

QIONG (JANE) ZHANG, Ph.D.

Department of Civil & Environmental Engineering
University of South Florida, Tampa, FL 33620
Office: (813) 974-6448
E-Mail: qiongzhang@usf.edu

EDUCATION

Ph.D., Environmental Engineering, Michigan Technological University, 2001

M.S., Environmental Engineering, Tsinghua University, P. R. China, 1995

B.S., Environmental Engineering, North-West Institute of Architecture Engineering, P. R. China, 1992

PROFESSIONAL EXPERIENCE

Associate Professor, Department of Civil and Environmental Engineering University of South Florida, Tampa, FL	8/2015-present
Assistant Professor, Department of Civil and Environmental Engineering University of South Florida, Tampa, FL	8/2009-7/2015
Senior Research Engineer, Department of Civil and Environmental Engineering Michigan Technological University, Houghton, MI <u>Operations Manager</u> , Sustainable Futures Institute	11/05-7/09
Adjunct Assistant Professor, Department of Civil and Environmental Engineering Michigan Technological University, Houghton, MI	11/05-present
Visiting Assistant Professor, Department of Civil and Environmental Engineering Michigan Technological University, Houghton, MI	8/04-12/04
Postdoctoral Researcher, Department of Civil and Environmental Engineering Michigan Technological University, Houghton, MI	1/02-10/05
Lecturer, Department of Chemical Engineering Michigan Technological University, Houghton, MI	10/01-1/02
Assistant Professor, Department of Environmental Sciences Hangzhou University, Hangzhou, Zhejiang, China	9/95-8/97

EDUCATION ACTIVITIES

Courses Taught (*New course developed at USF)

- Numerical Methods and Tools I (UG), University of South Florida, 2015 (taught 1 semester)
- Environmental Engineering Laboratory (UG), University of South Florida, 2012-present (taught 3 semesters)
- Green Engineering for Sustainability* (UG/G), University of South Florida, 2010-present (taught 7 semesters)
- Physical Chemical Principles in Environmental Engineering (G), University of South Florida, 2009-present (taught 6 semesters)
- Environmental and Water Resources Graduate Seminar, University of South Florida, 2012 (taught 1 semester)
- Environmental Process Engineering (G), Michigan Technological University, 2004
- Chemical Process Safety/Environment (UG), Michigan Technological University, 2002
- Numerical Modeling in Chemical Engineering (UG), Michigan Technological University, 2001

- Field Experience (UG), Hangzhou University, 1996-1997
- Engineering Graphic Design (UG), Hangzhou University, 1995-1996
- Wastewater Treatment and Laboratory (UG), Hangzhou University, 1995-1996

Education Materials Developed

- Co-authored 3 book chapters of first and second editions of the textbook *Environmental Engineering: Fundamentals, Sustainability, and Design* (John Wiley & Sons, Inc.)
- Created 6 learning materials on sustainability for the general engineering audience with Dr. Vanasupa (Cal Poly) funded by NSF, available at <http://works.bepress.com/ivanasup/>
- Created 24 video tutorials with Dr. Vanasupa (Cal Poly) and published at Open Education Resource (OER) Commons under “The Sustainability Learning Suites” funded by NSF, available at <http://www.oercommons.org/authoring/1660-the-sustainability-learning-suites/view>
- Created 10 lecture videos for Environmental Engineering Lab class

Education Workshops Organized

- Co-organized 2009 AEESP Education Workshop on Integrating Sustainability with Drs. Vanasupa (Cal Poly), Zimmerman (Yale) and Mihelcic (USF), with funded invitations to faculty members from underrepresented groups
- Co-organized 2010 ASEE Education Workshop on Integrating Sustainability with Dr. Vanasupa (Cal Poly), with funded invitations to faculty members from underrepresented groups
- Co-organized 2011 AEESP Education Workshop on Integrating Sustainability with Dr. Zimmerman (Yale) and the Center for Sustainable Engineering (a partnership among five universities: Syracuse University, Arizona State University, Carnegie-Mellon University, Georgia Institute of Technology, and the University of Texas at Austin).
- Co-organized 2013 AEESP Education Workshop on Integrating Sustainability with Dr. Zimmerman (Yale) and the Center for Sustainable Engineering (a partnership among five universities: Syracuse University, Arizona State University, Carnegie-Mellon University, Georgia Institute of Technology, and the University of Texas at Austin).

Postdoc and Students Advised or Co-advised*

- Supervised 2 PhD dissertations and 6 MS theses at Michigan Tech: Aaron Tice* (MS, 2006), Heather Wright (MS, 2007), Sinon Abood* (MS, 2007), Meng Yao* (Ph.D., 2008), Paul Pawelzik (MS, 2009), Andres Tarte* (MS, 2009), Abigail Clarke* (Ph.D., 2009)
- Supervised 5 completed PhD dissertations and 7 completed MS theses at USF: Maria Pinilla (MS, 2011, engineer at Citrosuco North America), Mehregan Jalalizadeh (MS, 2012, Ph.D. at University of Maryland), Weiwei Mo (Ph.D., 2012, postdoc at Yale and currently assistant professor at University of New Hampshire), Christy Prouty (MS, 2013, Ph.D. at USF), Sarah Watson (MS, 2014, engineer at EPA Region 4), Yilin Zhuang (Ph.D., 2014, research scientist at University of Florida/IFAS), Jie Zhang* (Ph.D., 2014, postdoc at USF), Adib Amini* (MS, 2014, Ph.D. at USF), Mark Santana* (Ph.D., 2015, postdoc at Catalan Water Research Institute), Pablo Cornejo-Warner* (Ph.D., 2015, postdoc at U. of Colorado Boulder and currently assistant professor at California State University, Chico), Simona Platukyte (MS, 2016, engineer at EPA Region 4), Janine Lambert (MS, 2016, engineer at Idaho National Laboratory)
- Mentored 6 REU students: Kaitlin R. Goldstein, Meg Lee, Jessica Marron, Jie Ma, Jewel Cumberbatch, Avaanne Hogue
- Supervised 1 research assistant professor, Nancy Diaz Elsayed, and 2 postdocs, Jie Zhang, Tianjiao Guo
- Currently supervising 1 postdoc, 7 PhD students, 2 MS students and 3 undergraduate students

at USF: Shima Mohebbi (Postdoc), Youngwoon Kim (Ph.D.), Christy Prouty (Ph.D.), Lawrence Gottschamer (Ph.D.), Eunyoung Lee (Ph.D.), Adib Amini (Ph.D.), Xiaofan Xu (Ph.D.), Faissal Ouedraogo* (Ph.D.), John Pryor (MS), Oswaldo Galcia (MS), Awa Ndiaye (UG), Ricardo Santos Portillo (UG), Avaanne Hogue (UG)

- Supervised 12 female graduate students (2 in progress) and 2 under-represented minority students (completed)

PUBLICATIONS (students underlined)

Books and Book Chapters

1. Solomon, B.D., J. Birchler, S.L. Goldman, **Q. Zhang**, “Chapter 1: Basic Information On Maize” in *Compendium of Bioenergy Crops* (S.L. Goldman and C. Kole), CRC Press, 2014.
2. Honrath, R.E., Jr., J.R. Mihelcic, J.B. Zimmerman, and **Q. Zhang**, “Chapter 4: Physical Processes” in *Environmental Engineering: Fundamentals, Sustainability, and Design*, 2nd Edition (J.R. Mihelcic and J.B. Zimmerman), John Wiley & Sons, Inc., New York, 2014.
3. Hand, D.W. **Q. Zhang**, and J.R. Mihelcic, “Chapter 8: Water Treatment” in *Environmental Engineering: Fundamentals, Sustainability, and Design*, 2nd Edition (J.R. Mihelcic and J.B. Zimmerman), John Wiley & Sons, Inc., New York, 2014.
4. Hand, D.W. and **Q. Zhang**, “Chapter 10: Water Treatment” in *Environmental Engineering: Fundamentals, Sustainability, and Design*, First Edition, (J.R. Mihelcic and J.B. Zimmerman), John Wiley & Sons, Inc., New York, 2010.
5. Mihelcic, J.R., Zimmerman, J.B. and **Q. Zhang**, “Chapter 14: Built Environment” in *Environmental Engineering: Fundamentals, Sustainability, and Design*, First Edition, (J.R. Mihelcic and J.B. Zimmerman), John Wiley & Sons, Inc., New York, 2010.
6. **Zhang, Q., K. Goldstein**, J.R. Mihelcic, "Chapter 8: A Review of Life Cycle Assessment Studies on Renewable Energy Derived from Forest Resources," in *Renewable Energy from Forest Resources in the United States*, (B.D. Solomon and V. Luzadis), Oxfordshire: Routledge, 2009.
7. Hokanson, D., J. Aieta, **Q. Zhang**, and H. Leverenz, *Solutions Manual for Water Treatment: Principles and Design*, 2nd ed., John Wiley & Sons, Inc., New York, 2005.

Peer-reviewed Journal Publications

1. Wang, M., E. Lee, **Q. Zhang**, S. J. Ergas, Anaerobic co-digestion of swine manure and microalgae *Chlorella* sp.: experimental studies and energy analysis, *Bioenergy Research*, DOI 10.1007/s12155-016-9769-4, **2016**.
2. Wang, M., E. Lee, M.P. Dilbeck, M. Liebelt, **Q. Zhang**, S. J. Ergas, S.J. (2016) Thermal Pretreatment of Microalgae for Biomethane Production: Experimental Studies, Kinetics and Energy Analysis, *J. Chemical Technology & Biotechnology*, DOI 10.1002/jctb.5018, **2016**.
3. Mihelcic, J. R., C. C. Naughton, M. E. Verbyla, **Q. Zhang**, R. W. Schweitzer, S. M. Oakley, E. C. Wells, L. M. Whiteford, The Grandest Challenge of All: The Role of Environmental Engineering to Achieve Sustainability in the World’s Developing Regions, *Environmental Engineering Science, Special Issue: EES in the 21st Century*, DOI: 10.1089/ees.2015.0334, **2016**.
4. Cornejo, P. K., **Q. Zhang**, J. R. Mihelcic, How Does Scale of Implementation Impact the Environmental Sustainability of Wastewater Treatment Integrated with Resource Recovery? *Environmental Science and Technology*, DOI: 10.1021/acs.est.5b05055, **2016**.
5. Gottschamer, L., **Q. Zhang**, Interactions of factors impacting implementation and sustainability of renewable energy sourced electricity, *Renewable and Sustainable Energy Reviews*, 65: 164-174, **2016**.
6. Zhang, J., A. E. Tejada-Martinez, H. Lei, **Q. Zhang**, Indicators for technological, environmental and economic sustainability of ozone contactors, *Water Research*, 101: 606-616, **2016**.

7. Lee, E., **Q. Zhang**, Integrated co-limitation kinetic model for microalgae growth in anaerobically digested municipal sludge centrate, *Algal Research*, 18:15-24, **2016**.
8. Mo. W., **Q. Zhang**, Modeling the influence of various water stressors on regional water supply infrastructures and their embodied energy, *Environmental Research Letters*, 11: 064018, **2016**.
9. Ouedraogo, F. R., J. Zhang, P. K. Cornejo, **Q. Zhang**, J. R. Mihelcic, A. E. Tejada-Martinez, Impact of sludge layer geometry on the hydraulic performance of a waste stabilization pond, *Water Research*, 99: 253-262, **2016**.
10. Prouty, C., **Q. Zhang**, How do people's perceptions of water quality influence the life cycle environmental impacts of drinking water in Uganda? *Resources, Conservation and Recycling*, 109: 24-33, **2016**
11. Zhang, J., A. E. Tejada-Martinez, **Q. Zhang**, Rapid Analysis of Disinfection Efficiency Through Computational Fluid Dynamics, *J. American Water Works Association*, 108(1): 50-59, **2016**.
12. Lee, E., M. Jalalizadeh, **Q. Zhang**, Growth kinetic models for microalgae cultivation: A review, *Algal Research*, 12: 497-512, **2015**.
13. Zhang, J., A. Amini, J. A. O'Neal, T. H. Boyer, **Q. Zhang**, Development and Validation of a Novel Modeling Framework Integrating Ion Exchange and Resin Regeneration for Water Treatment, *Water Research*, 84: 255-265, **2015**.
14. Amini, A., Y. Kim, J. Zhang, T. H. Boyer, **Q. Zhang**, Environmental and Economic Sustainability of Ion Exchange Drinking Water Treatment for Organics Removal, *Journal of Cleaner Production*, 104: 413-421, **2015**.
15. Zhuang, Y., **Q. Zhang**, Evaluating Municipal Water Management Options with the Incorporation of Water Quality and Energy Consumption, *Water Resour Manage*, 29(1): 35-61, **2015**
16. Zhong, F., J. Wu, Y. Dai, L. Yang, Z. Zhang, S. Cheng, **Q. Zhang**, Bacterial community analysis by PCR-DGGE and 454-pyrosequencing of horizontal subsurface flow constructed wetlands with front aeration, *Appl Microbiol Biotechnol*, 99: 1499-1512, **2015**.
17. Halfhide, T., O.K. Dalrymple, A.C. Wilkie, J. Trimmer, B. Gillie, I. Udom, **Q. Zhang**, S.J. Ergas, Growth of an Indigenous Algal Consortium on Anaerobically Digested Municipal Sludge Centrate: Photobioreactor Performance and Modeling, *Bioenergy Research*, 8:249-258, **2015**.
18. Cornejo, P.K., M.V. Santana, **Q. Zhang**, D.R. Hokanson, J.R. Mihelcic, Carbon footprint of water reuse and desalination: a review of greenhouse gas emissions and estimation tools, *Journal of Water Reuse and Desalination*, 04.4: 238-252, **2014**.
19. Zhang, J., A. E. Tejada-Martinez, **Q. Zhang**, Evaluation of LES and RANS for Determining Hydraulic Performance of Disinfection Systems for Water Treatment, *Journal of Fluids Engineering*, 136(12):121102-121102-9, **2014**.
20. Maul, G.A., Y. Kim, A. Amini, **Q. Zhang**, T. H. Boyer, Efficiency and life cycle environmental impacts of ion-exchange regeneration using sodium, potassium, chloride, and bicarbonate salts, *Chemical Engineering Journal*, 254: 198-209, **2014**.
21. Zhang, J., A. E. Tejada-Martinez, **Q. Zhang**, Developments in computational fluid dynamics-based modeling for disinfection technologies over the last two decades: A review, *Environmental Software & Modeling*, 58, 71-85, **2014**.
22. Santana, M.V.E., **Q. Zhang**, J. R. Mihelcic, Influence of Water Quality on the Embodied Energy of Drinking Water Treatment, *Environmental Science and Technology*, 48(5): 3084-3091, **2014**.
23. Zhang, J., A. E. Tejada-Martinez, **Q. Zhang**, H. Lei, Evaluating Hydraulic and Disinfection Efficiencies of a Full-Scale Ozone Contactor using a RANS-based Modeling Framework, *Water Research*, 52: 155-167, **2014**.
24. Cornejo, P. K., **Q. Zhang**, J. R. Mihelcic, Quantifying benefits of resource recovery from sanitation provision in a developing world setting, *Journal of Environmental Management*, 131: 7-15, **2013**.
25. Tong, L., X. Liu, X. Liu, Z. Yuan, **Q. Zhang**, Life cycle assessment of water reuse systems in an

- industrial park, *Journal of Environmental Management*, 129: 471-478, **2013**.
26. Mo, W., **Q. Zhang**, Energy-nutrients-water Nexus: Integrated resource recovery in municipal wastewater treatment plants, *Journal of Environmental Management*, 127: 255-267, **2013**.
 27. Zhang, J., A. E. Tejada-Martínez, **Q. Zhang**, Hydraulic Efficiency in RANS of the Flow in Multichambered Contactors, *Journal of Hydraulic Engineering*, 139(11): 1150-1157, **2013**.
 28. Udom, I., B.H. Zaribaf, T. Halfhide, B. Gillie, O.K. Dalrymple, **Q. Zhang**, S. Ergas, Harvesting Microalgae Grown on Wastewater, *Bioresource Technology*, 139: 101-106, **2013**.
 29. Zhang, J., A. E. Tejada-Martinez, **Q. Zhang**, Reynolds-Averaged Navier-Stokes Simulation of the Flow and Tracer Transport in a Multichambered Ozone Contactor, *Journal of Environmental Engineering*, 139(3): 450-454, **2013**.
 30. Dalrymple, O.K., T. Halfhide, I. Udom, B. Gilles, J. Wolan, **Q. Zhang**, S. Ergas, Wastewater use in algae production for generation of renewable resources: a review and preliminary results, *Aquatic Biosystems*, 9(2): 1-11, **2013**. <http://www.aquaticbiosystems.org/content/9/1/2>
 31. Held, B., **Q. Zhang**, J.R. Mihelcic, Quantification of human and embodied energy of improved water provided by source and household interventions, *Journal of Cleaner Production*, 60: 83-92, **2013**.
 32. Mo, W., **Q. Zhang**, Can municipal wastewater treatment systems be carbon neutral? *Journal of Environmental Management*, 112: 360-367, **2012**.
 33. Pawelzik, P. F., **Q. Zhang**, Evaluation of environmental impacts of cellulosic ethanol using life cycle assessment with technological advances over time, *Biomass and Bioenergy*, 40: 162-173, **2012**.
 34. Mo, W., **Q. Zhang**, R. Wang, Energy embodiment of water supply: A comparison between the US and China, *Advanced Materials Research*, 356-360: 2175-2181, **2012**.
 35. Clarke-Sather, A. R., M. J. Hutchins, **Q. Zhang**, J. K. Gershenson, Development of social, environmental, and economic indicators for a small/medium enterprise, Special Issue on "Sustainability, Accounting and Reporting" in the *International Journal of Accounting and Information Management - IJAIM*, 19(3): 247-266, **2011**.
 36. Owens, E. L., **Q. Zhang**, J.R. Mihelcic, Material flow analysis applied to household solid waste and marine litter on a small island developing state, *J. of Environmental Engineering*, 137(10): 937-944, **2011**.
 37. Mo, W., **Q. Zhang**, J. R. Mihelcic, D. Hokanson, Embodied Energy Comparison of Surface Water and Groundwater Supply Options, *Water Research*, 45(17): 5577-5586, **2011**.
 38. Mo, W., F. Nasiri, M. J. Eckelman, **Q. Zhang**, J. B. Zimmerman, Measuring the Embodied Energy in Drinking Water Supply Systems: A Case Study in The Great Lakes Region, *Environmental Science and Technology*, 44(24): 9516-9521, **2010**.
 39. Kumar, A., S. Ergas, X. Yuan, A. Sahu, **Q. Zhang**, J. Dewulf, F. X. Malcata, H. van Langenhove, Enhanced CO₂ fixation and biofuel production via microalgae: recent developments and future directions, *Trends in Biotechnology*, 28(7): 371-380, **2010**.
 40. Meng, Y., **Q. Zhang**, D.W. Hand, R. Taylor, Modeling of Adsorption and Regeneration of Volatile Organic Compounds on Activated Carbon Fiber Cloth, *J. of Environmental Engineering*, 135(12): 1371-1379, **2009**.
 41. Meng, Y., **Q. Zhang**, D.W. Hand, D. Perram, R. Taylor, Investigation of the Treatability of the Primary Indoor Volatile Organic Compounds on Activated Carbon Fiber Cloths at Typical Indoor Concentrations, *J. of Air & Waste Management*, 59(7): 882-890, **2009**.
 42. **Zhang, Q.**, J.C. Crittenden, K. D. Hristovski, D.W. Hand, P. K. Westerhoff, User-Oriented Batch Reactor Solutions to the Homogeneous Surface Diffusion Model for Different Activated Carbon Dosages, *Water Research*, 43(7): 1859-1866, **2009**.
 43. Meng, Y., **Q. Zhang**, D.W. Hand, D. Perram, R. Taylor, Adsorption and Regeneration on Activated

- Carbon Fiber Cloth for Volatile Organic Compounds at Indoor Concentration Levels, *J. of Air & Waste Management*, 59(1): 31-36, **2009**.
44. Mihelcic, J.R., K.G. Paterson, L.D. Phillips, **Q. Zhang**, D.W. Watkins, B. Barkdoll, V.J. Fuchs, L.M. Fry, D.R. Hokanson, Educating Engineers in the Sustainable Futures Model with a Global Perspective, *Civil Engineering and Environmental Systems*, 25(4): 255-263, **2008**.
 45. Wright, H., **Q. Zhang**, J.R. Mihelcic, Integrating Economic Input-Output Life Cycle Assessment with Risk Assessment for a Screening-Level Analysis, *International Journal of Life Cycle Assessment*, 13(5): 412-420, **2008**.
 46. Johnson, D.M., D.R. Hokanson, **Q. Zhang**, K.D. Czupinski, J. Tang, Feasibility of Water Purification Technology in Rural Areas of Developing Countries, *Journal of Environmental Management*, 88(3): 416-427, **2008**.
 47. Hokanson, D.R., **Q. Zhang**, J.R. Cowden, A.M. Troschinetz, J.R. Mihelcic, and D.M. Johnson, Challenges to Implementing Drinking Water Technologies in Developing World Countries, *Environmental Engineer: Applied Research and Practice*, Vol. I, Winter, 2007, in *Environmental Engineer*, the Magazine of the American Academy of Environmental Engineers, 43(1): 31-38, **2007**.
 48. **Zhang, Q.**, J.C. Crittenden, D.R. Shonnard, J.R. Mihelcic, Development and evaluation of an environmental multimedia fate model CHEMGL for the Great Lakes region, *Chemosphere*, 50: 1377-1397, **2003**.
 49. Mihelcic, J.R., J.C. Crittenden, M.J. Small, D.R. Shonnard, D.R. Hokanson, **Q. Zhang**, H. Chen, S.A. Sorby, V.U. James, J.W. Sutherland, J.L. Schnoor, Sustainability Science and Engineering: The Emergence of a New Metadiscipline, *Environmental Science and Technology*, 37(23): 5314-5324, **2003**.
 50. **Zhang, Q.**, J.C. Crittenden, J.R. Mihelcic, Does Simplifying Transport and Exposure Yield Reliable Results? An Analysis of Four Risk Assessment Methods, *Environmental Science & Technology*, 35(6): 1282-1288, **2001**.

Non-Peer Reviewed Journal Article

1. Zhang, J., X. Liu, A. Tejada-Martinez, **Q. Zhang**, Computational Fluid Dynamics: A Promising Tool for Analysis and Design of Water and Wastewater Treatment, *HydroLink*, number 2, **2016**.
2. **Zhang, Q.**, W. Mo, Embodied Energy and Carbon Footprint Benefits of Water Reclamation, *World Water: Water Reuse & Desalination*, 29-30, Spring **2012**.

Conference Proceedings

1. Zhuang, Y., **Q. Zhang**, Exploring Water-Energy Nexus towards Integrated Water and Energy Management, *Proceedings of the 33rd International Conference of the System Dynamics Society*, Cambridge, MA, July 19-23, 2015.
2. Amini, A., Y. Kim, J. Zhang, T. Boyer, **Q. Zhang**, Environmental Impact and Cost Assessment of Ion Exchange Drinking Water Treatment for Organics Removal in Florida, *Proceedings of Florida Section American Water Works Association Conference (FSAWWA)*, ChampionsGate, FL, Nov. 30-Dec. 4, 2014. (**Best Paper Award**)
3. Amini, A., V. Aponte-Morales, M. Wang, M. Dillbeck, N. Manser, S.J. Ergas, **Q. Zhang**, J. Cunningham, A Proposed Treatment Train for Sustainable Energy and Nutrient Recovery From Swine Waste, *Proceedings of 87th Annual Meeting Water Environment Federation (WEFTEC 14)*, New Orleans, LA, Sept. 27-Oct. 1, 2014.
4. Wang, M., E. Lee, **Q. Zhang**, J. Mihelcic, S. Ergas, Energy production from anaerobic co-digestion of swine manure and microalgae *Chlorella* sp. *Proceedings of 87th Annual Meeting Water Environment Federation (WEFTEC 14)*, New Orleans, LA, Sept. 27-Oct. 1, 2014.
5. Zhuang, Y., **Q. Zhang**, Integrated Water Resources Management Incorporating Water Quality,

- Energy Consumption and Ecological Requirement, *Proceedings of the 31st International Conference of the System Dynamics Society*, Cambridge, MA, July 21-25, 2013.
6. Mo, W., Q. Li, **Q. Zhang**, The Optimal Design of Water Supply Systems for Energy Efficiency, *Proceedings of the Industrial and Systems Engineering Research Conference (ISERC) 2013 Conference*, San Juan, Puerto Rico, May 18-22, 2013.
 7. Zaribaf, B.H., **Q. Zhang**, N. Bennett, Life cycle energy and greenhouse gas emissions of an integrated water management system, City of Clearwater, FL, *2013 AWWA Sustainable Water Management Conference Proceedings*, Nashville TN, April 7-10, 2013.
 8. Udom, I., T. Halfhide, B. Gillie, O. Dalrymple, B.H. Zaribaf, **Q. Zhang**, S.J. Ergas, Harvesting algae grown on wastewater, *Proceedings of 85th Annual Meeting of the Water Environment Federation (WEFTEC 12)*, New Orleans, LA, Sept. 29-Oct. 3., 2012.
 9. **Zhang, Q.**, L. Vanasupa, J.R. Mihelcic, J.B. Zimmerman, S. Platukyte, Challenges for Integration of Sustainability into Engineering Education, *Proceedings of 119th Annual ASEE (American Society for Engineering Education) Conference & Exposition*, San Antonio, TX, June 10-13, 2012.
 10. **Zhang, Q.**, D. Durham, A. Norma, Teaching Sustainability in an Interdisciplinary Environment, *Proceedings of ASEE Southeastern Section Conference*, Starkville, MS, April 1-3, 2012.
 11. Dalrymple, O.K., T. Halfhide, I. Udom, B. Gilles, J. Wolan, **Q. Zhang**, S.J. Ergas, A preliminary estimation of the algal feedstock production potential of Tampa Bay utilizing CO₂ emissions and wastewater effluent, *Proceedings of Florida Energy Systems Consortium (FESC) Summit*, Gainesville, FL, Sept. 26-27, 2011.
 12. Vanasupa, L., **Q. Zhang**, J.B. Zimmerman, and J.R. Mihelcic, Assessing engineering students' readiness to collaborate sustainable design: An open access instrument for experimentation, 118th Annual ASEE Conference & Exposition, Vancouver, BC, Canada, June 26-29, 2011.
 13. Halfhide, T., J. Trimmer, M. Pinilla, W. Bosshart, **Q. Zhang**, J. Wolan, K. Main, S.J. Ergas, Reducing Carbon and Nutrient Impacts of Aquaculture Using an Algal Photo-bioreactor Production System, *Proceedings of International Water Association Leading Edge Technologies Conference*, Amsterdam, The Netherlands, June 6-10, 2011.
 14. Watson, S., T. Halfhide, J. T. Trimmer, **Q. Zhang**, J. Wolan, K. Main, S. Ergas, Reducing the Nutrient Impacts of Aquaculture Through the Use of an Algal Photobioreactor Production System, *Proceedings of Nutrient Recovery and Management 2011*, Miami, FL, Jan 9-12, 2011.
 15. **Zhang, Q.**, L. Vanasupa, J.B. Zimmerman, J.R. Mihelcic, Development and Dissemination of Learning Suites for Sustainability Integration in Engineering Education, *Proceedings of 117th Annual ASEE Conference & Exposition*, Louisville, KY, June 20-23, 2010.
 16. Clarke-Sather, A. R., Ballard, M. M., Reents, N., **Zhang, Q.**, Mihelcic, J.R., and J. W. Sutherland, Utilizing Quality Function Deployment for the Environment to Compare the Sustainability Differences between Wastewater Treatment System Designs, *Proceedings of 17th CIRP International Conference on Life Cycle Engineering 2010*, Hefei, China, May 19-21, 2010.
 17. Mo, W., **Q. Zhang**, J.R. Mihelcic, D. Hokanson, Embodied Energy Model on Water Supply Systems in Great Lakes Region, *Proceedings of WEFTEC 2009, The 82nd Annual Water Environment Federation Technical Exhibition and Conference*, October 10-14, Orlando, FL, 2009.
 18. Meng, Y., **Q. Zhang**, D.W. Hand, R. Taylor, Activated Carbon Fiber Cloth Adsorption-Regeneration Processes for Indoor Volatile Organic Compounds Treatment, *Proceedings of AFS 2009 Conference*, Bloomington, MN, May 4-7, 2009.
 19. Shonnard D.R., J. Jensen, J. Naber, **Q. Zhang**, A. Maclean, K. E. Halvorsen, J. W. Sutherland, T. L. Jenkins, Wood-to-Wheels: A Multidisciplinary Research Initiative in Sustainable Transportation Utilizing Fuels and Co-Products from Forest Resources, *Proceedings of SAE Convergence 2008*, Detroit, MI, October 20-22, 2008.
 20. **Zhang, Q.**, J.B. Zimmerman, J.R. Mihelcic, L.D. Vanasupa, Civil and Environmental Engineering

Education (CEEE) Transformational Change: Tools and Strategies for Sustainability Integration and Assessment in Engineering Education, *Proceedings of 115th Annual ASEE Conference & Exposition*, Pittsburgh, PA, June 22 - 25, 2008. (**Best Paper Award**)

21. Clarke, A.R., **Q. Zhang**, J.K. Gershenson, J.W. Sutherland, Selection of Remanufacturing Facility Locations to Minimize Cost and Environmental Impact, *Proceedings of 15th CIRP International Conference on Life Cycle Engineering*, Sydney, Australia, March 17-19, 2008.
22. Tice, A., **Q. Zhang**, D.W. Hand, D.R. Hokanson, A Transient Model for Predicting Powdered Activated Carbon Adsorption Performance in a Completely Mixed Flow Reactor, *Proceedings of AWWA ACE'07*, Toronto, Canada, June 24-28, 2007.
23. **Zhang, Q.**, D.M. Johnson, J.R. Mihelcic, Interdisciplinary Research for Graduate Education in Sustainability, *Proceedings of ASEE North Midwest Section Conference*, Houghton, MI, Sept. 20-22, 2007.
24. Li, Y. and **Q. Zhang**, A Framework for Incorporating Sustainability Design Concepts into Performance-Based Engineering (PBE) in Civil and Environmental Engineering Education, *Proceedings of ASEE North Midwest Section Conference*, Houghton, MI, Sept. 20-22, 2007.
25. Mihelcic, J.R., K.G. Paterson, L.D. Phillips, **Q. Zhang**, D.W. Watkins, B. Barkdoll, V.J. Fuchs, D.R. Hokanson, Educating Engineers in the Sustainable Futures Model with a Global Perspective, *Proceedings of 2nd International Conference on Sustainability Engineering & Science*, Auckland, New Zealand, February 20-23, 2007.

Technical Reports

1. Kim, Y., M. Wang, S. Ergas, **Q. Zhang**, "Alternative energy sources for Florida aquaculture systems," Final Project Report, submitted to ARC (Aquaculture Research Council), Sept. 2015.
2. Mihelcic, J.M., **Q. Zhang**, D.R. Hokanson, P.K. Cornejo, M.V. Santana, A.M. Rocha, S.J. Ness, "Feasibility Study on Model Development to Estimate and Minimize Greenhouse Gas Concentrations and Carbon Footprint of Water Reuse and Desalination Facilities," Final Project Report, 118 pages, WateReuse Foundation, Oct. 2012.
3. **Zhang, Q.**, D.M. Johnson, M. Young, L.T. Helmuth, "Reducing the Environmental Impact of Material Conversion Process," Final Project Report, submitted to Dow Corning, Sept. 2008.
4. Shonnard, D.R., **Q. Zhang**, D.M. Johnson, R.E. Froese, J.W. Sutherland, B.D. Solomon, J.H. Whitmarsh, J. Waterstraut, A.R. Martin-Garcia, C.A. Miller, T.L. Jenkins, G.J. Wright, "Evaluation of Low Greenhouse Gas Bio-Based Energy Technologies," Final Project Report, submitted to Caterpillar, Inc., Nov. 2006.
5. Hokanson, D.R., D.W. Hand, D.M. Johnson, J.R. Mihelcic, **Q. Zhang**, J.R. Cowden, K.D. Czupinski, J. Tang, A.M. Troschinetz, "Clean Water for the World," Final Project Report, submitted to Caterpillar, Inc., May 2005.

PRESENTATIONS (students underlined, speaker in bold)

Oral Presentations

1. Xu, X., Q. Zhang, Life Cycle Assessment of Bioretention Systems for Nutrient Management, StormCon, Indianapolis, IN, Aug. 22-26, 2016.
2. **Mohebbi, S.**, Q. Zhang, Optimizing Reverse Logistics Network for Integrated Water/Wastewater Systems: Economic, Social, and Environmental Aspects, Anaheim, CA, May 21-24, 2016.
3. **Ware, T.**, **J. Barksdale**, **A. Britton**, **T. McKim**, **Q. Zhang**, Energy and Nutrient Recovery Practices, FWEA West Coast Chapter Annual Round Table Luncheon, Tampa, FL, Mar. 31, 2016. *Invited Panel.*
4. **Zhang, J.**, Q. Zhang, Improving Disinfection and Energy Efficiency of Ozone Contactors via Baffle Design, Florida Section American Water Works Association Conference (FSAWWA),

Orlando, FL, Nov. 29-Dec. 3, 2015.

5. **Grudin, L., Q. Zhang, J. Gattenby**, Debunking the Myths of Sustainability, the 21st Florida Remediation Annual Conference, Orlando, FL, Oct. 8-9, 2015. *Invited Panel*.
6. **Zhang, Q., P. K. Cornejo**, J. R. Mihelcic, Implications of implementation scale on the environmental sustainability of wastewater treatment with resource recovery, 250th American Chemical Society National Meeting & Exposition, Boston, MA, Aug. 16-20, 2015. *Invited Talk*.
7. **Zhuang, Y., Q. Zhang**, Exploring Water-Energy Nexus towards Integrated Water and Energy Management, the 33rd International Conference of the System Dynamics Society, Cambridge, MA, July 19-23, 2015.
8. **Zhang, Q., Y. Zhuang**, A system dynamics model to link water and energy for resources management, AEESP Education & Research Conference, New Haven, CT, June 13-16, 2015.
9. **Naughton, C., Q. Zhang, J.R. Mihelcic**, Assessing the food-energy-climate nexus of traditional and improved shea butter processes across sub-Saharan Africa, AEESP Education & Research Conference, New Haven, CT, June 13-16, 2015.
10. **Amini, A., Y. Kim, J. Zhang, T. H. Boyer, Q. Zhang**, A Life Cycle Assessment and Life Cycle Cost Analysis of Ion Exchange Drinking Water Treatment Technology in Florida, the Florida Water Environment Association West Coast Chapter, Tampa, FL. May 28, 2015. *Invited Talk*.
11. **Amini, A., K. Payne, Y. Kim, J. Zhang, T. H. Boyer, Q. Zhang**, Environmental and Economic Sustainability Evaluation for Design Improvement and Optimization of Ion Exchange Drinking Water Treatment, AIChE's 4th International Congress on Sustainability Science & Engineering (ICOSSE), Balatonfured, Hungary, May 26-29, 2015.
12. **Cornejo, P.K., Q. Zhang, J. R. Mihelcic**, Implications of implementation scale on the environmental sustainability of wastewater treatment with resource recovery, AIChE's 4th International Congress on Sustainability Science & Engineering (ICOSSE), Balatonfured, Hungary, May 26-29, 2015.
13. **Amini, A., Y. Kim, J. Zhang, T. H. Boyer, Q. Zhang**, A Life Cycle Assessment and Life Cycle Cost Analysis of Ion Exchange Drinking Water Treatment Technology in Florida, Florida Section American Water Works Association Conference (FSAWWA), ChampionsGate, FL, Nov. 30-Dec. 4, 2014.
14. **Amini, A., V. Aponte-Morales, M. Wang, M. Dillbeck, N. Manser, S.J. Ergas, Q. Zhang, J. Cunningham**, A Proposed Treatment Train for Sustainable Energy and Nutrient Recovery From Swine Waste, 87th Annual Meeting Water Environment Federation (WEFTEC 14), New Orleans, LA, Sept. 27-Oct. 1, 2014.
15. **Wang, M., E. Lee, Q. Zhang, J. Mihelcic, S. Ergas**, Energy production from anaerobic co-digestion of swine manure and microalgae Chlorella sp. 87th Annual Meeting Water Environment Federation (WEFTEC 14), New Orleans, LA, Sept. 27-Oct. 1, 2014.
16. **Cornejo, P.K., Q. Zhang, J.R. Mihelcic**, How does scale of implementation impact embodied energy and carbon footprint of water reuse systems? 87th Annual Meeting Water Environment Federation (WEFTEC 14), New Orleans, LA, Sept. 27-Oct. 1, 2014.
17. **Diaz-Elsayed, N., Q. Zhang**, Evaluating the Environmental Impact of Onsite Wastewater Treatment Systems, 2014 Biological Waste-to-Energy Technology (BioWET)/Partnerships for International Research & Education (PIRE) Symposium, Tampa, FL, July 9-10, 2014.
18. **Lee, E., Q. Zhang**, Development of a kinetic model for microalgae growth in wastewater, 2014 Biological Waste-to-Energy Technology (BioWET)/Partnerships for International Research & Education (PIRE) Symposium, Tampa, FL, July 9-10, 2014.
19. **Santana, M.V.E., Q. Zhang, J. R. Mihelcic**, The Impact of Water Quality on the Drinking Water Embodied Energy in the City of Tampa, FL, 2014 Biological Waste-to-Energy Technology (BioWET)/Partnerships for International Research & Education (PIRE) Symposium, Tampa, FL,

July 9-10, 2014.

20. **Zhang, Q., D.R. Hokanson, P.K. Cornejo, M.V.E. Santana, J.M. Mihelcic**, Evaluating Carbon Footprint for Water Reuse and Desalination, webcast presentation at the Water Reuse Research Foundation Webcast seminar, online, December 12, 2013.
21. **Zhang, Q.**, We Can Get More Energy for Our Energy Buck, FWEA Wastewater Process Seminar, November 5, 2013. *Invited Talk*
22. **Prouty, C.**, Q. Zhang, Environmental impacts associated with household water source and treatment choices in Uganda, University of Oklahoma's International Water Conference, Norman, OK, September 22-25, 2013.
23. **Zhuang, Y.**, Q. Zhang, Integrated Water Resources Management Incorporating Water Quality, Energy Consumption and Ecological Requirement, the 31st International Conference of the System Dynamics Society, Cambridge, MA, July 21-25, 2013.
24. **Cornejo, P.K.**, Q. Zhang, J.R. Mihelcic, Life-cycle Assessment of Wastewater Infrastructure and Resource Recovery Strategies in a Developing World Context, 2013 AEEESP Education and Research Conference, Golden, CO, July 14-16, 2013.
25. **Prouty, C.**, Q. Zhang, Socioeconomic factors' and water source features' effect on household water supply choices in Uganda and the associated environmental impacts, Global Governance and Sustainable Communities Interdisciplinary Conference, Tampa, FL, April 12, 2013.
26. **Zaribaf, B.H.**, Q. Zhang, N. Bennett, Life cycle energy and greenhouse gas emissions of an integrated water management system, City of Clearwater, FL, 2013 AWWA Sustainable Water Management Conference, Nashville TN, April 7-10, 2013.
27. **Santana, M.V.E.**, Q. Zhang, J. R. Mihelcic, Effect of Urbanization on the embodied energy of water treatment in the City of Tampa, Engineering Sustainability Conference, Pittsburgh, PA, April 7-9, 2013
28. **Zhang, Q., D.R. Hokanson, P.K. Cornejo, M.V. Santana, J.R. Mihelcic**, Feasibility Study on Model Development to Estimate and Minimize Greenhouse Gas Emissions and Carbon Footprint of Water Reuse and Desalination Facilities, 2013 Water Reuse & Desalination Research Conference, Phoenix, AZ, May 6-8, 2013.
29. **Zhang, J.**, A. E. Tejada-Martinez, Q. Zhang, Flow And Tracer Transport Simulation In A Multi-Chambered Ozone Contactor Using RANSS, ASME 2012 International Mechanical Engineering Congress & Exposition (IMECE), Houston, TX, November 9-15, 2012.
30. **Udom, I., T. Halfhide, B. Gillie, O. Dalrymple, B.H. Zaribaf, Q. Zhang, S.J. Ergas**, Harvesting algae grown on wastewater, *Proceedings of 85th Annual Meeting of the Water Environment Federation (WEFTEC 12)*, New Orleans, LA, Sept. 29-Oct. 3., 2012.
31. **Zhang, Q.**, The Potentials of Integrated Resource Recovery to Mitigate Carbon Footprint of Wastewater Treatment Systems, Chang'an University, China, July 4, 2012. *Invited Talk*
32. **Zhang, Q.**, The Potentials of Integrated Resource Recovery to Mitigate Carbon Footprint of Wastewater Treatment Systems, Nanjing University, China, June 28, 2012. *Invited Talk*
33. **Zhang, Q.**, Integration of Algal Biofuel Production with Wastewater Treatment, Tongji University, China, June 25, 2012.
34. **Zhang, Q.**, The Potentials of Integrated Resource Recovery to Mitigate Carbon Footprint of Wastewater Treatment Systems, FWEA lunch meeting, May 17, 2012. *Invited Talk*
35. **Zhang, J.**, A. E. Tejada-Martinez, Q. Zhang, Study of the Flow in Baffled Reactor by Numerical Simulation, Annual Meeting of the Florida Academy of Sciences (FAS), Tampa, FL, March 16-17, 2012. (honored as outstanding presentation)
36. **Zhang, Q.**, L. Vanasupa, J.R. Mihelcic, and J.B. Zimmerman, Challenges for Integration of Sustainability into Engineering Education, 119th Annual ASEE (American Society for Engineering Education) Conference & Exposition, San Antonio, TX, June 10-13, 2012.

37. **Zhang, Q.**, W. Mo, Embodied Energy and carbon footprint benefits of water Reuse, 2011 Portable Reuse Conference, Hollywood, FL, Nov 13-15, 2011.
38. Mo, W., Q. Zhang, **R. Wang**, Energy embodiment of water supply: A comparison between the US and China, accepted by 2011 International Conference on Energy, Environment and Sustainable Development, Shanghai, China, Oct 21-23, 2011.
39. **Dalrymple, O. K.**, T. Halfhide, I. Udom, B. Gilles, J. Wolan, Q. Zhang, and S. Ergas, A preliminary estimation of the algal feedstock production potential of Tampa Bay utilizing CO2 emissions and wastewater effluent, 2011 FESC Summit, Gainesville, FL, Sept 27-28, 2011.
40. **Pinilla, M.**, Q. Zhang, and B. Joseph, Comparative life cycle assessment (LCA) of lignocellulosic biomass conversion into different energy products, 2011 FESC Summit, Gainesville, FL, Sept 27-28, 2011.
41. Li, Q., **W. Mo**, Q. Zhang, The optimal design of water supply systems for energy efficiency, 2011 AEESP Education & Research Conference, Tampa, FL, July 10-12.
42. **Halfhide, T.**, S. Watson, J. Trimmer, Q. Zhang, J. Wolan, K. Main, S. J. Ergas, Reducing Carbon and Nutrient Impacts of Aquaculture Using an Algal Photo-bioreactor Production System, International Water Association Leading-Edge Technologies 2011, Amsterdam, Netherlands, June 6-10, 2011.
43. **Zhang, Q.**, **W. Mo**, J.R. Mihelcic, and D. Hokanson, Embodied Energy of Water Supply Systems, 6th International Conference on Industrial Ecology Science, Systems, and Sustainability, Berkeley, CA, June 7-10, 2011.
44. **Watson, S.**, T. Halfhide, J. T. Trimmer, Q. Zhang, J. Wolan, K. Main, S. Ergas, Reducing the Nutrient Impacts of Aquaculture Through the Use of an Algal Photobioreactor Production System, *Nutrient Recovery and Management 2011*, Miami, FL, Jan 9-12, 2011.
45. **Clarke-Sather, A. R.**, Ballard, M. M., Reents, N., Zhang, Q., Mihelcic, J.R., and J. W. Sutherland, Utilizing Quality Function Deployment for the Environment to Compare the Sustainability Differences between Wastewater Treatment System Designs, *17th CIRP International Conference on Life Cycle Engineering 2010*, Hefei, China, May 19-21, 2010.
46. **Mo, W.**, Q. Zhang, J.R. Mihelcic, D. Hokanson, Embodied Energy Model on Water Supply Systems in Great Lakes Region, *The 82nd Annual Water Environment Federation Technical Exhibition and Conference*, October 10-14, Orlando, FL, 2009.
47. **Meng, Y.**, Q. Zhang, D.W. Hand, R. Taylor, Activated Carbon Fiber Cloth Adsorption-Regeneration Processes for Indoor Volatile Organic Compounds Treatment, *AFS 2009 Conference*, Bloomington, MN, May 4-7, 2009.
48. **Shonnard, D.R.**, Jensen, J.R., Naber, J., Polonowski, C., Zhang, Q., Maclean, A., Halvorsen, K.E., Jenkins, T., Sutherland, J.W., Froese, R.E. Miller. C.A., Wood-to-Wheels: A Multidisciplinary Research Initiative in Sustainable Transportation Utilizing Fuels and Co-Products from Forest Resources, */Future of Biofuels/ Keystone conference*, Snowbird, Utah, Apr. 04-08, 2009.
49. **Shonnard D.R.**, J. Jensen, J. Naber, Q. Zhang, A. Maclean, K. E. Halvorsen, J. W. Sutherland, T. L. Jenkins, Wood-to-Wheels: A Multidisciplinary Research Initiative in Sustainable Transportation Utilizing Fuels and Co-Products from Forest Resources, *SAE Convergence 2008*, Detroit, MI, October 20-22, 2008.
50. **Shonnard D.R.**, J. Naber, Q. Zhang, A. Maclean, K. E. Halvorsen, J. W. Sutherland, T. L. Jenkins, Wood-to-Wheels: A Multidisciplinary Research Initiative in Sustainable Transportation Utilizing Fuels and Co-Products from Forest Resources, *Short Rotation Crops International Conference*, Bloomington, MN, August 18 – 22, 2008.
51. **Zhang, Q.**, J.B. Zimmerman, J.R. Mihelcic, L.D. Vanasupa, Learning Materials and Teaching Strategies for Sustainability Integration in Engineering Education, *12th Annual Green Chemistry and Engineering Conference*, Washington, D.C., June 24-26, 2008.

52. **Zhang, Q.**, J.B. Zimmerman, J.R. Mihelcic, L.D. Vanasupa, Civil and Environmental Engineering Education (CEEE) Transformational Change: Tools and Strategies for Sustainability Integration and Assessment in Engineering Education, *2008 Annual American Society of Engineering Education (ASEE) Conference & Exposition*, Pittsburgh, PA, June 22-25, 2008.
53. **Mayer, A.**, J. Zimmerman, J.R. Mihelcic, S. Olmstead, D. Watkins, Q. Zhang, Modeling and analyzing the use, efficiency, value, and governance of water in the Great Lakes region through an integrated approach, *Association for Great Lakes Research 51st Annual Conference*, Peterborough, Ontario, Canada, May 19-23, 2008.
54. **Clarke, A.R.**, Q. Zhang, J.K. Gershenson, J.W. Sutherland, Selection of Remanufacturing Facility Locations to Minimize Cost and Environmental Impact, *15th CIRP International Conference on Life Cycle Engineering*, Sydney, Australia, March 17-19, 2008.
55. **Zhang, Q.**, D. Johnson, J. Mihelcic, Interdisciplinary Research for Graduate Education in Sustainability, *ASEE North Midwest Section Conference*, Houghton, MI, Sept. 20-22, 2007.
56. **Li, Y.** and Q. Zhang, A Framework for Incorporating Sustainability Design Concepts into Performance-Based Engineering (PBE) in Civil and Environmental Engineering Education, *ASEE North Midwest Section Conference*, Houghton, MI, Sept. 20-22, 2007.
57. **Zhang, Q.**, D.R. Shonnard, J.R. Mihelcic, Simplified Impact Assessment Methods for Green Engineering Design through Chemical Grouping and Parameter Adjustment, *AEESP Education and Research Conference*, Blacksburg, VA, Jul. 27- Aug. 1, 2007.
58. **Tice, A.**, Q. Zhang, D.W. Hand, D.R. Hokanson, A Transient Model for Predicting Powdered Activated Carbon Adsorption Performance in a Completely Mixed Flow Reactor, *AWWA ACE'07*, Toronto, Canada, June 24-28, 2007.
59. **Mihelcic, J.R.**, K.G. Paterson, L.D. Phillips, Q. Zhang, D.W. Watkins, B. Barkdoll, V.J. Fuchs, D.R. Hokanson, Educating Engineers in the Sustainable Futures Model with a Global Perspective, *2nd International Conference on Sustainability Engineering & Science*, Auckland, New Zealand, February 20-23, 2007.
60. **Mihelcic, J.R.**, D.R. Hokanson, N.J. Hutzler, Q. Zhang, How the Environmental Engineer fits into Education and Research Initiatives in Sustainability, *Association of Environmental Engineering & Science Professors (AEESP) Education and Research Conference*, Clarkson University, Potsdam, NY, July 24-26, 2005.
61. Zhang, Q., **J.C. Crittenden**, J.R. Mihelcic, T. Rogers, A. Horvath, Life Cycle Assessment Leading to Improved Environmentally Conscious Automotive Manufacturing, *The 2nd International Conference of the International Society for Industrial Ecology*, Ann Arbor, MI, June 29-July 2, 2003.
62. **Crittenden, J.C.**, J.R. Mihelcic, Q. Zhang, M.J. Small, J. Schnoor, Sustainability Science: The Case for a New Metadiscipline, *The Association of Environmental Engineering and Science Professors/American Academy of Environmental Engineering Conference on Research and Education*, Toronto, Canada, Aug 11-13, 2002.
63. **Zhang, Q.**, J.C. Crittenden, Evaluation of Risk Assessment Methods for Pollution Prevention and Green Design, *AIChE spring conference*, Houston, TX, April 21-26, 2001.
64. **Zhang, Q.**, J.C. Crittenden, Development of an Environmental Multimedia Fate Model for the Great Lakes Region, *23rd Midwest Environmental Chemistry Workshop*, Kalamazoo, MI, Oct. 6-8, 2000.

Poster Presentations

1. **Zhang, J.**, Q. Zhang, Improving Disinfection and Energy Efficiency of Ozone Contactors via Baffle Design, *AEESP Education & Research Conference*, New Haven, CT, June 13-16, 2015.
2. **Lee, E.**, Q. Zhang, Development of a kinetic model for microalgae growth in wastewater, *AEESP*

- Research and Education Conference, Yale University, New Haven, CT, June 13-16, 2015.
3. **Amini, A.**, K. Payne, **J. Zhang**, Q. Zhang, Technology Improvement of Ion Exchange Drinking Water Technology by Dynamic Process Model Integration with Life Cycle Assessment and Optimization of Sustainability Using a Genetic Algorithm, AEESP Research and Education Conference, Yale University, New Haven, CT, June 13-16, 2015.
 4. **Amini, A.**, K. Payne, **Y. Kim**, **J. Zhang**, T. H. Boyer, Q. Zhang, Environmental Impact and Cost Assessment for Technology Design Optimization of Ion Exchange Technology by Dynamic Mathematical Model Integration, Poster presented at AIChE's 39th Annual International Phosphate Fertilizer & Sulfuric Acid Technology Conference, Clearwater, FL, June 5-6, 2015.
 5. **Amini, A.**, K. Payne, **Y. Kim**, **J. Zhang**, T. H. Boyer, Q. Zhang, A Novel Method for Evaluation of Environmental and Economic Sustainability by Process Model Integration with Life Cycle Assessment and Optimization Using a Genetic Algorithm, ASCE's Environmental Water Resource Institute World Congress, Austin, TX, May17-21, 2015.
 6. **Amini, A.**, K. Payne, **Y. Kim**, **J. Zhang**, T. H. Boyer, Q. Zhang, Environmental Impact and Cost Assessment of Ion Exchange Drinking Water Treatment for Organics Removal, the Engineering Sustainability Conference, Pittsburgh, PA, April 19-21, 2015.
 7. **Santana, M.V.E.**, Q. Zhang, J. R. Mihelcic, The Effect of Sprawl and Smart Growth on The Embodied Energy and Carbon Footprint of Water Supply, 2015 Sustainable Water Management Conference, Portland, Oregon, March 15-18, 2015.
 8. **Amini, A.**, **Y. Kim**, J. Zhang, T. H. Boyer, Q. Zhang, A Life Cycle Assessment and Cost Analysis of Ion Exchange Drinking Water Treatment Plants in Florida, Florida Air and Waste Management Association Conference, Jacksonville, FL, Oct. 28-30, 2014.
 9. **Lee, E.**, Q. Zhang, Development of a kinetic model for microalgae growth in wastewater, 4th international Conference on Algal Biomass, Biofuels, and Bioproducts, Santa Fe, NM, June 15-18, 2014.
 10. **Amini, A.**, V. Aponte-Morales, M. Wang, M. Dillbeck, N. Manser, S.J. Ergas, Q. Zhang, J. Cunningham, Sustainable Energy and Nutrient Recovery from Swine Waste, AIChE's 38th Annual International Phosphate Fertilizer & Sulfuric Acid Technology Conference, Clearwater, FL, June 6-7, 2014.
 11. **Lee E.**, Q. Zhang, A kinetic model for microalgae growth in wastewater, Florida Energy System Consortium Summit, Gainesville, FL, May 12-13, 2014.
 12. **Amini, A.**, V. Aponte-Morales, M. Wang, M. Dillbeck, N. Manser, S.J. Ergas, Q. Zhang, J. Cunningham, Sustainable Energy and Nutrient Recovery from Swine Waste, the National Association of Environmental Professionals Annual Conference, St. Petersburg, FL, April 7-10, 2014.
 13. **Amini, A.**, S.J. Ergas, Q. Zhang, J. Cunningham, Sustainable energy and nutrient recovery from swine waste: a life cycle environmental impact and cost assessment, the UF Sustainable Water Resources Conference, Gainesville, FL Feb. 11-12, 2014.
 14. **Zhuang, Y.**, Q. Zhang, Integrated Water Resources Management Incorporating Water Quality, Energy Consumption and Ecological Requirement, the 31st International Conference of the System Dynamics Society, Cambridge, MA, July 21-25, 2013.
 15. **Zhang, Q.**, **W. Mo**, D. Joni, Regional Embodied Energy In Water Supply: The Impacts Of Water Source, Land Use And Population, 2013 AEESP Education & Research Conference, Golden, Colorado, July 14 - 16, 2013.
 16. **Santana, M.V.E.**, Q. Zhang, J. R. Mihelcic, Influence of Water Quality on the Embodied Energy of Water Treatment in the City of Tampa, 2013 AEESP Education & Research Conference, Golden, Colorado, July 14 - 16, 2013.
 17. **Cornejo, P.K.**, J.M. Mihelcic, D.R. Hokanson, Q. Zhang, Estimating the Carbon Footprint of

Water Reuse and Desalination Facilities, 22nd Annual Southwest Florida Water Resources Conference, Fort Meyers, FL, January 25-26, 2013.

18. **Prouty, C.**, Q. Zhang, Socioeconomic factors' and water source features' effect on household water supply choices in Uganda and the associated environmental impacts, 22nd Annual Southwest Florida Water Resources Conference, Fort Meyers, FL, January 25-26, 2013.
19. **Cornejo, P.K.**, Q. Zhang, J.R. Mihelcic, Embodied Energy and Carbon Footprint of Wastewater Treatment Infrastructure: Water Reuse and Energy Recovery in Rural Bolivia, WEFTEC National Conference, New Orleans, LA, September 29, 2012 – October 3, 2012.
20. **Pinilla, M.**, Q. Zhang, and B. Joseph, Comparative life cycle assessment (LCA) of biofuels and electricity production from algal biomass, *2011 FESC Summit*, Gainesville, FL, Sept 27-28, 2011.
21. **Zhuang, Y.** and Q. Zhang, A system dynamics simulation model for integrated water resources management in Hillsborough County, *2011 AEESP Education & Research Conference*, Tampa, FL, July 10-12, 2011.
22. **Pinilla, M. J.**, S. Watson, and Q. Zhang, Life cycle assessment (LCA) of algae biofuel and/or biogas production using wastewater, *2011 AEESP Education & Research Conference*, Tampa, FL, July 10-12, 2011.
23. **Zhang, J.**, A. E. Tejada-Martínez, and Q. Zhang, Study of the flow in ozone reactor using CFD, *2011 AEESP Education & Research Conference*, Tampa, FL, July 10-12, 2011.
24. **Zhang, Q.**, L. Vanasupa, J.B. Zimmerman, J.R. Mihelcic, Development and Dissemination of Learning Suites for Sustainability Integration in Engineering Education, *116th Annual ASEE Conference & Exposition*, Louisville, KY, June 20-23, 2010.
25. **Mo, W.**, Q. Zhang, Water Embodied in US Economic Sectors, *2nd UF Water Institute Symposium*, Gainesville, FL, Feb 24-25, 2010.
26. Zhang, Q., **H. Wright**, J.R. Mihelcic, Integrated Assessment for Emerging Chemicals of Concern, *The 4th International Conference of the International Society for Industrial Ecology*, Toronto, Canada, June 17-20, 2007.
27. **Zhang, Q.**, J.C. Crittenden, J.R. Mihelcic, Environmental Indices for Green Chemical Production and Use, *22nd Midwest Environmental Chemistry Workshop*, Houghton, MI, Oct. 1-3, 1999.

FUNDED RESEARCH PROJECTS (Total dollars: \$17,258,974; Total NSF dollars: \$10,547,802; Total NSF dollars under Dr. Zhang's control: \$4,296,373)

- Zhang, Q. (PI), Q. Lu, S. Mohebbi, X. Ou, E. C. Wells, Y. Zhang, M. Li, "CRISP Type 2: Integrative Decision Making Framework to Enhance the Resiliency of Interdependent Critical Infrastructures," **National Science Foundation, \$1,963,542** (Control: 100%), 2016-2020.
- Ergas, S.J. (PI), **Q. Zhang (co-PI)**, K. M. Scott, "UNS: A Novel Algal-Bacterial Shortcut Nitrogen Removal Process for Wastewater Treatment," **National Science Foundation, \$329,999** (Share: ~100,000), 2015-2018.
- **Zhang, Q. (PI)**, "CAREER: Envisioning Integrated Wastewater Management through the Lens of Reverse Logistics," **National Science Foundation, \$501,886** (Control: 100%), 2015-2019.
- Tobiason, J.E. (PI), D. Lawler, B. Dvorak, L. Katz, M.J. Kirists, T.H. Boyer, S.D. Wilson, K. Kinney, **Q. Zhang (co-PI)**, J. Brown, "Water Innovation Network for Sustainable Small Systems (WINSSS) Center," **Environmental Protection Agency, \$4,100,000** (Control: **\$133,772**), 2014-2017. Lead for sustainability assessment of the project.
- Ergas, S. (PI), **Q. Zhang (co-PI)**, "Alternative Energy Sources for Florida Aquaculture Systems," **Florida Aquaculture Review Council, \$71,848** (Share: **\$35,924**), 2014-2015.
- Mihelcic, J.R. (PI), **Q. Zhang (co-PI)**, Cunningham, J., Ergas, S., M. Trotz, Yeh, D., "Center for Reinventing Aging Infrastructure for Nutrient Management (RAINmgt)," **Environmental**

- Protection Agency**, \$ 2,220,648 (Share: **\$218,493**), 2013-2017. Lead for life cycle environmental impact and cost analysis of the project.
- Mihelcic, J.R. (PI), M. Trotz, C. Well, **Q. Zhang (SP)**, “PIRE: Context Sensitive Implementation of Synergistic Water-Energy Systems,” **National Science Foundation**, \$3,900,643 (Share: **\$464,330**), 2012-2017. Lead for system analysis and environmental sustainability assessment research thrusts of the project.
 - Boyer, T.H. (PI), **Q. Zhang (site PI)**, “Small, safe, sustainable (S3) public water systems through innovative ion exchange,” **Environmental Protection Agency**, \$499,361 (Control: **\$154,579**), 2012-2016.
 - Mihelcic, J.R. (PI), **Q. Zhang (co-PI)**, “Feasibility Study on Model Development to Estimate and Minimize the Greenhouse Gas Concentrations and Carbon Footprint of Water Reuse and Desalination Facilities,” **WaterReuse Foundation**, \$25,000 (Share: **\$12,500**), 2011-2012.
 - Mihelcic, J.R. (PI), **Q. Zhang (co-PI)**, A. Stuart, S. Ergas, Y. Zhang, “Graduate Scholarships to Achieve Sustainable Infrastructure at the Water-Energy-Global Nexus,” **National Science Foundation**, \$599,976 (Share: **\$120,000**), 2010-2015.
 - Ergas, S. (PI), **Q. Zhang (co-PI)**, J. Wolan, J.R. Mihelcic, “Sustainable Microalgal Biofuel Production,” **Florida Energy Systems Consortium**, \$50,000 (Control: **\$17,904**), 2010-2011.
 - Babu, J. (PI), **Q. Zhang (co-PI)**, “Feasibility, Sustainability and Economic Analysis of Solar Assisted Biomass,” **Florida Energy Systems Consortium**, \$45,328 (Control: **\$22,832**), 2010-2011.
 - **Zhang, Q. (PI)**, J.R. Mihelcic, “Civil and Environmental Engineering Education (CEEE) Transformation Change: Tools and Strategies for Sustainability Integration and Assessment in Engineering Education,” **National Science Foundation**, CCLI (Course, Curriculum, and Laboratory Improvement) program, **\$252,059** (Control: 100%), 2007-2012.
 - Mayer, A.S., **Q. Zhang (co-PI)**, D.W. Watkins, and J.R. Mihelcic, “Modeling and Analyzing the Use, Efficiency, Value, and Governance of Water as a Material in the Great Lakes Region through an Integrated Approach,” **National Science Foundation**, MUSES (Materials Use: Science, Engineering, and Society) program, \$1,086,322 (USF Share: **\$298,522**, Control: 100%), 2007-2012.
 - Cai, Y. (PI), **Q. Zhang (co-PI)**, Ott, L., Hungwe, N. H., Tan, J. “CPATH CDP: Integrating Sustainability into Undergraduate Computing Education,” **National Science Foundation**, Computer & Information Science & Engineering (CISE) Pathways to Revitalized Undergraduate Computing Education (CPATH) program, \$144,554, 2008-2010.
 - Perlinger, J. (PI), **Q. Zhang (co-PI)**, V. Griffis, J.R. Mihelcic, K. Paterson, “Graduate Student Scholarships to Advance a Global Outlook of Economic and Social Prosperity that Protects the Environment,” **National Science Foundation**, S-STEM program, \$599,978, 2008-2012.
 - **Zhang, Q. (PI)**, “Reducing Environmental Impact of Material Conversion Process,” Undisclosed Company, \$5,000, 2008.
 - Mihelcic, J.R., **Q. Zhang (co-PI)**, K.G. Paterson, D.W. Watkins, and B.D. Barkdoll, “International: Integration of an International Research Experience in Bolivia with Sustainable Development Engineering Education,” **National Science Foundation**, Developing Global Scientists and Engineers (DGSE) program, \$144,345, 2007 – 2010.
 - Hand, D.W., **Q. Zhang (co-PI)**, D.L. Perram, “Development of an Indoor Air Treatment System for Removing Volatile Organic Chemicals from Air,” Access Business Group, \$100,000, 2006 - 2008.
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PROFESSIONAL SERVICES

Memberships

Association of Environmental Engineering and Science Professors, 01/2007 – present

American Water Works Association, 11/2005 – present

Water Environment Federation, 9/2009 – present

American Chemical Society, 8/2001 – 5/2016

American Society for Engineering Education, 3/2008 – 4/2013

International Society of System Dynamics, 7/2013 -7/2014

International Society for Industrial Ecology, 01/2005 – 12/2012

Review

- NSF proposal review for Environmental Sustainability Program, International Research Fellowship Program, Experimental Program to Stimulate Competitive Research (EPSCoR)
- EPA proposal review for People, Prosperity, & Planet Sustainability Program, Collaborative Science and Technology Network for Sustainability Program, Sustainable Chesapeake Center Program, STAR program
- The Research Council of Norway for the Latin America Programme
- Research Grants Council (RGC) of Hong Kong
- Award review: 2013 ASEE SE Award Reviewers
- Journal review for *Environmental Science & Technology*; *J. of Hazardous Materials*; *Environmental Engineer: Applied Research and Practice*; *Environmental Engineer Science*; *J. of Cleaner Production*; *Advances in Engineering Education*; *Water Resources Management*; *Industrial & Engineering Chemistry Research*; *Resources, Conservation & Recycling*; *Sustainable Energy Technologies and Assessments*; *Environmental Management*; *Sustainability*; *Algal Research*; *Energy Technology & Policy*; *Bioresource Technology*; *Sustainability*

Professional Organization Services

- Serve on the Task Committee: Manual of Practice for CFD Applications in Environmental Engineering in ASCE (August 2015 – present)
- Serve on the ASCE Environmental and Water Resources Institute (EWRI) Sustainability Task Committee (December 2010 – present)
- Served on organizing committee and technical committee for 2011 AEESP (Association of Environmental Engineering and Science Professors) Education & Research Conference.
- Co-organized 4 workshops to disseminate learning materials developed to incorporate sustainability into the engineering education

University Related Services

- Serve as Faculty Advisor: USF American Water Works Association Student Chapter (2013-present); USF Society of Women Engineers (2012-2015); USF Chinese Student Christian Fellowship (2009-present), Society of Asian Scientists and Engineers (2015-present)
- Serve on the ABET Industrial Liaison Committee of Civil and Environmental Engineering (2011-present)
- Serve on the Environmental and Water Resource Engineering (EWRE) area committee of Civil and Environmental Engineering (2009-present)
- Served as the Graduate Coordinator for Environmental Engineering area (2013-present)
- Served on the Graduate Student Dissertation and Thesis Committee in and outside of USF (over 15)

HONORS & AWARDS

- USF Outstanding Faculty Award (2015, 2016)
- CAREER award by the National Science Foundation (2015)
- Best Paper Award by the Florida Section of the American Water Works Association (FAWWA) (2014)
- 2011 ASEE-SE (American Society of Engineering Education-South Eastern section) New Faculty Research Award. This award is given to young faculty members who have demonstrated excellence in teaching and research.
- Best Paper Award by the Environmental Engineering Division of the American Society of Engineering Education (ASEE) (2009)
- Graduate advisor to doctoral students, Christy Prouty and Jie Zhang, who received USF College of Engineering Research Week Poster Awards (2012)
- Graduate co-advisor to doctoral student, Jie Zhang, who received an outstanding presentation award at the Annual Meeting of the Florida Academy of Sciences (FAS) (2012)
- Graduate advisor to doctoral student, Yilin Zhuang, who received a Student Poster Award in 2011 AEESP (Association of Environmental Engineering and Science Professors) Education & Research Conference (2011)
- Invited to participate in the McKnight Doctoral Mid-Year Research and Writing Conference as discussant (2014)
- Invited to participate in the National Science Foundation (NSF) Energy-Water Workshop, Arlington, VA (2013)
- Dedicated Service Award by the Sustainable Futures Institute at Michigan Technological University (2009)
- Ford Fellowship, Michigan Tech (2001)
- Best Poster Award in Graduate Student Poster Session, Michigan Tech (1999)
- Research scholarship supported by the EPA CenCITT (Center for Clean Industrial and Treatment Technologies), Michigan Tech (1998-2001)