Curriculum Vitae

Roger C. Viadero, Jr., Ph.D., CSE, BCEEM

Director, Institute for Environmental Studies
Founding Chair, Environmental Science Ph.D. Program
Professor, Department of Biological Sciences

Western Illinois University
Institute for Environmental Studies
1 University Circle
301 Tillman Hall
Macomb, IL 61455
309/298.1632 (office)
309/318-9146 (cell)
RC-Viadero@wiu.edu
www.wiu.edu/viadero

Education

Ph.D. Civil and Environmental Engineering, West Virginia University, Morgantown, WV, 1997
M.S. Nuclear Engineering, University of Illinois, Urbana, IL, 1994
B.S. Physics, Mary Washington College, Fredericksburg, VA; *Phi Beta Kappa*, *Summa Cum Laude*, 1993

Professional Certification

Board Certified Environmental Engineering Member (BCEEM), 2019
American Academy of Environmental Engineers and Scientists
Specialty in hazardous waste management and site remediation

Certified Senior Ecologist (CSE), valid through June 2025
Ecological Society of America

Employment

Western Illinois University (WIU)

2014 - present **Founding Chair**, Environmental Science Ph.D. Program: Large River Ecosystem Science, Western Illinois University

Developed and led WIU's multidisciplinary Environmental Science Ph.D. program; managed all aspects of program operation including staffing, budget, recruitment, and assessment. Worked with external stakeholders to establish support for specialized equipment, access to unique study sites, and annual student scholarship support.

2007 - present **Director**, Institute for Environmental Studies (IES), Western Illinois University

Revised multidisciplinary Environmental Studies minor to include students from eleven departments across three colleges and two campuses; Developed, promoted, and supported collaborative research and scholarship, multidisciplinary undergraduate and graduate programs, and outreach and service on scientific, human, and social aspects of environmental issues; Established Memoranda of Understanding between the WIU Board of Trustees and the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service to support collaborative environmental research and teaching in the Upper Mississippi River basin; Established STEM-based outreach with regional K-12 stakeholders; Initiated and sustained WIU's co-sponsorship and planning of the annual Upper Mississippi River Conference.

2007 - present **Professor**, Department of Biological Sciences, Western Illinois University

West Virginia University (WVU)

2005 - 07 **Director**, Center for Environmental Research (CER), Office of the Vice President for Research and Economic Development

Developed and led a university-wide center to enhance environmental research strength and capacity that integrated stakeholders from WVU's Colleges of Engineering and Mineral Resources; Arts and Sciences, Agriculture, Forestry, and Consumer Sciences; and WVU's Health Science Center. Expanded WVU's environmental research profile to include successful collaboration with the University of Maryland Center for Environmental Science and Delaware State University. Managed Center budget and staff including the investment of indirect funds recovered from sponsored research and internal support ($400k) from WVU's Research Corporation; Served as a member of the Vice President for Research and Economic Development's Research Cabinet and the advisory board of the Center for Immunopathology and Microbial Pathogenesis in WVU's Health Science Center.

2005 - 07 **Robert C. Byrd Associate Professor**, Department of Civil & Environmental Engineering

2004 - 05 **Associate Professor**, Department of Civil & Environmental Engineering

1999 - 2004 **Assistant Professor**, Department of Civil & Environmental Engineering

Taught undergraduate and graduate courses in environmental engineering and science with a focus on water chemistry, physiochemical water and wastewater treatment, and site remediation; Established and sustained an externally funded multidisciplinary research program ($5.7M as PI, $1.1M as co-PI) on the assessment and remediation of anthropogenic impacts on natural water systems; Coordinated environmental and hydrotechnical engineering aspects of Accreditation Board for Engineering & Technology (ABET) accreditation; advised WVU's student chapter of the American Society of Civil Engineers.

University of Wisconsin-Green Bay (UWGB)

1998 - 99 **Assistant Professor of Environmental Engineering**, Division of Natural and Applied Science

Taught undergraduate and graduate courses in environmental engineering and science and natural resource management with a focus on waste management and resource recovery. Established a collaborative research relationship with the Water Research Center at UW-Milwaukee.

West Virginia University

1998 **Research Assistant Professor**, Department of Civil & Environmental Engineering

1996 - 97 **Lecturer**, Department of Civil & Environmental Engineering

University of Illinois at Urbana-Champaign (UIUC)

1993 - 95 **Research Fellow**, College of Engineering

Automated Sciences Group

1993 **Consultant**, Hazardous Waste Remedial Action Program, Dahlgren, VA

Federal Bureau of Investigation (FBI)

Summer 1992 **Director's Intern**, FBI Headquarters Laboratory, Washington, DC

Summer 1991 **Intern**, Federal Bureau of Investigation, Forensic Science Research & Training Center, Quantico, VA

Summer 1990 **Intern**, Federal Bureau of Investigation, Forensic Science Research & Training Center, Quantico, VA

Synergistic Professional Experience

2020 **Research Consultant** - integration of undergraduate research into environmental curricula

Eastern Iowa Community College (EICC) District, EARTh (Environmental and nAtural Resources Technology) Center, Advanced Technology Education Center, National Science Foundation, Dr. Laurie Finn, PI.

2015 - 17 **Science Advisor and Panel Manager**, National Institute for Food and Agriculture, Institute of Bioenergy, Climate, and Environment, US Department of Agriculture Washington, DC

Managed the evaluation of Phase 1 (exploratory) and Phase 2 (commercialization) grant proposals (~$2.0M+ annual investment) by a panel of subject matter experts; Ensured the integration of scientific and economic development factors into funding recommendations (Phase 2); Provided the National Program Leader and NIFA staff with input on program priorities.

2008 **President**, Aquacultural Engineering Society; elected, succeeded from 2nd Vice President (2006) through Past President (2009)

Enhanced the Society's international profile by broadening the representation of engineers and scientists from abroad in executive-level leadership positions and doubling AES's sponsorship in conferences held outside of North America; Coordinated the successful revision and adoption of AES bylaws.

2006 - present **Editorial Board Member**, Journal of Aquacultural Engineering, Elsevier Science, Ltd.

2006 **Senior Fellow**, Homeland Security Policy Institute, The George Washington University Medical Center, Washington, DC

Provided legislators and senior-level federal executives with candid input on critical infrastructure issues (water quality and public health) relevant to current and emerging threats to homeland security.

Research and Scholarship

Publications

Papers in Archival Journals

Viadero, R., Zhang, S., Hu, X., and X, Wei. "Mine drainage: Remediation Technology and Resource Recovery," Water Environment Research, accepted (manuscript number WER-2020-05-0256).

Kang, R., Chacko, E., Kaur, D., and R. Viadero. (2019). "Silting Patterns in the Reservoirs of Small- and Medium-Sized Earthen Check Dams in Humid Subtropical Monsoon Regions," Earth Surface Processes and Landforms, 44 (13), 2638-2648. https://doi.org/10.1002/esp.4689

Hunt, J., Rehbein, M., Viadero, R., and C. Miller-Hunt. "Distribution of *Aedes* Mosquitoes in Western Illinois, 2014-2017: First Records for *Aedes japonicus* and *Aedes albopictus*," Journal of the American Mosquito Control Association, submitted summer 2019.

Rehbein, M., Hunt, J., Schiebel, R., Viadero, R., and C. Miller-Hunt. "The Role of Key Abiotic Factors on the Abundance of *Culex pipiens* and West Nile virus (WNV) Infection Rate in Rural West-Central Illinois," Journal of Vector Ecology, under review (manuscript number JVE-RA-Aug-18-074).

Viadero, R., and R. Fortney (2015). "Water Quality Assessment and Environmental Impact Minimization for Highway Construction in a Coal-Mined Watershed: the Beaver Creek Drainage," Southeastern Naturalist, 14 (7), 112-120. https://doi.org/10.1656/058.014.sp712

Wei, X., Buzby, K., Hendricks, J., Creel, A., Semmens, K., and R. Viadero (2015). "Application of Geotextile Bag Filters in Flow-Through Aquaculture Systems: Solid Waste Management and Water Quality Implications," Jacobs Journal of Environmental Sciences, 1(2): 004.

Wei, X., Bhojappa, S., Lin, L., and R. Viadero (2012). "Performance of Nano-Magnetite for Removal of Selenium from Aqueous Solutions," Environmental Engineering Science, 29 (6), 526-532. http://dx.doi.org/10.1089/ees.2011.0383

Wei, X., Wei, H., and R. Viadero (2011). "Post-Reclamation Water Quality Trends in a Mid-Appalachian Watershed of Abandoned Mine Lands," Science of the Total Environment, 409 (5), 941-948. http://dx.doi.org/10.1016/j.scitotenv.2010.11.030

Chen, Y., Viadero, R., Wei, X., Hedrick, L., Welsh, S., Anderson, J., and L. Lin (2008). "Effects of Highway Construction on Stream Water Quality and Macroinvertebrate Condition in a Mid-Atlantic Highlands Watershed, USA," Journal of Environmental Quality, 38, 4, 1672-1682. http://dx.doi.org/0.2134/jeq2008.0423

Wei, X., Viadero, R., and S. Bhojappa (2008). "Phosphorus Removal by Acid Mine Drainage Sludge from Secondary Effluents of Municipal Wastewater Treatment Plants," Water Research, 42 (13), 3275-3284.

Viadero, R., Fortney, R., and A. Tierney (2008). "Impact Assessment and Remediation Strategies for Roadway Construction in Acid-Bearing Media: A Case Study from Mid-Appalachia," Journal of Infrastructure Systems, 14 (3), 223-229. http://dx.doi.org/10.1061/(ASCE)1076-0342(2008)14:3(223)

Wei, X. and R. Viadero (2007). "Adsorption and Precoat Filtration Studies of Synthetic Dye Removal by Acid Mine Drainage Sludge," Journal of Environmental Engineering, 133 (6), 633-640. http://dx.doi.org/10.1061/(ASCE)0733-9372(2007)133:6(633)

Buzby, K. and R. Viadero (2007). "Structural and Functional Aspects of Treated Mine Water and Aquaculture Effluent Streams," Hydrobiologia, 583 (1), 251-263. http://dx.doi.org/10.1007/s10750-006-0534-0

Wei, X. and R. Viadero (2007). "Synthesis of Magnetite Nanoparticles with Ferric Iron Recovered from Acid Mine Drainage: Implications for Environmental Engineering," Colloids and Surfaces: Physicochemical and Engineering Aspects, 294 (1–3), 280-286. ttp://dx.doi.org/10.1016/j.colsurfa.2006.07.060

Chen, Y., Lin, L., Viadero, R., and D. Gang (2007). "Non-point Source Pollution," Water Environment Research, 79 (17), 2032-2048. http://dx.doi.org/10.2175/106143007X218656

Viadero, R., Rumberg, A., Gray, D., Tierney, A., and K. Semmens (2006). "Acoustic Doppler Velocimetry in Aquaculture Research: Raceway and Quiescent Zone Hydrodynamics," Aquacultur al Engineering, 34 (1), 16-25. http://dx.doi.org/10.1016/j.aquaeng.2005.03.002

Viadero, R., Wei, X., and K. Buzby (2006). "Characterization and Dewatering Evaluation of Acid Mine Drainage Sludge from Ammonia Neutralization," Environmental Engineering Science, 23 (4), 734-743. http://www.dx.doi.org/10.1089/ees.2006.23.734

Wei, X., Viadero, R., and K. Buzby (2005). "Recovery of Iron and Aluminum from Acid Mine Drainage by Selective Precipitation," Environmental Engineering Science, 22 (6), 745-755. http://www.dx.doi.org/10.1089/ees.2005.22.745

Viadero, R., Cunningham, J., Semmens, K., and A. Tierney (2005). Effluent Characterization and Production Impacts of Flow-Through Aquaculture Operations in West Virginia," Aquacultural Engineering, 33 (4), 258-270. http://dx.doi.org/10.1016/j.aquaeng.2005.02.004

Miller, D., Semmens, K., Viadero, R., and A. Tierney (2004). "The Resource Potential of Mining Discharge Water for Aquaculture," World Aquaculture, 35 (4), 57-61.

Viadero, R., Tierney, A., and K. Semmens (2004). "Use of Treated Mine Water for Rainbow Trout (*Oncorhynchus mykiss*) Culture – A Production Scale Assessment," Aquacultural Engineering, 31 (3–4), 319-336. http://dx.doi.org/10.1016/j.aquaeng.2004.06.003

Qiu, X., Reed, B., and R. Viadero (2004). "Effects of Plant Flavonoids on 14C[7,10]-Benzo[a]pyrene Degradation in Root Zone Soil," Environmental Engineering Science, 21 (5), 637-646. http://www.dx.doi.org/10.1089/ees.2004.21.637

Viadero, R., and A. Tierney (2003). "Use of Treated Mine Water for Rainbow Trout (*Oncorhynchus mykiss*) Culture – A Preliminary Assessment," Aquacultural Engineering, 29 (1–2), 43-56. http://www.dx.doi.org/10.1016/S0144-8609(03)00030-X

Viadero, R., and J. Noblet (2002). "Membrane Filtration for Removal of Fine Solids from Aquaculture Process Water," Aquacultural Engineering, 26 (3), 151-69. **PAPER AWARD** http://dx.doi.org/10.1016/S0144-8609(02)00011-0

Reed, B., Bagby, M., Masciola, D., Viadero, R., and R. Vaughan (2002). "Microfiltration of a Dental Wastewater (DWW) for Mercury Removal," Environmental Engineering Science, 19 (1), 9-26. http://www.dx.doi.org/10.1089/109287502753590205

Masciola, D., Viadero, R., and B. Reed (2001). "Effects of Operating Parameters in Tubular Ultrafiltration," Journal of Environmental Engineering, 127 (4), 288-294. http://www.dx.doi.org/10.1061/(ASCE)0733-9372(2001)127:4(288)

Masciola, D., Viadero, R., and B. Reed (2001). "Tubular Ultrafiltration Flux Prediction for Oil-In-Water Emulsions: Analysis of Series Resistances," Journal of Membrane Science, 184, 197-208. http://www.dx.doi.org/10.1016/S0376-7388(00)00625-6

Viadero, R., Masciola, D., Reed, B., and R. Vaughan (2000). "Two Phase Limiting Flux Decline in the High-Shear Rotary Ultrafiltration of Oil-In-Water Emulsions," Journal of Membrane Science, 175, 85-96. http://www.dx.doi.org/10.1016/S0376-7388(00)00408-7

Vaughan, R., Reed, B., Viadero, R., Roark, G., and D. Masciola (2000). "Pilot-Scale Investigation of Chemical Addition-Dissolved Air Flotation for the Treatment of an Oily Wastewater," Environmental Engineering Science, 17 (5), 267-278; *errata* in 18 (3), 213. http://www.dx.doi.org/10.1089/109287501750281103

Reed, B., Vaughan, R., Lin, W., and R. Viadero (2000). "Recovery of Metal Working Fluids Using a Chelation Ultrafiltration (CUF) Process," Journal of Environmental Engineering, 126 (9), 807-814. http://www.dx.doi.org/10.1061/(ASCE)0733-9372(2000)126:9(807)

Viadero, R. and B. Reed (1999). "Rotation and Concentration Effects in High-Shear Ultrafiltration," Journal of Environmental Engineering, 125 (7), 638-646. http://www.dx.doi.org/10.1061/(ASCE)0733-9372(1999)125:7(638)

Viadero, R., Vaughan, R., and B. Reed (1999). "Study of Series Resistances in High-Shear Rotary Ultrafiltration," Journal of Membrane Science, 162 (1-2), 199-211. http://www.dx.doi.org/10.1016/S0376-7388(99)00143-X

Vaughan, R., Reed, B., Viadero, R., Jamil, M., and M. Berg (1999). "Simultaneous Removal of Organic and Heavy Metal Contaminants by Granular Activated Carbon (GAC) Columns," Advances in Environmental Research, 3 (3), 229-242.

Viadero, R., Reed, B., Berg, M., and J. Ramsey (1998). "A Laboratory-Scale Study of the Effects of Applied Voltage on the Electrokinetic Separation of Lead from Soils," Separation Science and Technology, 33 (12), 1833-1859.

Reed, B., Carriere, P., Lin, W., Roark, G., and R. Viadero (1998). "Treatment of An Aluminum Manufacturer's Oily Wastewater: Pilot-Scale Results and Preliminary Design," ASCE Practice Periodical of Hazardous, Toxic, and Radioactive Waste Management, 2 (3) 100-107. http://www.dx.doi.org/10.1061/(ASCE)1090-025X(1998)2:3(100)

Reed, B., Matsumoto, M., Viadero, R., Vaughan, R., and W. Lin (1999). "Physicochemical Processes," Water Environment Research, 71 (5), 589-617.

Lin, W., Viadero, R., Reed, B., and R. Vaughan (1999). "Electronics and Metal Finishing and Processing," Water Environment Research, 71 (5), 816-822.

Reed, B., Lin, W., and R. Viadero (1998). "Treatment of a Concentrated Oily Waste Using A High-Shear Rotary Ultrafiltration System: Preliminary Results," Fluid-Particle Separation Journal, 11 (1), 82-88.

Reed, B., Lin, W., Viadero, R., and J. Young (1997). "Treatment of Oily Wastes Using High-Shear Rotary Ultrafiltration," ASCE Journal of Environmental Engineering, 123 (12), 1234-1242. http://www.dx.doi.org/10.1061/(ASCE)0733-9372(1997)123:12(1234)

Lin, W., Reed, B., and R. Viadero (1997). "Electronics and Metal Finishing and Processing," Water Environment Research, 69 (4), 626-628.

Viadero, R. and S. Landsberger (1994). "Development of a Method for the Analysis of Low-Level Radioactive Waste from a Neutron Activation Analysis Laboratory," Radioactivity and Radiochemistry, 5 (4), 42-48.

Invited Papers in Professional Publications

Tierney, A. and R. Viadero (2005). "Lower Loads – Vegetable-Based Trout Feed Produces Lower Waste Loads than Fishmeal Diet," Global Aquaculture Advocate, 8 (3), 69-71, **INVITED**.

Viadero, R. (2003). "Membrane Filtration: An Emerging Technology for the Removal of Fine Solids from Recirculating Aquaculture Systems," Global Aquaculture Advocate, 6 (3), 32-34, **INVITED**.

Book Edited

Griffin, W.D. (2012). Voices of the Hennepin Canal: Promoters, Politicians, and the US Army Corps of Engineers," R. Viadero, Jr., Ed., Western Illinois University, Macomb, IL, 368 pp. (ISBN: 978-0-9777116-2-8.)

Book Chapters

Viadero, R. (2019). "Principles of Gas Solubility in Water: Henry's Law," in Encyclopedia of Water: Science, Technology, and Science, Part 1: Fundamentals of Water, Chemistry, Particles, and Ecology, Patricia Maurice, Ed., John Wiley and Sons, NY, 175-182. **INVITED** https://doi.org/10.1002/9781119300762.wsts0133

Viadero, R. (2019). "The Geochemistry of Acid Mine Drainage," in Encyclopedia of Water: Science, Technology, and Science, Part 1: Fundamentals of Water, Chemistry, Particles, and Ecology, Patricia Maurice, Ed., John Wiley and Sons, NY, 191-198. **INVITED** https://doi.org/10.1002/9781119300762.wsts0096

Viadero, R. (2019). "Water Quality Factors Affecting Fish Growth and Production," in Encyclopedia of Water: Science, Technology, and Science, Part 1: Fundamentals of Water, Chemistry, Particles, and Ecology, Patricia Maurice, Ed., John Wiley and Sons, NY, 547-556. **INVITED** https://doi.org/10.1002/9781119300762.wsts0119

Viadero, R. (2005). "Sedimentation and Flotation," in Water Encyclopedia, Volume 3: Surface & Agricultural Water, Jay H. Lehr & Jack Keeley, Eds., John Wiley & Sons Publishing, New York, 404-408.

Viadero, R. (2005). "Factors Affecting Fish Growth and Production," in Water Encyclopedia, Volume 3: Surface & Agricultural Water, Jay H. Lehr & Jack Keeley, Eds., John Wiley & Sons Publishing, New York, 129-133.

Viadero, R. (2005). "Geochemistry of Acid Mine Drainage," in Water Encyclopedia, Volume 3: Surface & Agricultural Water, Jay H. Lehr & Jack Keeley, Eds., John Wiley & Sons Publishing, New York, 13-15.

Viadero, R. (2005). "Henry's Law," in Water Encyclopedia, Volume 4: Oceanography; Meteorology; Physics and Chemistry; Water Law; and Water History, Arts, and Culture, Jay H. Lehr & Jack Keeley, Eds., John Wiley & Sons Publishing, New York, 466-468.

Viadero, R. (2005). "Lime-Soda-Ash Processes," in Water Encyclopedia, Volume 1: Domestic, Municipal, and Industrial Water Supply & Waste Disposal, Jay H. Lehr & Jack Keeley, Eds., John Wiley & Sons Publishing, New York, 320-322.

Conference Plenary Papers

Viadero, R., Rehbein, M., and A. Singh (2017). "Hydropower on the Mississippi River," Raising the Grade on the Upper Mississippi River – Hydro Potential on the Mississippi River, July 18, 2017, Western Illinois University-Quad Cities, Moline, IL. http://www.riveraction.org/umrc/sites/default/files/UMRC%202017%20RTG%20Hydropower%20v4.pdf

Viadero, R., Sinkler, R., and K. Wine (2016). "Raising the Grade in the Upper Mississippi River and its Environs: Current Conditions, Ongoing Activities, and Future Opportunities," 9th Annual Upper Mississippi River Conference, October 13-14, 2016, Moline, IL. http://www.riveraction.org/umrc/sites/default/files/UMRC2016RaiseTheGrade.pdf

Conference Presentations and Proceeding Papers ([†]presenting author; [*]student author)

Singh, A.[†*] and R. Viadero, "Distribution of Trace Metals among Soil, Water, Sediment and Vegetation in the Vicinity of an Iron Foundry Slag Deposit at Carp Lake, Davenport, IA, US," Soil and Water Conservation Society (SWCS) 75th International Annual Conference, July 26-29, 2020, Des Moines, IA.

Billingsley-Tobias, T.[†*], Hunt, J.[*], Henry, J.[*], Viadero, R., Miller-Hunt, C., and A. Porras-Alfaro, "Freshwater Fungal Diversity and Ecological Interactions with Mosquitoes and Plant Communities," 12th International Mycological Congress, Minneapolis, MN, August 10 – 14, 2019.

Viadero, R.[†], "Ecological, Hydrologic, and Geomorphic Characteristics of Alluvial Headwater Streams in the Upper Mississippi River Basin: An Overview," **INVITED**, Illinois Statewide Master Naturalist Conference, University of Illinois, College of Agriculture, Consumer, and Environmental Sciences, Monticello, IL, October 26, 2018.

Billingsley-Tobias, T.[†*], Hunt, J.[*], Viadero, R., Miller-Hunt, C., and A. Porras-Alfaro, "Description of Aquatic Yeasts and Their Interactions with Plants and *Aedes* Mosquitoes," 11th International Mycological Congress, San Juan, Puerto Rico, July 16 – 21, 2018.

Billingsley-Tobias, T.[†*], Hunt, J.[*], Viadero, R., Miller-Hunt, C., and A. Porras-Alfaro, "Yeast Diversity in an Urban Stream and Their Impact on Mosquito Populations," Mycological Society of America, Athens, GA, June 16 – 19, 2017.

Viadero, R.[†], "A Cross Sectional View of Our River Environment," Upper Mississippi River Conference, Davenport, IA, October 14 – 16, 2015.

Viadero, R.[†], "Mining of Hydraulic Fracturing Sands in the Upper Mississippi River Basin: Environmental Challenges & Impacts," Joint Upper Mississippi River and Urban Waterfronts Conference, Davenport, IA, September 25 – 27, 2013.

Wei, X.[†], Bhojappa, S.[*], Lin, L., and Viadero, R. "Removal of Selenium from Aqueous Solutions Using Magnetite Nanoparticles as Adsorbent," TechConnect World Conference & Expo, Boston, MA, June 13 – 16, 2011.

Viadero, R.[†], "Innovation in Wastewater Treatment - Resilient Infrastructure in the Upper Mississippi River Watershed," Upper Mississippi River Conference, Moline, IL, September 24 – 25, 2009.

Chen, Y.[†*], Viadero, R. Wei, X., Hedrick, L.[*], Welsh, S., Anderson, J., and L. Lin. "Impacts of Highway Construction on Stream Water Quality and Macroinvertebrate Index in the Mid-Atlantic Highlands," Ecological Society of America, 93rd Annual Meeting, Milwaukee, WI, August 3 – 8, 2008.

Buzby, K.[†], Hendricks, J.[*], Creel, A.[*], Semmens, K., and R. Viadero. "Efficacy of a Geotextile Bag at Solids Removal and Nutrient Retention of Flow-Through Aquaculture Solids Waste," Aquaculture America, Lake Buena Vista, FL, February 9 – 12, 2008.

Smith, N.[†*], West, T., Buzby, K., Viadero, R., and K. Semmens. "Watercress Production Utilizing Flow-Through Aquaculture Effluent," American Society for Horticultural Science 2007, Scottsdale, AZ, July 16 – 19, 2007.

Hendricks, J.[†*], Viadero, R., and A. Creel. "Polymer Selection for Geotube® Application for Waste Management in a Small Flow-Through Aquaculture System," West Virginia Academy of Sciences, Huntington, WV, March 2007.

Tierney, A.[†], Viadero, R., and K. Semmens. "Mine Water Aquaculture Productivity: Species Selection and Economic Enhancement for Year-Round Operation," Aquaculture America, San Antonio, TX, February 26 – March 2, 2007.

Buzby, K.[†], Dyer, D.[*], Viadero, R., West, T., and K. Semmens. "Evaluation of the Nutrient Removal Capabilities of Watercress, Lettuce and Basil from a Flow-Through Aquaculture System," Aquaculture America, San Antonio, TX, February 26 – March 2, 2007.

Hendricks, J.[†*], Viadero, R., Tierney, A., and K. Semmens. "Geotube® Application for Waste Management in a Small Flow-Through Aquaculture System," Aquaculture America, San Antonio, TX, February 26 – March 2, 2007.

D. Dyer[†*], Buzby, K., Viadero, R., West, T., and K. Semmens. "Effectiveness of Aquatic Phytoremediation of Nutrients Via Watercress (*Nasturtium officinale*) from Effluent of a Flow-Through Aquaculture Operation," Aquaculture America, Las Vegas, NV, February 13 – 16, 2006.

Buzby, K.[†], Ravenscroft, W., Hedrick, L.[*], Viadero, R., and S. Welsh. "Cluster Analysis of Water Quality and Benthic Macroinvertebrate Data from 44 Mid-Appalachian Sites," North American Benthological Society, Anchorage, AK, June 4 – 9, 2006.

Viadero, R.[†], "Reporting Standards for Aquacultural Engineering Studies," Aquaculture America, Las Vegas, NV, February 13 – 16, 2006.

Tierney, A.[†], Viadero, R., and K. Semmens. "Diet Selection Using Four Factored Analysis for Rainbow Trout (*Oncorhynchus mykiss*) Reared in Treated Mine Water," Aquaculture America, Las Vegas, NV, February 13 – 16, 2006.

Viadero, R. and X. Wei[†*]. "Synthesis of Magnetite Nanoparticles from Reclaimed Acid Mine Drainage," 79th ACS Colloid and Surface Science Symposium, Clarkson University, Pottsdam, NY, June 12 – 14, 2005.

Tierney, A.[†*], Viadero, R., and K. Semmens. "Applied Aquatic Chemistry Effects in Mine Water Aquaculture: Metal Speciation and Ion Interactions," American Fisheries Society, Southern Division, Trout Committee, 4th East Coast Trout Management and Culture Workshop, Lock Haven, PA, June 6 – 8, 2005.

Miller, D.[†], Semmens, K., Davalos, J., and Viadero, R. "New Materials and Modular Construction of Small Raceway Systems in West Virginia," American Fisheries Society, Southern Division, Trout Committee, 4th East Coast Trout Management and Culture Workshop, Lock Haven, PA, June 6 – 8, 2005.

Lin, L.[†], Cunningham, J.[*], and R. Viadero. "Tracking Effects of Pollution Sources on In-Stream Water Quality Using a Modeling Approach," 2005 ASCE Watershed Management Conference: Engineering, Ecological, and Economic Challenges, Williamsburg, VA, July 19 – 22, 2005. http://dx.doi.org/10.1061/40763(178)123

Tierney, A.[†*], Viadero, R., and K. Semmens. "Waste Production Evaluation of Two Commercial Feeds for Rainbow Trout (*Oncorhynchus mykiss*) Reared in Treated Mine Water," Aquaculture America, New Orleans, LA, January 17 – 20, 2005.

Viadero, R. and A. Tierney[†]. "Development of Treated Mine Waters for Aquaculture: Non Ideal Water Chemistry Effects at Dogwood Lakes," American Society of Mining and Reclamation, Morgantown, WV, April 18 – 22, 2004.

Viadero, R. and A. Tierney[†*]. "Development of Treated Mine Waters for Aquaculture: Overview of Water Quality from Dogwood Lakes, 2002 – 2003," American Society of Mining and Reclamation, Morgantown, WV, April 18 – 22, 2004.

Viadero, R. and A. Rumberg[†*]. "Applications of Acoustic Doppler Velocimetery for Characterization of Quiescent Zone Hydrodynamics in Flow-Through Aquaculture Systems: Implications for Enhanced Solids Management," Aquaculture America, Honolulu, HI, March 1 – 5, 2004, 612.

Cunningham, J.[†], Viadero, R., and K. Semmens. "Production Impacts of Effluent Pollutant Limits at Six West Virginia Aquaculture Operations," Aquaculture America, Honolulu, HI, March 1 – 5, 2004, 137.

Tierney, A.[†*], Viadero, R., and K. Semmens. "Use of Treated Mine Water for Rainbow Trout (*Oncorhynchus mykiss*) Culture: A Production-Scale Assessment," Aquaculture America, Honolulu, HI, March 1 – 5, 2004, 587.

Tierney, A.[†*], Viadero, R., and V. Tummala. "Use of Treated Mine Water for Rainbow Trout (*Oncorhynchus mykiss*) Culture: Reaeration in the Presence of an Oxygen Demand," Aquaculture America, Honolulu, HI, March 1 – 5, 2004, 587.

Buzby, K.[†], Cunningham, J.[*], Miller, D., Tierney, A.[*], and R. Viadero. "Impacts of Trout Reared in Treated Acid Mine Water on Downstream Benthic Communities," Aquaculture America, Honolulu, HI, March 1 – 5, 2004, 83.

Reed, B.[†] and R. Viadero. "High-Shear Rotary Ultrafiltration System: Treatment of Concentrated Oily Wastes," American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 16 – 21, 2003.

Vantaram, A.[†*], Davalos, J., Robinson, J., Viadero, R., Semmens, K., and J. Plunkett. "Component Failure and System Modeling of Honeycomb FRP Aquaculture Tanks," 18th Annual Technical Conference: American Society for Composites, University of Florida, Gainesville, FL, July 2003.

Tierney, A.[†*] and R. Viadero. "Implications of Active Dissolved Metal Concentrations and Speciation on the Use of Treated Mine Water for the Culture of *Oncorhynchus mykiss*," Aquaculture America, Louisville, KY, February 2003, 291.

Cunningham, J.[†*] and R. Viadero. "A Process Engineering Assessment of a West Virginia Aquaculture Operation to Determine Potential for Increased Production," Aquaculture America, Louisville, KY, February 2003, 64.

Viadero, R.[†], Fortney, R., and P. Hudnall*. "Baseline Water Quality Assessment for Environmental Impact Avoidance: The Beaver Creek Watershed," Canaan Valley and its Environs: a Heritage Landscape Celebration, Davis, WV, October 16 – 20, 2002.

Tierney, A.[†*] and R. Viadero. "Implications of Active Dissolved Metal Concentrations and Speciation on the Use of Treated Mine Water for the Culture of *Oncorhynchus mykiss*," West Virginia Academy of Sciences, Morgantown, WV, April 2002.

Davalos, J.[†], Robinson, J., Vantaram, A.[*], Viadero, R., Semmens, K., and J. Plunkett. "Honeycomb Fiber-Reinforced Polymer Sandwich Panels for Fish Culture Tanks," 3rd International Conference on Composites in Infrastructure, San Francisco, CA, June 10 – 11, 2002.

Viadero, R. and A. Tierney[†*]. "Technical Feasibility of Using Treated Mine Waters to Rear *Oncorhynchus mykiss*," Aquaculture America, San Diego, CA, January 31, 2002, 349.

Cunningham, J.[†*] and R. Viadero. "Effluent Characterization of Flow-Through Aquaculture Operations in West Virginia," Aquaculture America, San Diego, CA, January 31, 2002, 76.

Viadero, R., Reed, B., Vaughan, R.[†], and D. Masciola*, "Two Phase Mass Transfer Controlled Flux in High-Shear Rotary Ultrafiltration," Proceedings: 31st Mid-Atlantic Industrial and Hazardous Waste Conference, Storrs, CT, June 1999, 420 – 428.

Masciola, D.[†*], Viadero, R., Reed, B., Vaughan, R.[*], and M. Malak*, "Effects of Feed Oil Content, Transmembrane Pressure and Membrane Rotational Speed on Permeate Water Quality in High-Shear Rotary Ultrafiltration," Proceedings: 31st Mid-Atlantic Industrial and Hazardous Waste Conference, Storrs, CT, June 1999, 324 – 331.

Vaughan, R.[†*], Viadero, R., Reed, B., Masciola, D.[*], and M. Malak*, "Study of Series Resistances in High-Shear Rotary Ultrafiltration," Proceedings: 31st Mid-Atlantic Industrial and Hazardous Waste Conference, Storrs, CT, June 1999, 409 – 419.

Malak, M.[†*], Reed, B., Vaughan, R., Masciola, D.[*], and R. Viadero, "Full-Scale Operation of a Tubular Ultrafiltration System for the Treatment of an Oily Wastewater," Proceedings: 31st Mid-Atlantic Industrial and Hazardous Waste Conference, Storrs, CT, June 1999, 314 – 323.

Reed, B.[†], Bagby, M., Masciola, D.[*], Malak, M.[*], Viadero, R., and R. Vaughan*, "Treatment of Amalgam Waste for Mercury Removal Using Ultrafiltration Membrane Separation," Proceedings: 31st Mid-Atlantic Industrial and Hazardous Waste Conference, Storrs, CT, June 1999, 429 – 438.

Reed, B.[†], Roark, G., Viadero, R., Carriere, P., Malak, M., Masciola, D.[*], and R. Vaughan*. "Design and Implementation of a Treatment System from an Aluminum Manufacturer's Oily Wastewater." 1998 Pollution Prevention in the Aluminum Industry Workshop, Cincinnati, OH, October 1998.

Bagby, M.[†], Reed, B., Viadero, R., and H. Batchu*. "Membrane Filtration and the Effects of Autoclaving Dental Wastewater." General Session of the American Association for Dental Research, Minneapolis, MN, March 1998.

Reed, B., Lin, W., and R. Viadero[†*]. "Treatment of Oily Wastes Using the SpinTek Centrifugal Membrane System," Proceedings: 70th Water Environment Federation Conference, Chicago, IL, October 1997.

Reed, B., Lin, W., and R. Viadero[†*]. "Treatment of Concentrated Oily Wastes Using the Centrifugal Membrane System," Proceedings: 1997 Joint ASCE/CSCE Conference on Environmental Engineering, Edmonton, Alberta, July 1997.

Reed, B., Lin, W., and R. Viadero[†*]. "Treatment of an Aluminum Manufacturer's Oily Wastewater: Pilot-Scale Results and System Design," 1997 Joint ASCE/CSCE Conference on Environmental Engineering, Edmonton, Alberta, July 1997.

Lin, W., Reed, B., and R. Viadero[†*], "Separation of Surfactant Micelle-Organic Pollutant Complex Using a High-Shear Rotary Ultrafiltration System," Proceedings: 29th Mid-Atlantic Industrial and Hazardous Waste Conference, Roanoke, VA, July 1997.

Viadero, R.[†*], Reed, B., and W. Lin. "The Effects of Membrane Rotation on the Performance of a Centrifugal Ultrafiltration Separation System," Proceedings: 29th Mid-Atlantic Industrial and Hazardous Waste Conference, Roanoke, VA, July 1997.

Reed, B., Lin, W., and R. Viadero[†*]. "Metal Working Coolant/Lubricant Treatment Using the SpinTek High-Shear Rotary Ultrafiltration System," Proceedings: 29th Mid-Atlantic Industrial and Hazardous Waste Conference, Roanoke, VA, July 1997.

Reed, B., Lin, W., Carriere, P., Roark, G., and R. Viadero[†*]. "Treatment of an Aluminum Manufacturer's Oily Wastewater: Pilot-Scale," Proceedings: 29th Mid-Atlantic Industrial and Hazardous Waste Conference, Roanoke, VA, July 1997.

Reed, B., Lin, W.[†], and R. Viadero[*]. "Direct Treatment of Concentrated Oily Wastes Using the Centrifugal Membrane System," Proceedings: 52nd Purdue University Industrial Waste Conference, West Lafayette, IN, May 1997.

Reed, B., Lin, W.[†], and R. Viadero[*], "Oil-Based Lubricant/Coolant Treatment by High-Shear Rotary Ultrafiltration," Proceedings: 52nd Purdue Industrial Waste Conference, West Lafayette, IN, May 1997.

Reed, B.[†], Lin, W., and R. Viadero[*], "Treatment of Concentrated Oily Wastes Using the SpinTek Rotary Ultrafiltration System," Proceedings: Advances in Filtration and Separation Technology, Vol. 11, American Filtration and Separations Society, Minneapolis, MN, April 1997.

Reed, B.[†], Lin, W., Carriere, P., and R. Viadero[*], "Treatment of an Aluminum Manufacturer's Oily Wastewater: Ultrafiltration (UF) Versus Chemical Addition-Dissolved Air Flotation (CA/DAF)," Proceedings: Advances in Filtration and Separation Technology, Vol. 11, American Filtration and Separations Society, Minneapolis, MN, April 1997.

Viadero, R.[†*] and S. Landsberger. "Background Reduction for Low-Level Nuclear Measurements in an Instrumental Neutron Activation Analysis Laboratory," Proceedings: American Nuclear Society Winter Meeting, San Francisco, CA, October 1995.

Viadero, R.[*] and S. Landsberger[†]. "Waste Stream Characterization in a Neutron Activation Analysis Facility," Proceedings: American Nuclear Society Winter Meeting, Washington, DC, November 1994.

Viadero, R.[†*] and S. Landsberger. "Characterization of Radionuclides Produced in the University of Illinois' Neutron Activation Analysis Laboratory," Environmental Radiation Conference, Prairie State Chapter of the Health Physics Society, Springfield, IL, October 1994.

Sponsored Research

Funded As Principal Investigator ($5.7M)

"Stream Monitoring Study for Appalachian Corridor H: Water Quality, Fisheries, and Benthic Macroinvertebrate Studies" and Amendments, Federal Highways Administration via the West Virginia Division of Highways, 2000-2010, $3,653,524 total.

> "Stream Monitoring Study for Appalachian Corridor H: Water Quality, Fisheries, and Benthic Macroinvertebrate Studies," 2000-2003, 2003-2006, 2006-2009, $2,825,776.
>
> "Acid-Base Accounting (ABA), Revegetation Planning, and Development of Plans for Stream Channel Restoration in Acid Mine Drainage Impacted Lands," 2002-2004, $168,632.
>
> "In Situ Stream Water Quality Monitoring along Appalachian Corridor H," 2001-2003, $110,502.
>
> "Technical Assessment and Application of Remediation Measures for Highway Construction Through Acid Mine Drainage Impacted Lands," 2001-2003, $548,614.

"Program to Stimulate Interdisciplinary Research," West Virginia University Research Corporation, June 2005-May 2007, $400,000.

"Cooperative Agreement Between the WV Department of Environmental Protection, Division of Mining & Reclamation, Office of Special Reclamation and West Virginia University's Department of Civil & Environmental Engineering," West Virginia Department of Environmental Protection, 2003–2005, $248,355.

"Aquaculture Food and Market Development Program," US Department of Agriculture, Cooperative State Research, Education, and Extension Service, 2000-2007, $1,278,060 total.

"Solids Removal and Sludge Handling in Small Flow Through Aquaculture Systems: Technological, Operational, & Economical Improvements," 2006-2007, $117,190.

"Mine Water Aquaculture Productivity and Economic Enhancements Through Year-Round Operation with Recreationally Relevant Warm Water Fish Species," 2005-2007, $91,160.

"Recovery of Nutrients from Aquaculture Process Water Using Watercress, Basil, and Dill: Effects of Seasonal Factors on Performance," 2005-2007, $67,780.

"Production Evaluation of Two Commercial Diets for Rainbow Trout in Treated Mine Water," 2004-2005, $77,264.

"Value-Added Use of Aquaculture Process Waters: Growth of Watercress (*Nasturtium officinale R.Br.)*," 2004-2005, $125,067.

"Development and Verification of a Model to Describe Production of Rainbow Trout in Raceway Systems," 2003-2004, $93,817.

"Treatment of Effluent from Modular Composite Raceway System and Assessment and Design of Novel Quiescent Zone," 2002-2004, $124,382.

"Strategic Assessment of Roadway Runoff Research Needs in West Virginia," West Virginia Division of Highways, 2000-2001, $97,773.

"Removal of Fine Particulate Matter from Intensive Fish Production Systems Using Microfiltration," University of Wisconsin System, 1999-2000, $39,000.

As Co-Investigator ($1.1M)

"Integrating Livestock Grazing into the Western Illinois Corn-Soybean Cropping System to Enhance Farm Profitability and Reduce Nutrient Loss,", Dr. M. Bernards PI, September 2020, $84,242.

"Long-Term Riparian and Aquatic Ecosystem Monitoring Projects on the Upper Mississippi River," Earthwatch Institute, Dr. S. Jenkins PI, August 2009, $16,000.

"Long-Term Riparian and Aquatic Ecosystem Monitoring Projects on the Upper Mississippi River," Earthwatch Institute, Dr. S. Jenkins PI, 2008, $16,000.

"Evaluating Restoration and Mitigation Species and Market Opportunities to Advance the Commercialization of the Aquatic Plant Industry," Northeastern Regional Aquaculture Center (NRAC), Drs. A. Lazur (University of Maryland Center for Environmental Science) and D. McIntosh (Delaware State University) PIs, 2008, $449,903 (total), $113,073 WVU.

"Increasing Economic and Environmental Sustainability of Aquaculture Production Systems Through Aquatic Plant Culture," Sustainable Agriculture Research and Education Program (SARE), US Department of Agriculture, Drs. A. Lazur (University of Maryland Center for Environmental Science) and D. McIntosh (Delaware State University) PIs, 2005 – 2008, $278,076; 2005 – 2006, $49,734 WVU.

"Evaluation of Highway and Other Transportation Rights-of-Way in West Virginia as Habitats & Vectors for Invasive Species," West Virginia Division of Highways, Dr. R. Fortney PI, 2000-2002, $150,419; $12,512 extension; no cost extension through 2003.

"Partnership for Innovation: Honeycomb Polymer Materials for Construction and Aquaculture Marketing Development," National Science Foundation, Dr. J. Davalos PI, 2001-2004, $597,378.

"Trout Production Raceway System Using Advanced Composite Materials," State of West Virginia Higher Education Policy Commission, Dr. J. Davalos PI, July 2001-June 2002, $140,000.

"Assessment of Benthic Macroinvertebrates in Environmental Impact Assessment," Potesta and Associates (Charleston, WV), Dr. T. Jones PI, 2000-2001, $25,000.

Teaching and Advising

Courses Developed. Taught, and/or Revised

(* graduate level, d developed, r substantially revised, t taught, tt team taught, dl/ol distance learning/on line)

Western Illinois University

ENVR 401 Colloquium on Environmental Studies*t

ENVR 675 Watershed-Scale Environmental Assessment and Management*[d t]

ENVR 730 Environmental Systems*[d t dl/ol]

ENVR 740 Advanced Analytic Tools in Environmental Science*[d]

ENVR 750 Integrated Environmental Decision Making*[d t dl/ol]

GEOG 510 Environmental Impact Analysis*[t]

GEOG 609 GIS Research and Application Methods*[t]

West Virginia University

CE 293 Civil Engineering Seminar[t]

CE 347 Introduction to Environmental Engineering[t r]

CE 443 Environmental Science and Technology[t]

CE 447 Environmental Engineering Design[t r]

CE 540 Aquatic Chemistry and Biology*[t]

CE 542 Physicochemical Unit Operations*[t]

CE 591 Hazardous Waste Site Remediation*[t]

CE 744 Industrial and Advanced Wastewater Treatment*[t]

ENG 1 Introduction to Engineering[tt dl/ol]

ENG 2 Freshman Engineering Design[t r]

University of Wisconsin–Green Bay

ENGR 314 Engineering Mechanics II - Dynamics[t]

ENVSCI 102 Introduction to Environmental Science[t]

ENVSCI 305 Environmental Systems[d]

ENVSCI 318 Industrial Pollution Control[t]

ENVSCI 460 Waste Management and Resource Recovery*[t]

ENVSP 766 Resource Management Strategy*[t]

Student Research Advising

Graduate Students Currently Advised or co-advised as Major Professor

John Nichols, M.S. student, WIU-BIO, topic under development (student matriculated in Fall 2019).

Victoria Livingston, Ph.D. candidate, WIU-ES, "Embryonic, Larval, and Adult Amphibian Success at a former Superfund Site - Turned Urban Wetland - in Direct Hydraulic Contact with the Mississippi River - Population Counts and Heavy Metals Burdens."

Anshu Singh,Ph.D. candidate, WIU-ES, "Passive Remediation of Heavy Metal Contaminated Sediment, Soil, and Water using Select Aquatic and Terrestrial Vegetation."

Jennifer Sandrik-Rubio, Ph.D. candidate, WIU-ES, (co-advised with Dr. Ranbir Kang, Department of Geography), "Geomorphological, Hydrologic, and Water Quality Characteristics of Low Order, Low Gradient Streams."

Jason Hunt, Ph.D. student, WIU-ES, "The Role of Environmental and Geomorphological Conditions on the Prevalence of the Invasive Mosquito, *Aedes japonicas*, between the Lower Impounded and the Illinois River Reaches in the Upper Mississippi River Watershed."

Terri Tobias, Ph.D. student, WIU-ES, (co-advised with Dr. Andrea Porras-Alfaro, Department of Biological Sciences), "Role of Microbiological/Mycological Communities Native to River Corridors in West-Central IL and Water Quality on the Germination and Maturation of *Aedes albopictus* and *Ae. triseriatus* Larvae.

Michele Rehbein, Ph.D. student, WIU-ES, "The Role of Microbomes on *Culex* and *Aedes* Mosquito Abundance in Wetland and Low Order Stream Habitats."

Graduate Students Graduated As Major Professor

Derek Dyer, MSCE, WVU-CEE, "Effectiveness of Aquatic Phytoremediation of Nutrients Via Watercress (*Nasturtium officinale*), Basil (*Ocimum basilicum*), Dill (*Anethum graveolens*), and Lettuce (*Lactuca sativa*) from Effluent of a Flow-Through Aquaculture Operation," December 2006.

Xinchao Wei, Ph.D., WVU-CEE, "Enhanced Management of Metal-Bearing Industrial Sludges through Physicochemical and Surface Investigations," December 2005.

Jennifer Selfridge, MSE, WVU-CEE, "Pharmaceuticals and Personal Care Products in Domestic Wastewaters: Water Pollutants of Emerging Concern," December 2005.

Mark Smith, MSE, WVU-CEE, "Effect of Water Quality Disturbances in a Mine Water Aquaculture System on Rainbow Trout, *Oncorhynchus mykiss*," August 2005.

Phannindra Kunderu, MSCE, WVU-CEE, "Analysis of Aging Effects and Effectiveness of Dewatering Processes on Treated Acid Mine Drainage (AMD) Sludge," May 2005.

Jennifer McGee, MSCE, WVU-CEE, "Geospatial Framework for Water Quality Impact Assessment: Corridor H," May 2005.

Andrea Rumberg, MSCE, WVU-CEE, "Applications of Acoustic Doppler Velocimetry for Characterization of Quiescent Zone Hydrodynamics in Flow-Through Aquaculture Systems: Implications for Enhanced Solids Management," December 2004.

John Gillilan, MSCE, WVU-CEE, "Land Cover and Land Use (LCLU) Impacts on Water Quality in Mid Appalachia," December 2003.

Patrick F. Hudnall, MSCE, WVU-CEE, "Characterization and Recommendations for the Remediation of Acid Mine Drainage Impacted Streams," December 2003.

James H. Cunningham, MSCE, WVU-CEE, "Effluent Characterization of Flow-Through Aquaculture Operations in West Virginia," August 2003.

Aislinn E. Tierney, MSCE, WVU-CEE, "Technical Feasibility of Using Treated Mine Waters to Rear *Oncorhynchus mykiss* as a Value-Added Use of Industrial Wastewater," August 2002.

Jaime M. Sayre, MSCE, WVU-CEE, "Ecosystem Impact Mitigation of Roadway Construction Based on Pre-Construction Engineering Analyses," May 2001.

David A. Masciola, Ph.D., WVU-CEE, "Development of Resistance-Based Model for Technical Performance Comparison of Membrane Separation Modules," December 2000.

Ronald L. Vaughan, MSE, WVU-CEE, "High-Shear Rotary Ultrafiltration of a Synthetic Oily Wastewater: Resistance in Series Modeling," August 1998.

Membership on Graduate Examining Committees

2020 Maddie Tomczak, M.S. student - WIU Biology, Evaluation of the Age, Growth, and Emergence of Larval Fish in Mississippi River Pools 17-19, successfully defended June 2020.

Zachary Witzel, M.S. student - WIU Biology, Size Selectivity of Gill Nets Used to Capture Bighead Carp, Solver Carp, and Five Commonly Encountered Bycatch Species in the Upper Mississippi River, successfully defended May 2020.

Boone LaHood, M.S. student - WIU Biology, Larval Light Trapping Efforts Reveal Protracted Spawning in Bighead Carp Upstream of Lock and Dam 19 on the Upper Mississippi River, successfully defended April 2020.

2019 Chelsea Center, M.S. student - WIU Biology, "Satellite-Linked GPS Identification and Tracking of Bigheaded Carp Invasion Front on the Illinois River," in progress.

Erienne Davis, M.A. student - WIU-Geography, "Analysis of Streambank Erosion in Low Order Streams Using Terrestrial LIDAR Data," June 2019.

2018 Paige Ehryke, M.A., WIU-Geography, "High-Precision Analysis of Moss Treatments on Streambanks Using Terrestrial LIDAR Scanning (TLS)," August 2018.

2016 Hannah Helms, M.S., WIU-Biology, "Single-Standing Wind Turbines Impact Bat Populations during Low Nocturnal Wind Speeds and Fall Migration"

Michele Rehbein, M.S., WIU-Biology, "Arbovirus Surveillance in Rural Western Illinois"

2013 John Bendick, Ph.D., University of Maryland-Chemical, Biochemical & Environmental Engineering, "High Shear Rotary Membrane System Enhancements for Naval Wastewaters"

2011 Babita Gurung, M.A., WIU-Geography, "Influence of Historical Land Use and Physiography on Current Forest Composition at the Post Wildlife Sanctuary, McDonough County, Illinois"

2010 Raj Gondle, Ph.D., WVU-CEE, "Numerical Modeling of Overburden Response during Geologic Sequestration"

Selina Goddard, M.S., WIU-Biological Sciences, "Temporal Assessment of Forest Habitat at the Ira and Reatha T. Post Wildlife Sanctuary, McDonough County, IL"

2008 Honghong Wei, MSE, WVU-CEE, "Impact of Mine Land Restoration and Revegetation on Water Quality in a Mid-Appalachian Watershed: A Stream Monitoring Study"

2007 Joshua Pike, MSCE, WVU-CEE, "Numerical Modeling of Soil- Geosynthetic Interactions"

Lara Raas-Hedrick, Ph.D., WVU-Division of Forestry, Wildlife, and Fisheries Resources, "Evaluation of the Impacts of Highway Construction on Sediment and Benthic Macroinvertebrates in Appalachian Streams"

2006 Raj Gondle, MSCE, WVU-CEE, "Finite Element Analysis of Long-Term Performance of High Density Polyethylene Pipes"

Xiaochao Tang, MSCE, WVU-CEE, "Numerical Analysis of the Geomechanical Response of Overburden Strata to Carbon Dioxide Sequestration Injection in Coal Seams"

Ronald Ingram, MSCE, WVU-CEE, "Pullout Study of Soil-Geosynthetic Interface and Boundary Effects with Cohesion and Cohesionless Soils"

Ricardo Longhi, Ph.D., WVU-CEE, "Experimental and Numerical Investigation of Seepage Through Longitudinal Drains"

2005 Krishan Kakarla, MSCE, WVU-CEE, "Numerical Analysis of Seepage in Earth Slopes".

Johnathan Niemiec, MSCE, WVU-CEE, "Investigation of Soil–Geosynthetic Interface Properties"

Hemachandar Mada, MSCE, WVU-CEE, "Numerical Analysis of Flowable Fill as a Backfill Material around Buried Pipe"

2004 Atif Hamid, MSCE, WVU-CEE, "Geomorphological Characterization of Beaver Creek and Development of a Regional Curve"

Vijay Duvvuir, MSCE, WVU-CEE, "Determination of Permeability in Low Permeable Materials in Geomechanics"

Christopher Ryan, MSCE, WVU-CEE, "A Geotechnical Investigation of the Montrose Wetland Site"

Rafif Srour, Ph.D., WVU-Division of Plant and Soil Science, "Metal-Surface Reactions in Mixed Aqueous-Organic Solvent Systems"

2003 Tummala Vijayalakshmi, MSCE, WVU-CEE, "Watershed-Scale Hydrologic Modeling for Habitat Restoration"

Kyle Stephens, MS, WVU-Division of Plant and Soil Science, "Characterization and Classification of Wetland Soils in the Beaver Creek Watershed"

2002 Vipin Bardwaj, MSE, WVU-CEE, "Anti-Scale Magnetic Water Conditioning"

2000 Xiujin Qin, Ph.D., WVU-CEE, "Effects of Plant Flavonoids on Polynuclear Aromatic Hydrocarbon Transformation in Rhizospere Soil"

Mark Grant, MSE, WVU-CEE, "Enhanced Limestone Dissolution in the Treatment of Acid Mine Drainage Utilizing a CO_2 Pre-Treatment"

Mookdawan Kornpitaksak, MSE, UWGB-Environmental Science, "Removal of Fine Particulate Matter from Intensive Recirculating Aquaculture Systems Using Microfiltration"

1999 David Masciola, MSCE, WVU-CEE, "Effects of Transmembrane Pressure and Membrane Rotation on Water Quality in the High-Shear Rotary Ultrafiltration System"

Michael Malak, MSCE, WVU-CEE, "Optimization of a High-Shear Rotary Ultrafiltration System for Tubular UF Residual Treatment"

1998 Daryl Hudson, MSE, WVU-CEE, "Industrial Discharge into Domestic Sewers"

Elvin Yúzúgúllú, MSE, WVU-CEE, "Influence of Surfactant Solution on the Hydraulic Conductivity of Glacial Till Soil at the RMI Facility-Ashtabulah, Ohio"

Alanna Morris, MSCE, WVU-CEE, "Development of a Standard Operating Plan for a Full-Scale Tubular Ultrafiltration System"

Undergraduate Student Research Advisees

2019 Madison Davee

2012 Ashley VanSpeybroeck

2003 - 2004	Derek Dyer
2001 - 2003	Andrea Rumberg
2001 - 2002	Nathaniel Krause
2000 - 2003	Brad Messenger
	Jenna McGee
2000 - 2002	April Belle
2000 - 2001	Daniel Grudzinski
1999 - 2000	Scott Copen
	Aislinn Tierney
1999 - 2001	John Gillilan
1999	Andrew Tuel
	Jeff Ross
	Melanie Holman
	Jennifer Gain
1998	Jaimie Sayre

Editorships, Editorial Boards, and Review Experience

Editorship

2004 - 2007 Contributing Editor, Government Engineer: The Journal for Public Infrastructure

Editorial Board Membership

2006 - present Journal of Aquacultural Engineering, Elsevier Science, Ltd.

Manuscript Reviewer

Applied Clay Science
Aquaculture
Aquacultural Engineering
Colloids and Surfaces A: Physicochemical and Engineering Aspects
Environmental Engineering Science
Environmental Science and Pollution Research
Environmental Science and Technology
International Journal of Recirculating Aquaculture
Journal of the American Water Resource Association
Journal of Contaminant Hydrology
Journal of Ecological Engineering
Journal of Environmental Engineering
Science of the Total Environment
Separation Science and Technology
Water Environment Research
Water Research

Fellowships, Honors, and Awards

2020 Eddy Award for excellence on the Mississippi River in the areas of Art, Design, Revitalization, River Activity, Education, and Stewardship," River Action, Quad Cities, IL/IA

2006	Senior Fellow, Homeland Security Policy Institute, the George Washington University Medical Center, Washington, DC
2005 - 07	Inaugural Robert C. Byrd Endowed Associate Professorship, WVU Research Corporation
2004	Outstanding Researcher, WVU College of Engineering & Mineral Resources
2004	Award for exceptional contribution to aquacultural engineering literature, Journal of Aquacultural Engineering, Aquacultural Engineering Society
2004 - 06	Elected Member, Board of Directors, Aquacultural Engineering Society
2003	Outstanding Researcher, WVU College of Engineering & Mineral Resources
2002	Outstanding Teacher, WVU College of Engineering & Mineral Resources
2001	Excellence in Teaching Award, WVU Department of Civil & Environmental Engineering
2000	J.C. Burchinal Award for Outstanding Undergraduate Teaching, WVU Department of Civil and Environmental Engineering, 2000-2001.
2000	Excellence in Teaching Award, WVU Department of Civil & Environmental Engineering
1999	J.C. Burchinal Award for Outstanding Undergraduate Teaching, WVU Department of Civil and Environmental Engineering, 1999-2000.
1993 - 95	College of Engineering Fellowship, University of Illinois at Urbana-Champaign
1993	Departmental Honors in Physics, Mary Washington College
1992	Phi Beta Kappa, Mary Washington College

Service

Professional Affiliations and Offices Held

American Academy of Environmental Engineers and Scientists, Board Certified Environmental Engineering Member; specialization in hazardous waste management and site remediation

American Fisheries Society, Member

American Institute of Chemical Engineers, Senior Member

AIChE Safety and Chemical Engineering Education Program, Member

AIChE Institute for Sustainability, Member

Aquacultural Engineering Society

2009	Past President
2008	President
2007	First Vice President
2006	Second Vice President
2004 - 05	Member, Board of Directors

Ecological Society of America, Member

Society of Biological Engineers, Member

World Aquaculture Society, Member

Other Professional Service

2020	Panelist, Aquaculture Special Research Program, US Department of Agriculture, National Institute for Food and Agriculture, Institute of Food Production and Sustainability.
2019	Member, Conference Planning Committee, 12th Annual Upper Mississippi River Conference, Moline, IL, October 23-24
	Organizer, Student Research Poster Session, 12th Annual Upper Mississippi River Conference, Moline, IL, October 23
2018	Panelist, Aquaculture Research Program, US Department of Agriculture, National Institute for Food and Agriculture, Institute of Food Production and Sustainability.

Member, Conference Planning Committee, 11th Annual Upper Mississippi River Conference, Moline, IL, October 24-25

Organizer, Student Research Poster Session, 11th Annual Upper Mississippi River Conference, Moline, IL, October 24

2017 Member, Conference Planning Committee, 10th Annual Upper Mississippi River Conference, Moline, IL, October 11-12

Organizer, Student Research Poster Session, 10th Annual Upper Mississippi River Conference, Moline, IL, October 11

2016 Moderator, "Raising the Grade in the Upper Mississippi River, Ecosystem Health Working Group," 9th Annual Upper Mississippi River Conference, Moline, IL, October 13-14

Member, Conference Planning Committee, 9th Annual Upper Mississippi River Conference, Moline, IL, October 13-14

Organizer, Student Research Poster Session, 9th Annual Upper Mississippi River Conference, Moline, IL, October 13

2015 Chair, Youth Summit, 8th Annual Upper Mississippi River Conference, Davenport, IA, October 14-16

Member, Conference Planning Committee, 8th Annual Upper Mississippi River Conference, Davenport, IA, October 14-16

Organizer, Student Research Poster Session, 8th Annual Upper Mississippi River Conference, Davenport, IA, October 14

2014 Session Organizer and Moderator, "Farmers Address Non-point Source Pollution," 7th Annual Upper Mississippi River Conference Joint Meeting with the Mississippi River Network, Moline, IL, October 14-17

Member, Conference Planning Committee, 7th Annual Upper Mississippi River Conference Joint Meeting with the Mississippi River Network, Moline, IL, October 14-17

Organizer, Student Research Poster Session, 7th Annual Upper Mississippi River Conference Joint Meeting with the Mississippi River Network, Moline, IL, October 15

2013 Member, Conference Planning Committee, 6th Annual Upper Mississippi River Conference Joint Meeting with the Waterfront Center's Thirty-first Urban Waterfronts Conference, Davenport, IA, September 25-28

Organizer, Student Research Poster Session, 6th Annual Upper Mississippi River Conference, Davenport, IA, September 26

2012 Member, Conference Planning Committee, 5th Annual Upper Mississippi River Conference, Moline, IL, September 26-28

Organizer, Student Research Poster Session, Conference Planning Committee, 5th Annual Upper Mississippi River Conference, Moline, IL, September 26-28

2011 Member, Conference Planning Committee, 4th Annual Upper Mississippi River Conference, Bettendorf, IA, September 21-23

Organizer, Student Research Poster Session, 4th Annual Upper Mississippi River Conference, Bettendorf, IA, September 21-23

Member, College of Reviewers, Canada Research Chairs (Chaires de recherche du Canada), Ottawa, Ontario, Canada

2010 Member, Conference Planning Committee, 3rd Annual Upper Mississippi River Conference, Moline, IL, August 25-27

Organizer, Student Research Poster Session, 3rd Annual Upper Mississippi River Conference, Moline, IL, August 25-27

2015, 2014, 2010 Panelist, Small Business Innovation Research Program, US Department of Agriculture, National Institute for Food and Agriculture, Institute of Bioenergy, Climate, and Environment

2009 Member, International Organization for Standardization (ISO) Technology Committee (TC) 234-Fisheries & Aquaculture, Society of Agricultural & Biological Engineers

	Member, Conference Planning Committee, 2nd Annual Upper Mississippi River Conference, Moline, IL, September 23-25
	Organizer, Student Research Poster Session, 2nd Annual Upper Mississippi River Conference, Moline, IL, September 23-25
2008	Member, College of Reviewers, Canada Research Chairs (Chaires de recherche du Canada), Ottawa, Ontario, Canada
	Session Organizer and Moderator, "Natural Resources and Environmental Planning," Inaugural Upper Mississippi River Conference, Moline, IL, August 22
	Member, Conference Planning Committee, Inaugural Upper Mississippi River Conference, Moline, IL, August 21-23
	Organizer, Student Research Poster Session, Inaugural Upper Mississippi River Conference, Moline, IL, August 21-23
2007	Chair, Awards Committee, Aquacultural Engineering Society
2007	Program Chair, "Special Session: Computer Tools for Design, Production Planning, and Operation of High-Intensity Flow-Through Production Systems" and "Bio Floc Technology," World Aquaculture Society International Meeting, San Antonio, TX, February 27 – March 2
2005 - 10	Chair, Research Reporting Standards Committee, Aquacultural Engineering Society
2004 - 06	Member, Board of Directors, Aquacultural Engineering Society
	Chair, Promotions & Meetings Committee, Aquacultural Engineering Society
2001 - 03	Member, Board of Directors, Water Board, Route 19 Water District, Marion County, WV
2000 - 04	Member, Technical Subgroup, Aquaculture Effluents Task Force, Federal Joint Subcommittee on Aquaculture (US EPA and USDA)
1999	Session Chair, "Membrane Processes II," 31st Mid-Atlantic Industrial and Hazardous Waste Conference, Storrs, CT, June 20 - 23
1998	Session Chair, "Hazardous Waste & Site Remediation," American Power Conference, Chicago, IL, April 14 - 16
1996 - 99	Member, Literature Review Committee (Physical/Chemical Processes and Metal Finishing), Water Environment Federation

University, College, & Department Service

Western Illinois University

2013 - present	Graduate Program Coordinator
2013 - present	University Chairs' Council
2015 - present	Coordinator, WIU Udall Fellowship Coordinator, Centennial Honors College
2010 - present	WIU-Quad Cities Riverfront Campus Master Planning Committee
2014 - 17	WIU Faculty Senate Council on Campus Planning and Usage
2008 - 10	North Central Association - Higher Learning Commission (HLC) Accreditation Self-Study Committee on Outreach and Public Service
2009	Chair, Search Committee for Interim Chair, Department of Biological Sciences
2008 - present	Post Wildlife Sanctuary Advisory Board
2008 - present	Advisory Board Member, Liberal Arts and Sciences Program
2008 - 09	Search Committee for College of Arts and Sciences (CAS) Associate Dean of Administration and Strategic Planning
2007 - 10	Chair, Environmental Science Ph.D. Program Development Committee
2007 - present	Chair, Advisory Board, Institute for Environmental Studies
2007 - present	College of Arts and Sciences Chairs' Council

West Virginia University

2005 - 07	Member, WVU Research Cabinet, Office of the Vice President for Research & Economic Development
	Co-Chair, Working Group on Mass Migration through Rural Areas – Infrastructure Resource Focus
2006 - 07	Member, Advisory Committee, WVU Center for Immunopathology and Microbial Pathogenesis, WVU Health Sciences Center
	Member, Faculty Search Committee, WVU Center for Immunopathology and Microbial Pathogenesis, WVU Health Sciences Center
	Member, Civil and Environmental Engineering (CEE) Chair Search Committee
	Member, Promotion and Tenure Committee
2006	Member, College of Engineering and Mineral Resources (CEMR) Researcher of the Year Selection Committee
2004 - 07	Faculty Advisor, American Society of Civil Engineers Student Chapter
	Ex officio Member, Student Expectations & Performance Committee
2004	Chair, Promotion and Tenure Committee
2003 - 04	Chair, Environmental Engineering Faculty Search Committee
2002 - 2003	Member, ABET Accreditation Committee - Learning Outcome Assessment for the Environmental and Hydrotechnical Specialty Area
2002 - 07	Member, Undergraduate Academic Affairs Committee
2001 - 07	Member, Graduate Admissions Committee
	Member, Undergraduate Recruiting Committee
2001 - 07	Founding Faculty Advisor, CEMR Graduate Student Council
2001 - 02	Member, CEMR Safety Committee
	Member, Promotion and Tenure Committee
	Member, Undergraduate Assessment Committee
	Chair, Environmental Engineering Faculty Search Committee
2000 - 07	Radiation Safety Officer
2000 - 01	Member, Student Awards Committee
1999 - 2000	Member, Academic Computing Committee
	Member, Environmental and Geo-environmental Engineering Faculty Search Committees
	Member, Undergraduate Laboratory Committee

University of Wisconsin–Green Bay

1998	Chair, Course Development Committee, 362-305, Environmental Systems