraa, O., Verdaguer M., Rosso D. and Poch M. (2022) The third route: A techno-economic evaluation of extreme water and wastewater decentralization. *Water Research* 218: 118408. doi: 10.1016/j.watres.2022.118408
- Cecchetti A.R., Stiegler A.N., Gonthier E.A., Bandaru SRS, Fakra S.C., Alvarez-Cohen L. and Sedlak D.L. (2022) Fate of dissolved nitrogen in a horizontal levee: seasonal fluctuations in nitrate removal processes. *Environ. Sci. Technol.* 56: 2770-2782. doi: 10.1021/acs.est.1c07512
- Olivares C.I., Yi S., Cook E.K., Choi Y.J., Montagnolli R., Byrne, A., Higgins C.P, Sedlak D.L. and Alvarez-Cohen (2022) Aerobic BTEX biodegradation increases yield of perfluoroalkyl carboxylic acids from biotransformation of a polyfluoroalkyl surfactant, 6:2 FtTAoS. *Env Sci.-Processes & Impacts.* 24:439-446. doi: 10.1039/d1em00494h
- Scholes R.C., Stiegler A.N., Anderson C.M. and Sedlak D.L. (2022) Enabling water reuse by treatment of reverse osmosis concentrate: the promise of constructed wetlands. *ACS Environmental Au* 1: 7-17. doi: 10.1021/acsenvironau.1c00013

- Olivares C.I., Yi S., Cook E.K., Choi Y.J., Montagnolli R., Byrne, A., Higgins C.P, Sedlak D.L. and Alvarez-Cohen (2022) Aerobic BTEX biodegradation increases yield of perfluoroalkyl carboxylic acids from biotransformation of a polyfluoroalkyl surfactant, 6:2 FtTAoS. *Env Sci.-Processes & Impacts*. doi: 10.1039/d1em00494h
- Finnerty C.T.K., Menon A.K., Conway, K.M., Lee, D., Nelson M., Urban J.J., Sedlak D.L. and Mi, B.X. (2021) Interfacial Solar Evaporation by a 3D Graphene Oxide Stalk for Highly Concentrated Brine Treatment. *Environ. Sci. Technol.* 55: 15435-15445. doi: 10.1021/acs.est.1c04010
- Duan Y. and Sedlak D.L. (2021) An electrochemical advanced oxidation process for the treatment of urban stormwater. *Water Research X* Volume 13, article 100127 doi: 10.1016/j.wroa.2021.100127
- Steffens S.D., Cook E.K., Sedlak D.L. and Alvarez-Cohen, L. (2021) Under-reporting Potential of Perfluorooctanesulfonic Acid (PFOS) under High-Ionic Strength Conditions. *Environ. Sci. Technol. Letters* 8: 1032-1037. doi: 10.1021/acs.estlett.1c00762
- Van Buren J., Cuthbertson A.A., Ocasio D. and Sedlak D.L. (2021) Ubiquitous Production of Organosulfates during Treatment of Organic Contaminants with Sulfate Radicals *Environ. Sci. Technol. Letters* 8: 574-580. doi: 10.1021/acs.estlett.1c00316
- Charbonnet J.A., Duan Y., van Genuchten C.M. and Sedlak D.L. (2021) Regenerated Manganese-Oxide Coated Sands: The Role of Mineral Phase in Organic Contaminant Reactivity. *Environ. Sci. Technol.* 55: 5282-5290. doi: 10.1021/acs.est.0c05745
- Scholes R.C., Vega M.A., Sharp J.O. and Sedlak D.L. (2021) Nitrate removal from reverse osmosis concentrate in pilot-scale open-water unit process wetlands. *Env Sci. Water Res. & Technol.* 7:650-661. doi: 10.1039/d0ew00911c
- Drenkova-Tuhtan, A., Sheeleigh E.K., Rott E., Meyer C and Sedlak D.L. (2021) Sorption of recalcitrant phosphonates in reverse osmosis concentrates and wastewater effluents - influence of metal ions. *Water Sci. Technol.* 83: 934-937. doi: 10.2166/wst.2021.026
- Marron E.L., Van Buren J., Cuthbertson A.A., von Gunten U. and Sedlak D.L. (2021) Reactions of α,β -unsaturated carbonyls with free chlorine, free bromine, and combined chlorine. *Environ. Sci. Technol.* 55: 3305-3312. doi: 10.1021/acs.est.0c07660
- Scholes R.C., King J.F., Mitch W.A. and Sedlak D.L. (2020) Transformation of trace organic contaminants from reverse osmosis concentrate by open-water unit-process wetlands with and without ozone pretreatment. *Environ. Sci. Technol.* 54: 16176-16185. doi: 10.1021/acs.est.0c04406
- Wang Z., Tu, Q., Sim A., Yu J., Duan Y., Poon S., Liu B., Han Q., Urban J.J., Sedlak D.L. and Mi B. (2020) Superselective Removal of Lead from Water by Two-Dimensional MoS₂ Nanosheets and Layer-Stacked Membranes *Environ. Sci. Technol.* 54: 12602-12611. doi: 10.1021/acs.est.0c02651
- Cecchetti A.R., Stysma A., Stiegler A.N., Dawson T.E. and Sedlak D.L. (2020) Use of stable nitrogen isotopes to track plant uptake of nitrogen in a nature-based treatment system. *Water Research X* Volume 9, article 100070 doi: 10.1016/j.wroa.2020.100070
- Rabaey K., Vandekerckhove T., Van de Walle A. and Sedlak D.L. (2020) The third route: using extreme decentralization to create resilient urban water systems. *Water Research*, 185: 116276. doi: 10.1016/j.watres.2020.116276

- Marron E.L., Prasse C., Van Buren J. and Sedlak D.L. (2020) Formation and fate of carbonyls in potable water reuse systems. *Environ. Sci. Technol.* 54: 10895-10903. doi: 10.1021/acs.est.0c02793
- Van Buren J., Prasse C., Marron E.L., Skeel B. and Sedlak D.L. (2020) Ring-cleavage products produced during the initial phase of oxidative treatment of alkyl-substituted aromatic compounds. *Environ. Sci. Technol.* 54: 8352-8361. doi: 10.1021/acs.est.0c00432
- Guo W.R., Cecchetti A.R., Wen Y., Zhou Q. and Sedlak D.L. (2020) Sulfur cycle in a wetland microcosm: extended ³⁴S-stable isotope analysis and mass balance. *Environ. Sci. Technol.* 54: 5498-5508. doi: 10.1021/acs.est.9b05740
- Cecchetti A.R., Stiegler A.N., Graham K.E. and Sedlak D.L. (2020) The horizontal levee: a multi-benefit nature-based treatment system that improves water quality and protects coastal levees from the effects of sea level rise. *Water Research X* Volume 7, article 100052. doi: 10.1016/j.wroa.2020.100052
- Charbonnet J.A., Duan Y. and Sedlak D.L. (2020) The use of manganese oxide-coated sand for the removal of trace metal ions from stormwater. *Env. Sci. Water Res. & Technol.* 6: 593-603. doi: 10.1039/c9ew00781d
- Prasse C., von Gunten U. and Sedlak D.L. (2020) Chlorination of phenols revisited: unexpected formation of α,β -Unsaturated C4-dicarbonyl ring cleavage products. *Environ. Sci. Technol.* 54: 826-834. doi: 10.1021/acs.est.9b04926
- Spahr S., Teixido M., Sedlak D.L. and Luthy R.G. (2020) Hydrophilic trace organic contaminants in urban stormwater: occurrence, toxicological relevance, and the need to enhance green stormwater infrastructure. *Env. Sci.-Water Res. & Technol.* 6:15-44. doi: 10.1039/c9ew00674e
- Yang X., Duan Y., Wang J., Wang W., Liu. H and Sedlak D.L. (2019) The impact of peroxymonocarbonate (HO_4^-) on the transformation of organic contaminants during hydrogen peroxide (H_2O_2) *in situ* chemical oxidation (ISCO). *Environ. Sci. & Technol. Letters.* 6: 781-786. doi: 10.1021/acs.estlett.9b00682
- Ray J.R., Shabtai I.A., Teixido M., Mishaal Y.G. and Sedlak D.L. (2019) Polymer-clay composite geomedia for sorptive removal of trace organic compounds and metals in urban stormwater. *Water Research*, 157:454-462. doi: 10.1016/j.watres.2019.03.097
- Scholes R.C., Prasse C. and Sedlak D.L. (2019) The role of reactive nitrogen species in sensitized photolysis of wastewater-derived trace organic contaminants. *Environ. Sci. Technol.* 53(11): 6483-6491 doi: 10.1021/acs.est.9b01386
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- Sedlak D.L. and Andren A.W. (1991) Oxidation of chlorobenzene with Fenton's reagent. *Environ. Sci. Technol.* 25(4), 777-782.

BOOKS AND BOOK CHAPTERS

- Sedlak D.L. (2023) *Water for All: Global Solutions for a Changing Climate*. Yale University Press: New Haven, CT. <https://yalebooks.yale.edu/book/9780300256932/water-for-all/>
- Harris-Lovett S.R. and Sedlak D.L. (2015) The History of Water Reuse in California. In: *Sustainable Water—Challenges and Solutions from California*, Lassiter A. editor. University of California Press: Berkeley, CA.
- Sedlak D.L. (2014) *Water 4.0: The Past, Present and Future of the World's Most Vital Resource*. Yale University Press: New Haven, CT. <http://www.water4point0.com/>
- 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: *Aquatic Redox Chemistry*, Tratnyek, P.G. et al. editors. American Chemical Society: Washington, DC.
- Kümmerer K., Ericson J.F., Hannah R., Johnson A., Sedlak D.L., Weston J.J. (2005) Environmental fate and transport of human pharmaceuticals. In: *Human Pharmaceuticals: Assessing the Impacts on Aquatic Ecosystems*. R.T. Williams, Editor, SETAC Press. Pensacola, FL.
- Sedlak D.L., Huang C.H. and Pinkston K.E. (2004) Strategies for selecting pharmaceuticals to assess attenuation during indirect potable water reuse. In: *Pharmaceuticals in the environment*. K. Kümmerer, ed. Springer Publishers, Berlin.

NON-REVIEWED PUBLICATIONS

- Hering J.G., Sedlak D.L., Tortajada C., Biswas A.K., Niwagaba C., Breu T. (2015) Local perspectives on water. *Science* 349(6247): 479-480.
- Sedlak, D.L. and von Gunten, U. (2011) The chlorine dilemma. *Science* 331(6013), 42-43.
- Sedlak D.L., Pinkston K.E., Gray J.L. and Kolodziej E.P. (2003) Approaches for quantifying the attenuation of wastewater-derived contaminants in the aquatic environment. *Chimia*, 57(9), 567-569.
- Mitch W.A. and Sedlak D.L. (2002) N-Nitrosodimethylamine (NDMA): an emerging chlorine disinfection byproduct. *Water Science & Technology:Water Supply*, 2, 191-198.
- Sedlak D.L. and Pinkston K.E. (2001) Factors affecting the concentrations of pharmaceuticals released to the aquatic environment. *Wat. Res. Update*, 120, 56-64.

- Huang C.H., Renew J.E., Smeby K.L., Pinkston K. and Sedlak D.L. (2001) Assessment of potential antibiotic contaminants in water and preliminary occurrence analysis. *Wat. Res. Update*, 120, 30-40.
- Sedlak D.L., Bedsworth W.W., Jenkins D., Kang S.J. and Murin J. (2000) Assessing methods of removing metals from wastewater: a review of data and methodologies. Final report to the Water Environment Research Foundation: Project 97-CTS-4.
- Sedlak D.L. (1999) Pharmaceutically-active compounds in the aquatic environment and their relationship to water reuse. Proceedings of the 9th biennial symposium on artificial recharge of groundwater. Tempe, Arizona, June 10-12, 1999.
- Sedlak D.L., Bedsworth W.W. and Jenkins D. (1998) The role of speciation in the removal of nickel by the San Jose/Santa Clara Water Pollution Control Plant and its fate in San Francisco Bay. Environmental Engineering Health Sciences Laboratory, report 98-01.
- Sedlak D.L. and Bentley A. (1997) The role of photochemistry in the transport and transformation of arsenic. University of California Water Resources Center Technical Completion Report: UCAL-WRC-W-853.
- Sedlak D.L. (1997) Analytical Techniques for determining metal speciation in polluted waters. 5th International Conference on the Transport, Fate and Effects of Silver in the Environment. Hamilton, Canada, September 4-6, 1997.
- Voelker B.M., Zafiriou O.C. and Sedlak D.L. (1995) Metal redox cycling by photoproduced superoxide radical. 210th National Meeting of the American Chemical Society, Chicago, IL, August 21-26, 1995.
- Sedlak D.L. (1995) The use of ionizing radiation to study reactions of hydroperoxyl and superoxide radicals in sunlit waters. 210th National Meeting of the American Chemical Society, Chicago, IL, August 21-26, 1995.
- Sedlak D.L. and Hoigné J. (1995) Mechanisms of iron redox reactions in sunlit cloudwater. 210th National Meeting of the American Chemical Society, Chicago, IL, August 21-26, 1995.
- Sedlak D.L. and Andren A.W. (1994) Photo-enhanced sorption of silver to bentonite. 2nd International Conference on the Transport, Fate and Effects of Silver in the Environment. Madison, WI, September 11-14, 1994.
- Sedlak D.L. and Hoigné J. (1993) The use of γ -radiation to simulate the free radical chemistry of sunlit waters. 6th European Symposium on the Physico-Chemical Behavior of Atmospheric Pollutants. Varese, Italy, October 1993.
- Hoigné J., Zuo Y., Sedlak D.L., von Piechowski M., Bühler R. (1992) The role of iron and copper species for reactions of photooxidants and photochemical reactions in atmospheric waters. Joint CEC/EUROTRAC Workshop, Leuven Belgium, September 1992.
- Sedlak D.L. and Andren A.W. (1992) Hydroxyl radical transformations of polychlorinated biphenyls in the presence of particles. 203rd National Meeting of the American Chemical Society, San Francisco, CA April 1992.
- Sedlak D.L. and Andren A.W. (1990) Oxidation kinetics of chlorobenzene with Fenton's reagent: reaction pathway, intermediates and kinetics. 199th National Meeting of the American Chemical Society, Boston, MA, April 1990.

INVITED PRESENTATIONS (PARTIAL LIST)

“The Next Phase of Our Urban Water Journey” Keynote Lecture, 2022 Clean Water Symposium, Stony Brook University, Stony Brook, New York, June 17, 2022.

“The Next Fifty Years of Water” Kekule Cycle XIX, University of Antwerp, Antwerp, Belgium, April 24, 2022.

“Radical Fascination: Insights into Chemical Transformation Processes for the Curious and Perseverant” 2022 ACS Award for Creative Advances in Environmental Chemistry, San Diego, CA, March 22, 2022.

“The Next Water Revolutions” The Water Institute Water Talks (Virtual). University of Waterloo, Canada. February 17, 2022.

“The Next Water Revolutions” UC Berkeley Department of Civil & Environmental Engineering. February 4, 2022.

“Water Reuse in Europe’s Future” BluePlanet Berlin Water Dialogues (Virtual). November 25, 2021.

“Horizontal Levees, Nature-Based Solutions and Shovel Readiness” Keynote Lecture. Sustainable Silicon Valley Waterpolooza 2021 (Virtual). October 1, 2021.

“Three Paths to Solving Six Water Problems” Keynote Lecture. Oregon State University 2021 Clean Water (Virtual) Conference. August 26, 2021.

“Engineering to Meet the Needs of an Increasingly Thirsty Planet” IChemE Student Summit (Virtual). July 15, 2021.

“The Next Way of Solving the World’s Water Problems” Keynote Lecture. Water & Environment Student Talks (Virtual). June 8, 2021.

“The Next Path” Keynote Lecture, International Water Association Digital World Water Congress (Virtual). May 24, 2021.

“Three Paths for Solving Six Water Problems” Third Coast Water Seminars, Current: Chicago’s Water Innovation Hub (Virtual), January 27, 2021

“Water For All: Three Paths to a Better Water Future” Moos Family Speaker Series (Virtual), The Freshwater Society, Minneapolis. November 18, 2020.

“Technological Solutions for the Rest of the World’s Water Crises” Dourdeville Lecture, Brown University (Virtual). November 12, 2020.

“From Crises to Solutions: Drinking Water in the 21st Century” Bard College Citizen Science Program, Annandale-on-Hudson, January 12, 2020.

“Water Treatment for the Circular Economy” Gesellschaft Deutscher Chemiker Kolloquium, University of Duisburg Essen, Essen, December 4, 2019.

“Trace Organic Contaminants in a One Water World” Keynote Lecture, 11th Micropol & Ecohazard Conference, Seoul, South Korea, October 21, 2019.

“Opportunities for Deploying New Approaches to Increase Water Security” The World Bank, Washington, DC, October 17, 2019.

“The Drinking Water-Health Connection: Challenges for the Second Half of the 21st Century” ISGlobal Seminar, Barcelona, October 7, 2019.

“Oxidative Treatment in Potable Water Reuse: Formation and Fate of Transformation Products” Keynote Lecture, 8th Late Summer Workshop of the Wasserchemische Gesellschaft, Halltern am See, September 24, 2019.

“Safe and Plentiful Drinking Water in the Second Half of the Twenty-First Century” Keynote Lecture, 10th National Conference on Environmental Chemistry, Nankai University, August 16, 2019.

“Drinking Water in the Second Half of the Twenty-First Century” Water Disinfection, Byproducts and Health Gordon Research Conference, Mt. Holyoke, August 1, 2019.

“Thinking Globally and Acting Locally: The Urban Water Challenge” Auckland City Council. Auckland, May 8, 2019.

“Enabling an Urban Water Revolution: Potable Water Reuse with Multiple Barriers” Anne Carney Lecture, Old Dominion University, Norfolk, VA, November 13, 2018.

“Lessons Learned from the Last Two Decades of Emerging Contaminants” Keynote Lecture, What’s in Our Water 2018 Symposium, Canberra, Australia, October 29, 2018.

“Water 4.0: The Next Urban Water Revolution” Waterist: Istanbul Water Congress & Fair, Istanbul, Turkey, October 11, 2018.

“Enabling an Urban Water Revolution: Potable Water Reuse with Multiple Barriers” Lorch Lecture, Cranfield University, Cranfield, UK, October 2, 2018.

“Where to From Here? The Future Water Reuse Challenges” Keynote Presentation Water Reuse Association Symposium, Austin, Texas, September 12, 2018.

“Charting a Path to a More Secure Urban Water Future” FCE Distinguished Lecture, Hong Kong Polytechnic University, Kowloon, May 28, 2018.

“Adapting Urban Water Systems to a Changing Climate” Higley Endowed Lecture, Case Western Reserve University, Cleveland, OH, April 23, 2018.

“America’s Urban Water Security: The Next Twenty Years” Keynote Lecture, Interstate Technology Regulatory Council, Anaheim, CA, April 17, 2018.

“Water 4.0: New Solutions for the World’s Water-Stressed Cities” Campus-wide Common Reads Program, Fresno State University, Fresno, CA, April 12, 2018.

“Lessons from the Ongoing Urban Water Revolution in the United States” Indian Institute of Technology, Delhi, India, April 5, 2018.

“Enabling an Urban Water Revolution” W+T Seminar Series, Eawag, Zurich, Switzerland, March 12, 2018.

“Potable Water Reuse for the Bay Area: It Can, It Should and We are the Ones” Bay Area Regional Partnerships for Sustainable Water, Stanford University, Stanford, CA, March 9, 2018.

“Navigating a Water Security Revolution” WTAMU Distinguished Lecture Series, Texas A&M Canyon, Canyon, TX , February 20, 2018

“Water 4.0: Innovative Water Management For California’s Future” Keynote Lecture. CASA Winter Conference, Palm Springs, CA January 25, 2018

“Potable Water Reuse: The View from 2038” Keynote Lecture. AWWA International Symposium on Potable Water Reuse, Austin, TX, January 23, 2018.

“Realizing the potential of potable water reuse” Water Science & Technology Board, 35th Anniversary Meeting, Washington, DC, December 5, 2017.

“Reinventing California’s Urban Water Infrastructure” Rosenfeld Memorial Symposium, Lawrence Berkeley National Laboratory, Berkeley, CA , December 1, 2017.

“Embracing the Next Drinking Water Revolutions” Keynote Lecture. AWWA Water Quality Technology Conference, Portland, OR, November 13, 2017.

“Oxidative Transformation of Organic Contaminants: Underappreciated Pathways Lead to Unexpected and Potentially Toxic Products” 9th National Conference on Environmental Chemistry” Hangzhou, China. October 20, 2017.

“Water 4.0: Innovative Water Management For California’s Future” Keynote Lecture. New Frontiers Water Forum, California State University at Monterey Bay, October 6, 2017.

“Water Security Lessons from Water Scarce Cities in the United States” World Water Week, Stockholm, Sweden, August 30, 2017.

“Healthy, Tasty or Toxic: A Chemist’s View of Drinking Water” American Chemical Society National Meeting, Washington, DC, August 22, 2017.

“Whither the Fourth Water Revolution?” 10th Annual OC Water Summit, Anaheim, CA, June 16, 2017.

“Opportunities and Risks to Public Health in the Coming Water Infrastructure Revolutions” Tackling the Health Politics of Water, Public Health Advocates Annual Meeting, Sacramento, CA, June 14, 2017.

“The Local Water Transition for California’s Cities” UC Irvine Water Colloquium Series, University of California, Irvine, CA, April 19, 2017.

“Breaking the Imported Water Habit: An Essential Strategy for the 21st Century” Chinese American Environmental Professionals Association, Berkeley, CA April 8, 2017.

“The Next Urban Water Revolutions: A Path for Avoiding Water Scarcity” UVa World Water Day Events, Charlottesville, Virginia, March 28, 2017.

“Our Next Water Revolutions Begin Here” EBMUD Infrastructure Week, East Bay Municipal Utilities District, Oakland, CA March 13, 2017.

“The Next Urban Water Revolutions” Department of Chemical & Biological Engineering Seminar, University of British Columbia, Vancouver, Canada, January 13, 2017.

“The Global Water Crisis: What Next?” Hindustan Times Leadership Summit. New Delhi, India, December 3, 2016.

“The Coming Urban Water Revolutions” Hong Kong University, Hong Kong, China, November 21, 2016.

“Breaking the Imported Water Habit: Urban Water Supply in a Drying World” Plenary Talk. IWA Science Summit on Urban Water, Beijing, China, November 18-20, 2016.

“Drinking Water: Past, Present and Future” Health & Environmental Funders Network 2016 Annual Meeting, Oakland, CA, November 14, 2016.

“A Brighter Future for Urban Water Systems” University of Tennessee Distinguished Lecture Series, Knoxville, TN, October 31, 2016.

“The Fifth Urban Water Revolution” 23rd Annual Clarke Prize Conference, Irvine, CA, November 4, 2016.

“Anticipating Technologies that will Enable the Fourth Urban Water Revolution” International Conference on Sustainable Infrastructure, Shenzhen, China, October 17-19, 2016.

“The Next Urban Water Revolutions” Vanuxem Lecture, Princeton University, October 6, 2016.

“A Secure Water Future Awaits Proactive Cities” Keynote Presentation. Big 12 Water Conference, Baylor University, Waco, TX, September 26, 2016.

“Water Reuse: California Style” Hebrew University, Rehovot, Isreal, June 20, 2016.

“The Fourth Urban Water Revolution” Vernon E. Snoeyink Distinguished Lecture, University of Illinois, Champaign-Urbana, April 4, 2016.

“Making the Environment Part of the Next Generation of Urban Water Infrastructure” University of Toronto, LLE Lecture Series, Toronto, Canada, March 23, 2016.

“Blueprints for the Fourth Urban Water Revolution” World Water Tech-Toronto, Toronto, Canada October 7, 2015.

“Open Water Unit Process Wetlands for Water Quality Improvement” Plenary Lecture. 8th National Conference on Environmental Chemistry Guangzhou, China. November 6, 2015

“Water 4.0—A revolution” Oskar von Miller Forum, Munich, Germany December 10, 2015.

“Chemical Contaminants and the Fourth Revolution in Urban Water” 12th International Symposium on Persistent Toxic Substances. Riverside, CA November 16, 2015.

“Is There Room for Stormwater in the Fourth Urban Water Revolution?” Keynote Lecture. CASQA 11th Annual Conference. Monterey, CA October 20, 2015.

“Building the Fourth Generation of Urban Water Infrastructure” *Water Resilience and Sustainability: Can We Make LA Water Self-Sufficient?* Resnick Institute Workshop September 21, 2015.

“Chemical Contaminants in New Water Sources: Are DBPs Still an Issue?” Gordon Research Conference: Drinking Water Disinfection Byproducts Mt. Holyoke, MA August 9, 2015.

“Remediation of Poly- and Perfluoroalkyl Substances by Chemical Oxidation: Cost-Effective Option or Fool’s Errand?” Fluoros 2015, Golden, CA. June 13, 2015

“Is There Room for a Chemist at The Fourth Revolution in Urban Water?” ACS SF Bay Area Regional Chapter. Richmond, CA June 10, 2015.

“The Future of Water” The Berkeley City Club, Berkeley, CA. May 7, 2015.

“The Coming Revolution in Urban Water” San Francisco State University Department of Geography & Environment San Francisco, CA April 21, 2015.

“Potable Water Reuse: Opportunities and Challenges” CWEA California Drought Summit. Sacramento, CA. May 11, 2015.

“Blueprint for the Fourth Urban Water Revolution” Keynote Lecture. GE-NUS Visiting Scientist Lecture. Singapore. July 8, 2015.

“Blueprint for the Fourth Urban Water Revolution” Keynote Lecture. Watermatex 2015. Surfer’s Paradise, Australia. June 16, 2015.

“2050: The Year We Completed our Urban Water Transformation” Keynote Lecture. Association of Bay Area Governments. Oakland, CA. April 23, 2015.

“Rethinking Wastewater: Water Reuse in the United States” Arab-American Frontiers of Engineering. Muscat, Oman. December 14, 2014.

“Water 4.0: The Inevitable Revolution in Urban Water and the Relevance of Trace Organic Contaminants” 2014 NIEHS Superfund Research Program. San Jose, CA. November 14, 2014.

“The Fourth Revolution: A View from the Other Side” Sagan National Colloquium. Ohio Wesleyan University, Delaware, OH. November 12, 2014.

“The Fourth Revolution in Urban Water Infrastructure: Opportunities, Challenges and the Need for Innovation” Keynote Lecture. The Second Annual Water Research Symposium at Kent State University. Kent, OH. October 31, 2014.

“California Dreaming: Natural Systems and Urban Water Infrastructure” IARU Sustainability Science Conference 2014. Copenhagen, Denmark, October 24, 2014.

“Water 4.0: An Answer to Urban Water Challenges of the 21st Century” Richard L. Valentine Distinguished Lecture in Civil and Environmental Engineering. University of Iowa, Iowa City, September 19, 2104.

“Ten Decades of Fostering Revolution: Safe Urban Water Courtesy of ACS” Keynote Lecture. Division of Environmental Chemistry, 248th National Meeting of the American Chemical Society. San Francisco, CA August 11, 2014.

- “Getting it Right the Fourth Time: Urban Water in the 21st Century” Science Museum of Minnesota, St. Paul, MN. June 30, 2014.
- “The Fourth Revolution in Urban Water: Options for Water Scarce Cities” University of Queensland, Brisbane, Australia. June 11, 2014.
- “California’s Drought: A Window of Opportunity for the Fourth Revolution in Urban Water” Keynote Lecture. Resources Roundtable: California in Drought. Berkeley Energy and Resources Consortium. Berkeley, CA. April 18, 2014.
- “Trace Organic Contaminants and the Fourth Water Revolution” Keynote Lecture. 17th Annual Environmental Chemistry and Microbiology Student Symposium. Penn State University, State College, PA. March 28, 2014.
- “Creating Robust Environmental Buffers to Support Potable Water Reuse” Department of Civil & Environmental Engineering, Duke University, Durham, NC. March 19, 2014.
- “A Multiple Barrier Approach to Potable Water Reuse” Department of Civil & Environmental Engineering, University of Washington, Seattle, WA. January 20, 2014.
- “Two Visions of the Fourth Revolution in Urban Water” Keynote Lecture. 2013 Clarke Prize Conference. Newport Beach, CA. November 15, 2013.
- “The Fourth Revolution in Urban Water Systems” The John McClanahan Henske Distinguished Lecture in Chemical Engineering. Yale University. October 30, 2013.
- “The Fourth Revolution in Urban Water Systems” The Clifford W. Randall Distinguished Lecture. Virginia Institute of Technology. September 27, 2013.
- “Optimizing the Removal of Trace Organic Contaminants in Managed Natural Treatment Systems. Keynote Lecture. 14th EuCheMS International Conference on Chemistry and the Environment. Barcelona, Spain. June 26, 2013.
- “Removal of Trace Organic Contaminants: A Critical Barrier to Deploying the Next Generation of Urban Water Infrastructure” Keynote Lecture. Micropol & Ecohazard 2013. Zürich, Switzerland. June 17, 2013.
- “The Future of Urban Water Systems: Technological and Institutional Challenges” Presidential Symposium-Water: A Grand Challenge for Science and Society. ACS National Meeting. New Orleans, LA. April 9, 2013.
- “Urban Water Technologies for the 21st Century” 50th Anniversary Celebration of the Water Chemistry Program. University of Wisconsin. Madison, WI. October 12, 2012.
- “The Water Sustainable City” Sustainable Development for the 21st Century: The Role of the Modern University. UC Davis College of Engineering. Davis, CA. September 26, 2012.
- “Introducing the Unit Process Wetland” Stanford University Environmental Science & Engineering Graduate Seminar. Stanford, CA. May 4, 2012.
- “Heterogeneous Activation of Hydrogen Peroxide and Persulfate for Oxidative Treatment of Contaminants.” Korea Institute of Science & Technology (KIST). February 20, 2012.
- “Anticipating Emerging Contaminants: Lessons from the Recent Past” National Research Council Water Science and Technology Board and the Board on Chemical Sciences and Technology Workshop on Emerging Contaminants in Water. Washington, DC. April 13, 2011.
- “The Past, Present and Future of Potable Water Reuse” Gloyna Lecture, Johns Hopkins University, Department of Environmental Engineering and Geography, Baltimore, MD. April 19, 2011.

- “Closing the Loop on Urban Water Systems” Keynote Borchardt Lecture, The 2011 Borchardt Conference, Ann Arbor, MI. February 23, 2011.
- “Watering the Megacities” National Academy of Engineering, 2011 National Meeting, University of Southern California, Los Angeles. February 10, 2011.
- “Production of Hydroxyl Radicals by Iron-Containing Fenton Catalysts at Circumneutral pH Values. 16th Advanced Oxidation Technologies Conference. San Diego, CA. November 16, 2010.
- “Reinventing Urban Water Systems” Gilbreth Lecture, National Academy of Engineering Annual Meeting. Washington, D.C., October 3, 2010.
- “Is Potable Water Reuse a Viable Solution to Urban Water Shortages?” Swiss Federal Institute for Environmental Science & Technology (Eawag). Dübendorf, Switzerland, April 30, 2010.
- “Reinventing Urban Water Systems” 2010 Indo-American Frontiers of Engineering Symposium, Jaypee Palace Hotel, Agra, India March 10-13, 2010.
- “Is Potable Water Reuse a Viable Solution to Urban Water Shortages?” Singapore Public Utilities Board. February 2, 2010.
- “Short-Circuiting the Hydrologic Cycle to Meet Urban Water Needs” 2009 Nobel Conference: H₂O Uncertain Resource. Gustavus Adolphus College, St. Peter, MN. October 7, 2009.
- “Oxidant Production from Iron Nanoparticles: Mechanisms, Contaminant Transformation and Impacts of Biological Systems” UC Santa Barbara, CA. May 18, 2009.
- “Agricultural Sources of Endocrine-Disrupting Compounds (EDCs) and the Fate of EDCs in Surface Waters and Wetlands” AQWATEC Distinguished Lecturer, Colorado School of Mines. Golden, CO. March 26, 2009.
- “Environmental Engineers Engineering the Environment” Urban Water Security Alliance, Brisbane Australia, January 12, 2009.
- “Oxidant Production from Iron Nanoparticles: Mechanisms and Environmental Implications” Department of Civil and Environmental Engineering, Stanford University, November 7, 2009.
- “Thinking Beyond the Box About the Challenges Posed by Emerging Contaminants” AEESP/WEF Scientist’s Luncheon, WEFTEC 2008, Chicago, IL, October 20, 2009.
- “Engineering Surface Waters to Minimize the Impacts of Steroid Hormones and Related Compounds” Department of Civil and Environmental Engineering, University of Texas, Austin, TX, October 9, 2008.
- “The Oxidation of Organic Compounds with Nanoparticulate Iron” Invited speaker, 5th Annual IWA Leading Edge Technology Conference, Zürich, Switzerland, June 3, 2008.
- “Turning Rust Into Gold: Harnessing the Oxidation of Iron to Improve Water Quality” Distinguished Faculty Lecturer, School of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, GA. April 15, 2008 and Environmental Engineering Seminar Series, UCLA, May 20, 2008.
- “Will The Toxics We Pour Down the Drain Come Back and Bite Us?” University of California Research and Teaching Program Annual Meeting, Riverside, CA. April 12, 2008.
- “Treatment and Treatability of Pharmaceuticals in Water Treatment Plants” Society of Toxicology Annual Meeting, Seattle, WA. March 18, 2008.
- “Where Will the Golden State Find its Water in a Brown Future?” Discover Cal Faculty Lecture Series, Los Angeles, CA and San Diego, CA, November 27 and 28, 2007.

- “Can We Transform Ourselves Out of the Risks Posed by Wastewater-Derived Contaminants?”
Plenary Speaker, Society of Environmental Toxicology and Chemistry Annual Meeting,
Milwaukee, WI, November 12, 2007.
- “Wastewater-Derived Contaminants: A Challenge for the Predictive Tools Developed by
Environmental Chemists.” Department of Chemistry, University of South Carolina,
Columbia, S.C., October 5, 2007.
- “Sources, Fate and Treatment of Endocrine-Disrupting Compounds in Surface Waters” Bogazici
Institute of Technology, Istanbul, Turkey. June 14, 2007.
- “Fate of Wastewater-Derived Organic Contaminants in Engineered and Natural Systems”
Pharmaceuticals and Personal Care Products in the Environment Symposium. California
Department of Toxic Substance Control, Sacramento, CA. May 22, 2007.
- “EDTA Complexes in Sewage and Their Use as Wastewater Tracers” Plenary Talk, Complexing
Agents between Science, Industry, Authorities and Users. Ascona, Switzerland. March 13,
2007.
- “Steroid Hormones and Endocrine Disruption in Agricultural Watersheds” Department of
Energy, Environmental and Chemical Engineering, Washington University, St. Louis, MO.
March 2, 2007.
- “Sources, Fate and Potential Impacts of Steroid Hormones in the Aquatic Environment”
Department of Chemical & Environmental Engineering, UC Riverside. September 29,
2006.
- “Potential Human Health Risks Posed by Chemical Contaminants in Water From Reuse Projects”
Workshop on Water Reuse, Physicians for Social Responsibility, Los Angeles. September
28, 2006
- “Emerging Contaminants in San Francisco Bay” Keynote Presentation, San Francisco Estuary
Institute 2006 Annual Meeting. Oakland, CA. September 12, 2006.
- “Quantifying Sources and Attenuation of Wastewater-Derived Contaminants” UC Davis
Department of Civil and Environmental Engineering. May 22, 2006.
- “Chemical Contaminants in Water Produced by Desalination” AWWA Regional Meeting, San
Francisco, CA. April 27, 2006.
- “Quantifying Sources and Attenuation of Wastewater-Derived Contaminants” Environmental
Toxicology Program, UC Santa Cruz. April 25, 2006.
- “Oxygen activation by iron and its role in the abiotic transformation of organic compounds”
231st ACS National Meeting, Atlanta, GA. March 28, 2006.
- “Characterization and Fate of rDON” WERF Workshop on Organic Nitrogen. Washington, DC.
March 10, 2006.
- “Wastewater-Derived Contaminants: Problems and Potential Solutions” National University of
Singapore. January 19, 2006.
- “Challenges and Opportunities Associated with Wastewater-derived contaminants” California
Water Environment Association, Los Angeles, CA. January 12, 2006.
- “Strategies for Assessing the Fate of Wastewater-Derived Chemical Contaminants” Pacifichem
2005 Congress, Honolulu, HI. December 15, 2005.
- “Challenges and Opportunities Associated with Wastewater-derived contaminants” Department
of Chemistry, University of Buffalo, NY. November 11, 2005.
- “Oxidation of Organic Contaminants on Nanoparticulate Zero-Valent Iron” USEPA Workshop on
Nanotechnology for Site Remediation, Washington, DC. October 20, 2005.

- "The Significance of PhPCPs in US Drinking Water" American Water Works Association National Meeting, San Francisco, CA, June 15, 2005.
- "NDMA Fate and Transport" WaterReuse Association Research Conference, Orlando, FL, May 24, 2005.
- "Tools for Tracking the Fate of Wastewater-Derived Contaminants in Effluent-Dominated Waters" Plenary address, Southern California Society for Environmental Toxicology and Chemistry, Los Angeles, CA, May 21, 2005.
- "Technologies for Enhancing Water Supplies" Berkeley in Silicon Valley Symposium, Santa Clara, CA, May 7, 2005.
- "Protecting human health and aquatic ecosystems from potential impacts of wastewater-derived Contaminants" Departmental seminar, University of Illinois, CAMPWS Program, Urbana, IL November 12, 2004 and Stanford University, Stanford, CA October 15, 2004.
- "Androgen, estrogen and progestin hormones in the aquatic environment" Plenary lecture, SECOTOX 2004, Sogkla, Thailand, September 31, 2004.
- "The use of propranolol enantiomers to discriminate between combined sewer overflows and wastewater effluent discharges" ACS National Meeting, Philadelphia, PA August 25, 2004.
- "Understanding Microcontaminants in Recycled Water", Keynote presentation, OZ-AQUAREC Workshop IV, Detection, Fate and Removal of Trace Contaminants, Wollongong, Australia, February 13, 2004.
- "The Fate of Wastewater-Derived Contaminants in Engineered and Natural Systems", Departmental Seminar, CSIRO, Adelaide, Australia, January 29, 2004.
- "Quantification of NDMA Precursors in the Aquatic Environment", American Water Works Association 2003 National Meeting, Anaheim, CA, June 18, 2003.
- "Wastewater-Derived Chemical Contaminants to Water Providers", American Water Works Association 2003 National Meeting, Anaheim, CA, June 18, 2003.
- "Occurrence and Treatment of Endocrine Disrupters and Pharmaceuticals in Municipal Wastewater Effluent", San Gabriel Watermaster, Azusa, CA, May 29, 2003.
- "The Fate of Wastewater-Derived Contaminants in Engineered Treatment Wetlands", Departmental Seminar, Department of Oceanography, Stony Brook University, Stony Brook, NY, May 2, 2003.
- "Wastewater-Derived Chemical Contaminants to Water Providers", American Water Works Association California and Nevada Regional Meeting, Reno, NV, October 16, 2002.
- "Wastewater-Derived Chemical Contaminants." Association of California Water Agencies Conference on Xenobiotics. Sacramento, CA, September 2002.
- "N-Nitrosodimethylamine: The Unexpected Disinfection Byproduct." Gordon Research Conference, Environmental Sciences: Water. Plymouth, NH, June 2002.
- "Emerging Contaminants: New Research Opportunities for Bioremediation Specialists." NIEHS Conference on Bioremediation, Monterey, CA. June 2002.
- "Factors Controlling the formation of N-Nitrosodimethylamine (NDMA) during Chlorination." Water Reuse Foundations, 2001 Annual Research Conference. Monterey, CA.
- "Factors Affecting the Fate of Pharmaceuticals in the Aquatic Environment." National Ground Water Association International Conference on Pharmaceuticals and Endocrine Disrupters. Minneapolis, MN, November 2001.

- "Emerging Issues in Environmental Chemistry." Department of Environmental Toxicology and Chemistry, Oregon State University, Corvallis, OR. November 2001.
- "Effluent-Derived Chemical Contaminants in Recycled Water." Department of Civil and Environmental Engineering, MIT, Boston, MA. November 2001.
- "Endocrine Disrupters in Municipal Wastewater." Department of Environmental Engineering, National Autonomous University of Mexico (UNAM), Mexico City, Mexico. July 2001.
- "Challenges Associated with Quantification of Trace Concentrations of Pharmaceutically-Active Compounds (PhACs) in a Complex Matrix." American Water Works Association Research Foundation Emerging Contaminants Conference, Chicago, IL. April 2001.
- "The Fate and Transport of Hormones in the Aquatic Environment." Environmental Engineering Science seminar series, California Institute of Technology, Pasadena, CA. March 2001.
- "Analytical Challenges Associated with Identification of Endocrine Disrupters in Water." American Water Works Association Special Symposium, Denver, CO. March 2001.
- "Immunochemical Methods for Quantifying Hormones in Polluted Waters." Swiss Chemical Society Meeting, Basel, Switzerland. November 2000.
- "The Environmental Chemistry of Water Reuse." Harvard University College of Engineering and Applied Sciences, May 1999.
- "Pharmaceutically Active Compounds (PhACs) in the Aquatic Environment and their Relationship to Water Reuse." Plenary lecture, 9th Biennial Symposium on Artificial Recharge of Groundwater, Phoenix, AZ, June 1999.
- "The Role of Speciation in the Removal of Cationic Metals by Wastewater Treatment Systems: A Short Course on Metal Removal in Wastewater Treatment Plants." Water Environment Research Foundation, Orlando, FL, October 98.
- "Metals as Catalysts of Sunlight-Induced Reactions in Natural Waters." Geological Society of America, 1998 Annual Meeting, Toronto, Canada, October 1998.
- "Analytical Techniques for Determining Metal Speciation in Polluted Waters." Plenary lecture, Fifth International Argentum Conference, Hamilton, Ontario, Canada, September 1997.
- "Thermodynamic Data and the Prediction of Metal Speciation in Polluted Waters." National Institute of Standards and Technology (NIST), Gaithersburg, MD, August 1998.
- "The Treatment and Environmental Fate of Strongly Complexed Metals." Department of Civil and Environmental Engineering, UC Davis, November 1997 and Department of Civil Engineering, University of Nevada, Reno, February 1998.
- "Superoxide radical (O_2^-) and the Photoredox Chemistry of Copper and Chromium." 18th Annual Meeting of the Society of Environmental Toxicology and Chemistry, San Francisco, CA, November 1997.
- "Analytical Techniques for Determining Metal Speciation in Polluted Waters." Plenary lecture, Fifth International Argentum Conference, Hamilton, Ontario, Canada, September 1997.
- "The Treatment and Environmental Fate of Strongly Complexed Metals". Department of Civil and Environmental Engineering, UC Davis, November 1997.
- "Strongly Complexed Nickel and Copper Discharged by Anthropogenic Sources." Department of Civil Engineering, Stanford University, Stanford, CA. May 16, 1997.