Charles J. Werth,
Professor and the Bettie Margaret Smith Chair in Environmental Health Engineering
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Education

Ph.D., Civil/Environmental Engineering, Stanford University, 1/1997.
Ph.D. minor, Chemistry, Stanford University, 1/1997.
M.S., Civil/Environmental Engineering, Stanford University, 6/1992.
B.S., Mechanical Engineering, Texas A&M University, 12/1988.

Professional Experience

Full Professor, University of Texas at Austin, 8/1/2014-Present
Associate Chair, University of Texas at Austin, 8/1/2017-Present
Visiting Professor and High-End Foreign Expert, Tongji University, Shanghai, 1/1/14-12/31/16
Associate Head, Director of Graduate Studies and Director of Research, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign (UIUC), 2012-2014.
Chair, Environmental Engineering and Science Program, UIUC, 2008-2011.
Affiliate Professor, Institute for Genomic Biology, UIUC, April 2013-2014.
Affiliate Professor, Micro and Nanotechnology Laboratory, UIUC, Jan 2011-2014.
Affiliate Professor, Geology Department, UIUC, Dec 2009-2014.
Full Professor, UIUC, August of 2008-2014.
Visiting Professor, Tuebingen University, Tuebingen, Germany, 2004-2005.
Associate Professor, UIUC, August 2003-August 2008.
Assistant Professor, UIUC, January 1997-August 2003.
Post Doctoral Researcher, Stanford University, 1996.
Research Assistant, Stanford University, 1992-1996.
Systems Analyst, Anderson Consulting (now Accenture), Houston, TX, 1989-1991.

Professional Affiliations

Association of Environmental Engineering and Science Professors, member since 1999.
American Geophysical Union, member since 1997, Groundwater committee member 1999-2008.
American Society of Civil Engineers, member since 2007.
American Chemical Society, member since 1994.

Awards and Honors

Editors Choice Award, *Environmental Science and Technology*, Best Papers of 2017, 2nd Runner-up in the category of Science, (8 awards among 1500 paper) Michelson et al., *ES&T*, 2017.
High-End Foreign Expert Award, Chinese Government, Host: Tongji University, Shanghai, 2014-2016, 2018-2020.
Bettie Margaret Smith Chair of Environmental Health Engineering, UT Austin, 8/14-Present.
Wiley Research Fellow, DOE's Environmental Molecular Science Laboratory, 2011-2014.
One of the top ten most read articles in Environ. Sci. Technol., January – March, 2013, Impacts of Geochemical Reactions on Geologic Carbon Sequestration (Authors: Jun, Giammar, Werth).
Excellence in Reviewing Award, Environmental Science and Technology, 2012.

One of the ten most cited article since 2008, Journal of Contaminant Hydrology, Werth et al., A review of non-invasive imaging methods and applications in contaminant hydrogeology research, 2010.

Editors Choice Award, *Environmental Science and Technology*, Best Papers of 2010, 2nd Runner-up in the category of Technology, (Zhang et al., *ES&T*, 2010).

Arthur and Virginia Nauman Faculty Scholar, 2006-Present.

Invited presentation, Gordon Research Conference, 2008.

Humboldt Research Fellowship Award, 2004-2005.

Association of Environmental Engineering and Science Professors (AEESP), Board of Directors (2005-2008), Secretary (2006-2008), AEESP Foundation BOD (2006-2009).

Distinguished Service Award, Association of Environmental Engineering and Science Professors, 2005, 2008.

ASCE Journal of Environmental Engineering Editor's Award for Service, 2004.

Environmental Engineering and Science Faculty Scholar, 2001-2006.

National Science Foundation CAREER Award, 1998-2002.

Graduate Student Awards

Voices for Science Award, Policy track, for my graduate student (Reinaldo Alcalde), Class of 2019.

First place award for my graduate student (Erin Berns) for RemTEC Summit Student Presentation Competition, 2019.

Third place award for my graduate student (Erin Berns) for Geosyntec Student Paper Competition, Spring 2017.

Top poster award for my graduate student (Jinyong Liu) at the Gordon Conference on Environmental Sciences: Water, Summer 2014.

Certificate of Merit Award for my graduate student (Allison Bergquist) for her presentation at the 2013 Spring American Chemical Society Meeting, Indianpolis, IN.

Top poster award for one of my graduate students (Jinyong Liu) at the Gordon Conference on Environmental Nanotechnology, Summer 2013.

American Water Works Association Thomas R. Camp Scholarship for my graduate student, Jong Kwon Choe, 2011.

NANO conference, Student Platform Presentation Award for my graduate student, Danmeng Shuai, 2010.

Grand Challenge Student Paper Award for my graduate student, Danmeng Shuai, Association of Environmental Engineering and Science Professors, 2009.

Selected Service

Editor-in-Chief, Journal of Contaminant Hydrology, January 2014-Present.

Chair, USEPA Scientific Advisory Board (SAB) Regulatory Review Working Group, 12/15-12/17

USEPA Scientific Advisory Board (SAB), 12/14-12/17

USEPA Working Group to Develop New Leaching Standards for Organic Chemicals, 11/16-11/18

US EPA Science Advisory Board Environmental Engineering Committee Member, 1/14-10/18

External Advisory Board, Center for Frontiers of Subsurface Energy Security, DOE Energy Frontiers Research Center, University of Texas, 2011-2013.

Guest Editor, Environmental Science and Technology, special issue on *Environmental and Geochemical Aspects of Geological Carbon Sequestration*, January 2013.

User Advisory Committee, DOE's Environmental Molecular Science Laboratory, 2011.

Science Theme Advisory Panel on Biochemistry/Biogeochemistry and Subsurface Science, DOE's Pacific Northwest Laboratory, Environmental Molecular Science Laboratory, 2009-2011.

Associate Editor, Journal of Contaminant Hydrology, 2004-2014.

Associate Editor, ASCE, Journal of Environmental Engineering, 2004-2007.

Teaching Recognition

National Academy of Engineering's Frontiers of Engineering Education Symposium, Fall 2009.
BP Award for Innovation in Undergraduate Instruction, 2008.
Collins teaching fellow, 2000, 2001.
General Electric teaching fellow, 1999.
General Electric teaching scholar, 1998.
List of teachers ranked as excellent by their students at UIUC for CEE540 (Remediation Design): Fall 2001, 2003, 2008; CEE330 (Intro to Env. Eng.): Fall 2012; CEE440 (Pollutant Fate and Cleanup), Spring 1997, 2000- 2002, 2004, 2006-2012, Fall 2012.

Consulting / Expert Experience

Providing guidance for a oil-field Salt Water Disposal (SWD) company in the Permian Basin, 2017-2019.
Providing expert report for a Houston law firm regarding the source, extent, and risk of chemicals at a former surfactant processing facility, 2016-2018.
Provided guidance to the USEPA on issues related to organics leaching from soil and waste material, USEPA Organic Leaching Workshop, 9/15
Reviewed and provided feedback on the DePue Superfund Site Preliminary Phase II Remedial Investigation Report, and associated documents, for DePue, Illinois, 2012-Present.
Provided expert opinion and a deposition for a St. Louis law firm regarding the source, extent, and risk of a hydrocarbon spill in West Alton, Missouri, 2007 & 2008 (West Alton Saale Road Pipeline Release, Missouri Dept of Natural Resources Incident Number 0209261415RDS)
Provided design guidance on a bioremediation project at a hazardous waste site in Indiana, 2007-2009.
Served as a consultant to a Korean government research project, 2006, 2007.
Provided design guidance on a bioremediation pilot project at a hazardous waste site in Chicago (Lockformer Manufacturing), 2004, 2005, 2006, 2008.
Served as a consultant to a Korean geotechnical/environmental company (BEC) during 2004 and 2005.
Provided expert opinion, an expert report, and trial testimony for a Chicago law firm on the source of vapor phase organic pollutants in residential homes above a contaminated drinking water aquifer in suburban Chicago, 2002 (LeClercq vs. The Lockformer Company).
Reviewed report for The Consortium for Risk Evaluation with Stakeholder Participation, 1999.

Publications

Articles in Peer-Reviewed Journals (#indicates work by my graduate student or post-doc)

125) Dávila, G., L. Dalton, D.M.Crandall, C. Garing, C.J.Werth, J.L.Druhan, Reactive alteration of a Mt. Simon Sandstone due to CO2-rich brine displacement, Geochimica et Cosmochimica Acta, Volume 271, 227-247, 2020.
124) Engelmann, C., L. Schmidt, C.J. Werth, M. Walther, Quantification of uncertainties from image processing and analysis in laboratory-scale DNAPL release studies evaluated by reflective optical imaging, Water, In Press, 2019.
123) #Fuchs, S., D.N. Espinoza, A.T. Akono, C.J. Werth, Geochemical and geomechanical alteration of siliciclastic reservoir rock by supercritical CO2-saturated brine formed during geological carbon sequestration, Journal: International Journal of Greenhouse Gas Control, 88, 251-260, 2019.
122) #Dong, Y., Sanford, R.A., Inskeep, W.P., Srivastava, S., Bulone, V., Fields, C., Yau, P.M., Sivaguru, M., Ahren, D., Fouke, K.W., Weber, J., Werth, C.J., Cann, I. K., Keating, M. K., Khetani, R., Hernandez, H.G., Wright, C., Band, M., Imai, B.S., Fried, G.A., and Fouke, B. W.,

2019. Physiology, Metabolism and Fossilization of Hot-Spring Filamentous Microbial Mats. *Astrobiology*, 19(12), 1-17, 2019.

121) #Deng, J., L. Zhou, R.A. Sanford, L.A. Shechtman, Y. Dong, R.E. Alcalde, M. Sivaguru, G.A. Fried, C.J. Werth, B.W. Fouke, Adaptive evolution of Escherichia coli to ciprofloxacin in controlled stress environments: Contrasting patterns of resistance in spatially varying versus uniformly , Environ. Sci. Technol., 53(14), 7996-8005, 2019.

120) #Akono, A.-T., J.L. Druhan, G. Dávila, T. Tsotsis, K. Jessen, S. Fuchs, D. Crandall, Z. Shi, L. Dalton, M.K. Tkach, P. Kabir, A.L. Goodman, S. Frailey, C.J. Werth, A Review of Geo-Chemical-Mechanical Impacts in Geological Carbon Storage Reservoirs, Greenhouse Gases: Science and Technology, 9(3), 474-504, 2019.

119) #Berns, E.C., R.A. Sanford, A.J. Valocchi, T.J. Strathmann, C.E. Schaefer, C.J. Werth, Contributions of Biotic and Abiotic Pathways to Anaerobic Trichloroethene Transformation in Low Permeability Source Zones, J. Contam. Hydrology, 224, 103480, 2019.

118) #Michelson, K., R. Alcalde, R.A. Sanford, A.J. Valocchi, C.J. Werth, Diffusion-based recycling of flavins allows Shewanella oneidensis MR-1 to yield energy from metal reduction across physical separations, Environ. Sci. Technol., 53(7), 3480-3487, 2019.

117) #Alcalde, R.E., K. Michelson, L. Zhou, E.V. Schmitz, J. Deng, R.A. Sanford, B.W. Fouke, C.J. Werth, Shewanella oneidensis MR-1 Motility Allows for Nitrate Reduction in the Toxic Region of a Ciprofloxacin Concentration Gradient in a Diffusion-Controlled Microfluidic Reactor, Environ. Sci. Technol., 53(5), 2778-2787, 2019.

116) #Schaeffer, C.E. P. Ho, E. Berns, C.J. Werth, Mechanisms for abiotic dechlorination of TCE by ferrous minerals under oxic and anoxic conditions in natural sediments, Environ. Sci. Technol., 52(23), 13747-13755, 2018.

115) Valocchi, A.J., D. Bolster, C.J. Werth Mixing-limited reactions in porous media, Transport in Porous Media, 1-26, 2018.

114) #Akono , A.-T., P. Kabir, Z. Shi, S. Fuchs, T.T. Tsotsis, K. Jessen, C.J. Werth, Modeling CO2-induced alterations in Mt. Simon sandstone via nanomechanics, Rock Mechanics and Rock Engineering, 52(5), 1353-1375, 2019.

113) #Sivaguru, M., J.J. Saw, J.C. Williams Jr., J.C. Lieske, A.E. Krambeck, M.F. Romero, N. Chia, A.L. Schwaderer, R.E. Alcalde, W.J. Bruce, D.E. Wildman, G.A. Fried, C.J. Werth, R.J. Reeder, P.M. Yau, R.A. Sanford, B.W. Fouke, Geobiology reveals how human kidney stones dissolve in vivo, Scientific Reports, 8, 13731, 2018.

112) #Akki, S., C.J. Werth, Critical Review: DNA aptasensors, Are they ready for monitoring organic pollutants in natural and treated water sources? Environ. Sci. Technol., **DOI:** 10.1021/acs.est.8b00558, 2018.

111) Gong, Y, C.J. Werth, Y. He, Y. Su, Y. Zhang, X. Zhou, Intracellular versus extracellular accumulation of Hexavalent chromium reduction products by Geobacter sulfurreducens PCA, Environ. Poll., 240, 485-492, 2018.

110) #Lin, W., A.M. Bergquist, K. Mohanty, C.J. Werth, Environmental impacts of replacing slickwater with low-no-water fracturing fluids for shale gas recovery, ACS Sustainable Chemistry & Engineering, 6(6), 7515-7524, 2018.

109) #Michelson, K., R.A. Sanford, A.J. Valocchi, C.J. Werth, Nanowires of Geobacter sulfurreducens require redox cofactors to reduce metals in pore spaces too small for cell passage, Environ. Sci. Technol., 51(20), 11660-11668, 2017.

108) #Schaefer, C.E., P. Ho, C. Gurr, E. Berns, C. Werth , Abiotic dechlorination of chlorinated ethenes in natural clayey soils: Impacts of mineralogy and temperature. J. Contam. Hydrol., 206, 10-17, 2017

107) #Singh, R., M. Sivaguru, G.A. Fried, B.W. Fouke, R.A. Sanford, M. Carrera, C.J. Werth, Real Rock-Microfluidic Flow Cell: A Test Bed for Real-Time In Situ Analysis of Flow, Transport, and Reaction in a Subsurface Reactive Transport Environment, J. Contaminant Hydrology, 204, 28-39, 2017.

106) #Tudek, J.K., D. Crandall, S.J. Fuchs, C.J. Werth, A.J. Valocchi, Y. Chen, A. Goodman, In situ contact angle measurements of liquid CO2, brine, and Mount Simon sandstone core using Micro X-ray CT imaging, Sessile Drop, and Lattice Boltzmann Modeling, J. Petroleum Sci. Eng., 155, 3-10, 2017.

105) #Botto, J., S.J. Fuchs, B.W. Fouke, A.F. Clarens, J.T. Freiburg, P.M. Berger, C.J. Werth, Effects of mineral surface properties on supercritical CO2 wettability in a siliciclastic reservoir, Energy & Fuels, 31(5), 5275-5285, 2017.

104) #Seraj, S., P. Kunai, H. Lao, G. Henkelman, S.M. Humphrey, C.J. Werth, PdAu alloy nanoparticle catalysts: effective candidates for nitrite reduction in water, ACS Catal., 7(5), 3268-3276, 2017.

103) #Bertoch, M., A.M. Bergquist, G. Gildert, T.J. Strathmann, C.J. Werth, Catalytic nitrate removal in a trickle bed reactor: direct 1 drinking water treatment, J. AWWA, 109(5), E144-E157, 2017.

102) #Bergquist, A.M. M. Bertoch, G. Gildert, T.J. Strathmann, C.J. Werth, Catalytic denitrification in a trickle bed reactor: ion exchange waste brine treatment, J. AWWA, 109(5), E129-E143, 2017.

101) #Liu, J., X. Su, M. Han, D. Wu, D. Gray, J. Shapley, C. Werth, T. Strathmann, Ligand Design for Isomer-Selective Oxorhenium(V) Complex Synthesis, Inorganic Chemistry, 56(3), 1757-1769, 2017.

100) #Chen, X., X. Huo, J Liu, Y. Wang, C.J. Werth, T.J. Strathmann, Exploring beyond palladium: Catalytic reduction of aqueous oxyanion pollutants with alternative platinum group metals and new mechanistic implications, Chem. Eng. J., 313, 745-752, 2017.

99) Lee, J., H. Yoon, P.K. Kitanidis, C.J. Werth, A.J. Valocchi, Scalable subsurface inverse modeling of huge data sets with an application to tracer concentration breakthrough data from magnetic resonance imaging, Water Resour. Res., 52 (7), 5213-5231, 2016.

98) #Liu, J., M. Han, D. Wu, X. Chen, J.K. Choe, C.J. Werth, T.J. Strathmann, A new bioinspired perchlorate reduction catalyst with significantly enhanced stability via rational tuning of rhenium coordination chemistry and heterogeneous reaction pathway, Environ. Sci. Technol., *50* (11), 5874–5881, 2016.

97) #Bergquist, A., J.K Choe, T.J. Strathmann, C.J. Werth, Evaluation of a hybrid ion exchange-catalyst treatment technology for nitrate removal from drinking water, *Water Research*, 96, 177-187, 2016.

96) #Liu, J., D. Wu, X. Su, M. Han, S. Kimura, D. Gray, J. Shapley, M. Abu-Omar, C.J. Werth, T.J. Strathmann, Configuration Control in the Synthesis of Homo- and Heteroleptic Bis-(oxazolinylphenolato/thiazolinylphenolato) Chelate Ligand Complexes of Oxorhenium (V), Isomer Effect on Ancillary Ligand Exchange Dynamics and Implications for Perchlorate Reduction Catalysis, *Inorganic Chem.*, 55 (5), 2597-2611, 2016.

95) #Laleian, A., A.J. Valocchi, C.J. Werth, Incompressible, depth-averaged lattice Boltzmann method for liquid, Computation, 3, 600-615, 2015.

94) #Liu, J., X. Chen, Y. Wang, T. Strathmann, C. Werth, Mechanism and Mitigation of the Decomposition of an Oxorhenium Complex-Based Heterogeneous Catalyst for Perchlorate Reduction in Water, *Environ. Sci. Technol.*, 49 (21), 12932-12940, 2015.

93) #Singh, R., H. Yoon, R.A. Sanford, L. Katz, B.W. Fouke, C.J. Werth, Metabolism induced CaCO3 biomineralization during reactive transport in a micromodel: Implications for porosity alteration, *Environ. Sci. Technol.*, 49 (20), 12094-12104, 2015.

92) #Akki, S., C.J. Werth, S. Silverman, Selective Aptamers for Detection of Estradiol and Ethynylestradiol in Natural Waters, *Environ. Sci. Technol.*, 49(16), 9905-9913, 2015.

91) #Choe, J.K., A.M. Bergquist, S. Jeong, J.S. Guest, C.J. Werth, T.J. Strathmann, Performance and environmental benefits of recycling of spent ion exchange brines via catalytic reduction, *Water Research*, 1(80), 267-280 2015.

90) #Tang, Y., C.J. Werth, R. Sanford, R. Singh, K. Michelson, N. Masaru, W.-S. Liu, A.J. Valocchi, Immobilization of selenite via two parallel pathways during in-situ bioremediation, *Environ. Sci. Technol.*, 49(7), 4543–4550, 2015.
89) #Tang, Y., A.J. Valocchi, C.J. Werth, A hybrid pore-scale and continuum-scale model for solute diffusion, reaction and biofilm development in porous media, *Water Resour. Res.*, 51(3), 1846-1859, 2015.
88) Gao, Z., Y. Zang, D. Li, C.J. Werth, Y. Zhang, X. Zhou, Highly active Pd–In/mesoporous alumina catalyst for nitrate reduction, *J. Haz. Materials*, 286(9), 425-431, 2015.
87) #Liu, J., J.K. Choe, Y. Wang, J. Shapley, C.J. Werth, T. Strathman, A bio-inspired complex-nanoparticle hybrid catalyst system for aqueous perchlorate reduction: Rhenium speciation and its influence on catalyst activity, *ACS Catalysis*, 5, 511-522, 2015.
86) #Wang, Y., J. Liu, P. Wang, C.J. Werth, T.J. Strathmann, Palladium nanocrystals encapsulated in core-shell silica: a structured hydrogenation catalyst with enhanced activity for reduction of oxyanion water pollutants. *ACS Catalysis*, 4, 3551-3559, 2014.
85) Liu, H., A. Valocci, C.J. Werth, Q. Kang, M. Oostrom, Pore-scale simulation of liquid CO2 displacement of water using a two-phase lattice Boltzmann model, *Adv. Water Res.*, 73, 144-158, 2014.
84) #Choe, J.K., M. Boyanov, J. Liu, K. Kemner, C.J. Werth, T.J. Strathmann, X-Ray Spectroscopic Characterization of Immobilized Rhenium Species in Hydrated Rhenium-Palladium Bimetallic Catalysts used for Perchlorate Water Treatment, *J. Phys. Chem., Part C*, 118 (22), 11666–11676, 2014.
83) Oostrom, M., Y. Mehmani, P. Romero-Gomez, Y. Tang, H. Liu, H. Yoon, Q. Kang, V. Joekar-Niasar, M.T. Balhoff, T. Dewers, G.D. Tartakovsky, E.A. Leist, N.J. Hess, W.A. Perkins, C.L. Rakowski, M.C. Richmond, J.A. Serkowski1, C.J. Werth, A.J. Valocchi, T.W. Wietsma, and C. Zhang, Pore-scale and Continuum Simulation of Solute Transport 1 Micromodel Benchmark Experiments, *Computational Geosciences*, 10.1007/s10596-014-9424-0, 2014.
82) #Boyd, T., H. Yoon, C. Zhang, M. Oostrom, N. Hess, B. Fouke, A.J. Valocchi, C.J. Werth, The effect of magnesium on calcium carbonate precipitation during reactive transport in a model subsurface pore network, *Geochimica Cosmochimica Acta*, 135, 321-335, 2014.
81) #Yoon, H., S. Leibeling, C. Zhang, R.H. Mueller, C.J. Werth, J. Zilles, Aptation of Delftia acidovorans for degradation of 2,4-dichlorophenoxyacetate in a microfluidic porous medium, *Biodegradation*, 25(4), 595-604, 2014.
80) Saat, M.R., C.J. Werth, D.Schaeffer, H. Yoon, C.P.L. Barkan, Environmental risk analysis of hazardous material rail transportation, *J. Haz. Materials*, 264, 560-569, 2014.
79) #Liu, H., A.J. Valocchi, C.J. Werth, Q. Kang, Pore-scale simulations of gas displacing liquid in a homogeneous micromodel, *Trans. Porous Med.*, DOI:10.1007/s11242-013-0200-8, 2014.
78) #Tang, Y., A.J. Valocchi, C.J. Werth, H. Liu, An improved pore-scale biofilm model and comparison with a microfluidic flow cell experiment, *Water Resour. Res.*, DOI: 10.1002/2013WR013843, 2013.
77) Kokkinaki, A., D.M. O'Carroll, C.J. Werth, B.E. Sleep, An evaluation of Sherwood-Gilland models for NAPL dissolution and relation to soil properties, *J. Contam. Hydrol.*, 155, 87-98, 2013.
76) Kokkinaki, A., D.M. O'Carroll, C.J. Werth, B.E. Sleep, Coupled simulation of DNAPL infiltration and dissolution in three dimensional heterogeneous domains: process model validation, *Water Resour. Res.*, DOI: 10.1002/wrcr.20503, 2013.
75) #Fanizza, M.F., H. Yoon, C. Zhang, M. Oostrom, T.W. Wietsma, N.J. Hess, M.E. Bowden, T.J. Strathmann, K.T. Finneran, C.J. Werth, Pore scale evaluation of uranyl phosphate precipitation in a model groundwater system, *Water Resour. Res.*, DOI: 10.1002/wrcr.20088, Feb, 2013.
74) Jun, Y.-S., D.E. Giammar, C.J. Werth, Impacts of geochemical reactions on geologic carbon sequestration, *Environ. Sci. Technol.*, Feature Article, 47(1), 3-8, 2013.
73) #Choe, J.K., M.H. Mehnert, J.S. Guest, T.J. Strathmann, C.J. Werth, Comparative assessment of the environmental sustainability of existing and emerging perchlorate treatment technologies for drinking water, *Environ. Sci. Technol.*, 47(9):4644-4652, 2013.

72) #Shuai, D., D.C. McCalman, J.K. Choe, J.R. Shapley, W.F. Schneider, C.J. Werth, Structure sensitivity study of waterborne contaminant hydrogenation using shape and size-controlled Pd nanoparticles, *ACS Catalysis*, 3(3), 453-463, DOI: 10.1021/cs300616d, 2013.
71) #Zhang, R., D. Shuai, K.A. Guy, J.R. Shapley, T.J. Strathmann, and C.J. Werth, Elucidation of nitrate reduction mechanisms on a Pd/In Bimetallic catalyst using isotope labeled, nitrogen species. *ChemCatChem.*, 5, 313-321, 2013.
70) #Liu, J., J.K. Choe, Z. Sasnow, J.R. Shapley, C.J.Werth, T.J. Strathmann, Application of a Re-Pd bimetallic catalyst for treatment of perchlorate in waste ion-exchange regenerant brine, *Water Research*, 47, 91-101, 2013.
69) Guo, Y., W. Li, J. Yan, B. Moosa, M. Amad, C.J. Werth, N.M. Khashab, Fullerene-catalyzed reduction of azo derivatives in water under UV irradiation, *Chem. Asian J.*, 7(12), 2842-2847, DOI: 10.1002/asia.201200701, 2012.
68) McCalman, D.C., K.H. Kelley, C.J. Werth, J.R. Shapley, W.F. Schneider, Aqueous N2O reduction with H2 over Pd-based catalyst: Mechanistic insights from experiment and simulation, *Topics Catal.*, 55(5), 300-312, 2012.
67) Chaplin, B.P., M. Reinhard, W.F. Schneider, C. Schüth, J.R. Shapley, T.J. Strathmann, C.J. Werth, A critical review of Pd-based catalytic treatment of priority contaminants in water, *Environ. Sci. Technol.*, 46, 3655-3670, 2012.
66) #Shuai, D., J.K. Choe, J. Shapley, C.J. Werth, Enhanced activity and selectivity of carbon nanofiber supported Pd catalysts for nitrite reduction, *Environ. Sci. Technol.*, 46(5), 2847-2855, 2012.
65) Yoon, H., A.J. Valocchi, C.J. Werth, T. Dewers, Pore-scale simulation of mixing-induced calcium carbonate precipitation and dissolution in a microfluidic pore network, *Water Resour. Res.*, 48, doi:10.1029/2011WR011192, 2012.
64) #Marruffo, A., H. Yoon, D.J. Schaeffer, C.P.L. Barkan, M.R. Saat, C.J. Werth, NAPL source zone depletion model and its application to railroad-tank-car spills, *Groundwater*, DOI: 10.1111/j.1745-6584.2011.00863, 2011.
63) #Shuai, D., C. Wang, A. Genc, C.J. Werth, A new geometric method based on two-dimensional transmission electron microscopy for analysis of interior versus exterior Pd loading on hollow carbon nanofibers, *J. Phys. Chem. Lett.*, 2, 1082-1087, 2011.
62) #Choe, J.K., J.R. Shapley, T.J. Strathmann, C.J. Werth, Influence of rhenium speciation on the stability and activity of Re/Pd bimetal catalysts used for perchlorate reduction, *Environ. Sci. Technol.*, 44, 4716-4721, 2010.
61) #Yang, Y., B.J. Mahler, P.C. VanMetre, B. Ligouis, C.J. Werth, Potential contributions of asphalt and coal tar to black carbon quantification in urban dust, soils, and sediments, *Geochimica et Cosmochimica Acta*, 74, 6830-6840, 2010.
60) #Zhang, C., K. Dehoff, N. Hess, M. Oostrom, T.W. Wietsma, A.J. Valocchi, B.W. Fouke, C.J. Werth, Pore-scale study of transverse mixing induced CaCO3 precipitation and permeability reduction in a model subsurface sedimentary system, *Environ. Sci. Technol.*, 44, 7833-7838, 2010.
59) #Zhang, C., Q. Kang, X. Wang, J. Zilles, R.H. Muller, C.J. Werth, Effects of pore-scale heterogeneity and transverse mixing on bacterial growth in porous media, *Environ. Sci. Technol.*, 44, 3085-3092, 2010.
58) #Willingham, T.W., C. Zhang, C.J. Werth, A.J. Valocchi, M. Oostrom, T.W. Wietsma, Using dispersivity values to quantify the effects of pore-scale flow focusing on enhanced reaction along a transverse mixing zone, *Adv. Water Resour.*, 33, 525-535, 2010.
57) #Werth, C.J., C. Zhang, M. Brusseau, M. Oostrom, T. Baumann, A review of non-invasive imaging methods and applications in contaminant hydrogeology research, *J. Contam. Hydrol.*, 113, 1-24, 2010.
56) #Yang, Y., P. Van Metre, B. Mahler, J. Wilson, B. Ligouis, M. Razzaque, D. Schaeffer, C.J. Werth, The influence of coal-tar sealcoat and other carbonaceous materials on polycyclic aromatic hydrocarbon loading in an urban watershed, *Environ. Sci. Technol.*, 44, 1217-1223, 2010.

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43) Martin, J.P., K.S. Sorenson, Jr., R.A. Brennan, R.A. Sanford, C.J. Werth, G.H. Bures, G. Guest, R. Fulton, "Full-scale application of chitin for bioremediation of chlorinated solvents." Proceedings of the Remediation of Chlorinated and Recalcitrant Compounds: The Fourth International Conference, Monterey, CA, 2004.
42) Knutson, C.E., C.J. Werth, A.J. Valocchi, B.J. Travis, Modeling biofilm morphology in porous media at the pore scale, Proceedings of the Computational Methods in Water Resources Meeting, University of North Carolina, Chapel Hill, Spring 2004.
41) Roundy, E., K. Guy, J.R. Shapley, C.J. Werth, The effects of natural water ions and humic acid on nitrate reduction using an alumina supported Pd-Cu catalyst, Proceedings of the American Chemical Society Meeting, Division of Environmental Chemistry, Philadelphia, PN, 2004 Fall Meeting.
40) Jeong, S., C.J. Werth, Spectroscopic characterization of carbonaceous material properties that affect hydrophobic organic chemical sorption, Proceedings of the American Chemical Society Meeting, Division of Environmental Chemistry, Philadelphia, PN, 2004 Fall Meeting.

39) Brennan, R.A., C.J. Werth, R.A. Sanford, "Tracking the growth and distribution of a chloridogenic microbial community in PCE-contaminated sediments treated with chitin." Proceedings of the 10th International Symposium on Microbial Ecology – ISME, Mexico, 2004.
38) Yoon, H., A.J. Valocchi, C.J. Werth, Effect of soil Moisture dynamics on DNAPL spill zone architecture in heterogeneous porous media, EOS Transactions, The American Geophysical Union, Hydrol. Division, San Francisco, CA, 2004 Fall Meeting.
37) Nambi, I. M., C.J. Werth, R.A. Sanford, A Pore-scale investigation of anaerobic dechlorinating bacteria growth, Proceedings of the American Chemical Society Meeting, Division of Environmental Chemistry, New Orleans, 2003 Spring Meeting.
36) Knutson, C., A.J. Valocchi, C.J. Werth, The influence of pore-scale transverse mixing upon biodegradation reactions and biomass growth, EOS Transactions, Joint Meeting of The American Geophysical Union and the European Geophysical Society, Hydrol. Division, Nice, France, 2003 Spring Meeting.
35) Chomsurin, C., C.J. Werth, Pore-Scale Analysis of Mass Transfer from Dense Nonaqueous Phase Liquids Trapped in Low Permeability Zones of an Etched-Silicon Pore Network, EOS Transactions, Joint Meeting of The American Geophysical Union and the European Geophysical Society, Hydrol. Division, Nice, France, 2003 Spring Meeting.
34) Chu, Y., C.J. Werth, A.J. Valocchi, A.G. Webb, Investigation of Soil Vapor Extraction Mechanisms using Magnetic Resonance Imaging (MRI), EOS Transactions, Joint Meeting of The American Geophysical Union and the European Geophysical Society, Hydrol. Division, Nice, France, 2003 Spring Meeting.
33) Yoon, H., A.J. Valocchi, C.J. Werth, Modeling the Influence of Temperature and Water Content on Soil Vapor Extraction, EOS Transactions, Joint Meeting of The American Geophysical Union and the European Geophysical Society, Hydrol. Division, Nice, France, 2003 Spring Meeting.
32) Werth, C.J., C. Chomsurin, C. Zhang, A. Webb, Analysis of pore-scale mass transfer processes that control nonaqueous phase liquid dissolution and the implications for risk assessment, Proceedings of the 1st International Workshop on Groundwater Risk Assessment at Contaminated Sites, Tuebingen University, Tuebingen, Germany, 2002.
31) Valocchi, A.J. and C.J. Werth, Enhancing Student Understanding of Reactive Pollutant Fate and Transport Using Web-Based Interactive Simulation, XIV International Conference on Computational Methods in Water Resources, Delft, The Netherlands, June 23-28, 2002.
30) Valocchi, A.J. and C.J. Werth, Interactive web-based models for teaching students about integrated processes that control pollutant transport and fate in groundwater, Conference of the Association of Environmental Engineering and Science Professors, Toronto, August 11-13, 2002.
29) Sanford, R.A., C.J. Werth, I. Nambi, Pore-scale analysis of microbial growth using a silicon-based micromodel, Conference of the Association of Environmental Engineering and Science Professors, Toronto, August 11-13, 2002.
28) Li, J. and C.J. Werth, Slow desorption mechanisms of volatile organic chemical mixtures in soil and sediment micropores, EOS Transactions, The American Geophysical Union, Hydrol. Division, San Francisco, CA, 2002 Fall Meeting.
27) Chomsurin, C. and C.J. Werth, Characterization of the mass flux to groundwater from DNAPL trapped in low conductivity zones, EOS Transactions, The American Geophysical Union, Hydrol. Division, San Francisco, CA, 2002 Fall Meeting.
26) Yoon, H., A.J. Valocchi, C.J. Werth, The influence of water content on soil vapor extaction, EOS Transactions, The American Geophysical Union, Hydrol. Division, San Francisco, CA, 2002 Fall Meeting.
25) Martin, J.P., K.S. Sorenson, L.N. Peterson, R.A. Brennan, C.J. Werth, R.A. Sanford, G.H. Bures, C.J. Taylor, "Enhanced CAH dechlorination in a low permeability, variably-saturated medium." Proceedings of the Remediation of Chlorinated and Recalcitrant Compounds Conference, Monterey, CA, 2002.

24) Brennan, R.A., C.J. Werth, R.A. Sanford, K.S. Sorenson, J.P. Martin, G.H. Bures, "From the lab to the field: development and deployment of the halorespiration enhancing redox transition zone (HERTZ) technology for bioremediation." Proceedings of the Association of Environmental Engineering & Science Professors Conference, Toronto, Canada, 2002.
23) Chu, Y., C.J. Werth, A.J. Valocchi, A. G. Webb, Magnetic resonance imaging of nonaqueous phase liquid during soil vapor extraction in heterogeneous porous media, EOS Transactions, The American Geophysical Union, Hydrol. Division, San Francisco, CA, 2002 Fall Meeting.
22) Zhang, C., C.J. Werth, and A.G. Webb, A Magnetic Resonance Imaging Study of Dense Nonaqueous Phase Liquid Dissolution from Angular Porous Media, 6th International Conference on Magnetic Resonance in Porous Media, Ulm, Sept. 8-12, 2002.
21) Brennan, R.A., S.M. Vera, R.A. Sanford, and C.J. Werth, Bioremediation of PCE in a Column Experiment Using Chitin Fermentation, Proceedings of the In Situ and On-Site Bioremediation 6th International Symposium, San Diego, Summer of 2001.
20) Nambi, I., R. Sanford, C.J. Werth, Investigation of the anaerobic reductive dechlorination of chlorinated ethenes at the pore-scale using micromodels, 9th International Symposium, Microbial Ecology Interactions with the Microbial World, Amsterdam, August 2001.
19) Knutson, C. and C.J. Werth, Pore-scale fluid velocity measurements through porous media using MRI, EOS Transactions, The American Geophysical Union, Hydrology Division, Boston, MA, 2001 Spring Meeting.
18) Zhang, C. and C.J. Werth, Characterization of DNAPL dissolution in porous media using magnetic resonance imaging, EOS Transactions, The American Geophysical Union, Hydrology Division, Boston, MA, 2001 Spring Meeting.
17) Nambi, I., C.J. Werth, and R.A. Sanford, Investigation of biodegradation of chlorinated ethenes at the pore scale using silicon based micromodels, EOS Transactions, The American Geophysical Union, Hydrology Division, Boston, MA, 2001 Spring Meeting.
16) Knutson, C., C.J. Werth, and A.J. Valocchi, Pore scale modeling of apparent mass transfer limitations during equilibrium controlled NAPL dissolution, EOS Transactions, The American Geophysical Union, Hydrology Division, Boston, MA, 2001 Spring Meeting.
15) Chomsurin, C. and C.J. Werth, DNAPL Dissolution in a silicon based micromodel using fluorescence microscopy and digital image analysis, EOS Transactions, The American Geophysical Union, Hydrol. Division, Boston, MA, 2001 Spring Meeting.
14) Werth, C.J. and C. Chomsurin, Pore-scale evaluation of dense nonaqueous-phase liquid dissolution using silicon-based micromodels, EOS Transactions, The American Geophysical Union, Hydrol. Division, Boston, MA, 2001 Fall Meeting.
13) Baumann, T., C.J. Werth, R. Niessner, Quantitative observation of colloidal transport with etched silica micromodels, European Geophysical Union XXVII General Assembly, Nice, France, 22.-25.4.2001.
12) Schaefer, C., C. Scheuth, C.J. Werth, and R. Reinhard, Binary desorption isotherms of TCE and PCE from silica gel and natural solids, Transactions of the European Geophysical Society, Hydrology Division, Nice, France, 2000 Spring Meeting.
11) Werth, C.J., H. Castillia, and S.A. McMillan, Structural evaluation of slow desorbing site via isotope exchange column studies, Transactions of the European Geophysical Society, Hydrology Division, Nice, France, 2000 Spring Meeting.
10) Hansen, K.M. and C.J. Werth, Effects of concentration and incubation time on the slow desorption of TCE from a soil, Proceedings of the American Chemical Society Meeting, Division of Environmental Chemistry, Washington DC, 2000 Fall Meeting.
9) Li, J. and C.J. Werth, Evaluating competitive sorption mechanisms in soils and sediments using zeolites, Proceedings of the American Chemical Society Meeting, Division of Environmental Chemistry, Washington DC, 2000 Fall Meeting.
8) Vera S.M., R.A. Brennan, C.J. Werth, and R.A. Sanford, Analysis of substrates to support a halorespiration enhanced redox transition zone, HERTZ, in chlorinated solvent impacted groundwater, Proceedings of the Groundwater 2000 Conference, Amsterdam, 2000.

7) Castilla, H. and C.J. Werth, Effects of temperature on slow desorption characteristics of VOCs in soils and sediments, EOS Transactions, The American Geophysical Union, Hydrology Division, Boston, MA, 1998 Spring Meeting.
6) Li, J. and C.J. Werth, Effects of water on trichloroethylene desorption from silica gel and natural sediments, EOS Transactions, The American Geophysical Union, Hydrology Division, Boston, MA, 1998 Spring Meeting.
5) Werth, C.J. and M. Reinhard, Characterization of slow desorbing sites via isotope exchange column studies, Proceedings of the American Chemical Society Meeting, Division of Environmental Chemistry, Las Vegas, NV, 1997 Fall Meeting.
4) Hollenbeck, K.J., C.F. Harvey, R. Haggerty, C.J. Werth, Mass-transfer for continuous rate distributions: Modeling and estimation, EOS Transactions, The American Geophysical Union, Hydrology Division, San Francisco, CA, 1997 Fall Meeting.
3) McMillan, S. and C.J. Werth, A diffusion model of volatile organic isotope exchange in the slow sorption domain, EOS Transactions, The American Geophysical Union, Hydrology Division, San Francisco, CA, 1997 Fall Meeting.
2) Werth, C.J. and M. Reinhard, Mechanistic investigation of trichloroethylene desorption from model and natural solids at 100% relative humidity, The American Chemical Society, 70th Colloid and Surface Science Symposium, Potsdam, NY, June of 1996.
1) Werth, C.J., J. Farrell and M. Reinhard, The effects of temperature on the slow desorption of trichloroethylene from Livermore sand, clay and bulk fractions: isotherms and kinetics, Proceedings of the American Chemical Society Meeting, Division of Environmental Chemistry, San Diego, CA, 1994 Spring Meeting.

Major Research Grants

38) Werth (PI), $85,000, GSI Environmental, Comprehensive Evaluation and Guidance for In Situ Sorption-Degradation Technologies for Sustained Treatment of Chlorinated Solvents in Groundwater, 8/2019 – 7/2020.
37) Werth (PI), $359,000, National Science Foundation, Environmental Engineering Program, Non-precioius metal substitution into hydrogenation metal alloy catalysts deposited onto redox active supports for facile nitrate destruction in drinking water, 9/2019-8/2022.
36) Werth (PI), $3,000,000, National Science Foundation, National Research Traineeship Program, NRT-INFEWS: Graduate Student Education: Reducing Energy Barriers For Novel Water Supply Use in Sustainable Agriculture, 8/2018-8/2023.
35) Werth (PI), $125,000, Texas Commission on Environmental Quality, Aquifer Storage and Recovery, 5/2018-8/2019.
34) Werth (PI), $345,000, National Science Foundation, Novel Materials and Reactor Design for Coupled Electrolytic Hydrogen and Production Nitrate Removal with Resource Recovery from Drinking Water, 8/30-2017-8/30/2020
33) Werth (coPI), $330,000, Dow Chemical, Controlling Hydrocarbon Formation Damage to Enhance Souring Control and Energy Production, 6/30/2017-6/30/2020
32) Werth (PI), $659,198, Department of Energy, Basic Energy Sciences, Geosciences Program, Mineral Alteration of Shales by CO2 and Brine Containing Surfactants, 3/30/2017-3/30/2020
31) Werth (PI), $50,000, Tailoring the Structure of Hydrogenation Catalysts to Transform the Economic and Environmental Sustainability of Nitrate Removal from Drinking Water, Texas Hazardous Waste Research Center, 8/30/15-8/31/17.
30) Werth (PI), Valocchi (co-PI), Strathmann (co-PI), Sanford (co-PI), Schaefer (co-PI), Elsner (co-PI), Shouakar-Stash (co-PI), DOD SERDP, $1,069,000, Biogeochemical Processes that Control Natural Attenuation of Trichloroethylene in Low Permeability Zones, 8/15-8/18.
29) Werth (co-PI), Frailey (PI), DOE EFRC, $10,000,000, Center for Geological Storage of CO2, 8/14-8/18.
28) Werth (co-PI), Zilles (PI), NSF, $324k, Novel biomimetic materials for water purification: perchlorate treatment, 8/13-8/16.

27) Werth (co-PI), Fouke (PI), British Petroleum, Energy Bioscience Institute, $550,000, GeoBioCell experimentation of microbial sulfur cycling during oil reservoir souring, 1/1/13-6/31/15.
26) Werth (PI), Strathmann (co-PI), USEPA, $500k, Research and demonstration of innovative drinking water treatment technologies in small systems, 1/12-1/15.
25) Werth (co-PI), Goldenfeld (PI), NASA, $8,044,935, Towards universal biology: Constraints from early and continuing evolutionary dynamics of life on earth, 1/1/13-1/1/18.
24) Werth (PI), USGS-WRR, $250k, Determining the fate and toxicity of PAHs associated with coal-tar and other carbonaceous material particles in urban lakes, 9/11-9/14.
23) Werth (PI), USEPA P3 (People, Prosperity, Plant) Award, Phase II, $75,000, Use of bone char for the removal of arsenic and uranium from groundwater at the Pine Ridge Reservation, 2011-2013.
22) Werth (co-PI), Valocchi (PI), DOE, $1.3 million, Microbial enhanced mixing across scales during in-situ bioreduction of metals and radionuclides at DOE sites, 8/11-8/14.
21) Werth (PI), Marinas (co-PI), King Abdullah University of Science and Technology (KAUST), $3.8 million, Collaborative research on sustainable water development and engineering, 1/10-1/15.
20) Werth (co-PI), Boppart (PI), NSF Major Research Instrumentation Grant, $1,800,000, Acquisition of a molecular imaging instrument for dynamic material and biological systems, 9/2009-9/2012
19) Werth (co-PI), Valocchi (PI), DOE LDRD subcontract, $600k, Integrated experimentation and hybrid modeling for prediction and control of multi phase flow and reaction in CO2 injection and storage, 1/10-1/13.
18) Werth (PI), USEPA P3 (People, Prosperity, Plant) Award, Phase I, $10,000, Use of bone char for the removal of arsenic and uranium from groundwater at the Pine Ridge Reservation, 2010-2011.
17) Werth (PI), UIUC Student Sustainability Council, $13,000, Integration of green roof monitoring into classroom instruction, 2009.
16) Werth (co-PI), Dastgheib (PI), DOE, $1,183k, Reuse of produced water from CO2 enhanced oil recovery, coal-bed methane, and mine pool water by coal-based power plants, 6/09-6/12.
15) Werth (co-PI), Finneran (PI), DOE ERSP, $488k, Characterizing the combined roles of iron and transverse mixing on uranium bioremediation in groundwater using micromodels, 8/09-8/12.
14) Werth (co-PI), Strathmann (PI), NSF, $350k, Development of a sustainable catalytic treatment process for perchlorate, 5/8-5/11.
13) Werth (PI), Zilles (co-PI), NRI / USDA, $460k, Evolution of gene expression and herbicide degradation in a model dynamic soil system, 1/07-1/10.
12) Werth (PI), Zilles (co-PI), GAANN / US Dept. Educ., $540k, enhancing quality and diversity of environmental engineering at UIUC. 5/06-5/10.
11) Werth (PI), Valocchi (co-PI), ESPR / DOE, $920k, Influence of wetting and mass transfer properties of organic chemicals in the vadose zone on groundwater contamination, 3/06-3/10.
10) Werth (PI), NSF Project within Science and Technology Center (Shannon, PI), $800k, Nitrate reduction using bimetallic catalysts, 7/02-7/12.
9) Werth (PI), NIWR-USGS, $170k, Carbonaceous material fractions in sediment and their effect on the sorption and persistence of organic pollutants in small urban watersheds, 5/2005-5/2008.
8) Werth (co-PI), Valocchi (PI), NSF, $400k, Effects of pore-scale mixing on reactive transport, 5/2002-5/2006.
7) Werth (co-PI), Valocchi (PI), EMSP-DOE, $600k, Investigation of pore-scale processes that affect soil vapor extraction, Completed, 8/2001-8/2004.
6) Werth (co-PI), Valocchi (co-PI), Provosts Initiative on Teaching and Advancement, $8,977, Pollutant transport and fate in groundwater: web-based interactive simulation and instruction, 2000-2001.

5) Werth (co-PI), Sanford (PI), NSF, $400k, Effects of redox conditions on the bioavailability and biodegradation of nonaqueous phase chlorinated ethenes at the pore scale, 5/1998-5/2002.
4) Werth (co-PI), Daniel (PI), NSF, $250k, Contaminant transport through a field-scale earthern liner, Completed, 5/1999-5/2002.
3) Werth (PI), NSF, $270k, Competitive sorption of volatile organic chemicals in model and natural solids, 5/1998-5/2001.
2) Werth (PI), UIUC Educational Technology Board, $2,200, Development of web-based applications to integrate research and teaching, 1998-1999.
1) Werth (PI), NSF-CAREER, $250k, Spatial and temporal characterization of dense non-aqueous phase liquids in porous media, 5/1998-5/2002.

Invited Lecturers

Universities/Institutions

34) University of Buffalo, Buffalo, New York, September 2019, Electrocatalytic reduction of nitrate in drinking water.
33) Darmstadt University, Darmstadt, Germany, August 2018, Role of extracellular electron transfer for contaminant metal reduction.
32) Tuebingen University, Tuebingen, Germany, August 2018, Role of extracellular electron transfer for contaminant metal reduction.
31) University of California Irvine, Irvine, CA January 2016, Role of extracellular electron transfer for contaminant metal reduction in sediment nanopores, and implications for hazardous waste site cleanup.
30) Texas Tech University, Lubbock, TX, October 2015, Role of extracellular electron transfer for contaminant metal reduction in sediment nanopores, and implications for hazardous waste site cleanup.
29) University of Houston, Houston, TX, February 2015, Mechanisms of calcium carbonate biomineralization in subsurface reservoirs.
28) Manhattan College, Bronx, New York, November 2014, Development of sustainable catalytic treatment process for nitrate removal from drinking water.
28) University of Texas at Austin, TX, November 2013, Development of sustainable catalytic materials and treatment process for oxyanion removal from drinking water.
27) University of Texas at Austin, TX, Summer 2013, Mechanisms that control $CaCO_3$ biomineralization during reactive transport and the implications for pore space alteration, fluid flow, and mixing.
26) University of Michigan, Ann Arbor, MI, Spring 2012, New Pd-based catalyst materials for sustainable treatment of oxyanions in drinking water.
25) Tuebingen University, Tuebingen, Germany, Summer 2012, Pore-scale study of mixing induced mineral precipitation of relevance to geological carbon sequestration.
24) King Abdullah University of Science and Technology, Fall 2012, Sustainable treatment of oxyanions in drinking water using pd-based catalytic treatment.
23) Tufts University, Spring 2011, Pore-scale study of mixing induced mineral precipitation of relevance to geological carbon sequestration.
22) Notre Dame, Winter 2011, New Pd-based catalyst materials for sustainable treatment of oxyanions in drinking water.
21) King Abdullah University of Science and Technology, Fall 2010, Microfluidic-based sensors for detecting organic pollutants in drinking water resources.
20) Montana State Biofilm Research Center, Fall 2010, Pore-scale evaluation of mass-transfer limited reaction and biomass growth in model groundwater pore systems, and implications for in-situ bioremediation.
19) Sandia National Laboratory, Summer 2010, Experimental and modeling studies of pore-scale reactive transport.

18) Northeastern University, Fall 2009, Effects of pore geometry and biomass growth and activity and implications for bioremediation.
17) University of Nebraska – Lincoln, Spring 2009, Environmental microfluidics and applications in environmental engineering and science.
16) Pacific Northwest National Laboratory, Spring 2007, A pore-scale study of transverse mixing limited reactions and biomass growth, and implications for groundwater remediation.
15) Asian Institute of Technology, Spring 2006, Effects of heterogeneous permeability fields on DNAPL dissolution and cleanup.
14) Washington University, Spring 2006, Effects of transverse dispersion on bioremediation of chlorinated solvents.
13) University of Delaware, Fall 2005, The contribution of black carbon to hydrophobic organic chemical sorption in central Illinois aquifer sediments.
12) Tuebingen University, Tuebingen, Germany, Fall 2004, Determining the contribution of different carbonaceous material fractions to organic pollutant fate in soils and sediments.
11) Hohenheim University, Hohenheim, Germany, Fall 2004, Determining the contribution of different carbonaceous material fractions in soils and sediments to organic pollutant sorption**.**
10) UFZ, Leipzig, Germany, Fall 2004, A pore-scale study of biomass growth effects on transverse mixing limited reactions in groundwater during bioremediaiton.
9) Purdue University, West Lafeyette, IN, Spring 2002, Pore-scale analysis of dense nonaqueous phase liquid dissolution.
8) Technical University of Munich, Munich, Germany, Spring 2002, Evaluation of a halorespiration enhancing redox transition zone.
7) University of Arizona, Tucson, AZ, Fall 2001, Investigation of pore-scale mechanisms controlling nonaqueous phase liquid dissolution.
6) Johns Hopkins University, Baltimore, MD, Fall 2001, Investigation of pore-scale mechanisms controlling nonaqueous phase liquid dissolution.
5) Stanford University, Stanford, CA, Fall 2001, Investigation of pore-scale mechanisms controlling nonaqueous phase liquid dissolution.
4) University of Illinois at Chicago, Spring 2000, Structural evaluation of slow desorbing sites in model and natural sediments.
3) Tuebingen University, Tuebingen, Germany, Spring 2000, Investigation of pore-scale mechanisms controlling DNAPL dissolution: New techniques and initial results.
2) Vanderbilt University, Nashville, TN, Spring 1999, Structural evaluation of slow desorbing sites via temperature stepped desorption profiles.
1) Northwestern University, Evansville, IL, Spring 1998, Sterically hindered counter-diffusion of trichloroethylene isotopes in silica gel and geosorbent micropores.

<u>Conferences/Workshops</u>
28) Interpore Conference, Valencia, Italy, May 2019, Extracellular electron transport by dissimilatory metal reducing bacteria.
27) American Chemical Society Meeting, New Orleans, LA, Spring 2018, Sustainable catalytic reduction of nitrate.
26) American Geophysical Union Meeting, New Orleans, LA, Fall 2017, A Novel Nano/Micro-Fluidic Reactor for Evaluation of Pore-Scale Reactive Transport.
25) DOE Basic Research Needs Workshop. Plenary Lecture: Challenges at the water-energy nexus in subsurface energy recovery and storage, DOE Office of Science, Bethesda, Maryland, January, 2017.
24) American Geophysical Union Meeting, San Francisco, Fall 2016, Role of extracellular electron transfer for dissimilatory metal reduction in sediment nanopores, and implications for hazardous waste site cleanup.
23) American Chemical Society Meeting, Philadelphia, PA, Fall 2016, Novel hybrid ion exchange (ix)-catalyst treatment system for nitrate to reduce economic and environmental life cycle costs.

22) American Chemical National Meeting, San Diego, CA, Spring 2016, Metabolically induced calcium carbonate precipitation during reactive transport in porous media.
21) Gordon Research Conference on Environmental Sciences: Water, Holderness, NH, June 2014, Design of novel nanomaterial catalysts for oxyanion reduction in drinking water.
20) American Chemical Society National Meeting, Indianapolis IN, Fall 2013, Mechanisms that control $CaCO_3$ biomineralization during reactive transport and their implications for pore space occlusion.
19) American Chemical Society National Meeting, Indianapolis, IN, Fall 2013, Development of sustainable catalytic materials for removal of oxyanions from drinking water, September 2013.
18) Soil Science Society of American, Orlando, FL, Fall 2013, Mechanisms that control biomineralization of carbonates in porous media.
17) InterPore Conference, Purdue University, May 2012, Precipitation of carbonate minerals along a transverse mixing zone in a microfluidic pore network.
16) Illinois Groundwater Association Spring Meeting, Champaign, IL, April 2012, A pore scale evaluation of mixing limitations in groundwater that hinder mineral sequestration of uranium.
15) DOE EMSL, Richland, WA, 2011, Pore-scale modeling challenge and workshop, Pacific Northwest National Laboratory.
14) American Chemical Society Pacific Rim Regional Conference, Hawaii, December 2010, Catalytic treatment of oxyanions in dinking water.
13) GeoDarmstadt 2010, Germany, 2011, The role of coal-tar-based parking lot sealcoat on polycyclic aromatic hydrocarbon loadings in urban lake sediments in the United States.
12) NSF workshop on contaminated groundwater plumes, Univ. Kansas, 2008.
11) American Chemical Society National Meeting, April 2008, Effects of black carbon on polycyclic aromatic hydrocarbon fate in an urban watershed.
10) Gordon Research Conference, Flow and Transport in Porous Media, Summer 2008, Transverse mixing-limited reaction in groundwater; does pore-scale morphology matter.
9) Aquaterra Biogeochemical Workshop, Tuebingen University, Teubingen, Germany, Spring, 2007, Watershed-scale processes that affect pollutant partitioning, transport, and fate.
8) US-Israeli Workshop on Nanotechnology for Water Purification, March 2006, Impact of natural water solutes on nitrate reduction by alumina-supported Pd-Cu catalysts.
7) American Geophysical Union National Meeting, San Francisco, Fall 2006, Impact of source zone architecture on dense nonaqueous phase liquid dissolution.
6) National Institute of Environmental Health Sciences (NIEHS) Superfund Basic Research Program, February 24-25, 2005, DNAPL Source Zone Workshop, NAPL Dissolution – Pore Scale Experimentation, Tucson, AZ.
5) German – American workshop on Biogeochemical Gradients, Sponsored by the German National Science Foundation, Spring 2005, Effects of solute mixing at the pore scale on reactions in groundwater.
4) 1st International Workshop on Groundwater Risk Assessment at Contaminated Sites, Tuebingen, Germany, Spring 2002, Analysis of pore-scale mass transfer processes that control nonaqueous phase liquid dissolution and the implications for risk assessment.
3) American Geophysical Union National Meeting, San Francisco, Fall 2001, Pore-scale evaluation of dense nonaqueous-phase liquid dissolution using silicon-based micromodels.
2) European Geophysical Society Meeting, Nice, France, Spring 2000, Structural evaluation of slow desorbing site via isotope exchange column studies.
1) American Chemical Society National Meeting, Las Vegas, NV, Fall 1997, Characterization of slow desorbing sites via isotope exchange column studies.

Classroom Instructional Activities

2019, Spring, CE364-Wastewater Design
2018, Fall, CE385J-Hazardous Waste Management, , EVE101-Environmental Engineering Freshman Seminar
2018, Spring, CE364-Wastewater Design

2017, Fall, CE385J-Hazardous Waste Management, EVE101-Environmental Engineering Freshman Seminar
2017, Spring, CE385J-Hazardous Waste Management
2016, Fall, CE364-Wastewater Design
2016, Spring, CE385J-Hazardous Waste Management
2015, Fall, CE364-Wastewater Design
2015, Spring, CE377k/397-Energy and Water
2014, Fall, CE385J-Hazardous Waste Management
2014, Spring: CEE540-Remediation Design
2013, Fall: CEE440-Fate and Cleanup of Environmental Pollutants
2013, Spring: CEE540-Remediation Design
2012, Fall: CEE440-Fate and Cleanup of Environmental Pollutants
2012, Spring: CEE440-Fate and Cleanup of Environmental Pollutants
2012, Spring: CEE498SIS-Sustainable Infrastructure Systems
2011, Fall: CEE330-Introduction to Environmental Engineering
2011, Spring: CEE440-Fate and Cleanup of Environmental Pollutants
2010, Fall: CEE330-Introduction to Environmental Engineering
2010, Spring: CEE440-Hazardous and Solid Waste Management
2009, Fall: CEE498SUE-Sustainable Urban Engineering
2009, Spring: CEE440-Hazardous and Solid Waste Management
2008, Fall: CEE540-Remediation Design
2008, Spring: CEE440-Hazardous and Solid Waste Management
2007, Fall: CEE498SUE-Sustainable Urban Engineering
2007, Spring: CEE440-Hazardous and Solid Waste Management
2006, Fall: CEE498SUE-Sustainable Urban Engineering
2006, Spring: CEE440-Hazardous and Solid Waste Management
2006, Spring: Short course on Environmental Mass Transfer Processes, Tuebingen University, Tuebingen, Germany.
2005, Fall: CEE540-Remediation Design
2004-2005: Guest lectures in MS courses at Tuebingen University, Tuebingen, Germany
2003, Spring: CEE440-Hazardous and Solid Waste Management
2002, Fall: CEE540-Remediation Design
2002, Spring: CEE440-Hazardous and Solid Waste Management
2001, Fall: CEE540-Remediation Design
2001, Spring: CEE440-Hazardous and Solid Waste Management
2000, Fall: CEE540-Remediation Design
2000, Spring: CEE440-Hazardous and Solid Waste Management
1999, Fall: CEE537-Water Quality Processes I
1999, Spring: CEE440-Hazardous and Solid Waste Management
1998, Fall: CEE442-Physical Principles of Environmental Engineering
1998, Spring: CEE440-Hazardous and Solid Waste Management
1997, Fall: CEE540-Remediation Design
1997, Spring: CEE440-Hazardous and Solid Waste Management

Graduate Students Advised, Theses Titles, and (for PhD students) Current Position

M.S. Students

33) Jacob Troutman, M.S. Thesis, UT Austin, 2019, The Synthesis of Randomly Alloyed Palladium Silver Nanoparticles for the Catalytic Treatment of Aqueous Nitrite.
32) Fuchs, Samantha, M.S. thesis, UT Austin, 2017, The Effects of Geochemical Reaction On Geomechanical properties of Reservoir Rock During Geological Carbon Sequestration.
31) Bertoch, Madison, M.S. thesis, UT Austin, 2016, Catalytic Nitrate Reduction in Drinking Water Using a Trickle Bed Reactor.

30) Seraj, Sarah, M.S. thesis, UT Austin, 2016, Synthesis of Palladium-Gold Alloy Nanoparticle Catalysts for the Reduction of Nitrite in Water.
29) Botto, Juien, M.S. thesis, UT Austin, 2016, CO_2 Wettability Of The Mount Simon Sandstone And Implications For Predicting Co_2 Pore Scale Transport And Storage Capacity.
28) Berns, Erin, M.S. thesis, UIUC, 2015, Manganese Dioxide Reduction Kinetics By *Geobacter Sulfurreducens* And Associated Biofilm Morphology In A Flow-Through Reactor.
27) Laleian, Artin, M.S. thesis, UIUC, 2014, Approximating Three-Dimensional Fluid Flow In A Microfluidic Device With A Two-Dimensional, Depth-Averaged Lattice Boltzmann Method.
26) Spurti Akki, M.S. thesis, UIUC, 2012, Selection and Characterization of DNA Aptamers for 17□-Estradiol.
25) Tory Boyd, M.S. thesis, UIUC, 2012, The Effect Of Calcium And Magnesium On Carbonate Mineral Precipitation During Reactive Transport In A Model Subsurface Pore Structure.
24) Michael Fanizza, M.S. thesis, UIUC, 2011, Precipitation And Dissolution Of Uranyl Phosphates In A Microfluidic Pore Structure.
23) Cole Duckworth, M.S. Thesis, UIUC, 2011, Sulfate Removal From Water Produced During Co_2 Enhanced Oil Recovery, Coal-Bed Methane Recovery, And Mining Operations Using Anion Exchange Resins.
22) Rui Zhang, M.S. Thesis, UIUC, 2011, Elucidation of Nitrate Reduction Mechanisms on a Pd/In Bimetallic Catalyst using Isotope Labeled Nitrogen Species.
21) Ken Ng, M.S. Thesis, UIUC, 2011, Construction Of Green Fluorescent Protein Plasmids For Labeling Of Herbicide-Degrading Delftia Acidovorans MC1071.
20) Karl DeHoff, M.S. thesis, UIUC, 2010, Pore-Scale Characterization Of Transverse Mixing-Induced Calcium Carbonate Precipitation Of Relevance To Geological Carbon Sequestration.
19) Amanda Marruffo, M.S. thesis, UIUC, 2010, Modeling The Impact Of Petroleum Mixtures Released From Railroad Tank Car Accidents On Groundwater Contamination And Cleanup Times.
18) Jong Kwon Choe, M.S. thesis, UIUC, 2009, Influence Of Rhenium Speciation On The Stability And Activity Of Palladium/Rhenium Bimetal Catalysts Used For Perchlorate Reduction.
17) Scott Nellis, M.S. thesis, UIUC, 2008, Effect Of Mixture Properties And Aging On Soil Wettability At The Department Of Energy's Hanford Site.
16) Garvin Prescod, M.S. thesis, UIUC, 2008, Methods for Fabrication of Microfluidic Systems to Evaluate Multi-Phase Fluid Behavior in Porous Media.
15) Neha Hridaya, M.S. thesis, UIUC, 2008, Development Of An Environmental Consequence Model For Assessing The Impact Of Hazardous Chemical Spills From Railroad Tank Cars On Groundwater Cleanup Times And Cost.
14) Sheldon Adrian Gale, M.S. thesis, UIUC, 2005, Development Of Methods For Characterization Of Biomass Growth In Porous Media Along A Transverse Mixing Zone.
13) Rene Suarez-Soto, M.S. thesis, UIUC, 2005, Biological Degradation Of Tetrachloroethylene (PCE) At The Pore Scale.
12) Eric Roundy, M.S. thesis, UIUC, 2005, The Effects of Natural Water Ions and Humic Acid on Nitrate Reduction Using an Alumina Supported Pd-Cu Catalyst.
11) Julia Stamerjohn, M.S. thesis, UIUC, 2002, Effects of Moisture on Tricholoroethene Sorption to Model and Natural Solids.
10) Thomas Willingham, M.S. thesis, UIUC, 2001, Long Term Evaluation of Transport Through a Field-Scale Compacted Earthen Liner.
9) Changyong Zhang, M.S. thesis, UIUC, 2001, A Magnetic Resonance Imaging Study of Dense Nonaqueous Phase Liquid Dissolution from Angular Porous Media.
8) Karen Hansen, M.S. thesis, UIUC, 2000, Effects of Concentration and Incubation Time on the Slow Desorption of TCE From a Soil.
7) Alicia Aragon, M.S. thesis, UIUC, 2000, Characterization of Non-Aqueous Phase Liquid Dissolution in Porous Media Using Nuclear Magnetic Resonance Imaging.

6) Sinziana Vera, M.S. thesis, UIUC, 2000, Evaluation of Different Polymeric Organic Materials (POMs) to Stimulate Reductive Dechlorination.
5) Andrew Fuller, M.S. thesis, UIUC, 2000, Development and Testing of a Protocol for Determining the Photochemical Generation of Hydroxyl Radical, Singlet Oxygen, and Peroxyl Radicals in Natural Waters.
4) Chad Knutson, M.S. thesis, UIUC, 2000, Pore-Scale Modeling of Dissolution from Variably Distributed NAPL Blobs.
3) Bradley Grens, M.S. thesis, UIUC, 1999, Durability of Wood-Based Versus Coal-Based Granular Activated Carbon.
2) Humberto Castilla, M.S. thesis, UIUC, 1998, Effects of Temperature on the Slow Desorption of VOCs in Soils and Sediments.
1) Scott McMillan, M.S. thesis, UIUC, 1998, A Sterically-Hindered Counter-Diffusion Model of Trichloroethylene Isotope Exchange in Silica Gel and Geosorbent Micropores.

Ph.D. Students

19) Kyle Michelson, Ph.D. thesis, UIUC, 2018, Long-Range Extracellular Electron Transport By Dissimilatory Metal-Reducing Bacteria Across A Physical Separation. *Current Position: Post-doctoral Researchers, UT Austin Chemistry Department*.
18) Spurti Akki, Ph.D. thesis, UIUC 2018, Selection And Characterization Of Dna Aptamers For Estradiol And Ethynylestradiol For Aptasensor Development.
17) Victoria Boyd, Ph.D. thesis, UIUC 2017, Fate Of Polycyclic Aromatic Hydrocarbons Associated With Coal Tar, Asphalt, Charcoal, And Soot In Urban Lake Sediments. *Current Position: Environmental Engineer at GSI Environmental Inc*.
16) Allison Bergquist, Ph.D. thesis, UIUC 2016, Development Of A Hybrid Ion Exchange-Catalyst System To Denitrify Ion Exchange Waste Brine. *Current Position: Environmental Scientist in the Water Treatment Group at Exxon-Mobil*.
15) Najwa Obeid, Ph.D. thesis, UIUC 2015, Low Impact Development In Urban Areas For Integrated Watershed Management Across Scales. *Current Position: Water Resources Engineer at Louis Berger*.
14) Jinyong Liu, Ph.D. thesis, UIUC, 2014, Development of Oxorhenium Complexes and Bimetallic Re-Pd/C Catalysts for Perchlorate Reduction in Water. *Current Position: Assistant Professor at University of California Riverside.*
13) Jong Kwon Choe, Ph.D. thesis, UIUC, 2013, Development Of A Sustainable Water Treatment Technology For Oxyanions Using Palladium-Based Catalysts: Catalyst Design, Reaction Mechanisms, And Life Cycle Assessment. *Current Position: Assistant Professor at Seoul National University.*
12) Danmeng Shuai, Ph.D. thesis, UIUC, 2012, Development Of Sustainable Pd-Based Catalysts For Emerging Contaminant Removal From Drinking Water. *Current Position: Assistant Professor at George Washington University*.
11) Yaning Yang, Ph.D. thesis, UIUC, 2009, The Role Of Carbonaceous Materials In Pavement Dust, Soils, And Lake Sediments On The Fate Of Organic Pollutants In Small Urban Watersheds. *Current Position: Environmental Scientist at Bayer*.
10) Gayathri Gopalakrishnan, Ph.D. thesis, UIUC, 2008, Nature's Sensors: Using Plants As An Alternative Monitoring Approach for Subsurface Contamination. *Current Position: Research Scientist at The Space Science Institute*.
9) Brian Chaplin, Ph.D. thesis, UIUC, 2007, Mechanistic Study of Fouling and Regeneration of Palladium-Based Bimetallic Catalysts Used for the Removal of Pollutants from Drinking Water. *Current Position: Assistant Professor at University of Illinois, Chicago.*
8) Thomas Willingham, Ph.D. thesis, UIUC, 2006, Analysis Of Solute Mixing At The Pore-Scale Using Micromodels And Lattice-Boltzmann Finite Volume Modeling. *Current Position: Senior Scientist at Exxon-Mobil.*

7) Changyong Zhang, Ph.D. thesis, UIUC, 2005, Impacts Of Source Zone Architecture On Nonaqueous Phase Liquid Dissolution And Cleanup: A Magnetic Resonance Imaging Study. *Current Position: Scientist at Exxon-Mobil.*

6) Hongkyu Yoon, Ph.D. thesis, UIUC 2005, Influence of Soil Moisture Dynamics on DNAPL Spill-Zone Architecture and Its Impact on Mass Removal Mechanisms During Soil Vapor Extraction in Heterogeneous Porous Media. *Current Position: Research Scientist at Sandia National Laboratory.*

5) Chad Knutson, Ph.D. thesis, UIUC, 2004, A Pore Scale Study of Substrate Mixing and Biological Degradation in Porous Media. *Current Position: Quality Assurance Engineer, Wolfram Research.*

4) Sangjo Jeong, Ph.D. thesis, UIUC, 2004, The Contribution of Different Carbonaceous Material Fractions to the Sorption of Hydrophobic Organic Contaminants to Subsurface Sediments. *Current Position: Associate Professor at Korean Military Academy.*

3) Rachel Brennan, Ph.D. thesis, UIUC, 2003, Evaluation of Chitin-Enhanced Bioremediation of Chlorinated Solvents. *Current Position: Associate Professor at Penn State.*

2) Cheema Chomsurin, Ph.D. thesis, UIUC, 2003, Pore-Scale Analysis of Dense Nonaqueous Phase Liquid Dissolution Using Silicon-Based Micromodels. *Current Position: Associate Professor at Kasetsart University, Thailand.*

1) Jun Li, Ph.D. thesis, UIUC, 2002, Evaluating Competitive Sorption Mechanisms of Volatile Organic Chemical Mixtures in Soils and Sediments Using Polymers and Zeolites. *Current Position: Environmental Engineer at Sandia National Laboratory.*

Current Graduate Students

MS. Thesis Students:

1) Jacob Troutman (Expected Graduation: May 2019)

Ph.D. Thesis Students:

9) David Kyungtae Kim, Co-advise with Katz (Expected Graduation: May 2021)
8) Cameron Oden, Co-advise with Katz (Expected Graduation: May 2020)
7) Somayeh Ghazvini (Expected Graduation: May 2020)
6) Chenxu Yan (Expected Graduation: May 2020)
5) Samantha Fuchs (Expected Graduation: May 2019)
4) Reinaldo Alcalde (Expected Graduation: May 2019)
3) Artin Laleian (co-advise with Valocchi, Expected Graduation: May 2019)
2) Erin Berns (Expected Graduation: May 2019)
1) Lang Zhou (Expected Graduation: Spring 2020)

Post-doctoral Associates and Visiting Scientists

Post-doc, Jinyong Liu, 8/2014-12/2015, University of Illinois Ph.D. (co-advise with Strathmann)
Post-doc, Yin Wang, 2/2013-8/2014, Washington University Ph.D. (co-advise with Strathmann)
Visiting Scientist, Xuefei Zhou, 1/1/2013-7/31/2014, Professor at Tongji University, China.
Post-doc, Youneng Tang, 8/2012-12/2014, Arizona State Ph.D. (co-advise with Valocchi, then Fouke)
Post-doc, Rajveer Singh, 11/2011-12/2014, Drexel Ph.D. (co-advise with Fouke).
Visiting Scientist, Sangjo Jeong, 8/2011-8/2012, Professor at Korean Military Academy.
Visiting Scientist, Zeynep Erin, 8/2011-12/2011, Professor at Istanbul Technical University.
Post-doc, Changyong Zhang, 2007-2009, UIUC Ph.D. (co-advised with Zilles and Valocchi)
Post-doc, Hongkyu Yoon, 2006-2010, UIUC Ph.D., (co-advised with Valocchi).
Post-doc, Hongkyu Yoon, 2005-2006, UIUC Ph.D., (co-advised with Barkan).
Post-doc, Ram Achayra, 2005-Present, Nepal, Netherlands Ph.D.), (co-advised with Valocchi).
Post-doc, Yanjie Chu, 2000-2003, U. of Delaware Ph.D. (co-advised with Valocchi).
Post-doc, Indumathi Nambi, 2000-2002, Clarkson University Ph.D. (co-advised with Sanford).
Visiting Scientist, Thomas Baumann, 2001, Researcher, Technical University of Munich.

Selected University Service

Committee member, Hocott Distinguished Centennial Engineering Research Award Committee, 2019.
CAEE Curriculum Committee Member, 2018-2020.
Jackson School of Geosciences Promotion and Tenure Committee, 2018-2019.
Associate Chair of Environmental Engineering in Civil, Architecture, and Environmental Engineering, 2017-2020.
Chair, Cockrell School of Engineering Promotion and Tenure Committee, 2017-2018.
Cockrell School of Engineering Promotion and Tenure Committee, 2016-2018.
Chair, Faculty Search Committee, CAEE, UT Austin, 2016-2017.
Chair, Awards Committee, CAEE, UT Austin, 2015-2016.
EWRE Graduate Advisor, UT Austin, 2015-2016.
Associate Head, Director of Graduate Studies and Research, UIUC, 2012-8/2014.
Faculty Supervisor for Admissions Administrative Assistant, and for Graduate Studies Administrative Assistant, UIUC, 2012-8/2014.
Coordinator, CEE PhD Student Professional Development Program, UIUC, 2012-8/2014.
Management Committee, Department of Civil & Environ. Eng., UIUC, 2012-8/2014.
Chair, Environmental Engineering and Science Program, UIUC, 2008-2011.
Faculty Supervisor for the EES Administrative Assistant, UIUC, 2008-2011.
CEE Promotion and Tenure Committee, UIUC, 2009-Present.
Co-Leader of Interdisciplinary Research Team (one of three teams) that comprise the NSF Science and Technology Center of Advanced Materials for the Purification of Water with Systems (CAMPWS), UIUC, 2005-2010.
UIUC GAANN Program Manager, UIUC, 2006-2011.
Director, Environmental Engineering and Science Laboratories, UIUC, 2005-2008.
Faculty Supervisor for the EES Laboratory Manager, UIUC, 2005-2008.
CEE Department Advisory Committee, UIUC, 2002-2004, 2005-2007.
Chair, Faculty Search Committee for Environmental Microbiology Position, UIUC, 2005.
Chair, CEE Department Advisory Committee, UIUC, 2004, 2007.
Faculty Search Committee for Biotechnology Position, UIUC, 2003.
Faculty Search Committee for Environmental Chemistry Position, UIUC, 2002.
Graduate Admissions Committee, UIUC, 2000-2002.

Selected National Service/Activities Not Covered Above

DOE BER proposal review panel, Spring 2017.
NSF review panel, Environmental Engineering, Spring 2017.
Ecological and Environmental Engineering Program Review Committee for Purdue University in West Lafayette, IN, Fall 2013.
Co-Organized a special session on 'Reactive Transport' for the 2013 Conference of the Association of Environmental Engineering and Science Professors.
Civil and Environmental Engineering Program Review Committee for University of Utah in Salt Lake City, Utah, Spring 2013.
Organizing Committee, Gordon Research Conference on Flow and Transport in Permeable Media, 2010-2012.
Co-Organized a special session in honor of the retirement of Professor Martin Reinhard, Spring 2012 meeting of the American Chemical Society.
Co-Organized a special session on 'Carbon Capture and Storage' for the 2011 Conference of the Association of Environmental Engineering and Science Professors.
Reviewer for DOE EMSL user proposals, 2009-Present.
NSF proposal review panel, Fall 2009.
DOE proposal review panel, Fall 2009.

Environmental Engineering Program Review Committee for the Air Force Institute of Technology in Dayton, OH, Spring 2009.

Groundwater Committee Member (Hydrology Division), American Geophysical Union, 1999-2008.

Co-Organized a special session on 'Abiotic Transformation Processes for Micropollutants in Drinking Water and Drinking Water Resources' for the Spring 2008 meeting of the American Chemical Society.

Co-Organized a special session on 'Sustainability in Water Supply – Catalytic Control of Emerging Micropollutants' for the Spring 2007 meeting of the American Chemical Society.

Co-Organized a special session on 'Modeling Reactive Transport in Porous Media' for the Fall 2007 meeting of the American Geophysical Union.

DOE proposal review panel, Fall 2006.

Instructor, Short course on Environmental Mass Transfer Processes at Tuebingen University in Tuebingen, Germany, Spring 2006.

Chair, Web Site Committee, Association of Environmental Engineering and Science Professors, 2003-2005.

Instructor, Multiple lectures in three courses that are part of the M.S. program at Tuebingen University in Tuebingen, Germany, 2004-2005.

USDA proposal review panel, Winter 2003.

USEPA proposal review panel, Summer 2003.

Co-Organized a special session on 'Reconciling Sorption Theories of Organic Compounds in Soils and Sediments' for the Spring 2003 Joint meeting of the American Geophysical Union and the European Geophysical Society.

USEPA proposal review panel, Fall 2002.

Co-Organized a special session on 'Diffusion in Porous Materials' for the 2002 Fall meeting of the American Geophysical Union.

Co-Organized and co-chaired a special session on 'Pore-scale characterization of subsurface transport and fate processes' for the 2001 Spring meeting of the American Geophysical Union.

NSF proposal review panel, Summer 2000.

Co-Organized a symposium on the 'Sequestration of organic solutes in natural organic matter and mineral aggregates' at the 2000 Fall meeting of the American Chemical Society.

Contributed (by invitation) a chapter to the National Environmental Policy Institute's document on 'The bioavailability of organic compounds in soil,' 1999.

Session co-chair, Hydrology Division, American Geophysical Union, Boston, MA, 1998 Spring Meeting.

Journal and Proposal Reviewing Activities

Reviewing multiple manuscripts each and every year from 1997-Present for *Environmental Science and Technology, Journal of Contaminant Hydrology, Water Resources Research, Advances in Water Research, and others.*

Periodically reviewing manuscripts since 1997 for *Water Research, Environmental Engineering Science, Langmuir, Environmental Toxicology and Chemistry, Journal of Hydrology, Soil and Sediment Contamination: An International Journal, Advances in Water Research, ASCE Journal of Environmental Engineering, Journal of Environmental Quality*.

Reviewing proposals in most years since 1997 for the *National Science Foundation*

Reviewing proposals in most years since 1997 for the *Department of Energy*.

Reviewed one or more proposals since 1997 for the *USDA, Petroleum Research Fund, Illinois Groundwater Consortium, UIUC Research Board, European Union, Vanderbilt University*.