

EDWARD P. KOLODZIEJ

Interdisciplinary Arts and Sciences (UW Tacoma)
Department of Civil and Environmental Engineering (UW Seattle)
Center for Urban Waters (Tacoma, WA)
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EDUCATION

University of California, Berkeley. Ph.D., Environmental Engineering, December 2004.

Dissertation topic: *The Occurrence and Environmental Fate of Steroid Hormones with Endocrine and Pheromonal Activity in Fish.*

-minor emphases in Chemical Ecology and Endocrinology

University of California, Berkeley. M.S., with honors in Environmental Engineering, May 1999.

Johns Hopkins University. B.S., with general honors in Chemical Engineering, May 1998.

PROFESSIONAL EXPERIENCE

University of Washington. September 2014 – Present. Associate Professor, Interdisciplinary Arts and Sciences (UW Tacoma); Associate Professor, Department of Civil and Environmental Engineering. (UW Seattle). Principal Investigator, Center for Urban Waters. Research expertise includes the occurrence, fate and transport of organic contaminants in natural and engineered systems, characterization of storm water and non-point source pollution, toxicity identification and evaluation, source apportionment, water reuse, optimization of engineered treatment systems, mitigation of contaminants in urban and agricultural runoff, transformations and retained bioactivity of emerging contaminants, high resolution mass spectrometry, environmental analytical chemistry, innovative and transformative technologies for water quality improvement and ecosystem health.

University of Nevada, Reno, Reno, NV. July 2013 – August 2014. Associate Professor. *January 2007 – June 2013*, Assistant Professor, Department of Civil and Environmental Engineering. Research expertise includes the occurrence, fate and transport of contaminants in natural and engineered systems, optimization of engineered water reuse and groundwater recharge systems, mitigation of contaminants in agricultural runoff, transformations of endocrine disruptors and other emerging contaminants, analytical method development, innovative and transformative technologies for water quality improvement, applications of high resolution mass spectrometry.

University of California, Berkeley, Berkeley, CA. January 2005 – December 2006. Post-Doctoral Scholar; CALFED Project Manager. Research focused on the fate and occurrence of endocrine disrupting compounds at regional scales and in agricultural watersheds. Additional duties included experimental design, writing, budgeting, and coordinating the multi-investigator CALFED research project “Identifying the Causes of Feminization of Chinook Salmon in the Sacramento and San Joaquin River System”. Responsibilities included project management, field sampling, analytical method development, data analysis, communication.

University of California, Berkeley, Berkeley, CA. August 1999 - December 2004. Ph.D. Candidate in Environmental Engineering. Research focused on the occurrence and environmental fate of steroid hormones that are implicated in endocrine disruption or disruption of pheromone signaling. Responsibilities included experimental design, GC/MS/MS analytical method development, field sampling, chemical analysis, and interpretation, presentation, and publication of experimental data.

University of California, Berkeley, Berkeley, CA. October 1998 - August 1999. Graduate Student Researcher. Research focused upon the design and implementation of a novel chemical treatment process for remediation of acid mine drainage in California’s Lake Shasta region.

PUBLICATIONS

(ORCID ID# 0000-0002-7968-4198)

- 1) Tian, Z., Zhao, H.Q., Peter, K.T., Gonzalez, M., Wetzel, J., Wu, C., Hu, X., Prat, J., Mudrock, E., Hettinger, R., Cortina, A.E., Biswas, R.G., Kock, F.V.C., Soong, R., Jenne, A., Du, B., Hou, F., He, H., Lundeen, R., Gilbreath, A., Sutton, R., Scholz, N.L. Davis, J.W., Dodd, M.C., Simpson, A., McIntyre, J.K., Kolodziej, E.P. 2020. "Ubiquitous Tire Rubber-Derived Chemical Induces Acute Mortality in Coho Salmon." *Science*. Published online 12/3/20, in print 1/8/21. **371** (6525) 185-189. DOI 10.1126/science.abd6951
-Corresponding author and project lead
-"First Release" online 12/3/2020, global media coverage
- 2) Du, B., Tian, Z., Peter, K.T., Kolodziej, E.P., Wong, C. 2020. "Developing Unique Non-Target High Resolution Mass Spectrometry Signatures to Track Contaminant Sources in Urban Waters." *Environ. Sci. Technol. Letters*. In press. DOI: 10.1021/acs.estlett.0c00749
- 3) Pflug, N.C., Kral, A.K., Hankard, M.K., Breuckman, K.C., Kolodziej, E.P., Gloer, J.B., Wammer, K.H., Cwiertny, D.M. 2020. "Overlooked Environmental Fate Pathways for Trienone Steroids: Reversible Photo-Nucleophilic Addition and Thermal Binding of Photohydrates to Dissolved Organic Matter." *Environ. Sci. Technol.* **54**(19) 12181-12190. DOI: 10.1021/acs.est.0c03821
- 4) Peter, K.T., Hou, F., Tian Z., Wu C., Goehring, M., Liu, F., Kolodziej E.P. 2020. "More Than a First Flush: Urban Creek Storm Hydrographs Reveal Broad Contaminant Pollutographs" *Environ. Sci. Technol.* **54**(10) 6152-6165. DOI: 10.1021/acs.est.0c00872
- 5) Tian, Z., Peter, K.T., Gipe, A.D., Zhou, H., Hou, F., Wark, D.A., Kolodziej, E.P., James, C.A. 2020. "Suspect and Non-target Screening for Contaminants of Emerging Concern in an Urban Estuary." *Environ. Sci. Technol.* **54**(2) 889-901. DOI: 10.1021/acs.est.9b06126
- 6) Peter, K.T., Tian, Z., Wu, C., Kolodziej, E.P. 2019. "Application of Non-Target High Resolution Mass Spectrometry Data to Quantitative Source Apportionment." *Environ. Sci. Technol.* **53**(21) 12257-12268. DOI: 10.1021/acs.est.9b04481
- 7) Hou, F., Tian, Z., Peter, K.T., Wu, C., Alegria, E., Gipe, A.D., Zhao, H., Liu, F., Kolodziej E.P. 2019. "Quantification of Organic Contaminants in Urban Stormwater by Isotope Dilution and Liquid Chromatography-Tandem Mass Spectrometry." *Anal. Bioanal. Chem.* **411**(29) 7791-7806. DOI: 10.1007/s00216-019-02177-3
- 8) Yang, X., Zhao, H., Cwiertny D.M., Kolodziej E.P. 2019. "Sorption and Transport of Trenbolone and Altrenogest Photoproducts in Soil-Water Systems." *Environ. Sci. Processes Impacts.* **21**(10) 1650-1663. DOI: 10.1039/C9EM00305C
-Front cover article, October 2019, *Environ. Sci. Processes Impacts*.
- 9) Pflug, N., Patterson, E., Martinovic-Weigelt, D., Kolodziej, E.P., Gloer, J., McNeill, K., Cwiertny, D.M., Wammer, K. 2019. "Intramolecular [2+2] Photocycloaddition of Altrenogest: Confirmation of Product Structure, Theoretical Mechanistic Insight, and Bioactivity Assessment." *J. Org. Chem.* **84**(17) 11366-11371. DOI: 10.1021/acs.joc.9b02070
- 10) Bains, A., Perez-Garcia, O., Lear, G., Greenwood, D., Swift, S., Middleditch, M., Kolodziej E.P., Singhal, N. 2019. "Induction of Microbial Oxidative Stress as a New Strategy to Enhance the Enzymatic Degradation of Organic Micropollutants in Synthetic Wastewater." *Environ. Sci. Technol.* **53**(16), 9553-9563. DOI: 10.1021/acs.est.9b02219
- 11) Kenyon, P., Zhao, H., Yang, X., Wu, C., Cwiertny, D.M., Kolodziej, E.P. 2019. "Detection and Quantification of Metastable Photoproducts of Trenbolone and Altrenogest Using Liquid Chromatography-Tandem Mass Spectrometry." *J. Chrom. A.* 1603, 150-159. DOI: 10.1016/j.chroma.2019.06.030
- 12) Peter, K.T., Herzog, S., Tian, Z., Wu, C., McCray, J.E., Lynch, K., Kolodziej, E.P. 2019. "Evaluating Emerging Organic Contaminant Removal in an Engineered Hyporheic Zone using High Resolution Mass Spectrometry." *Water Research.* **150** (3), 140-152. DOI: 10.1016/j.watres.2018.11.050
- 13) Peter, K.T., Tian, Z., Wu, C., Lin, P., White, S., Du, B., McIntyre, J.K., Scholz, N.L., Kolodziej E.P. 2018. "Using High-Resolution Mass Spectrometry to Identify Organic Contaminants Linked to

- Urban Stormwater Mortality Syndrome in Coho Salmon.” *Environ. Sci. Technol.*, **52**(18) 10317-10327. DOI: 10.1021/acs.est.8b03287
- 14) Salls, K.A., Won, D., Kolodziej, E.P., Childress, A.E., Hübel, S.R. 2018. “Transport of Metals and Semi-Volatile Contaminants In Direct Contact Membrane Distillation.” *Desalination*. **427**, 35-41, DOI: 10.1016/j.desal.2017.11.001
 - 15) Pflug, N.C., Hankard, M.K., Berg, S.M., O’Connor, M., Gloer, J.C., Kolodziej, E.P., Cwiertny, D.M., Wammer, K.H. 2017. “Environmental Photochemistry of Dienogest: Phototransformation to Estrogenic Products and Increased Environmental Persistence via Reversible Photohydration.” *Environ. Sci. Processes Impacts*. **19**, 1414-1426, DOI: 10.1039/c7em00346c
 - 16) Du, B., Lofton, J.M., Peter, K.T., Gipe, A.D., James, C.A., McIntyre, J.K., Scholz, N.L., Baker, J.E., Kolodziej, E.P. 2017. “Development of Suspect and Non-Target Screening Methods for Detection of Organic Contaminants in Highway Runoff and Fish Tissue with High-Resolution Time-of-Flight Mass Spectrometry.” *Environ. Sci. Processes Impacts*. **19**, 1185-1196. DOI 10.1039/C7EM00243B
 - 17) Kolodziej E.P., Choi, K., Marfil-Vega, R., Brooks, B.W. 2017. “The Necessity of Bioanalytical Tools for Advancing Water and Sediment Quality Assessment.” *Environ. Sci. Processes Impacts*. **19**, 1113-1116. DOI: 10.1039/C7EM90032E
-Editorial content, non peer-reviewed
 - 18) Pflug, N.C., Kupsco, A., Kolodziej, E.P., Schlenk, D., Teesch, L.M., Gloer, J.B., Cwiertny, D.M. 2017. “Formation of Bioactive Transformation Products During Glucocorticoid Chlorination.” *Environmental Science: Water Research and Technology*. **3**, 450-461. DOI 10.1039/C7EW00033B
 - 19) Wammer, K.H., Anderson, K.C., Erickson, P.R., Kliegman, S., Moffat, M.E., Heitzman, J.A., McNeill, K., Martinovic-Weigelt, D., Cwiertny, D.M., Kolodziej, E.P. 2016. “Environmental Photochemistry of Altrenogest: Photoisomerization Followed by Reversible Photohydration.” *Environ. Sci. Technol.* **50**(14). 7480-7488. DOI 10.1021/acs.est.6b02608
 - 20) Baltrusaitis, J., Patterson, E., O’Connor, M., Shen, Q., Kolodziej E.P., Cwiertny, D.M. 2016. “Reversible Photohydration of Trenbolone Acetate Metabolites: Mechanistic Understanding of Product-To-Parent Reversion through Complementary Experimental and Theoretical Approaches.” *Environ. Sci. Technol.* **50**(13). 6753-6761. DOI 10.1021/acs.est.5b03905
 - 21) Ward, A.S., Cwiertny, D.M., Kolodziej, E.P., Brehm, C.C. 2015. “Stream-Hyporheic Spiraling Increases Environmental Persistence of Trenbolone Metabolites.” *Nature Communications*, **6**, Article #7067, DOI 10.1038/ncomms8067
 - 22) Cole, E.A. McBride, S., Kimbrough K.C., Marchand, E.A., Cwiertny, D.M., Kolodziej, E.P. 2015. “Rates and Product Identification for Trenbolone Acetate Metabolite Biotransformation in Aerobic Conditions.” *Environ. Toxicol. Chem.* **34**(7), 1472-1484, DOI: 10.1002/etc.2962
 - 23) Qu, S., Kolodziej, E.P., Cwiertny, D.M. 2014. “Sorption and Mineral Promoted Transformation of Synthetic Hormone Growth Promoters in Soil Systems” *J. Agricul. Food Chem.* **62**(51), 12277-12286. DOI 10.1021/jf5035527
 - 24) Jones, G.D., Benchetler, P.V., Tate, K.W., Kolodziej E.P. 2014. “Trenbolone Acetate Metabolite Transport in Rangelands and Irrigated Pastures: Observations and Conceptual Approaches for Agro-Ecosystems.” *Environ. Sci. Technol.* **48**(21) 12569-12576. DOI: 10.1021/es503406h
 - 25) Cwiertny, D.M. Schlenk, D., Snyder, S.A., Kolodziej E.P. 2014. “Environmental Designer Drugs: When Transformation Does Not Eliminate Risk.” *Environ. Sci. Technol.* **48**(20) 11737-11745. DOI: 10.1021/es503425w
-Invited (EPK) feature article (cover article) for *Environ. Sci. Technol.*
-Ranked #6, Most Read Articles of 2014; First runner up, Best Feature Article of 2014
 - 26) Jones, G.D., Benchetler, P.V., Tate, K.W., Kolodziej E.P. 2014. “Surface and Subsurface Attenuation of Trenbolone Acetate Metabolites and Manure-derived Constituents in Irrigation Runoff on Agro-Ecosystems” *Environ. Sci. Processes Impacts*. **16**, 2507-2516. DOI: 10.1039/c4em00385c
 - 27) Jones, G.D., Benchetler, P.V., Tate, K.W., Kolodziej E.P. 2014. “Mass Balance Approaches to Characterizing the Leaching Potential of Trenbolone Acetate Metabolites in Agro-Ecosystems.” *Environ. Sci. Technol.* **48**(7) 3715-3723. DOI 10.1021/es405701f

- 28) Cavallin, J.E., Durhan, E., Evans, N., Foreman, W.T., Jensen, K.M., Kahl, M.D., Kolodziej, E.P., Kolpin, D., LaLone, C.A., Makynen, E.A., Seidl, S.M., Thomas, L.M., Villeneuve, D.L., Weberg, M.A., Wilson, V., Ankley, G.A. 2014. "Integrated Assessment of Runoff from Animal Feeding Operations: Analytical Chemistry, In Vitro Bioassays, and In Vivo Fish Exposures." *Environ. Toxicol. Chem.* **33**(8) 1849-1857. DOI 10.1002/etc.2627
- 29) Qu, S., Kolodziej, E.P., Long, S.A., Gloer, J.B., Patterson, E.V., Baltrusaitis, J., Jones, G.D., Benchetler, P.V., Cole, E.A., Kimbrough, K.C., Tarnoff, M.D., Cwiertny, D.M. 2013. "Product-to-Parent Reversion of Trenbolone: Unrecognized Risks for Endocrine Disruption." *Science*. Published online 9/26/2013 in *Science Express*, in print 10/18/2013. **342**(6156), 347-351. DOI 10.1126/science.1243192
-Co-corresponding author and project Principal Investigator.
- 30) Kolodziej, E.P., Qu, S., Forsgren, K., Long, S.A., Gloer, J.B., Jones, G., Schlenk, D., Baltrusaitis, J., Cwiertny, D.M. 2013. "Identification and Environmental Implications of Photo-transformation Products of Trenbolone Acetate Metabolites." *Environ. Sci. Technol.* **47**(10), 5031-5041.
- 31) Qu, S., Kolodziej, E.P., Cwiertny, D.M. 2012. "Phototransformation Rates and Mechanisms for Synthetic Hormone Growth Promoters Used in Animal Agriculture." *Environ. Sci. Technol.* **46**(24), 13202-13211.
- 32) Parker, J.A., Webster, J.P., Kover, S.C., Kolodziej, E.P. 2012. "Analysis of Trenbolone Acetate Metabolites and Melengestrol Using Gas Chromatography-Tandem Mass Spectrometry." *Talanta*, **99**, 238-246.
- 33) Webster, J.P., Kover, S.C., Bryson, R.J., Harter, T., Mansell D.S., Sedlak D.L., Kolodziej, E.P. 2012. "Occurrence of Trenbolone Acetate Metabolites in Simulated Confined Animal Feeding Operation (CAFO) Runoff." *Environ. Sci. Technol.* **46**(7), 3803-3810.
- 34) Mansell, D.S., Bryson, R.J., Harter, T., Webster, J.P., Kolodziej, E.P., Sedlak, D.L. 2011. "Fate of Endogenous Steroid Hormones in Steer Feedlots Under Simulated Rainfall-Induced Runoff." *Environ. Sci. Technol.* **45**(20), 8811-8818.
- 35) Lavado, R., Loyo-Rosales, J.E., Floyd, E., Kolodziej, E.P., Snyder, S.A., Sedlak, D.L., Schlenk, D. 2009. "Site-Specific Profiles of Estrogenic Activity in California's Inland Waters." *Environ. Sci. Technol.* **43**(24), 9110-9116.
- 36) Kolodziej, E.P., and Sedlak D.L. 2007. "Rangeland Grazing as a Source of Steroid Hormones to Surface Waters." *Environ. Sci. Technol.* **41**(10), 3514-3520.
- 37) Fono, L.J., Kolodziej, E.P., Sedlak, D.L. 2006. "Attenuation of Wastewater-Derived Contaminants in a Wastewater-Dominated River." *Environ. Sci. Technol.* **40**(23), 7257-7263.
- 38) Schlenk, D., Sapozhnikova, Y., Irwin, M.A., Xie, L., Hwang, W., Reddy, S., Brownawell, B.J., Armstrong, J., Kelly, M., Montagne, D.E., Kolodziej, E.P., Sedlak, D.L., Snyder, S.A. 2005. "In Vivo Bioassay-guided Fractionation of Marine Sediment Extracts from the Southern California Bight, USA, for Estrogenic Activity." *Environ. Toxicol. Chem.*, **24**(11), 2820-2826.
- 39) Kolodziej E.P., Harter T.H., Sedlak D.L. 2004. "Dairy Wastewater, Aquaculture, and Spawning Fish as Sources of Steroid Hormones in the Aquatic Environment." *Environ. Sci. Technol.* **38**(23), 6377-6384.
- 40) Sedlak D.L., Pinkston K.L., Gray J.L. Kolodziej E.P. 2003. "Approaches for Quantifying the Attenuation of Wastewater-Derived Contaminants in the Aquatic Environment." *Chimia*. **57**(9), 567-569.
- 41) Kolodziej E.P., Gray J.L., Sedlak D.L. 2003. "Quantification of Steroid Hormones with Pheromonal Properties in Municipal Wastewater Effluent." *Environ. Toxicol. Chem.*, **22**(11), 2622-2629.
- In Review or Preparation*
- 42) Peter, K.T., Lundeen, J.I., Wu, C., Feist, B., Tian, Z., Cameron, J., Kolodziej, E.P., Scholz, N.L. "Measuring The Chemical Profile of Urbanization and Biological Decline." In preparation.

- 43) Kumar, N., Zhao, H., Awoyemi, A., Kolodziej, E.P., Crago, J. "Toxicity Testing of Effluent Dominated Stream using Predictive Molecular Level Toxicity Signatures Based on High Resolution Mass Spectrometry: A Case Study of the Lubbock Canyon Lake System". In review.
- 44) McIntyre, J.K., Prat, J., Cameron, J., Wetzel, J., Mudrock, E., Peter, K.T., Tian, Z., MacKenzie, C., Lundin, J., Stark, J.D., Davis, J.W., Kolodziej, E.P., Scholz, N.L. "Treading Water: Tire Wear Particle Leachate Causes Acute Toxicity Similar to Roadway Runoff in Coho Salmon But Not Chum Salmon." In preparation.
- 45) Wang, R., Dodd, M.C., Kolodziej, E.P. "Kinetics and Mechanisms of Chlorination of 1,3-Diphenylguanidine from Density Functional Theory and Experimental Data." In preparation.
- 46) Tang, T., Kolodziej, E.P. "Sorptions and Desorption of Urban Stormwater-Derived Organic Contaminants in Soils." In preparation.
- 47) Tian, Z., Peter, K.T., Wu, C., Du, B., Leonard, B., McIntyre, J.K., Kolodziej, E.P. "Performance Evaluation Of Compost-Amended Biofiltration Swales For Roadway Runoff Treatment". In preparation.
- 48) Zhou, H., Tian, Z., Lam, K., Kolodziej, E.P. "Biotransformation of Next-Generation Progestins Dienogest and Drospirenone by Wastewater-Derived Microbes." In preparation.

TECHNICAL REPORTS

- 1) Tian, Z., Peter, K.T., Wu, C., Du, B., Leonard, B., McIntyre, J. Kolodziej, E.P. "Performance Evaluation Of Compost-Amended Biofiltration Swales For Highway Runoff Treatment In Field And Laboratory." 08/09/2019. Washington Department of Transportation, Federal Highway Administration.
- 2) Peter, K.T., Herzog, S., Tian, Z., McCray, J., Kolodziej, E.P. "Flow Path Delineation and Water Quality Assessment in the Thornton Creek Engineered Hyporheic Zone." 03/09/2018. Seattle Public Utilities.
- 3) Du, W., Kolodziej E.P. "Literature Review and Comment on Groundwater Aquifer Recharge and Recovery Systems. 06/21/2011. City of Reno, NV.
- 4) Callahan, S., Kolodziej E.P. "Assessment and Optimization of Aquifer Recharge and Recovery Systems for the Removal of Trace Organic Contaminants." 04/16/2010. City of Reno, NV.

SELECT PRESENTATIONS

- 1) Kolodziej, E.P., Zhenyu Tian, Nina Zhao, Katherine Peter, Christopher Wu, Melissa Gonzalez, Jen McIntyre. "Roadway Runoff as a Source of Toxic Trace Transformation Products to Surface Waters." Invited presentation, EAWAG Water Seminar series. (Virtual format), December 10, 2020
- 2) Kolodziej, E.P., Katherine Peter, Zhenyu Tian, Nina Zhao, Christopher Wu, Melissa Gonzalez, Allan Cortina, Jen McIntyre. "Characterizing the Environmental Chemistry of Roads, Salmon, and Water with High Resolution Mass Spectrometry." Invited presentation, Duke University Integrated Toxicology and Environmental Health Seminar series. Durham, NC, February 20, 2020
- 3) Kolodziej, E.P., Katherine Peter, Zhenyu Tian, Christopher Wu, Melissa Gonzalez, Jen McIntyre. "Stormwater and Salmonid Health." Invited presentation, Northwest Indian Fisheries Commission Water Quality Board. Olympia, WA, November 19, 2019.
- 4) Kolodziej, E.P., Katherine Peter, Zhenyu Tian, Christopher Wu, Allan Cortina, Melissa Gonzalez, Jen McIntyre, Nat Scholz. "Impacts of Vehicles and Roads on Urban Water Quality." Invited presentation, ESPI Editors Symposium, Department of Civil and Environmental Engineering, Massachusetts Institute of Technology. Cambridge, MA, June 24, 2019.
- 5) Kolodziej, E.P. "Chemistry in Stormwater." Invited presentation, *2nd Annual Green-Duwamish Sustainability Talks* to Auburn High School Students. Auburn Performing Arts Center, Auburn WA, May 24, 2019.

- 6) Kolodziej, E.P., Katherine Peter, Zhenyu Tian, Christopher Wu. “Characterizing Urban Stormwater Impacts on Water Quality to Understand Ecosystem Health.” Invited presentation, WA Department of Ecology, Lacey WA, April 17, 2019.
- 7) Kolodziej, E.P., Katherine Peter, Zhenyu Tian, Christopher Wu. “Using HRMS to Link Organic Contaminants to Urban Runoff Mortality Syndrome.” Invited presentation, 2019 Salmon Recovery Conference, Tacoma, WA, April 9, 2019.
- 8) Kolodziej, E.P., Katherine Peter, Zhenyu Tian, Christopher Wu. “Characterizing Urban Stormwater Impacts on Water Quality to Understand Ecosystem Health.” Invited presentation, Department of Chemical Oceanography, University of Washington. Seattle WA, March 15, 2019.
- 9) Kolodziej, E.P., Katherine Peter, Zhenyu Tian, Christopher Wu. “Characterizing Urban Stormwater Impacts on Water Quality to Understand Ecosystem Health.” Invited presentation, NIEHS Superfund Research Program 2018 Annual Meeting. Sacramento CA, November 29, 2018.
- 10) Kolodziej, E.P., Katherine Peter, Zhenyu Tian, Christopher Wu. “Using High-Resolution Mass Spectrometry to Characterize Urban Stormwater and Impacts on Water Quality.” Invited presentation, M. Gordan Wolman Seminar, Johns Hopkins University. November 13, 2018.
- 11) Kolodziej, E.P., Katherine Peter, Zhenyu Tian, Christopher Wu. “Using High-Resolution Mass Spectrometry to Characterize Urban Stormwater and Impacts on Water Quality.” Invited presentation, University of Delaware. November 12, 2018.
- 12) Kolodziej, E.P., Katherine Peter, Zhenyu Tian, Christopher Wu. “Using High-Resolution Mass Spectrometry to Characterize Urban Stormwater and Impacts on Water Quality.” Invited presentation, Jianying Hu Research group, Peking University. October 24, 2018.
- 13) Kolodziej, E.P., Katherine Peter, Zhenyu Tian, Christopher Wu. “Using High-Resolution Mass Spectrometry to Characterize Urban Stormwater and Impacts on Water Quality.” Invited departmental seminar, College of Urban and Environmental Sciences, Peking University. Beijing, China, October 23, 2018.
- 14) Kolodziej, E.P., Katherine Peter, Zhenyu Tian, Christopher Wu. “Using High-Resolution Mass Spectrometry to Characterize Urban Stormwater and Impacts on Water Quality.” Invited presentation, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences. Beijing, China, October 22, 2018.
- 15) Kolodziej, E.P. “Occurrence and Sources of Organic Contaminants in Urban Stormwater and Receiving Waters.” Invited presentation, Northwest Indian Fisheries Commission Salmon Stormwater Summit, The Point Casino, Suquamish Tribe, Kingston WA. September 20, 2018.
- 16) Kolodziej, E.P. “Stormwater Derived Chemicals and Ecosystem Health.” Keynote Speaker, 6th International Conference on Emerging Contaminants (EmCon 2018), Oslo Norway. June 25, 2018.
- 17) Kolodziej, E.P. “Underexplored Bioactive Contaminants in Urban Stormwaters.” Invited presentation, Department of Civil and Environmental Engineering, University of California, Berkeley. April 13, 2018.
- 18) Kolodziej, E.P. “Chemistry and the Environment: Why Puget Sound Needs Clean Water.” Invited Keynote Address, ACS Career Day, PNW Regional Chapter, Center for Urban Waters, Jan. 31, 2018.
- 19) Kolodziej, E.P. “Analysis of Urban Water Quality With High Resolution Mass Spectrometry.” Invited presentation, Southern California Coastal Water Research Project, Santa Ana, CA. Nov. 3, 2017.
- 20) Kolodziej, E.P. Du, B. Peter, K., Lofton, J. “Detection and Evaluation of Organic Contaminant Flows in the Puget Sound Region”. Invited Presentation. NOAA Montlake Lab Monster Jam. Seattle, WA. May 18, 2017
- 21) Kolodziej, E.P. “Understanding Our Chemical Fingerprints on Water: Occurrence and Concerns for Our Contaminants”. University of California, San Diego, School of Pharmacy, San Diego, CA. February 6, 2017.
- 22) Kolodziej, E.P. “Our Chemical Fingerprints: Safer Water for Our Cities”. Invited Presentation. Grit City Think and Drink. The Swiss, Tacoma, WA. December 13, 2016

- 23) Kolodziej, E.P. "Our Chemical Fingerprints: Safer Water for Our Cities". Invited Presentation. UW College of Engineering 2016 Engineering Lecture Series: "City Smarts: Engineering Resilient Communities." Seattle, WA. November 16, 2016 -Televised presentation.
- 24) Kolodziej, E.P. "Emerging Contaminants in Our Waters: The State of the Science". Invited Presentation. Northwest Toxics Community Coalition Annual Conference. Seattle, WA. October 22, 2016
- 25) Kolodziej, E.P. "Emerging Contaminants In Our Waters: The State of the Science." Pacific Northwest WaterReuse Conference, Spokane, WA May 18, 2016.
- 26) Kolodziej, E.P. "Potential Environmental Impacts of the NWIW Methanol Plant in Tacoma." UWT Methanol Plant Informational Seminar Series. UW-Tacoma, March 3, 2016.
- 27) Kolodziej, E.P. "Linking Contaminant Structure to Bioactivity: Key Issues and Uncertainties for Environmental Health." Invited presentation, Oregon Health & Science University, Institute of Environmental Health. November 20, 2015.
- 28) Kolodziej, E.P. "Linking Contaminant Structure to Bioactivity: Key Issues and Uncertainties for Environmental Health" Invited presentation, Oregon State University, Department of Environmental and Molecular Toxicology. November 18, 2015.
- 29) Kolodziej, E.P. "Characterization and Environmental Implications of Pharmaceutical Transformation Products in Water" Invited presentation, "Environmental Analysis" Session, Beijing Conference and Exhibition on Instrumental Analysis, China National Convention Center, Beijing, China, October 29, 2015.
- 30) Kolodziej, E.P. "Addressing the Challenge of Agricultural Pharmaceuticals and Bioactive Contaminants in Aquatic Systems." Invited presentation, Pennsylvania State University, Department of Ecosystem Science and Management; Department of Agricultural and Biological Engineering. April 24, 2015.
- 31) Baker, J., and Kolodziej, E.P. "Next Generation Design of Integrated Urban Water Systems." National Science Foundation, Invited presentation, EFRI program, Washington D.C. March 11, 2015.
- 32) Kolodziej, E.P. "Conserved Structure, Conserved Risk: Environmental Transformations of Steroidal Pharmaceuticals" Invited presentation, Gordon Research Conference, Environmental Sciences: Water. Holderness, NH, June 26, 2014.
- 33) Kolodziej, E.P. "The Implications of Structural Conservation During Environmental Transformations of Steroidal Pharmaceuticals" Invited presentation, session keynote. Canadian Society of Chemistry National Meeting, Vancouver, BC, June 5, 2014.
- 34) Kolodziej, E.P. "The Implications of Novel Transformations of Steroidal Pharmaceuticals for Endocrine Disruption and Environmental Risk Assessment." Invited presentation, Department of Civil and Environmental Engineering, Stanford University, Nov. 15, 2013.
- 35) Kolodziej, E.P. "In the Twilight of Trenbolone: The Vampire Steroid." Invited presentation, Environmental Science Graduate Program, Ohio State University, Sept. 6, 2013.
- 36) Kolodziej, E.P. "Trenbolone Transport And Transformation: What Do We Know and What Do We Need To Know?" Invited presentation, Department of Civil and Environmental Engineering, University of Iowa, March 9, 2013.
- 37) Kolodziej E.P. "Sources, Transport, and Transformations of Endocrine Disrupting Steroid Hormones Derived From Animal Agriculture." Invited Presentation, Washington State University. April 9, 2012.
- 38) Kolodziej E.P. "Agricultural Sources and Transformation of Steroid Hormones in Receiving Waters." Invited Presentation, University of Missouri. Oct. 4, 2011.
- 39) Kolodziej E.P. "Steroid Hormone Occurrence, Fate, and Transport in Northern California's Watersheds." Invited presentation, University of California, Riverside, April 4, 2008.
- 40) Kolodziej E.P. "Occurrence and Fate of Steroidal Hormones in Surface Waters Impacted by Cattle Grazing and Animal Agriculture." Plenary Speaker, Water and The Future of Kansas Conference, Topeka, Kansas, March 25, 2008.

- 41) Kolodziej E.P. "Steroid Hormone Occurrence, Fate, and Transport in Northern California's Watersheds." Invited Presentation, University of California, Davis, March 17, 2008.
- 42) Kolodziej E.P., Sedlak, D.L. "Occurrence and Fate of Steroid Hormones in Northern California." Invited presentation, Northern California Chapter of the Society of Environmental Toxicology and Chemistry 14th annual meeting, Davis, CA, May 12, 2004.
-1st Place award for Best Student Presentation.

WORKSHOPS AND PROFESSIONAL DEVELOPMENT (Partial List)

"Reflections on Teaching: Where We Were, Where We Are, and Where We Could Be", UW Advance, Jim Borgford-Parnell April 19, 2019.

RESEARCH GROUP AND STUDENT ADVISING

Post-Doctoral Scholars:

1) Zhenyu Tian (CUW/UW)	02/2018-Present
2) Rachel Lundeen (CUW/UW)	07/2019-02/2020
3) Katherine Peter (CUW/UW)	12/2016-04/2019
4) Bowen Du (CUW/UW)	12/2014-06/2017

Ph.D. Students (UW):

1) Ximin Hu	9/2019 – Present
2) Haoqi (Nina) Zhao	9/2016 – Present
2) Rui Wang	10/2018 – Present
Two year visiting PhD student, UW VISIT program.	
3) Ting Tang	10/2018 – Present
Two year visiting PhD student, UW VISIT program.	
2) Fan Hou	9/2017-1/2019

Quantification of organic contaminants in urban stormwater by isotope dilution and liquid chromatography-tandem mass spectrometry. 16 month visiting PhD student, UW VISIT program.

3) Xingjian Yang	9/2015-10/2016.
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Differential Transport of Photoactive, Metastable Steroids in Soil-Water Systems. One year visiting PhD student, UW VISIT program.

Ph.D. Students (UNR): 1) Gerrad Jones 1/2010 - 1/2014
Dissertation: The Environmental Fate and Transport of Trenbolone Acetate Metabolites in Agro-Ecosystems. Currently: Assistant Professor, Department of Biological and Ecological Engineering, Oregon State University. Post-Doctoral Scholar (Dr. Lenny Winkel), Swiss Federal Institute of Technology, ETH, Zurich.

M.S. Students (UW):

1) Philip Kenyon, 1/2014 – 12/2015
2) Danbi Won, 12/2015-03/2017

M.S. Students (UNR):

1) Jed Parker, 1/2008 - 5/2009.	6) Emily Cole, 10/2011 to 12/2013.
2) Silas Callahan, 1/2008 - 8/2010.	7) Philip Benedetti, 1/2013-1/2015
3) Jackson Webster, 1/2009 - 12/2010.	8) Philip Kenyon, 1/2014 -6/2014
4) Wenjun Du, 1/2010 - 8/2011.	9) Tianlin Song, 1/2013 -7/2014
5) Jaewoong Lee, 6/2010 - 12/2011.	

Undergraduate Students Participating in Funded Research Projects (UWT/CUW/UW)

1) Craig Rideout, UWT SAM	2) Lindsay Quast, UWT SAM
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- | | |
|------------------------------|------------------------------|
| 3) Rachel Hettinger, UWT SAM | 10) Christopher Wu, UWT SAM |
| 4) Melissa Gonzalez, UWT SAM | 11) Peter Lim, UWT SAM |
| 5) Allan Cortina, UWT SAM | 12) Harpreet Kang, UW CEE |
| 6) Keefe Brockman, UWT SAM | 13) Samantha Randall, UW CEE |
| 7) David Wark, UWT SAM | 14) Jonathan Lofton, UWT CUW |
| 8) Kenji Lam, UW CEE | 15) Esther Chang, UW CEE |
| 9) Sarah White, UWT SAM | |

Mentor: Undergraduate Student Capstone Research Projects

- | | |
|---|----------------------------|
| 1) Rachel Hettinger, UWT SAM | 5) Jordan Williams UWT SAM |
| 2) David Wark, UWT SAM | 6) Nicole Smith, UWT SAM |
| 3) Ernesto Alegria, UWT SAM | 7) Don Rollalazo, UWT SAM |
| 4) Susanne Gov, UW Seattle Program for
the Environment | |

Undergraduate Students Participating in Funded Research (UNR):

- | | |
|-------------------------|---------------------------|
| 1) Jackson Webster | 9) Claire Johnson |
| 2) Doug Holderman, | 10) Peter Benchetler |
| 3) Collin Emmerson | 11) Kaitlin Kimbrough |
| 4) Jonathan Ebert | 12) Emily Ruskowitz |
| 5) Robert (Alex) Vaughn | 13) Jasmine Miller |
| 6) Stephanie Kover | 14) Rachel Weber |
| 7) Melissa DeVera | 15) Tatum Demay (NSF REU) |
| 8) Samantha McBride | |

Graduate Student Committee Member (UNR):

- | | |
|---------------------------|----------------------------|
| 1) Jazmin Aravena (Ph.D.) | 4) Winn Wilson (M.S.) |
| 2) Nalelli Herrera (M.S.) | 5) Alissa Backman (Ph.D.) |
| 3) Miranda Hutton (M.S.) | 6) Sanjeev Ryaprolu (M.S.) |

SERVICE

Professional:

- NWRI (National Water Research Institute) Experts Panel for LOTT Clean Water Alliance, Olympia, WA. Invited. 2017-present
- Puget Sound Clean Cars Stormwater Partnership Working Group. Invited. 2017-present
- Associate Editor, *Environmental Science: Processes and Impacts*, August 2014-present
- Conference Session Chair: “Stormwater Characterization and Management Using a Watershed Approach”. Salish Sea Ecosystem Conference, Seattle WA, April 4-6, 2018.
- Invited Session Facilitator and Technical Content Contributor: “Contaminants in the Food Web” session, Southern Resident Killer Whale Symposium and Workshop. Sponsored by Environment Canada. Vancouver, BC October 10-12, 2017.
- Conference Session Co-Chair/Organizer: “Integrated Tools For Improving Environmental Fate And Risk Assessment For Unregulated Contaminants And Their Mixtures” Society of Environmental Toxicology and Chemistry National Meeting, Minneapolis, MN, November 12-16, 2017
- Science Committee, The 18th IWA International Conference on Diffuse Pollution and Eutrophication. Los Angeles CA, August 13-17, 2017. Invited. 2016-2017
- Member at Large (Academic), PNW Chapter of Society for Environmental Toxicology and Chemistry (PNW-SETAC), Regionally elected leadership position. 2017-2019.

- Conference Session Co-Chair/Organizer: “Endocrine Disrupting Compounds and Pharmaceuticals in the Environment” Society of Environmental Toxicology and Chemistry National Meeting, Tampa Bay, FL, November 5-10, 2016
- Associate Editor, *Critical Reviews in Environmental Science and Technology*, 2012-2015
- Member at Large, ACS Division of Environmental Chemistry, Nationally elected leadership position. 2013-2015.
- Faculty Mentor and Senior Discussion Leader, 2012 Gordon Research Seminar, Environmental Sciences: Water. “Processes in Ecosystems” Session.
- Adjunct Faculty, UNR Graduate Program in Hydrologic Sciences, 2012-2014
- Member, AWWA Organic Contaminants Research Committee, 2011-2013
- Project Advisory Committee, Water Research Foundation Project #4334
- AAESP Student Award Committee, 2013-2015
- Conference Session Co-Chair/Organizer: “Frontiers in Water Reuse: Detection, Advanced Treatment, and Environmental Fate.” ACS National Conference, Salt Lake City 2009.
- NSF Proposal Review panels: 2009, 2010, 2012, 2017, 2019
- External Reviewer: UIUC, MIT, CUNY, AOAC, EPA, USGS, USDA, others
- Journal Peer Review: *Environmental Science and Technology*, *Environmental Science and Technology Letters*, *Environmental Sciences: Processes and Impacts*, *Environmental Pollution*, *Environmental Toxicology and Chemistry*, *Critical Reviews in Environmental Science and Technology*, *Journal of Chromatography, A*, *Journal of Environmental Quality*, *Water Resources Research*, *Aquatic Toxicology*, *Science of the Total Environment*, *Journal of Chemical Ecology*

TEACHING PORTFOLIO

- UW Tacoma:* TESC 201: The Science of Sustainability (W15-W20)
TESC 333: Environmental Chemistry (W15-W20)

- UW Seattle:* CEE 496/CEWA 596: Contaminant Fate and Transport (A18)
CEE 356: Quantitative and Conceptual Tools for Sustainability (S18, S20)
CEE 498/598: Environmental Analyses (S16, S17)

- UNR:* CEE 204/390: Introduction to Environmental Engineering.
CEE 417/617: Introduction to Environmental Quality and Analysis.
CEE 458/658: Fundamentals of Environmental Chemistry.
CEE 756: Environmental Chemistry. (Graduate Course)
CEE 771: Anthropogenic Contaminants in the Environment. (Graduate Course)

AWARDS AND HONORS

- Distinguished Research Award (2020), U. of Washington-Tacoma
- Keynote Speaker, 6th International Conference on Emerging Contaminants (EmCon 2018), Oslo Norway
- Invited Speaker, 2014 Gordon Research Conference, Environmental Sciences: Water
- Exceptional Reviewers of 2014 Award, *Environmental Toxicology and Chemistry*
- Excellence in Review Award, 2012, *Environmental Science and Technology*
- College of Engineering 2011 Senior Scholar Faculty Mentor, Stephanie Kover

SELECTED MEDIA LINKS (links current at time of publication)

Select News Media:

2020 Science, Tire Rubber Toxicant

Science: <https://www.sciencemag.org/news/2020/12/common-tire-chemical-implicated-mysterious-deaths-risk-salmon>

New York Times: <https://www.nytimes.com/2020/12/03/climate/salmon-kill-washington.html>

Seattle Times: <https://www.seattletimes.com/seattle-news/environment/tire-dust-is-killing-salmon/>

Los Angeles Times: <https://www.latimes.com/california/story/2020-12-03/coho-salmon-tire-chemical>

CNN: <https://www.cnn.com/2020/12/03/us/microplastics-tire-rubber-chemicals-killing-coho-salmon-scn/index.html>

The Guardian: <https://www.theguardian.com/environment/2020/dec/03/coho-salmon-pollution-car-tires-die-off>

San Francisco Chronicle: <https://www.sfchronicle.com/environment/article/New-research-explains-why-salmon-are-dying-in-the-15773283.php>

San Francisco Estuary Institute: <https://www.sfei.org/news/toxic-tire-contaminant-found-bay-area-stormwater>

Popular Science: <https://www.popsci.com/story/environment/coho-salmon-toxic-chemical-car-tires/>

KUOW: <https://www.kuow.org/stories/scientists-pinpoint-chemical-that-s-been-killing-coho-salmon-it-comes-from-car-tires>

Chemistry World: <https://www.chemistryworld.com/news/tyre-compound-driving-mystery-salmon-deaths-identified-after-years-of-chemical-detective-work/4012851.article>

2020 Contaminants in Urban Estuaries

January 2020: <http://www.washington.edu/news/2020/01/22/puget-sound-technique-casts-net-for-concerning-chemicals>

Forbes.com: <https://www.forbes.com/sites/allenelizabeth/2020/01/27/sixty-four-new-chemicals-discovered-in-washingtons-puget-sound/#10a27ef15d93>

KING5 news: <https://www.king5.com/article/news/local/whats-in-puget-sound/281-c122de89-af35-41a6-a47a-42f7345b6389>

2018 Coho Mortality Signature

KOUW radio:

<https://www.kuow.org/stories/coho>

2013 Science, Trenbolone Reversible PhotoHydration

Science: <http://www.sciencemag.org/content/341/6153/1441.full>

Nature: <http://www.nature.com/news/hormone-disruptors-rise-from-the-dead-1.13831>

U.S. News and World Report: <http://health.usnews.com/health-news/news/articles/2013/09/26/evidence-shows-steroid-used-in-livestock-can-impact-waterways>

Scientific American: <http://www.scientificamerican.com/article.cfm?id=hormone-disruptors-rise-from-the-dead-like-zombies>

Science Daily: <http://www.sciencedaily.com/releases/2013/09/130926142829.htm>

Chemistry World (Royal Society of Chemistry): <http://www.rsc.org/chemistryworld/2013/09/night-nearly-dead-steroid-trenbolone-acetate>

Chemical and Engineering News: <http://cen.acs.org/articles/91/i39/Growth-Hormones-Knack-Regenerating.html>

Yahoo Health News: <http://health.yahoo.net/articles/healthcare/vampire-steroid-may-haunt-us-rivers-and-streams>

Phys.org: <http://phys.org/news/2013-09-steroids-persist-longer-environment.html>

Huffington Post: http://www.huffingtonpost.com/andrew-gunther/industry-assurances-over-b_4039594.html

Huffington Post: http://www.huffingtonpost.com/andrew-gunther/big-ag-gifts-for-2013_b_4493687.html

The Scientist: <http://www.the-scientist.com/?articles.view/articleNo/37702/title/Steroids-Stick-Around/>
National Science Foundation, "Science360", 9/30/2013 News: <http://news.science360.gov/files/>
ACS "Molecule of the Week" 12/30/2013: <http://www.acs.org/content/acs/en/molecule-of-the-week/archive/trenbolone.html>

Twitter links:

<https://twitter.com/Healthline/status/383459992193343488>

<http://magist.com/all/383486732064129024/>

<http://t.co/zIfuj8Qm1>

Facebook, IFLS, 9/26/2013: (~6000 likes, 300 comments)

<https://www.facebook.com/IFeakingLoveScience#!/photo.php?fbid=673860729301608&set=a.456449604376056.98921.367116489976035&type=1&theater>

Radio: BBC "Inside Science" on 10/03/2013: <http://www.bbc.co.uk/programmes/b03bs0z6>

Documentary Films:

Engineering With Nature: An Ode to Wood, Water and Stone. Leaping Frog Films.

World Premier June 8, 2019 at the Seattle International Film Festival (SIFF). Seattle, WA.

<http://www.leapingfrogfilms.com/thorton.html>