

Edward F. Peltier

Learned Hall, Room 4112D
1530 West 15th Street
Lawrence, KS, USA
Phone (785)-864-2941/Fax: (785)-864-5379
Email: epeltier@ku.edu

EDUCATION

Northwestern University	Civil and Environmental Engineering	PhD, 2002
Northwestern University	Civil and Environmental Engineering	MS, 1997
Princeton University	Chemical Engineering	BSE, 1996

WORK EXPERIENCE

Professor	2019-present
Chair's Council Associate Professor	2018-2019
Associate Professor	2012-2019
Assistant Professor	2006-2012

Department of Civil, Environmental and Architectural Engineering, University of Kansas, Lawrence KS

Post-Doctoral Research Fellow	2002-2005
-------------------------------	-----------

Department of Plant and Soil Sciences, University of Delaware, Newark, DE

Graduate Research/Teaching Assistant and Ph.D. Candidate,	1996-2002
---	-----------

Northwestern University, Evanston, IL.

Pollution Prevention Intern,	1997
------------------------------	------

Illinois Environmental Protection Agency, Freeport, IL

PROFESSIONAL ORGANIZATIONS

American Chemical Society (Member of Environmental Division and Geochemistry Division)

American Society of Civil Engineers : Environmental & Water Resources Institute (EWRI): Water Resources Education Task Committee (2009-2012), Stormwater Infrastructure Committee (2010-2012), Urban Water Resources Research Council, LID Subcommittee (2011-present); Water Quality and Drainage Committee (2015-present, Secretary 2017-2019, Vice-Chair 2019-present); Hydraulic Fracturing Committee (2017-present, Vice-Chair Education Task Committee 2017-present).

HONORS AND AWARDS

Chair's Council Associate Professor of Civil, Environmental and Architectural Engineering, 2018-19 Academic Year
University of Kansas Miller Scholar, 2017
U.S. EPA STAR Program Fellow, 1998-2001.

PUBLICATIONS

- Chen, M., Dollar, O., Shafer-Peltier, K., Randtke, S., Waseem, S., and Peltier, E. (2020) “Boron removal by electrocoagulation: Removal mechanism, adsorption models and factors influencing removal” in press. Available online at *Water Research*
- Shafer-Peltier, K., Kenner, C., Albertson, E., Chen, M., Randtke, S. and Peltier, E. (2020) “Removing Scale-Forming Cations from Produced Waters” *Environmental Science: Water Research & Technology* 6, 132-143.
- Ibrahim, A., Hiripitiyage, Y., Warren, J., Peltier, E. F. and Sturm, B. S. M. (2019) “Enhancing removal of aromatic compounds using an integrated biofilm-GAC reactor” *Proceedings of the Water Environment Federation 2019*
- Chen, M., K. Shafer-Peltier, S. Randtke, E. Peltier, (2019) “Complex and Precipitation of Scale-forming cations in Oil Produced Water with Ionic Polyelectrolytes,” *Separation and Purification Technology* 222(1), 1-10.
- Siddiqui, D. A., Peltier, E. F., Young, C. B. and Sullivan, P. L. (2019) “Modelling Influent Runoff and Retention Time in Storm Water Wetland Systems” *Proceedings of the 2019 World Environmental and Water Resources Congress*, 400-410
- Chen, M., Shafer-Peltier, K., Randtke, S. J., and Peltier, E. (2018) “Modeling arsenic (V) removal from water by micellar enhanced ultrafiltration in the presence of competing anions” *Chemosphere* 213, 285-294.
- Ibrahim, A., Hiripitiyage, Y., Peltier, E. F. and Sturm, B. S. M. (2018) “Investigation of the response mechanisms of halophilic and mixed culture aerobic granular sludge under hypersaline conditions” *Proceedings of the Water Environment Federation 2018* (10), 3836-3853.
- Chen, M., Shafer-Peltier, K., Randtke, S. J., and Peltier, E. (2018) “Competitive association of cations with poly(sodium 4-styrenesulfonate) (PSS) and heavy metal removal from water by PSS-assisted ultrafiltration. *Chemical Engineering Journal*, 344, 155-164
- Hosseini, H., Tsau, J., Peltier, E., and Barati, R. (2018) “Lowering Fresh Water Usage in Hydraulic Fracturing by Stabilizing scCO₂ Foam with Polyelectrolyte Complex Nanoparticles Prepared in High Salinity Produced Water” SPE International Conference and Exhibition on Formation Damage Proceedings, February 2018.
- Ibrahim, A., Peltier, E. F., and Sturm, B. S. M. (2017) “Halophilic and nonhalophilic aerobic granular sludge formation in hypersaline synthetic oilfield produced water” *Proceedings of the Water Environment Federation 2017* (16), 141-152.
- Mangus, M.; Kiani, F.; Mattson, J.; Tabakh, D.; Petka, J.; Depcik, C.; Peltier, E.; Stagg-Williams, S. (2015) Investigating the Compression Ignition Combustion of Multiple Biodiesel/ULSD Blends via Common-Rail Injection. *Energy*, 89 (932-945).
- Depcik, C.; Jachuck, J.; Jantz, D.; Kiani, F.; Mangus, M.; Mattson, J.; Peltier, E.; Stagg-Williams, S. (2015) Influence of Fuel Injection System and Engine Timing Adjustments on Regulated Emissions from Four Biodiesel Fuels. *Transportation Research Record: Journal of the Transportation Research Board*, 2503, 20–28.

- Mangus M., Depcik, C., Ragone, C. and Peltier, E. (2015) "Ozone-Assisted Combustion: Experimental Assessment of the Influence of Ozone in a Single-Cylinder Diesel Engine" *SAE Technical Paper 2015-01-0787*
- Mangus, M.D., Kiani, F., Mattson, J., Depcik, C. D., Peltier, E. and Stagg-Williams, S. M. (2014) "Comparison of Neal Biodiesels and ULSD in an Optimized Single-Cylinder Diesel Engine with Electronically-Controlled Fuel Injection" *Energy & Fuels* 28: 3849-3862
- Peltier, E., Chong, W. O., Nielsen, E., Johnson, J. (2014) "Auditing Kansas Department of Transportation Vehicle Fleet Fuel Use and Carbon Footprint" 93rd Annual Meeting of the Transportation Research Board Compendium, Washington, DC January 2014
- Chong, W. O., Peltier, E., Wade, B., Kwok, K.-Y. G., (2014) "Energy Use and Carbon Emissions Analysis Methodologies for Large Organizations" 93rd Annual Meeting of the Transportation Research Board Compendium, Washington, DC January 2014
- Chen, X., Peltier, E., Sturm, B.S.M. and Young, C. B. (2013) "Nitrogen Removal and Nitrifying and Denitrifying Bacteria Quantification in a Stormwater Bioretention System" *Water Research* 47 1691-1700.
- Guerra, S. A., Lane, D. D., Carter, R. E., Peltier, E., Marotz, G., Slade, N. (2013) "Novel Data Analysis Technique Used to Evaluate NO_x and CO₂ Continuous Emissions Data" 106th Air & Waste Management Association Annual Conference and Exhibition 2013, Chicago, IL
- Mattson, J. M. S., O'Malley, R., Depcik, C. and Peltier, E. (2013) "Recommendation for the Next Generation of Hydrocarbon Modeling with respect to Diesel Exhaust Aftertreatment and Biodiesel Fuels" *SAE Technical Paper 2013-01-1348*
- Cecrle, E., Depcik, C., Duncan, A., Guo, J., Mangus, M., Peltier, E., Stagg-Williams, S. and Y. Zhong (2012) "Investigation of the Effects of Biodiesel Feedstock on the Performance and Emissions of a Single-Cylinder Diesel Engine" *Energy & Fuels* 26(4), 2331-2341.
- Guo, J., Peltier, E., Carter, R. E., Krejci, A. J., Stagg-Williams, S. M. and Depcik, C. (2012) "Waste Cooking Oil Biodiesel Use in Two Off-Road Diesel Engines" *ISRN Renewable Energy*, doi:10.5402/2012/130782
- Cecrle, E., Depcik, C., Guo, J. and Peltier, E. (2012) "Analysis of the effects of reformat (hydrogen/carbon monoxide) as an assistive fuel on the performance and emissions of used canola-oil biodiesel." *Int. J. Hydrogen Energy* 37(4): 3510-3527.
- Shi, Z., Peltier, E. and Sparks, D. L. (2012) "Kinetics of Ni Sorption in Soils: Roles of Soil Organic Matter and Ni Precipitations" *Environmental Science and Technology* 46(4), 2212-2219.
- Sturm, B. S. M., Peltier, E., Smith, V H., and deNoyelles, F. (2012) "Controls of Microalgal Biomass and Lipid Production in Municipal Wastewater-Fed Bioreactors" *Environmental Progress & Sustainable Energy*. 31(1): 10-16

- Peltier, E., Ilipilla, P. and Fowle, D. (2011) "Structure and reactivity of zinc sulfide precipitates formed in the presence of sulfate-reducing bacteria" *Applied Geochemistry* 26(9-10): 1673-1680.
- Mohammadi, Z., Xie, S.-X., Peltier, E. Veisi, M. and Berkland, C. (2011) "Enhancing the Selectivity of an Iron Binding Hydrogel" *European Polymer Journal* 47: 1485-1488.
- Peltier, E. and Carbone, G. "Bioretention Design and Performance in Johnson County, KS" *Proceedings of the 2011 World Environmental and Water Resources Congress*, 356-363
- Peltier, E., Guo, J., Slade, D., Danzer, M. and Laughridge, R. (2011) "Impact of Biodiesel Blends on Emissions from a Switching Locomotive" 90th Annual Meeting of the Transportation Research Board Compendium (DVD), Washington, D. C. January 2011.
- Peltier, E., Vincent, J., Finn, C., and Graham, D. W. (2010) "Zinc-induced antibiotic resistance in activated sludge bioreactors" *Water Research* 44 3829-3836
- Guo, J., E. Peltier and G. Macpherson, (2010) "Measuring Trace Metal Concentrations in Diesel and Biodiesel Particulate Exhaust" *Symposium on Air Quality Measurement Methods and Technology 2010*, pp. 913-917, Air & Waste Management Association, Pittsburgh, PA.
- Peltier E., J. Saadi, X. Chen and C. B. Young (2010) "Metal Sequestration and Remobilization in Bioretention Media" *Proceedings of the 2010 World Environmental and Water Resources Congress*, 3028-3037
- Young, C. B., E. Peltier and K. Kindscher (2010) "Relating Vegetation Composition in a Bioretention Cell to Small-Scale Hydrologic and Topographic Variability" *Proceedings of the 2010 World Environmental and Water Resources Congress*, 1451-1457
- Peltier, E., van der Lelie, D. and Sparks, D. L. (2010) "Formation and Stability of Ni-Al Hydroxide Phases in Whole Soils" *Environmental Science and Technology* 44(1):302-308
- Guo, J., E. F. Peltier, R. E. Carter and A. J. Krejci (2009) "Effects of Biodiesel Blending on Gas-phase Emissions from a Heavy-duty Engine" *Preprints of Papers-American Chemical Society, Division of Fuel Chem.*
- Peltier, E., X. Chen, K. Kindscher and C. B. Young (2009) "Long-term Effectiveness of a Bioretention System Treating Road Runoff in Northeastern Kansas" *Proceedings of the 2009 World Environmental and Water Resources Congress*, 1335-1343
- Porter, E., J. Kenny, E. Peltier and C. B. Young (2009) "A Student-Led Effort to Assess the Effect of Urban Runoff on Potter Lake." *Proceedings of the 2009 World Environmental and Water Resources Congress*, 791-798
- Tappero, R., Peltier, E., Grafe, M., Heidel, K., Ginder-Vogel, M., Livi, K. J. T., Rivers, M. L., Marcus, M. A., Chaney, R. L., Sparks, D. L. (2007) "Hyperaccumulator *Alyssum murale* relies on a different metal storage method for cobalt than for nickel" *New Phytologist* 175(4):641-654

- Allada, R. K., Peltier E., Navrotsky, A., Casey, W. H., Johnson, A., Thompson-Berbeco, H. and Sparks, D. L. (2006) "Calorimetric determination of the enthalpies of formation of hydrotalcite-like solids and their use in the geochemical modeling of metals in natural waters" *Clays and Clay Minerals* 54(4):409-417
- Everhart, J., McNear Jr., D. H., Peltier, E., van der Lelie, D., Chaney, R. L. and Sparks, D. L. (2006) "Assessing nickel bioavailability in smelter-contaminated soils" *Science of the Total Environment* 367(2-3):732-744
- Peltier, E., Allada, R. K., Navrotsky, A. and Sparks, D. L. (2006) "Nickel Solubility and Precipitation in Soils: A Thermodynamic Study" *Clays and Clay Minerals* 54(2):153-163
- McNear Jr., D. H., Peltier, E., Everhart, J. Chaney, R. Newville, M., Rivers, M., Sutton, S., and Sparks, D. L. (2005) "Application of Quantitative Fluorescence and Absorption-Edge Computed Microtomography to Image Metal Compartmentalization in *Alyssum murale*" *Environmental Science and Technology* 39: 2210-2218
- Peltier, E., Dahl, A.L., and Gaillard, J.F. (2005) "Metal Speciation in Anoxic Sediments: When Sulfides Can Be Construed as Oxides" *Environmental Science and Technology* 39:311-316
- Peltier, E., Webb, S. M. and Gaillard, J.F. (2003). "Zinc and Lead Sequestration in an Impacted Wetland System" *Advances in Environmental Research* 8:103-112
- REPORTS**
- Randtke, S. J., Peltier, E. F., Adams, C. D., Lane, R. F., Breault, Z. A. and Carter Jr. R. E. (2017). "Evaluation of Lead Service Line Lining and Coating Technologies" WRF #4351, Water Research Foundation, Denver, CO.
- Peltier, E., Young, C. B., Luellen, L. and Lee, H. (2016). "Monitoring Effectiveness of Tile Outlet Terrace Fields with Constructed Wetlands for Sediment, Nutrient and Volume Reduction in Northeastern Kansas." Kansas Water Office, Topeka, KS.
- Nielsen, E., Magnuson, G., Kwok, G., Peltier E. and Chong, O. (2014) "Kansas Department of Transportation Enterprise Energy and Carbon Accounting and Utility Usage Research, Phase 2B: Improving Energy and Fuel Efficiencies in KDOT Operations" Kansas Department of Transportation, Topeka, KS.
- Peltier, E. (2013) "Impacts of Emissions Control Solutions RH7 Technology on Locomotive Engine Exhaust: Report of Experimental Findings" Kansas City Southern Railroad, Kansas City, MO
- Kwok, G., Wade, B., Magnuson, G., Johnson, J., Chong, O. and Peltier, E. (2011) "Kansas Department of Transportation Enterprise Energy and Carbon Accounting and Utility Usage Research, Phase 1B: Embodies and Operation Energy and Carbon in Buildings and Vehicles" Kansas Department of Transportation, Topeka, KS.
- Peltier, E., Young, C. B. and Lacy, S. (2008) "Minimizing Contaminant Impact from Road and Parking Lot Runoff" University of Kansas Transportation Research Institute, Lawrence KS, Report KAN 42816.

PRESENTATIONS

- “Modeling Nutrient Removal in Constructed Wetlands Collecting Terraced Field Runoff” Governor’s Conference on the Future of Water in Kansas. Wichita, KS, November 7-8, 2019
- “Assessing the Water Quality Impacts of Constructed Wetlands on Tile Outlet Terrace Runoff” World Environmental & Resources Congress 2019, Pittsburgh, PA, May 19-23, 2019
- “Better Management and Recovery of Oil and Gas Produced Water” Professional Development Seminar Series, College of Engineering, University of Alaska Anchorage, February 15, 2019
- “Constructed Wetland Impacts on Runoff Quality from Terraced Fields in NE Kansas” Governor’s Conference on the Future of Water in Kansas. Manhattan, KS, November 13-14, 2018
- “Integrated Treatment Strategies for Produced Water” World Environmental & Water Resources Congress 2017, Minneapolis, MN, June 3-7 2018
- “RII-Track-2 FEC: Improving Water Management, Treatment and Recovery in Oil and Gas Production” Innovations at the Nexus of Food, Energy and Water Systems (INFEWS) Principal Investigator Workshop, May 16-18, 2018, Alexandria, VA
- “Produced Water Management: Integrating Treatment and Reuse” University of Kansas Chemical and Petroleum Engineering Department Seminar Series, Lawrence, KS April 3, 2018. Invited Speaker.
- “Stormwater Management for Water Quality” 2018 KU CEAE Professional Development Series, Overland Park, KS, April 2, 2018.
- “Elemental contaminants in produced water and their impact on treatment and reuse” 255th American Chemical Society National Meeting, New Orleans, LA, March 18-22, 2018.
- “Produced Water Management in Kansas: Treatment and Reuse Options” Governor’s Conference on the Future of Water in Kansas. Manhattan, KS, November 8-9, 2017
- “Produced Water Reuse Options in Kansas: A Case Study at the Food-Energy-Water Nexus” 254th American Chemical Society National Meeting, Washington, DC, August 20-24, 2017.
- “Nitrogen Removal in Constructed Wetlands Treating Storm Runoff from Tile Drain Systems” World Environmental and Water Resources Congress 2017, Sacramento, CA, May 21-25, 2017.
- “RII Track-2 FEC: Improving Water Management, Treatment and Recovery in Oil and Gas Production” Innovations at the Nexus of Food, Energy and Water Systems (INFEWS) Principal Investigator Workshop, Arlington, VA, March 22-24, 2017.
- “Tile Outlet Terrace Systems: What we Know and What We’re Doing” Missouri Regional Advisory Committee, Atchison, KS. February 14, 2017.

- “Constructed Wetlands for Sediment, Nutrient and Runoff Volume Reduction in Northeastern Kansas” Governor’s Conference on the Future of Water in Kansas. Manhattan, KS, November 14-15, 2016.
- “Impact of Treatment Wetlands on Tile Outlet Terrace Drainage: A Monitoring Study” World Environmental and Water Resources Congress 2016. West Palm Beach, FL. May 22-26, 2016.
- “Use of Polyelectrolyte Complexes in Sr and Ba Removal from Produced Waters” 251st American Chemical Society National Meeting, San Diego, CA. March 13-17, 2006.
- “Treating Agricultural Runoff with Constructed Wetlands.” Governor's Conference on the Future of Water in Kansas, Manhattan, KS, November 18-19, 2015.
- “Assessing Constructed Wetlands for Treating Runoff from Tile Outlet Terraces in Agricultural Systems.” World Environmental and Water Resources Congress 2015, Austin, TX, May 17-21, 2015.
- “Stormwater Treatment: Best Management Practices and New Techniques.” CEAE Professional Development Series, Overland Park, KS, April 13, 2015.
- Reactivity of an Epoxy Coating with Free and Combined Chlorine in Drinking Water Service Lines. 249th American Chemical Society National Meeting, Denver, CO, March 22-26, 2015.
- “Influence of Fuel Injection System and Engine Timing Adjustments on Regulated Emissions from Four Biodiesel Fuels” Transportation Research Board 94rd Annual Meeting, Washington, DC January 11-15, 2015.
- “The Effects of Biodiesel Blending on Hydrocarbon Emissions from a Single Cylinder Compression Engine” Air & Waste Management Association 107th Annual Conference and Exhibition, Long Beach, CA, June 24-27, 2014.
- “Zebra Mussels: Impact on Drinking Water Treatment” KS AWWA Water Treatment Operations School, Kansas City, KS, May 7, 2014. Invited Speaker.
- “Auditing Kansas Department of Transportation Vehicle Fleet Fuel Use and Carbon Footprint” Transportation Research Board 93rd Annual Meeting, Washington, DC January 12-16, 2014.
- “N-Heptane as a Fuel Surrogate for n-Alkane Components of Diesel and Biodiesel Fuels” 245th American Chemical Society National Meeting, New Orleans, LA, April 7-11, 2013.
- “NO_x and Particulate Matter Emissions from a Diesel Engine Burning Jatropha Biodiesel-ULSD Fuel Blends” 245th American Chemical Society National Meeting, New Orleans, LA, April 7-11, 2013.
- “Contaminant Sorption and Desorption Processes in Bioretention Media” World Environmental and Water Resources Congress 2013, Cincinnati, OH, May 19-23, 2013.

- “Measuring Emissions from a General Aviation Engine Burning Alternative Jet Fuels” Transportation Research Board 92nd Annual Meeting, Washington, DC January 13-17, 2013.
- “Sorption and pH effects on the removal of trace metals from a contaminated alkaline groundwater” 244th American Chemical Society National Meeting, Philadelphia, PA August 19-23, 2012.
- “Air Quality Impacts of Biofuel Combustion” Universidad de Costa Rica, San José, Costa Rica, June 19, 2012.
- “Effects of Biodiesel Composition on Nitrogen Oxide Emissions from a Single Cylinder Diesel Engine” 243rd American Chemical Society National Meeting, San Diego, CA March 2012.
- “Road salt Impacts on Bioretention Systems” Philadelphia Low Impact Development Symposium, Philadelphia, PA Sept. 25-28, 2011.
- “Comparing Bioretention System Design and Performance in Johnson County, KS” World Environmental & Water Resources Congress 2011, Palm Springs, CA, May 22-26, 2011.
- “Road Salt Effects on Contaminant Remobilization from Bioretention Media” World Environmental & Water Resources Congress 2011, Palm Springs, CA, May 22-26, 2011.
- “Trace Metal Impacts on Antibiotic Resistance in Wastewater Reactors” 241st American Chemical Society National Meeting, Anaheim, CA, March 27-31, 2011.
- “Impact of Biodiesel Blends on Emissions from a Switching Locomotive” Transportation Research Board 90th Annual Meeting, Washington, DC January 24-27, 2011.
- “Characterizing Metal Loadings in Exhaust Particulate Fractions Using a Laser Ablation-ICP-MS Technique” Society of Environmental Toxicology and Chemistry (SETAC) North America 31st Annual Meeting, Portland, OR, November 7-11, 2010
- “Zn and Cu Effects on Microbial Resistance to Antibiotics in Activated Sludge Populations” Society of Environmental Toxicology and Chemistry (SETAC) North America 31st Annual Meeting, Portland, OR, November 7-11, 2010
- “Effects of Biodiesel Blending on Exhaust Emissions from a Switching Locomotive” 2010 Railroad Environmental Conference, Champaign, IL, October 26-27, 2010
- “Biogenically Formed Metal Sulfide Phases” 2010 Goldschmidt Conference, Knoxville TN, June 13-18, 2010
- “Metal Sequestration and Remobilization in Bioretention Media” World Environmental & Water Resources Congress 2010, Providence, RI, May 16-20, 2010.
- “Biogenic Metal Sulfide Formation and Reactivity” 239th American Chemical Society National Meeting, San Francisco, CA, March 21-25, 2010.
- “Stormwater Treatment: Performance = Maintenance” Green Infrastructure Workshop, Lenexa, KS February 18, 2010 Invited Speaker.

- “Stormwater Treatment: Vegetated Systems for Water Quality Improvement”, Haskell Indian Nations University, October 14, 2009
- “New Treatment Technologies Using Ion Exchange”, KWEA & KsAWWA Joint Conference, Topeka, KS, September 1-3, 2009.
- “Formation and Characterization of Biogenic Metal Sulfide Phases” 238th American Chemical Society National Meeting, Washington, DC, August 16-20, 2009.
- “Metal Induced Antibiotic Resistance in Activated-Sludge Reactors” AEESP 2009, Iowa City, IA, July 27-28, 2009.
- “Long-term Effectiveness of a Bioretention System Treating Road Runoff in Northeastern Kansas” World Environmental & Resource Conference 2009 Kansas City, MO, May 17-21, 2009.
- “Sustainable Stormwater Treatment and Management in Northeastern Kansas” Johnson County Stormwater Management Program Series, October 21, 2008. Invited Speaker.
- “Sustainable Stormwater Treatment and Management” 2008 KU CEAE Professional Development Series, Overland Park, KS, April 7, 2008.
- “Zebra Mussels: Impact on Drinking Water Treatment” KS AWWA Water Workshop, Kansas City, KS, February 14, 2008. Invited Speaker.
- “Sustainable Approaches for Stormwater Treatment: A Bioretention Study” 58th Annual Environmental Engineering Conference, Lawrence, KS, February 6, 2008. Invited Speaker.
- “Emerging Environmental Issues in Water Use and Management” Asian Groundwater Management Program, University of Kansas, November 26-December 15, 2006. Invited Speaker.
- “Metal Transformations in Natural Systems: Integrating Molecular and Macroscopic Studies” KBS Seminar Series, September 8, 2006. Invited Speaker.
- “The Influence of Surface Precipitation on Nickel Solubility, Bioavailability and Fate in Contaminated Soils.” 18th World Conference of Soil Science, Philadelphia, PA. July 9-15, 2006.
- “Environmental Remediation of Urban Industrial Sites” 2006 KU CEAE Professional Development Series, Overland Park, KS, April 24, 2006.
- “Formation and Stability of Ni Surface Precipitates in Delaware Soils” National Science Foundation Sponsored Workshop Frontiers in Exploration of the Critical Zone, Newark, DE, October 24-26, 2005.
- “Predicting Nickel Precipitate Formation in Contaminated Soils” Soil Science Society of America National Meeting, Seattle, WA, October 31-November 4, 2004.
- “Formation and Stability of Mixed Metal Hydroxide Phases in Contaminated Soils” 20th Annual International Conference on Soils, Sediments and Water, Amherst MA, October 18-21, 2004.
- “Formation and Stability of Nickel Soil Precipitates” 228th American Chemical Society National Meeting, Philadelphia, PA, August 22-26, 2004.

“Kinetics of Nickel Precipitate Formation in Soils” 227th American Chemical Society National Meeting, Anaheim, CA, March 27-April 1, 2004.

“Factors Affecting Ni and Zn Hydroxide Precipitate Formation in Soils” Soil Science Society of America National Meeting, Denver, CO, November 2-6, 2003.

“Trace Metal Re-Speciation during Partial Oxidation of Anoxic Wetland Sediments” 225th American Chemical Society National Meeting, New Orleans, LA, March 23-27, 2003.

“Assessing Metal Mobility and Release in Wetland Sediments using X-Ray Techniques” 222nd American Chemical Society National Meeting, Chicago, IL, August 26-30, 2001.

FUNDED GRANTS (PI UNLESS OTHERWISE NOTED)

“Experimental and Modeling Investigations of Fluid-Fluid and Rock-Fluid Compatibility between Arbuckle and Lansing Kansas City Formations with the Purpose of Produced Water-Exchange Between the Two Formations to Reduce both Fresh Water Usage and Water Disposal Problems” \$40,000 from Kansas Water Resources Institute from March 2020- February 2022 (Co-PI with PI R. Barati and Co-PI J. Hutchison)

“INFEWS/T2 FEWtures: Innovation Analysis Framework for Resilient Futures, with Application to the Central Arkansas River Basin” \$2,500,000 from September 2019-August 2024 from the National Science Foundation (Senior Personnel with M. Hill, PI and four Co-PIs)

“Steel Pickling for Hot-Dip Galvanizing: Effects of Zinc and Iron on Hydrochloric and Sulfuric Acid Pickling Rates” \$9,998 from American Galvanizers Association, Inc. (Co-PI with C. Bennett, PI and Co-PIs J. Li and W. Collins)

“Pilot Test Project for Produced Water near Hardtner, Kansas” \$210,972 from August 2019 – May, 2020 from Bureau of Reclamation and KS Water Office (with Co-PI S. Randtke)

“RET Site: Exploring Career Opportunities through Water-Themed Engineering Research (ECO-WaTER)” \$594,001 from Sept 2018- Sept 2021 from National Science Foundation (with Co-PI C. Bode)

“WERF: Determining the fate and major removal mechanisms of microplastics in water and resource recovery facilities” \$304,892 from August 2017 – July 2020 from National Science Foundation (Co-PI with B. Sturm, PI)

“Assessing the Water Quality Impacts of Constructed Wetlands on Tile Outlet Terrace Runoff” \$248,767 from October 2016- September 2018 from Kansas Water Office (with Co-PIs: Pam Sullivan and C. Bryan Young)

“RII Track-2 FEC: Improving Water Management, Treatment and Recovery in Oil and Gas Production” \$3,898,637 from August 2016-July 2020 from NSF EPSCoR Program (with Co-PIs: Lian-Shin Lin, Karen Peltier, Steve Randtke and Paul Ziemkiewicz)

“Assessing the impact of constructed wetlands on nitrogen transformation and release from tile outlet terraces (TOTs) in Kansas” \$30,000 from March 2016-September, 2017 from KS Water Resources Institute (Co-PI with P. Sullivan, PI)

“Sustainable Hydrocarbon Recovery in Unconventional Reservoirs Initiation” \$299,000 from January 2014- December 2015 from KU Strategic Research Initiative (One of four Co-PIs with Jenn-Tai Liang, PI)

“Supplemental Monitoring of Constructed Wetlands in the Upper Wakarusa Watershed” \$20,000 May, 2014- June, 2016. (with B. Young and R. Carter)

“Monitoring the Effectiveness of Constructed Wetlands for Removing Sediment and Nutrients from Agricultural Runoff” \$148,000 from Kansas Water Office from November 2013 – August 2015. (Co-PI with B. Young, PI)

“Impact of Emissions Control Solutions RH7 Technology on Locomotive Exhaust Emissions” \$5,000 from Kansas City Southern Railroad, December 2012- December 2013 (with C. Depcik)

“KU Investigation into Emissions Control Solutions Hardware” \$252,000 from Emissions Control Solutions, August 2011- August 2013. (Co-PI with C. Depcik, PI)

“Carbon Emissions and Energy Efficiency (Phase 2): Improving Energy and Fuel Efficiencies in KDOT Operations” \$60,000 from Kansas Department of Transportation, July 2011 -June 2012. (with O. Chong and C. Depcik)

“Feasibility of Renewable Feedstocks for Production of Bio-jet Fuel” \$488,193 from Kansas NASA EPSCoR Program, January 2011- May, 2012. (One of three Co-PIs with B. Sturm, PI)

“Evaluation of Lead Service Line Lining and Coating Technologies” \$600,000 from USEPA, May 2011- December 2014 (one of 2 Co-PIs with S. Randtke, PI)

“Engine Test Cell Upgrade Project” \$350,000 from U. S. Department of Transportation, September 2010- September 2013 (Co-PI with C. Depcik, PI)

“Evaluation of ECS Ozone Addition Process” \$32,974 from Emissions Control Strategies, Inc., August 2010 – May 2011. (with C. Depcik, PI)

“Carbon Emissions (Phase 1): Establish Carbon Emissions Baseline for Kansas Department of Transportation (KDOT)” \$60,000 from Kansas Department of Transportation, July 2010 -June 2011. (one of four Co-PIs O. Chong, PI)

“Emissions Studies of Biodiesel and Biodiesel Blends in a Light Duty Truck” \$49,480 from Kansas Soybean Commission, April 2010 – June 2011 (one of 3 Co-PIs with S. Williams, PI)

“Feedstock to tailpipe initiative: Kansas biofuels, production, testing and certification laboratory” \$1,236,950 from U. S. Department of Energy, January 2010- December 2011. (one of 7 Co-PIs with S. Williams, PI)

“RET: Shaping Inquiry for Feedstock to Tailpipe (SHIFT)” \$499,477 from 2009-2011 from National Science Foundation, August 2009- August 2012. (one of multiple Senior Personnel with S. Williams, PI)

“KU Biofuels Feedstock to Tailpipe Initiative” \$516,814 from KU Transportation Research Institute, October 2008 – May, 2011. (one of 8 CO-PIs with S. Williams, PI)

“Assessment of the Short and Long Term Effectiveness of Bioretention Cells Treating Paved Surface Runoff in Lenexa, KS”. \$179,040 from KU Transportation Research Institute from Johnson County Stormwater Management Advisory Council, January 2008 – December, 2010. (with B. Young and K. Kindscher)

“Biodiesel Emissions Testing” \$187,000 from KU Transportation Research Institute, August 2007-December 2008. (one of two Co-PIs with D. Lane, PI)

“Minimizing Contaminant Impact from Road and Parking Lot Runoff.” \$51,487 from KU Transportation Research Institute, July 2007- June 2007. (with B. Young and D. Graham)

“Plug-in Hybrid Emissions Characterization & Demonstration Study” \$169,336 from KU- Transportation Research Institute, August 2006-July 2008 (one of two Co-PIs with D. Lane, PI)

“On-Board Vehicle Emissions Monitoring System” \$85,000 from KU Transportation Research Institute, August 2006-July 2008 (one of two Co-PIs with D. Lane, PI)

“Chemical Speciation and Availability of Metals in Wetlands” Co-PI. (with J.-F. Gaillard, Northwestern University, PI) Awarded \$110,000 from 2002-2004 by Illinois-Indiana Sea Grant College Program.

COURSES TAUGHT AT THE UNIVERSITY OF KANSAS

CE 576 Municipal Water Supply and Wastewater Treatment, Spring 2006-2020
CE 756 Introduction to Wetland Hydrology and Management, Fall 2007, Spring 2010, 2012,2016, 2019
CE 770/570 Concepts in Environmental Chemistry, Fall 2006-2017, 2019
CE 771/571 Environmental Chemical Analysis, Fall 2006-2017
CE 775 Stormwater Treatment Systems Design, Spring 2011, Fall 2012, 2014, 2016, 2019
CE 875 Solid and Hazardous Wastes, Fall 2013
CE 895/495 Special Topics in Stormwater Quality and Treatment, Spring 2009
CE 895/CPE Special Topics: Produced Water Management, Spring 2018
715

CHAIRPERSON ON EXAMINATIONS

Ph.D.: Chairperson for four candidates in Environmental Engineering, two graduated, two currently enrolled.

D.E.: Co-chair for one candidate in Environmental Engineering, graduated.

M.S.: Chairperson or co-chair for 26 candidates in Environmental Engineering or Environmental Science. 24 graduated, two currently enrolled.

UNIVERSITY SERVICE

Department of Civil, Environmental and Architectural Engineering

Sabbatical Leave Committee, Chair (2019-present)
Undergraduate Recruiting, Chair (2014-present)
Undergraduate Retention Committee (2018-present)
ABET Accreditation Committee (2008-present)
Graduate Studies Committee (2007-present)
Renovation Committee (2008-2012)
Computer Committee, Chair (2012-2014)
Faculty Search Committee, Environmental Engineering, 2017
Department Chair Search Committee, 2012

School of Engineering

Promotion & Tenure Committee (2019—present)
Design Committee for LEEP2 Environmental and
Analytical Laboratories (2012-2014)
Computer Committee (2009-2017)
Academic Standards Committee (2007-2009)

University

Ad-Hoc Committee on the KU Core (2019-present)
Faculty Senator, University & Faculty Senate (2016-2019)
University Core Curriculum Committee
 Interim Engineering Representative (Fall, 2019)
 Engineering Representative (2013- 2016)
 Chair (2014-2015)
University Calendar Committee (2013-2015)
Faculty Advisor, Potter Lake Project student group (2008-2010)
CEAE Departmental Contact, KU Research
Experience Program (2008-2016)