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EDUCATION

- Ph.D., University of California, Berkeley, Civil and Environmental Engineering, 2000
- M.S., University of California, Berkeley, Civil and Environmental Engineering, 1994
- B.S., University of California, Los Angeles, *Cum Laude*, Civil Engineering, 1990

EXPERIENCE

- 2015-Present, Associate Professor, School of Engineering, University of California, Merced
- 2011-2015, Associate Professor, Department of Civil and Environmental Engineering, Washington State University
- 2013-2014, Guest Researcher, Department of Earth Sciences, University of Florence, Italy
- 2004-2011, Assistant Professor, Department of Civil and Environmental Engineering, Washington State University
- 2001-2004, Principal Water Resources Engineer, Brown and Caldwell, Walnut Creek, CA
- 2000-2001, Post-Doctoral Researcher, Kastanienbaum Limnological Research Center, Switzerland
- 1990-1993, Junior/Assistant Engineer, East Bay Municipal Utility District, Oakland, CA

AWARDS

- 2016 International Scholars Fellowship, Department of Earth Sciences, University of Florence, Italy
- 2012 WSU Civil and Environmental Engineering Department Outstanding Advisor Award
- 2009 NSF CAREER Grant: *Mercury Cycling in Lakes on the Colville Indian Reservation*
- 2009 WSU College of Engineering and Architecture Merit Grant
- 2005 WSU Faculty Seed Grant
- 2000 Fulbright Post-Doctoral Fellowship, Swiss Federal Institute for Environmental Science and Technology, Kastanienbaum Limnological Center, Lucerne

SELECT RESEARCH ACTIVITIES

Funded Research Activities

California Watershed Restoration and Delta Water Quality Grants Program. 2016-19. \$490,000. Quinn (PI, LBNL), Beutel, O'Day (Nat Sci). *Decision support for coordinated sustainable real-time management of methylmercury and salinity discharge from seasonal wetlands*. In review.

NSF CBET. 2016-19. \$327,000. Beutel (PI), O'Day (Nat Sci), Beman (Nat Sci). *Comprehensive assessment of methylmercury production and control strategies in a mercury-impacted flood control reservoir*. In review.

DOD Minority-Serving Institutions Equipment/Instrumentation Grant. 2016. \$85,000. *Water Quality Profiling with a Special Emphasis on Monitoring Near the Sediment-Water Interface*. In review.

Marin Municipal Utility Department. 2016-19. \$45,000. Beutel (PI). *Surface Water Quality Study*.

San Diego Water Department. 2015-16. \$90,000. Beutel (PI). *Lake Hodges Reservoir Sediment-Water Interface and Lake Oxygenation Study*.

National Park Service. 2013-16. \$130,000. Beutel (PI). *Determining the Sensitivity of High Elevation Lakes in Mount Rainier, North Cascades, and Olympic National Parks to Atmospheric Nitrogen Deposition through Nutrient Enrichment Experiments*.

- WSU Research Advancement Challenge Grant. 2012-13. \$70,000. Christen (PI, Arts & Sci), Price (Ed), Beutel. *Streams of Knowledge: Water Science and Education for the 21st Century*.
- EPA Small Business Innovation Research Program Phase I. 2012-13. \$80,000. Stamets (PI, Fungi Perfecti), Beutel. *Assessment of Mycofiltration Biotechnology to Remove Pathogens from Urban Storm Water*.
- NSF Research Experience for Undergraduates. 2010-13. \$18,000. Beutel (PI). Supplemental to 2009 CAREER Grant. NSF Research Experience for Undergraduates.
- USDA Cooperative State Research, Education and Extension Service. University of Idaho and Washington State University Aquaculture Initiative. 2010-12. \$23,700. Beutel (PI) and Liou (U Idaho). *Enhancing Aquaculture Water Usage and Fish Production using Oxygenation*.
- Washington State Centennial Clean Water Program. 2010-13. \$250,000. Hummel (PI, Extension), Beutel, Erwin (Extension), Ullman (Biosys Eng). *Clarks Creek Water Quality Science, Restoration and Education Implementation Program*.
- Colville Confederated Tribes. 2009-13. \$260,000. Beutel (PI). *Effects of Lake Oxygenation on Mercury Accumulation in Zooplankton and Fish*.
- Washington State Department of Ecology. 2009-10. \$150,000. Barber (PI, Civil Eng), Beutel, Orr (Env Sci). *Lake Osoyoos Drought Study*.
- Washington State Omnibus Equipment Allocation. 2009-11 Biennium. \$65,000. Funds to Acquire Brooks Rand MERX Automated Methylmercury Analytical System.
- NFS 2009 CAREER Grant Program. 2009-14. \$400,200 (#0846446). Beutel (PI). *CAREER: Fundamental Understanding of Mercury Cycling in Lakes and Use of Reservation-Based Research to Recruit American Indians into Environmental Engineering and Science*.
- Agouon Institute Grant in Microbial Ecology. 2008-12. \$158,000. Beutel (PI), Call (Vet Med). *Microbial Ecology of Mercury Cycling in Freshwater Lakes*.
- Northwest Power & Conservation Council FY 2007-09 Fish and Wildlife Program Innovative Project Solicitation. \$150,000. Funded by Colville Confederated Tribes. Beutel (PI), Moore (Nat Res). *Lake Oxygenation to Improve Trout Habitat and Water Quality in Twin Lake*.
- Strategic Environmental Research and Development Program. FY 2008. \$149,300. Watts (PI, Civil Eng), Beutel, Rentz (Civil Eng). *Pretreated Starch Solution for Sustainable Aircraft Deicing*.
- Dow AgroSciences. 2007. Pro Bono Supply of ¹⁴C-Ring-Labeled Chlorpyrifos valued at \$30,000. Beutel. *Fate and transport of Chlorpyrifos in treatment aquatic sediments*.
- USGS Section 104(B) Grant. FY2007. \$23,000. Beutel (PI), Watts (Civil Eng) and Peters (Biosys Eng). *Quantifying and Enhancing Nitrogen Removal in Constructed Wetlands*.
- USGS Section 104(B) Grant. FY2006. \$23,000. Beutel (PI). *Effects of Sediment Oxygenation on Methylmercury Bioaccumulation in Benthic Biota*.
- Metropolitan Water District of Southern California. 2006-07. \$25,000. Beutel (PI). *Lake Perris Sediment-Water Interface Study*.
- WSU 2005 Faculty Seed Grant. \$19,900. Beutel (PI). *Effects of Wet-Dry Cycling on Chlorpyrifos removal in Wetland Sediments*.
- USGS Section 104(B) Grant. FY2005. \$27,500. Beutel (PI), Moore (Nat Res). *Oxygenation for the Management of Sediment Mercury Release from Aquatic Sediments*.

Graduate Student Fellowships

- WSU Research Assistantship for Diverse Scholars. Spring 2015. \$15,000. Duvil (PhD student) and Beutel as advisor. *Nitrate Control on Methylmercury Accumulation in Lakes and Reservoirs*.
- Bullitt Environmental Fellowship. 2012-14. \$100,000. Duvil (PhD student) and Beutel as advisor. *Nitrate Control on Methylmercury Accumulation in Lakes and Reservoirs*.

WSU Nitrogen Systems: Policy-oriented Integrated Research IGERT Fellowship Program. 2012-14. \$80,000. Williams (PhD student) and Beutel as advisor. *Determining the Sensitivity of High Elevation Lakes to Atmospheric Nitrogen Deposition*.

WSU Nitrogen Systems: Policy-oriented Integrated Research IGERT Fellowship. 2011-13. \$80,000. Duvil (PhD student) and Beutel as advisor. *Nitrate Control on Methylmercury Accumulation in Lakes and Reservoirs*.

WSU Engineering and Architecture 2006 Interdisciplinary Research Fellowship. \$24,000. Gebremariam (PhD student) advised by Beutel. *Pesticide Sorption in Aquatic Sediments*.

Inland Northwest Research Alliance Research 2-year Fellowship. 2007-09. \$60,000. Gebremariam (PhD student) advised by Beutel. *Pesticide Sorption in Aquatic Sediments*.

Applied Research/Consulting

Stillwater Sciences, Berkeley, CA and Brown and Caldwell Consulting Engineers, Walnut Creek, CA. 2009-Present. *Expert review of efforts to implement monitoring program to evaluate mercury bioaccumulation in Soulaajule Reservoir, a back-up raw water reservoir in Marin, CA*.

JUB Engineering, Boise, ID. 2010-2012. *Evaluation of constructed treatment wetlands to cool secondary effluent from Moscow, ID wastewater treatment plant*.

Lake Tahoe Environmental Research Center, Davis, CA. 2010-2011. *Informal advisor regarding efforts to assess future anoxia-induced internal nutrient loading from profundal sediments and control measures for current Asian clam infestation in littoral sediments of Lake Tahoe, CA/NV*.

Parsons Engineering, Syracuse, NY. 2006-2010. *Expert review of efforts to develop lake management strategies to impede mercury bioaccumulation in aquatic biota of Onondaga Lake, a heavily polluted urban lake in NY*.

Water Quality Engineering, Wenatchee and Washington State Department of Ecology. 2007-08. *Feasibility study of lake management strategies including lake alum treatment, alum treatment of tributary inflows, and lake aeration or oxygenation for Jameson Lake, WA*.

PUBLICATIONS AND PRESENTATIONS

Peer Reviewed Journal Articles

6 in review; 37 with ~700 citations; H-Index 13

¹graduate or ²undergraduate student advised by Beutel; ³other graduate student

Beutel, M.W., L. DeSilva¹, S.R. Dent¹. Direct measurement of dry and wet mercury deposition at a rural and suburban site in Washington State. *Environmental Engineering Science* in review.

Chiarantini, L., V. Rimondi, M. Benvenuti, M.W. Beutel, P. Costagliola, C. Gonnelli, P. Lattanzi, M. Paolieri. Tree Barks as biomonitors of airborne pollution: Hg content of black pine (*Pinus nigra*) barks in the Monte Amiata area, southern Tuscany, Italy. *Environmental Sci. Technology* in review.

Beutel, M.W., R. Duvil¹, F.J. Cubas, T.J. Grizzard. Effects of nitrate addition on water column methylmercury in Occoquan Reservoir, Virginia, USA. *Water Research* in review.

Williams¹, J., M.W. Beutel, A. Nurse, B.C. Moore, S. Hampton and J. Saros. Phytoplankton responses to nitrogen enrichment in Pacific Northwest mountain lakes. *Hydrobiologia* in review.

McCord, S.A., M.W. Beutel, S.R. Dent, S.G. Schladow. The case for hypolimnetic oxygenation to control methylmercury bioaccumulation in seasonally stratified reservoirs. *Water Resources Research* in review.

Beutel, M.W., R. Duvil¹, F.J. Cubas, T.J. Grizzard, F.M. Wilhelm, D. Austin, D.A. Matthews, A.J. Horne, S.Y. Gebremariam. A review of managed nitrate addition to improve surface water quality. *Critical Reviews in Environmental Science and Technology* in review.

Beutel, M.W., S.E. Cox¹, S.Y. Gebremariam¹. Effects of chironomid density and dissolved oxygen on mercury efflux from profundal sediment of a mesotrophic lake. *Lake and Reservoir Management* in press.

- Rimondi, V., L. Chiarantini, P. Lattanzi, M. Benvenuti, M.W. Beutel, A. Colica, P. Costagliola, F. Di Benedetto, G. Gabbani, J.E. Gray, E. Pandeli, G. Pattelli, M. Paolieri, G. Ruggieri. 2015. Metallogeny, exploitation and environmental impact of the Mt. Amiata mercury ore district (Southern Tuscany, Italy). *Italian Journal of Geosciences* 134, 323–336.
- Beutel, M.W., S. Diemont, D. Reinhold. 2015. The 13th annual conference of the American ecological engineering society: Ecological engineering and the dawn of the 21st century. *Ecological Engineering* 78, 1–5.
- Beutel, M.W., L. Larson. 2015. Pathogen removal from urban pond water using a simple rock biofilter. *Ecological Engineering*, 78, 72–78.
- Taylor, A., A. Flatt¹, M.W. Beutel, M. Wolff, K. Brownson, P. Stamets. 2015. Removal of *Escherichia coli* from synthetic stormwater using mycofiltration. *Ecological Engineering* 78, 79–86.
- Beutel, M.W., M.R. Morgan, J.J. Erlenmeyer¹, E.S. Brouillard. 2014. Phosphorus removal in a surface-flow constructed wetland treating agricultural runoff. *J. Environmental Quality* 43, 1071–1080.
- Beutel, M.W., S.R. Dent¹, B. Reed¹, P. Marshall¹, S. Gebremariam¹, B. Moore, B. Cross³, P. Gantzer, E. Shallenberger. 2014. Effects of hypolimnetic oxygen addition on mercury bioaccumulation in Twin Lakes, Washington, USA. *Science of the Total Environment* 496, 688–700.
- Dent¹, S.R., M.W. Beutel, P. Gantzer, B.C. Moore. 2014. Response of methylmercury, total mercury, iron and manganese to oxygenation of an anoxic hypolimnion in North Twin Lake, Washington. *Lake and Reservoir Management* 30, 119–130.
- Beutel, M.W., V. Whritenour¹, E. Brouillard. 2013. Fecal coliform removal in a lightly loaded surface-flow constructed treatment wetland polishing agricultural runoff. *Water Sci Technology* 68, 909–915.
- Dent¹, S.R., M.W. Beutel. 2012. Targeted outreach to enhance diversity in university-sponsored technology competitions. *J. Applications Practices Engineering Education* 3, 43–49.
- Moore, B.C, B. Cross³, M.W. Beutel, S.R. Dent¹, E. Preece³, M. Swanson. 2012. Newman Lake restoration: A case study – Part III. Hypolimnetic oxygenation. *Lake Reserv. Manage.* 28, 311–327.
- Debroux J., M.W. Beutel, C.M. Thompson, S. Mulligan. 2012. Design and testing of a novel hypolimnetic oxygenation system to improve water quality in Lake Bard, California. *Lake and Reservoir Management* 28, 245–254.
- Beutel, M.W. 2012. Water quality in a surface-flow constructed treatment wetland polishing tertiary effluent from a municipal wastewater treatment plant. *Water Science and Technology* 66, 1977–1983.
- Gebremariam¹, S.Y., M.W. Beutel, D. Christian, T.F. Hess. 2012. Effects of glucose on the performance of enhanced biological phosphorus removal in activated sludge. *Bioresource Technology* 121, 19–24.
- Gebremariam¹, S.Y., M.W. Beutel, M. Flury, J.B. Harsh, D.R. Yonge. 2012. Non-singular adsorption/desorption of chlorpyrifos in soils and sediments: Experimental results and modeling. *Environmental Science and Technology* 46, 869–875.
- Lancaster³, C., M.W. Beutel. 2011. Fate and transport of metals and particulates within the roadside environment – A review. *Water Research and Management* 1, 37–46.
- Gebremariam¹, S.Y., M.W. Beutel, D.R. Yonge, M. Flury, J.B. Harsh. 2011. Adsorption and desorption of chlorpyrifos. *Reviews of Environ. Contamination and Toxicology* 215, 123–175.
- Plahuta³, J.M., A.L. Teel, M. Ahmad, M.W. Beutel, J.A. Rentz, R.J. Watts. 2011. Oxidized starch solutions for environmentally friendly aircraft deicers. *Water Environment Res.* 83, 826–833.
- Gebremariam¹, S.Y., M.W. Beutel, T.F. Hess, D. Christian. 2011. Research advances and challenges in the microbiology of enhanced biological phosphorus removal – A review. *Water Environment Research* 83, 195–219.
- Betancourt³, C., F. Jorge, R. Suárez, M.W. Beutel, S.Y. Gebremariam¹. 2010. Manganese sources and cycling in a tropical eutrophic water supply reservoir, Paso Bonito Reservoir, Cuba. *Lake and Reservoir Management* 26, 217–226.
- Gebremariam¹, S.Y., M.W. Beutel. 2010. Effects of drain-fill cycling on chlorpyrifos mineralization in microcosms containing wetland sediment. *Chemosphere* 78, 1337–1341.

- Allen, J.G.¹, M.W. Beutel, D.R. Call, A.M. Fischer. 2010. Effects of oxygenation on ammonia oxidation potential and microbial diversity in sediment from surface-flow wetland mesocosms. *Bioresource Technology* 101, 1389–1392.
- Palmer¹, H.R., M.W. Beutel, S.Y. Gebremariam¹. 2009. High rates of ammonia removal in experimental oxygen-activated nitrification wetland mesocosms. *ASCE J. Environmental Engineer.* 135, 972–979.
- Al-Houri³, Z.M., M.E. Barber, D.R. Yonge, J.L. Ullman, M.W. Beutel. 2009. Impacts of frozen soils on the performance of infiltration treatment facilities. *Cold Regions Sci. Tech.* 59, 51–57.
- Beutel, M.W., C.D. Newton¹, E.S. Brouillard, R.J. Watts. 2009. Nitrate removal in surface-flow constructed wetlands treating dilute agricultural runoff in the lower Yakima Basin, Washington. *Ecological Engineering* 35, 1538–1546.
- Churchill¹, J.J., M.W. Beutel, P. Burgoon. 2009. Evaluation of the optimal dose and mixing regime for alum treatment of Matthiesen Creek inflow to Jameson Lake, WA. *Lake and Reservoir Management* 25, 102–110.
- Lancaster³, C., M.W. Beutel, D.R. Yonge. 2009. Evaluation of roadside infiltration to manage stormwater runoff in semi-arid eastern WA. *Environmental Engineering Science* 26, 935–940.
- Gebremariam¹, S.Y., M.W. Beutel. 2008. Nitrate removal and DO levels in batch wetland mesocosms: Cattail versus bulrush. *Ecological Engineering* 34, 1–6.
- Beutel, M.W., N.R. Burley², S.R. Dent¹. 2008. Nitrate uptake rate in anoxic profundal sediments from a eutrophic reservoir. *Hydrobiologia* 610, 297–306.
- Beutel, M.W., T.M. Leonard¹, S.R. Dent¹, B.C. Moore. 2008. Effects of aerobic and anaerobic conditions on P, N, Fe, Mn and Hg accumulation in waters overlaying profundal sediments of an oligo-mesotrophic lake. *Water Research* 42, 1953–1962.
- Beutel, M.W., A.J. Horne, W.D. Taylor, R.F. Losee, R.D. Whitney. 2008. Effects of oxygen and nitrate on nutrient release from profundal sediments from a large, mesotrophic reservoir, Lake Mathews, California. *Lake and Reservoir Management* 24, 18–29.
- Beutel, M.W., I. Hannoun, J. Pasek, K. Bowman Kavanagh. 2007. Evaluation of hypolimnetic oxygen demand in a large eutrophic reservoir, San Vicente Reservoir, CA. *ASCE Journal of Environmental Engineering* 133, 130–138.
- Beutel, M.W. 2006. Inhibition of ammonia release from anoxic profundal sediments in lakes using hypolimnetic oxygenation. *Ecological Engineering* 28, 271–279.
- Beutel, M.W., N. Burley², K.M. Culmer². 2006. Quantifying the effects of water velocity and oxygen on sediment oxygen demand. *Hydrological Sciences & Technology* 22, 15–28.
- Beutel, M.W. 2003. Hypolimnetic anoxia and sediment oxygen demand in California drinking water reservoirs. *Lake and Reservoir Management* 19, 208–221. *Nominated for Best Paper of the Year, North American Lake Management Society.*
- Beutel, M.W., A.J. Horne, J.C. Roth, N.J. Barratt. 2001. Limnological effects of anthropogenic desiccation in a large, saline lake, Walker Lake, Nevada. *Hydrobiologia* 466, 91–105.
- Beutel, M.W. 2001. Oxygen consumption and ammonia accumulation in the hypolimnion of Walker Lake, Nevada. *Hydrobiologia* 466, 107–117.
- Beutel, M.W., A.J. Horne. 1999. A review of the effects of hypolimnetic oxygenation on lake and reservoir water quality. *Lake and Reservoir Management* 15, 285–297.

Conference Proceedings

- Laurie, L., M.W. Beutel. 2014. Fecal coliform levels and control in DeCoursey Pond, an urban pond in Puyallup, WA. StormCon 2014, Portland, Oregon.
- Beutel, M.W., D. Drury, R. Duvil. 2014. Effect of oxygen, nitrate and aluminum oxide addition on mercury efflux from mine-impacted reservoir sediments. SETAC Europe, Basel, Switzerland.
- Mobley, M., E. Shallenberger, M.W. Beutel, P. Gantzer, B. Sak. 2012. Oxygen diffusers to create and maintain summer fish habitat. In J. Bulak, C. Coutant, J. Rice, eds. *Biology and Management of Inland Striped Bass and Striped Bass Hybrids*. American Fisheries Society, Symposium 80.

- Nelson, S.S., D.R. Yonge, M.E. Barber, M.W. Beutel, Z.M. Al-Houri. 2006. Performance evaluation of cold weather flow control and runoff treatment BMPs. Proceedings of the 13th International Conference on Cold Region Engineering, Oromo, ME. doi: 10.1061/40836(210)18.
- Beutel, M.W. 2005. Improving quality of salmonid habitat in lakes using hypolimnetic oxygenation. Proceedings of the Universities Council on Water Resources/National Institute for Water Resources Annual Conference, Portland, ME.
- Beutel, M.W., D. Wilson. 2005. Targeted oxygen addition to Hood Canal to ameliorate hypoxia. Proceedings of the 2005 Puget Sound Georgia Basin Research Conference, Seattle, WA.
- Barber, M.E., M.W. Beutel, B. Lamb, R. Watts. 2004. Understanding hydrologic processes in semi-arid cold climates. American Geophysical Union Fall Conference, San Francisco, CA.

Magazine Articles

- Beutel, M.W. 2011. Letter to the Editor - The Dam and the Reservoir. *Civil Engineering - ASCE Magazine*. December, 2011.
- Beutel, M.W., B.C. Moore, D. Christensen, P. Gantzer, E. Shallenberger. 2011. Ease the Squeeze in Twin Lakes - The Colville Confederated Tribes Work to Enhance a Trout Fishery and Improve Water Quality in Reservation Lakes. *Lakeline*. 30(4):31-37.

Technical Reports

- Beutel, M.W. 2015. Lake Hodges Reservoir Sediment Oxygen Demand Study. Report to the San Diego Public Utility Department. 39 p.
- Beutel, M.W. 2015. Lake Hodges Reservoir Sediment Flux Study. Report to the San Diego Public Utility Department. 18 p.
- Williams, J. and M.W. Beutel. 2015. Phytoplankton Responses to Nitrogen Enrichment in Mountain Lakes: Implications for Lake Sensitivity to Nitrogen Deposition. 2014 Investigator Annual Report to the National Park Service. Task Agreement P13AC00955.
- Williams, J. and M.W. Beutel. 2014. Effects of Glaciers on the Chemistry of Mountain Lakes within the North Cascades National Park Service Complex (USA). Progress Report to National Park Service. Task Agreement P13AC00955.
- Stamets, P., M.W. Beutel, A. Taylor, A. Flatt, M. Wolff, K. Brownson. 2012. Comprehensive Assessment of Mycofiltration Biotechnology to Remove Pathogens from Urban Storm Water. USEPA SBIR Phase I Final Report, Contract EP-D-12-010.
- Beutel, M.W., S.R. Dent. 2011. Summary of 2010 Monitoring Efforts at Twin Lakes. Report to the Colville Confederated Tribes. 9 p.
- Beutel, M.W. 2010. Use of the Moscow Constructed Treatment Wetlands to Cool Wastewater Effluent. Technical Memorandum to JUB Engineering and the City of Moscow, Idaho. 5 p.
- Beutel, M.W., S.R. Dent, B.C. Moore. 2010. Twin Lakes 2008 and 2009 Metals Monitoring Summary Report. Report to the Colville Confederated Tribes. 23 p.
- Beutel, M.W et al. 2010. Effects of Zosel Dam Water Regulation on Osoyoos Lake Water Quality (Study 4). Report to the Washington State Department of Ecology. 38 p.
- Beutel, M.W. 2008. Jameson Lake Technical Memoranda: (1) Preliminary Sizing and Cost of Aeration and Oxygenation System; (2) Sediment Oxygen Demand; (3) Sediment Phosphorus Release; (4) Effects of Alum Addition on pH and Phosphorus in Lake Water and Lake Inflow. Reports to Water Quality Engineering and Washington State Department of Ecology. 40 p.
- Beutel, M.W., H.R. Palmer, C.D. Newton. 2008. Quantifying and Enhancing Nitrogen Removal in Constructed Wetlands. Project Completion Report to State of Washington Water Research Center and USGS. Project 2007WA196B. 5 p.
- Dent, S.R. and M.W. Beutel. 2007. Effects of Sediment Oxygenation on Methylmercury Bioaccumulation in Benthic Biota. Project Completion Report to State of Washington Water Research Center and USGS. Project 2006WA149B. 8 p.

- Beutel, M.W. 2006. Lake Perris Sediment-Water Interface Study. Report to Montgomery Watson Harza Americas, Inc. and the Metropolitan Water District of Southern California. 38 p.
- Beutel, M.W., B.C. Moore. 2006. Oxygenation for the Management of Sediment Mercury Release from Aquatic Sediments. Project Completion Report to State of Washington Water Research Center and USGS. State of Washington Water Research Report WRR-27. 14 p.
- Wilson, D., M.W. Beutel. 2005. Review of the Feasibility of Oxygen Addition or Accelerated Upwelling in Hood Canal, Washington. Report to Puget Sound Action Team. 44 p.
- Beutel, M.W., K. Abu-Saba. 2004. Potential effects of the South Bay Salt Ponds Restoration Project on mercury cycling and bioaccumulation. Memorandum to California Coastal Commission. 47 p.

Invited Presentations

- Beutel, M.W., 2015. Oxygen addition to enhance surface water quality. Engineer Advisory Board. UC Merced.
- Beutel, M.W., 2015. An Overview of hypolimnetic oxygenation: three brief case studies. World Bank Surface Water Oxygen Addition Workshop. Sacramento, CA.
- Beutel, M.W. 2015. Effects of oxygen addition on mercury bioaccumulation in Twin Lakes, WA. Delta Tributaries Mercury Council, Davis, CA.
- Beutel, M.W. 2014. Effects of oxygen addition on mercury bioaccumulation in Twin Lakes, WA. Keynote Presentation, California Lake Management Society Annual Conference, Davis, CA.
- Beutel, M.W. 2014. Enhancing Ammonia Removal in Constructed Treatment Wetlands. University of Pisa, Department of Civil Engineering, Pisa, Italy.
- Beutel, M.W. 2013. Applied Biogeochemistry 1: Managing mercury bioaccumulation in lakes and reservoirs. University of Florence, Department of Earth Sciences, Florence, Italy.
- Beutel, M.W. 2013. Applied Biogeochemistry 2: Enhancing ammonia removal in constructed treatment wetlands. University of Florence, Department of Earth Sciences, Florence, Italy.
- Beutel, M.W. 2012. An historical overview of alum treatment in lakes in Washington State; Case Studies of Hypolimnetic Oxygenation in Western Lakes and Reservoirs. Arkansas Water Research Center Watershed and Research Conference, Fayetteville, AR.
- Beutel, M.W. 2011. Effects of lake oxygenation on mercury cycling in Twin Lakes, Washington. University of Vermont, Rubenstein Ecosystem Science Laboratory and Rubenstein School of Environment and Natural Resources, Burlington, VT.
- Beutel, M.W. 2011. Novel research avenues related to oxygenation: Mercury cycling in lakes and ammonia removal in wetlands. Four presentations: University of Arkansas, Fayetteville, AR; University of Waterloo, Ontario, Canada; University of Western Ontario, Ontario, Canada; McMaster University, Ontario, Canada.
- Beutel, M.W., S.R. Dent, B.C. Moore, E. Shallenberger. 2011. Impacts of lake oxygenation on mercury cycling in Twin Lake, Washington. Second IWA Symposium on Lake and Reservoir Management, Granada, Spain.
- Beutel, M.W. 2010. Effects of lake oxygenation on mercury cycling in Twin Lakes, Washington. IWA Lake and Reservoir Management Workshop. Montreal, Canada, September 2010.
- Beutel, M.W. 2010. Mercury cycling: A graphical overview. University of Idaho. Moscow, ID.
- Beutel, M.W. 2010. Novel research avenues related to oxygenation: Mercury cycling in lakes and ammonia removal in wetlands. San Diego State University, Department of Civil, Environmental and Construction Engineering, San Diego, CA.
- Beutel, M.W. 2008. Novel research avenues related to oxygenation: Mercury cycling in lakes and ammonia removal in wetlands. University of Florida, Environmental Engineering Sciences Department, Gainesville, FL.
- Beutel, M.W. 2005. The use of oxygenation to improve water quality in Hood Canal. Testimony to the Washington State Legislature Select Committee on Hood Canal, Olympia, WA.

Select National and International Presentations

- Todorova, S., M.W. Beutel. 2015. Conceptual model for recovery of eutrophic freshwater ecosystems from mercury contamination. MERCURY 2015, Korea, upcoming June 2015.
- Williams, J., M.W. Beutel. 2015. Phytoplankton responses to nutrient enrichment within high elevation lakes at Mount Rainier, North Cascades, and Olympic National Parks. Science for Parks National Conference, Berkeley, CA, upcoming March 2015.
- Williams, J., M.W. Beutel, B.C. Moore. 2014. Effects of nitrogen deposition and glacier melting on mountain lakes in the North Cascades National Park (USA). American Society of Limnology and Oceanography Conference, Portland, OR.
- Larson, L., M.W. Beutel. 2014. Fecal coliform levels and control in DeCoursey Pond, an urban pond in Puyallup, WA. StormCon 2014, Portland, OR.
- Beutel, M.W., D. Drury, R. Duvil. 2014. Effect of oxygen, nitrate and aluminum oxide addition on mercury efflux from mine-impacted reservoir sediments. SETAC Europe, Basel, Switzerland.
- Beutel, M.W., L. Chiarantini, V. Rimondi, P. Costagliola, M. Benvenuti, P. Lattanzi. 2014. Biomonitoring of atmospheric mercury pollution using tree bark at the Monte Amiata mercury mining district in southern Tuscany, Italy. SETAC North America, Vancouver, Canada.
- Beutel, M.W., S.R. Dent, D. Drury, R. Duvil. 2013. Effects of oxygen and nitrate on mercury cycling in natural and contaminated lakes and reservoirs in the Western USA. MERCURY 2013 Conference, Edinburgh, Scotland.
- Duvil, R., M.W. Beutel, D. Drury. 2013. The effect of oxygen, nitrate and aluminum hydroxide on methylmercury efflux from contaminated profundal lake sediments. North American Lake Management Society Conference, San Diego, CA.
- Beutel, M.W., L. Larson. 2013. Pathogen removal from urban pond water using a simple rock biofilter. American Ecological Engineering Society Conference, East Lansing, MI.
- Beutel, M.W. 2012. Modeling nutrient removal in constructed treatment wetlands. American Ecological Engineering Society Conference, Syracuse, NY.
- Williams, J., M.W. Beutel, D. Ward, C. Chen. 2012. How variable are rates of mercury biomagnification across systems? Society for Environmental Toxicology and Chemistry Conference (poster), San Diego, CA.
- Marshall, P., M.W. Beutel, others. 2011. Mercury biomagnification in Twin Lakes in 2011 under oxygenated and non-oxygenated conditions. North American Lake Management Society Conference, Spokane, WA.
- DeSilva, L., M.W. Beutel, B. Lamb, J. Vaughan. 2011. Field measurements of mercury deposition in Pullman and Puyallup, Washington. North American Lake Management Society Conference, Spokane, WA.
- Cox, S., M.W. Beutel, S.R. Dent. 2011. Influence of macrobenthos on the cycling of mercury at the sediment-water interface of lakes. North American Lake Management Society Conference, Spokane, WA. *Finalist for Outstanding Student Paper.*
- Gebremariam, S.Y., M.W. Beutel. 2011. Enhancing trout production and health in aquaculture and hatcheries facilities using oxygenation. North American Lake Management Society Conference, Spokane, WA.
- Beutel, M.W., M.E. Barber, L. Tran. 2011. Effects of Zosel Dam water regulation on Osoyoos Lake water quality. Osoyoos Lake Water Science Forum. Osoyoos, BC, Canada.
- Dent, S.R., M.W. Beutel, B.C. Moore, E. Shallenberger. 2011. An evaluation of the impacts of hypolimnetic oxygenation on water quality and mercury in Twin Lake, Washington. Tenth International Conference on Mercury as a Global Pollutant, Halifax, Nova Scotia, Canada.
- Mobley, M., R. Ruane, P. Gantzer, E. Shallenberger, F.H. Dunlap, M.W. Beutel, J.A. Sykes. 2011. Oxygen diffusers to enhance water quality and fish habitat in lakes and reservoirs. Second IWA Symposium on Lake and Reservoir Management, Granada, Spain.

- Beutel, M.W., B. Reed, S.R. Dent, B.C. Moore, E. Shallenberger. 2011. Effects of biodilution and lake oxygenation on mercury bioaccumulation in zooplankton in Twin Lake, Washington. American Ecological Engineering Society Conference, Asheville, NC.
- Beutel, M.W., S.R. Dent, B. Reed, B.C. Moore, D.R. Yonge, E. Shallenberger. 2010. Effects of hypolimnetic oxygenation on mercury cycling in Twin Lake, Washington. American Geophysical Union Fall Meeting (poster), San Francisco, CA.
- Gebremariam, S.Y., M.W. Beutel, D.R. Yonge, M. Flury, J. Harsh. 2010. Retention and migration of chlorpyrifos in aquatic sediments and soils. American Geophysical Union Fall Meeting, San Francisco, CA.
- Betancourt, C., F. Jorge, R. Suárez, M.W. Beutel, S.Y. Gebremariam. 2010. Evaluation of manganese sources and cycling in a eutrophic water supply reservoir. XV International Scientific Congress, Cuban National Center for Scientific Research, Havana, Cuba.
- Mobley, M., M.W. Beutel, P. Gantzer, B.C. Moore, E. Shallenberger. 2009. Oxygenation diffusion for fish habitat enhancement at Colville Confederated Tribe's North Twin Lake. North American Lake Management Society Conference, Hartford, CT.
- Dent, S.R., M.W. Beutel. 2009. Effect of transient oxygenation on methylmercury in the hypolimnetic waters of a eutrophic freshwater lake. American Ecological Engineering Society Conference, Oregon State University, Corvallis, OR. *Awarded Best Student Presentation.*
- Erlenmeyer, J.J., M.W. Beutel. 2009. Phosphorus removal in constructed treatment wetlands polishing agricultural return flows in the Yakima Valley, Washington. American Ecological Engineering Society Conference, Oregon State University, Corvallis, OR.
- Allen, J.G., M.W. Beutel. 2009. Microbial activity, composition and abundance in bench-scale oxygen-activated nitrification wetlands. American Ecological Engineering Society Conference, Oregon State University, Corvallis, OR.
- Gebremariam, S.Y., M.W. Beutel. 2009. Effects of drain/fill cycling on chlorpyrifos mineralization in constructed treatment wetlands. American Ecological Engineering Society Conference, Oregon State University, Corvallis, OR.
- Beutel, M.W., H.R. Palmer. 2008. Almost beyond wetlands: Enhancing ammonia removal in constructed treatment wetlands using oxygenation. American Ecological Engineering Society Conference, Virginia Technical University, Blacksburg, VA.
- Beutel, M.W., S.Y. Gebremariam. 2007. Environmental properties and biochemical transformations of permethrin in aquatic ecosystems – A role for constructed wetlands? American Ecological Engineering Society Conference, Kansas State University, Manhattan, KS.
- Beutel, M.W., N. Burley and K. Culmer. 2007. Induced sediment oxygen demand and nitrate demand. American Society of Limnology and Oceanography Conference, Santa Fe, NM.
- Dent, S.R., M.W. Beutel. 2006. Effects of lake oxygenation on bioaccumulation of mercury in benthic organisms. 8th International Conference on Mercury as a Global Pollutant, Madison, WI.
- Leonard, T.M., M.W. Beutel. 2006. Control of mercury release from lake sediments using oxygenation. American Ecological Engineering Society Conference, Berkeley, CA.

Select Regional Presentations

- Whritenour, V., M.W. Beutel. 2014. Effectiveness of Surface Flow Contracted Wetlands Receiving Agricultural Runoff in Mitigating Pathogens and Turbidity, Lower Yakima Basin. WA (poster). WSU BIOAg Symposium, Pullman, WA.
- Taylor, A., A. Flatt, M.W. Beutel, P. Stamets, M. Wolff, K. Brownson. 2014. Mycofiltration biotechnology for urban stormwater bacteria removal. Salish Sea Ecosystem Conference, Seattle, WA.
- Williams, J., C. Chen, D. Ward, M.W. Beutel. 2012. How variable are rates of mercury biomagnification across systems? Washington Lakes Protection Association, Wenatchee, WA.

- Beutel, M.W. 2012. Nutrient removal in constructed treatment wetlands. ASCE/Washington State Department of Transportation Nutrient Workshop, Spokane, WA.
- DeSilva, L., M.W. Beutel, B. Lamb, E. Shallenberger. 2011. Field measurements of mercury deposition in Pullman and Puyallup, Washington. PNWIS Annual Conference, BC, Canada.
- Beutel, M.W., E. Shallenberger. 2011. Lake oxygenation and mercury cycling in Twin Lakes, Washington. Water in the Columbia Basin Conference. Stevenson, WA.
- Beutel, M.W., M. Barber. 2011. Effects of Zosel Dam water regulation on Osoyoos Lake water quality. Water in the Columbia Basin Conference. Stevenson, WA.
- Reed, B., M.W. Beutel. 2010. Effects of oxygenation on mercury bioaccumulation in zooplankton in Twin Lakes, Washington. PNWIS Annual Conference, Missoula, MT.
- Marshall, P., M.W. Beutel. 2010. A review of colloid-facilitated transport of pesticides in soils. PNWIS Annual Conference, Missoula, MT.
- DeSilva, L., M.W. Beutel. 2010. Greenhouse gas emissions from constructed treatment wetlands: An overview. PNWIS Annual Conference, Missoula, MT.
- Cox, S., M.W. Beutel. 2010. An introduction to the effects of macrobenthos on the efflux of pollutants from aquatic sediments. PNWIS Annual Conference, Missoula, MT.
- Gebremariam, S.Y., M.W. Beutel, D.R. Yonge, M. Flurry, J. Harsh. 2010. Dual-component sorption of chlorpyrifos in aquatic sediments and soils at environmentally relevant concentrations. PNWIS Annual Conference, Missoula, MT.
- Beutel, M.W., J. Liou. 2010. Enhancing aquaculture water usage and fish production using oxygenation. University of Idaho/WSU Aquaculture Meeting, Moscow, ID.
- Whritenour, V.A., M.W. Beutel, J.R. Foltz. 2009. Effectiveness of surface-flow constructed wetlands receiving agricultural runoff in mitigating pathogens and turbidity, Lower Yakima Basin, WA. Poster, WSU Showcase, Pullman, WA.
- Beutel, M.W., B.C. Moore, others. 2009. Comprehensive limnological evaluation of water quality and trout habitat in Twin Lakes, Colville Indian Reservation. Poster, WSU Native American Research EXPO, Pullman, WA.
- Dent, S.R., M.W. Beutel. 2008. Reducing the formation of methylmercury in freshwater lakes: From theory to practice. PNWIS Annual Conference, Anchorage, AK.
- Beutel, M.W., H.R. Palmer. 2008. A mesocosm study evaluating effects of pure oxygen addition on ammonia removal in constructed treatment wetlands. Inland Northwest Aquatic, Riparian and Wetland Symposium, Spokane, WA.
- Palmer, H.R., M.W. Beutel. 2007. Effects of pure oxygen gas on ammonia removal in surface flow treatment wetlands. PNWIS Annual Conference, Boise, ID.
- Dent, S.R., M.W. Beutel. 2007. Reducing the formation of methylmercury at the sediment-water interface in freshwater lakes. PNWIS Annual Conference, Boise, ID. *Best Student Presentation.*

Newspaper Articles, Blogs and Interviews

- The Post-Standard.* Syracuse, NY. October 13, 2013. "Mercury's Falling in an Onondaga Lake Success Story"
- Biotechnology Calendar, Inc.* May 24, 2013. "WSU Team Tests Mycofiltration Biotechnology to Purify Water Supply," <http://info.biotech-calendar.com/bid/97482/WSU-Team-Tests-Mycofiltration-Biotechnology-to-Purify-Water-Supply>
- AGU Blogosphere.* December 15, 2010. "Pumping oxygen into lakes may reduce mercury contamination," <http://blogs.agu.org/meetings/2010/12/15/pumping-oxygen-into-lakes-may-reduce-mercury-contamination>
- The Enterprise.* Cape Cod, MA. June 25, 2010. "For alum, support from scientists, despite unknown effects on mercury"
- Moscow-Pullman Daily News.* Pullman, WA. June 21, 2010. "Taking advantage of the lull - Faculty, students use summer months to focus on research projects"

The Olympian. Olympia, WA. July 9, 2005. "Hood canal fixes proposed - Water quality panel scrutinizes oxygen-injection idea"

The Daily News. Longview, WA. January 3, 2007. "Polluted Camas Lake needs oxygen pumps"

EDUCATION ACTIVITIES

Chair of PhD Committees (3 graduated, 2 ongoing)

University of California, Merced

Stephanie Helmrich (co-chair with Peggy O'Day), Environmental Systems. Mercury biogeochemistry. Expected graduation Spring 2020.

Washington State University

Jason Williams, Engineering Science. *Sensitivity of High Elevation Lakes to Atmospheric Nitrogen Deposition through Nutrient Enrichment Experiments*. Expected graduation Spring 2016.

Ricardi Duvil, Civil Engineering. *Effects of Nitrate on Methylmercury Cycling in Lake Ecosystems*. Spring 2015. USEPA Drinking Water Quality Office, Seattle, WA.

Stephen Dent, Civil Engineering. *Effects of Oxygenation on Mercury Cycling in Twin Lakes, WA*. Spring 2012. Associate Engineer. CDM/Smith Engineering. Portland, OR.

Seyoum Gebremariam, Civil Engineering. *Sorption and Biodegradation of Chlorpyrifos in Aquatic Sediments*. Spring 2010. Senior Limnologist, Metropolitan Water District of Southern California.

Chair of MS Committees (13 graduated)

Washington State University

Louis Neira, Non-thesis, Environmental Engineering. *Removal of pathogens from urban stormwater*. Fall 2013.

Alicia Flatt, Thesis, Environmental Engineering. *Mycofiltration to remove E. coli and suspended solids from urban runoff*. Spring 2013. Staff Engineering, Gordon Engineering, Chantilly, VA.

Lanka Desilva, Thesis, Environmental Engineering. *Field Measurements of Mercury Deposition in the Pacific Northwest*. Fall 2011. Staff Engineer, Environ, Lynnwood, WA.

Suzanne Cox, Thesis, Environmental Engineering. *Effects of Macrobenthos Density on Methyl Mercury Release from Sediments*. Fall 2011. Staff Engineer, Engineering Ministries International, U.K.

Piper Marshall, Thesis, Environmental Engineering. *Effects of Lake Oxygenation on Mercury Uptake into Fish*. Fall 2011. Washington State Department of Transportation, Wenatchee, WA.

Brandon Reed, Thesis, Environmental Engineering. *Effects of Lake Oxygenation on Mercury Uptake into Zooplankton*. Spring 2011. Staff Engineer, TRC Engineering, Concord, CA.

Seyoum Gebremariam, Thesis, Environmental Engineering. *Effect of Plant Type on Nitrate Removal in Treatment Wetlands*. Fall 2010. Senior Limnologist, Metropolitan Water Dist. of Southern California.

Victoria Whritenour, Non-thesis, Environmental Engineering. *Pathogen Removal in Lightly Loaded Surface Water Treatment Wetlands*. Fall 2010. Staff Engineer, Parsons, Syracuse, NY.

Jonathan Erlenmeyer, Non-thesis, Environmental Engineering. *Phosphorus Removal in Constructed Treatment Wetlands*. Spring 2010. Staff Engineer, Moses Lake Industries, Inc., WA.

Jennifer Allen, Thesis, Civil Engineering. *Microbial Diversity and Activity in Oxygenated Wetland Mesocosms*. Spring 2009. Staff Engineer, Anchor Environmental, Seattle, WA.

Crystal Newton, Non-thesis, Environmental Science. *Nitrogen Removal in Surface-Flow Constructed Wetlands Treating Agricultural Return Flows, WA*. Spring 2008. Washington State Department of Natural Resources, Spokane, WA.

Jillian Churchill, Thesis, Environmental Engineering. *Optimal Dose and Mixing to Remove Phosphorus in Tributary Inflow to Jameson Lake, WA*. Spring 2008. Virginia State Office of Drinking Water.

Huckleberry Palmer, Thesis, Environmental Engineering. *Ammonia Removal in Treatment Wetland Using Oxygenation*. Spring 2008. Staff Engineer, Washington Department of Ecology, Spokane.

Theo Leonard, Thesis, Environmental Engineering. *Effects of Oxygenation on Mercury Release from Lake Sediments*. Spring 2006. Staff Engineer, Geoengineers, Seattle, WA.

Member of Graduate Student Committees

University of California, Merced

Current: Brandi McKuin, PhD Environmental Systems

Washington State University

Current: Bridget Deemer, PhD EES;

2015: George Neerackal, PhD BSE; Ellen Preece, PhD NATRS; Lai Tran, MS non-thesis CE

2014: Hallie Rakjovich, MS Natural Resources, University of Idaho

2013: Ben Ware, MS CE; Matt McDonald, MS CE; Jerrin Tilson, MS CE 2013; Andrew Child, MS NATRS

2012: Eric Palmer, MS CE; Marc LaVanway, non-thesis MS CE

2011: Brian Lanouette, MS NATRS; Sandra Mead, MS NATRS 2011; Carman Bentancourt, PhD via University of Alicante Spain-Cuba Program

2010: Bridget Deemer, MS EES; Ellen Preece, MS NATRS; Emily Wessels, MS NATRS; Joe Plahuta, MS CE

2009: Olga Furman, PhD CE; Simon Smith, PhD BSE; Craig Frear, PhD BSE; Jeremiah Trenka, CE MS; Haley Watson, MS CE

2008: Zain Al-Houri, PhD CE; Casey Newton, non-thesis MS ES

2007: Elizabeth Milburn, MS CE; Bo Hu, PhD BSE; David Christensen, PhD NATRS; Joseph Corbin, PhD ES; Michael Biggs, MS NATRS; Kevin Anderson, MS NATRS

2006: Jeremy Schmidt, MS CE; Adam Hill, MS CE; Christopher Frei, MS CE; Steven Nelson, MS CE; Lynn Cutler, MS CE; Anastasia Chetty, non-thesis MS ES 2006; Zach Hedgpeth, non-thesis MS CE

2005: Cory Lancaster, MS CE; Harini Shanmugam, MS CE

Undergraduate Research Advisor (outcome)

Washington State University

2014: Destry Seiler, Kellie Bracht

2012: Esteban Mena, Rebecca Kloster (Oregon State graduate program), Brian Beleau (WSU graduate program)

2011: Alicia Flatt (WSU graduate program), Griffin Nielson (WSU graduate program), Danielle Judd (WSU graduate program), Gary Martindale (WSU graduate program)

2010: Marion Imbault (French exchange student), Julie Bryant (WSU graduate program), Jerin Tilson (WSU graduate program)

2009: Piper Marshal (WSU graduate program), Brandon Reed (WSU graduate program)

2006: Nathan Burley (UC Davis graduate program) Kayla Culmer (UC Berkeley graduate program)

2005: Adrienne Nikolic (Johns Hopkins graduate program)

Graduate Course Responsibilities

University of California, Merced

- Environmental Systems Seminar Series (ES 291/ESS 190): Spring 2016

Washington State University

- Biological Wastewater Treatment (CE 542): Sp 2015
- Natural Treatment Systems (CE 555): Fall 2008, Fall 2009, Fall 2010, Sp 2012, Fall 2014
- Environmental Engineering Seminar (CE 580): Sp 2005, Fall 2010, Sp 2015
- Aquatic Ecosystem Restoration & Ecological Engineering (CE 585): Sp 2005, 2006, 2008, 2009
- Mercury and Nitrogen Cycling in Aquatic Ecosystems (CEE 543): Sp 2007
- Environmental Microbiology (CE 584): Fall 2005, 2006

Undergraduate Course Responsibilities

University of California, Merced

- Water and Wastewater Treatment (ENVE 176): Spring 2016

Washington State University

- Fluid Mechanics (CE 315): Fall 2004-2009, Sp 2011, Fall 2011, Fall 2014
- Water Resources Engineering (CE 351): Sp 2010; Fall 2012

Student Teaching Evaluations

Washington State University

Numerical average of 17 courses (possible high score of 5.0):

- Marc Beutel – 4.62
- Civil and Environmental Engineering Department – 4.34
- College of Engineering and Architecture – 4.16

SERVICE ACTIVITIES

Outreach Activities

WSU Upward Bound/USDA High School Outreach Program. 2011-present. Mentoring high school students in summer research program focused on pollution in surface waters.

NSF CAREER Grant. 2009-Present. Working with WSU experts in American Indian outreach and education assessment to implement outreach program to middle school students on the Colville Indian Reservation related to water science.

Research Training for Women and Undergraduates. 2005-present. Promoting inclusion of women and undergraduates in engineering research group. Many of my graduate students to date have been women. Over half-a-dozen undergraduates, including a significant number of women, have played meaningful roles in my research lab, including the co-authorship on peer-reviewed papers.

American Ecological Engineering Society. 2007-2013. As member of AEES Executive Committee, support key aim of the Society including promoting student involvement through discount memberships and travel scholarships to annual AEES conferences.

WSU Imagine Tomorrow. 2009-2010. Mentored students from rural Lake Roosevelt High School, WA participating in *Imagine Tomorrow*, a WSU-sponsored annual competition in which over 150 high school teams present design innovations related to energy sustainability. Judge for 2010 competition.

NSF Graduate Teaching Fellows in K-12 Education. 2008-2010. Facilitated involvement of my graduate students with the WSU Culturally Relevant Engineering Application in Mathematics Program, funded by NSF through the WSU Engineering Education Center.

Service to UC Merced School of Engineering and Environmental Engineering Program

- Co-Chair, Environmental Systems Graduate Program, 2015-present
- Environmental Engineering undergraduate curriculum review subcommittee, 2016

Service to WSU Civil and Environmental Engineering Department

- Faculty Senate Representative, Spring 2015
- Water Environmental Faculty Search Committee Chair, Two Positions, 2014-15
- Safety Committee, 2014-present
- Undergraduate Awards Committee, 2014-present
- Undergraduate Advising, 2006-Present
- Water Resources Technician Search Committee, 2013
- Water Resources Search Committee, 2012-2013
- Environmental Engineering Club Faculty Advisor, 2010-2014

- Water Resources Search Committee, 2006-2007
- Graduate Studies Committee, 2005-2008
- Graduate Applicant Coordinator, Water Group, 2005-2008
- Informal advisor, Engineers Without Borders and Senior Project Design Projects, 2005-2010
- Fundamentals in Engineering Review Session, Fluid Mechanics, Fall 2004, Fall 2006, Spring 2011, Fall 2012, Fall 2014, Spring 2015
- Center for Multiphase Environmental Research Cluster Hire Search Committee, 2005-2006
- Environmental Engineering Search Committee (informal member), 2004-2005

Service to Broader Scientific and Academic Community

- SUNY ESF, Department of Environmental and Forest Biology, 2015 External reviewer of faculty tenure packet
- Editorial Board, 2015-present, *Ecological Engineering*
- Managing Guest Editor, 2015 Special Edition of *Ecological Engineering*, American Ecological Engineering Society 2013 Annual Conference
- SUNY ESF, Department of Environmental Resource Engineering, 2013 External reviewer of faculty tenure packet
- MERCURY 2013 Conference, Session Co-chair, *Reducing Mercury Bioaccumulation in Reservoirs and Other Managed Aquatic Ecosystems*, Edinburgh, Scotland, 2013
- American Ecological Engineering Society, Session Chair, *Water and Wastewater*, AEES Annual Conference, Syracuse, NY, 2012
- California Water Resources Control Board, 2012 TMDL Scientific Review: Nitrogen Compounds and Orthophosphate Lower Salinas River and Reclamation Canal Basin, and the Moro Cojo Slough Subwatershed, Monterey County, California Draft Project Report; Algae, Eutrophic Conditions, and Nutrients TMDL for Ventura River and its Tributaries
- National Science Foundation Proposal Reviewer: Hydrological Sciences ad-hoc reviewer; Environmental Engineering ad-hoc reviewer; Sustainability CAREER proposals (Washington DC, November 2009); Environmental Engineering unsolicited proposals (Washington DC, July 2010 and April 2012)
- Proposal Reviewer: National Institute for Water Resources, 104(G) program; Connecticut Institute of Water Resources, 104(B) program; Hudson River Foundation; Ohio Sea Grants Program and Ohio State SEEDS Program
- North American Lake Management Society, Session Chair, *Mercury II and Lake Fisheries*, NALMS Annual Conference, Spokane, WA, 2011
- American Ecological Engineering Society, Secretary/Treasurer, 2007-2009; Chair of Membership Committee, 2006-2007
- PINWIS, Session Chair, *Water and Wastewater Management at Dairies, Feedlots and Fish Farms*, PINWIS Annual Conference, Boise, ID, 2007
- North American Lake Management Society, Session Chair, *Lake Aeration*, NALMS Annual Conference, Victoria, Canada, 2004
- North American Lake Management Society, Session Chair, *Hypolimnetic Oxygenation*, NALMS Annual Conference, Reno, NV, 1999

Select Manuscript Review for Journals

Environmental Science and Technology, Water Research, Ecological Engineering (Associate Editor), Bioresource Technology, J. Environmental Quality, Science of the Total Environment, Hydrobiologia, Lake and Reservoir Management, J. Environmental Engineering (ASCE), J. Environmental Engineering

and Science, International Review on Hydrobiology, Limnology, Archiv für Hydrobiologie, Applied Geochemistry, Wetlands, Water Environment Research, PLoS ONE

Memberships and Licenses

- Professional Civil Engineer, California, C65783
- Affiliate Faculty, WSU Plateau Center for American Indian Studies
- Association of Environmental Engineering and Science Professors (AEESP)
- American Ecological Engineering Society (AEES)
- North American Lake Management Society (NALMS)
- American Indian Science of Engineering Society (AISES)