



YUSHI WANG, PHD

Water Resources Engineer

Yushi Wang is a water resources engineer with The Water Institute's Modeling group. He has more than ten years of experience conducting hydraulic and water resources studies using numerical models. His areas of expertise include numerical simulation of hydrodynamic, sediment transport, water quality modeling, hydraulic design, and environmental impact assessment.

COMPANY ROLE

Water Resources
Engineer

PROJECT ROLE / FOCUS AREAS

Environmental
Hydraulics

Computational Fluid
Dynamics

Multiphase Modeling
Thermal Discharge
Modeling

Hydro Power Flows

EDUCATION

PhD Civil and
Environmental
Engineering, University
of Iowa, 2013

MS Civil and
Environmental
Engineering, University
of Iowa, 2009

BS Environmental
Sciences, Florida A&M
University, 2007

PROFESSIONAL MEMBERSHIP

International
Association for Hydro-
Environment
Engineering and
Research

Prior to joining the Institute, Dr. Wang worked as a Computational Fluid Dynamics (CFD) Specialist for the Stantec Consulting Ltd., where he focused on developing numerical models to resolve a broad range of industrial and environmental flow-related problems. During his graduate studies, Dr. Wang has been involved in several research projects to assist in the design of hydraulic structures to minimize environmental impacts and optimize operational effectiveness using CFD models.

Dr. Wang received his Ph.D. in civil and environmental engineering from the University of Iowa.

PROFESSIONAL EXPERIENCE

2015-Present: Research Scientist, The Water Institute

2013-2015: Computational Fluid Dynamics (CFD) Specialist, Stantec Consulting Ltd.

2007-2013: Research Assistant, University of Iowa: IIHR-Hydroscience & Engineering

2005-2007: Research Assistant, Florida A&M University: The Environmental Science Institute

SELECTED PROJECTS

Louisiana's Coastal Master Plan (CMP) 2017, 2023. *Coastal Protection and Restoration Authority (CPRA) (2015-2023).* Yushi played a key role on the CMP's hydrodynamic modelling team for both the CMP 2017 and 2023. Louisiana's CMP is a 50-year, \$50 billion overarching plan to guide coastal restoration and protection for south Louisiana. The plan which includes extensive hydrologic and sediment modeling, is redone every five (now six) years to incorporate the latest scientific findings.

Calcasieu Ship Channel Salinity Control Measures Project. *Coastal Protection and Restoration Authority (CPRA) (2014-2021).* Yushi led the Institute's effort on conducting numerical studies to evaluate a wide array of salinity control alternatives developed by the CPRA at the Calcasieu Ship Channel. After



narrowing down the alternative solutions, Yushi performed detailed modeling as part of the engineering, design, and permitting phase of the project.

Louisiana Watershed Initiative (LWI). *Louisiana Office of Community Development (2019-ongoing)*. Yushi served as a key team member in supporting the development of coastal compound flooding analysis of a statewide, comprehensive \$1.2B Watershed-based Floodplain Management Program.

SELECTED PUBLICATIONS

1. Meselhe, E.M., White, E.D., **Wang, Y.** and Reed, D.J., 2021. Uncertainty analysis for landscape models used for coastal planning. *Estuarine, Coastal and Shelf Science*, 256, p.107371. <https://doi.org/10.1016/j.ecss.2021.107371>
2. Yuill, B., **Wang, Y.**, Allison, M., Meselhe, E. and Esposito, C., 2020. Sand settling through bedform - generated turbulence in rivers. *Earth Surface Processes and Landforms*, 45(13), pp.3231-3249. <https://doi.org/10.1002/esp.4962>
3. Reed, D., Wang, Y., Meselhe, E. and White, E., 2020. Modeling wetland transitions and loss in coastal Louisiana under scenarios of future relative sea-level rise. *Geomorphology*, 352, p.106991. <https://doi.org/10.1016/j.geomorph.2019.106991>
4. Meselhe, E., **Wang, Y.**, White, E., Jung, H., Baustian, M.M., Hemmerling, S., Barra, M. and Bienn, H., 2020. Knowledge-based predictive tools to assess effectiveness of natural and nature-based solutions for coastal restoration and protection planning. *Journal of Hydraulic Engineering*, 146(2), p.05019007. [https://doi.org/10.1061/\(ASCE\)HY.1943-7900.0001659](https://doi.org/10.1061/(ASCE)HY.1943-7900.0001659)
5. **Wang, Y.**, Politano, M., Laughery, R. and Weber, L., 2015. Model development in OpenFOAM to predict spillway jet regimes. *Journal of applied water engineering and research*, 3(2), pp.80-94. <https://doi.org/10.1080/23249676.2015.1025442>
3. Freeman, A., Grace, A., Green, M., Lindquist, D., Meselhe, E., Reed, D., **Wang, Y.**, White, E. 2015. Coastal Ecosystem Integrated Compartment Model (ICM): Modeling Framework. In Proceedings of the AGU 2015. San Francisco, California, USA.
4. Politano, M., **Wang, Y.**, Laughery, R., and Weber, L. 2015. A Numerical Model for Spillway Jet Regimes and Total Dissolved Gas. In Proceedings of the HydroVision International Conference 2015. Portland, Oregon, USA. (Best Technical Paper)

SELECTED CONFERENCE PROCEEDINGS AND PRESENTATIONS

1. **Wang, Y.**, Yuill, B., Kim, H., Villarini, G., MacManus, M., Misra, S. 2022. Precipitation Uncertainty and Bias in Coastal Compound Flood Modeling. In Proceedings of the 2022 ERDC Comprehensive Water Risk Management Symposium.
2. Meselhe, E., White, E., Reed, D., Grace, A., **Wang, Y.**, Green, M., Freeman, A., Habib, E., Lindquist, D., Pahl, J., Yuill, B. 2016. Introduction to the 2017 Coastal Master Plan Future Scenarios. In Proceedings of the State of the Coast Conference 2016. New Orleans, Louisiana, USA.