Zhonglong Zhang, PhD, PE, PH

Vice President of American Institute of Hydrology
Research Professor
Department of Civil and Environmental Engineering

Portland State
UNIVERSITY

Email: zz3@pdx.edu

Summary

Dr. Zhang is a Research Professor and Principal Investigator of Civil and Environmental Engineering at Portland State University. He has been working side-by-side with the USACE team for the development of watershed, riparian vegetation, water quality, and multimedia environmental modeling capabilities and software. He is the primary author of water quality modules currently coupled with HEC-RAS, HEC-ResSim as a companion water quality model. He is a major contributor of 2D hydrodynamic and water quality CE-QUAL-W2 Version 4.5. He has conducted a wide range of hydraulic and water quality modeling applications for many of the major US river systems including the Sacramento River, San Joaquin River, Santa Ana River in California, Columbia and Snake River system, Lehigh River system, Jacksonville Harbor-St. John River, Patuxent River and Potomac River in Chesapeake Bay, Minnesota River, Missouri River, and Mississippi River. I developed and applied the SWAT model to the whole Mississippi River Basin for evaluating impacts of biofuel production and land use changes on water quality.

Workshops and Courses Taught

- CE-QUAL-W2 Water Quality Modeling Workshop, ERDC, Vicksburg, MS, Aug 16-18, 2022.
- HEC-RAS 1D Riverine Water Quality Modeling, EWRI Workshop, Atlanta, GA, June 8, 2022
- W24 Water Quality Modeling 101 with HEC-RAS, WEFTEC Workshop, New Orleans, LA, Sept 30, 2018.
- CE-QUAL-W2 Water Quality Modeling Workshop, ERDC, Vicksburg, MS, Sept 27-29, 2016.
- GEOG494/594: GIS for Water Recourses (undergraduate/Graduate), Spring, 2021

Selected Publications

- Ha, M., Zhang, Z., and Wu, M. 2018. "Biomass production in the Lower Mississippi River basin: mitigating associated nutrient and sediment discharge to the Gulf of Mexico." Science of the Total Environment, 635(2018): 1585-1599.
- Zhang, Z., Sun, B., and Johnson, B.E. 2015. "Integration of a benthic sediment diagenesis module into a two-dimensional hydrodynamic and water quality model – CE-QUAL-W2." Ecological Modelling, 297 (2015): 213-231.
- Zhang, Z. 2014. "Nonpoint source and water quality modeling." In *Handbook of Engineering Hydrology: Environmental Hydrology and Water Management.* CRC Press, pp 261-298.
- Zhang, Z. and Johnson, B.E. 2016. Aquatic contaminant and mercury simulation modules developed for hydrologic and hydraulic models, *ERDC/EL TR-16-8*.
- Zhang, Z. and Johnson, B.E. 2016. Aquatic nutrient simulation modules (NSMs) developed for hydrologic and hydraulic models, *ERDC/EL TR-16-1*.
- Zhang, Z. and Wu M. 2013. Analysis of riverine sediment and nutrient exports in Missouri river basin by application of SWAT model, *ANL/ESD-13/12*.