

Jiaze Wang

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Education

Ph.D. in Oceanography, 2018

Louisiana State University

M.S. in Marine Geology, 2013

Institute of Oceanology, Chinese Academy of Sciences

B.S. in Geology, 2010

Ocean University of China

Research Interests

sediment dynamic observation and modeling; geomorphology modeling; biogeochemical modeling; paleo sea-level reconstruction

Professional Experience

- **Postdoctoral Researcher (Jan. 2021 – Present)**

Oak Ridge National Laboratory, Oak Ridge, TN

Research topic: Coastal Wetland Biogeochemical Modeling with E3SM Earth system model

Expertise: Developing and conducting model simulations of biogeochemical cycles in estuarine wetlands subject to fluctuations in freshwater and saltwater influences

- **Postdoctoral Researcher (Jul. 2018 – Jan. 2021)**

University of Maryland Center for Environmental Sciences, HPL, Cambridge, MD

Research topic: Consortium for Simulation of Oil-Microbial Interactions in the Ocean

Expertise: Development of Genome-based EmergEnt Ocean Microbial Ecosystem Model (GENOME model) which simulates Oil-Microbial interactions in the Gulf of Mexico under HYCOM and ROMS environments

- **Research Assistant (2013-2018 May)**

Louisiana State University, Baton Rouge, LA

Research topic: Natural and anthropogenic impacts on sediment dynamics and preservation in contrasting Mississippi deltaic coastal environments

Expertise: Wetland eco-geomorphology simulation; sediment transport observation and modeling; coastal hydrodynamics monitoring; relative sea-level reconstruction; AMS C-14 dating

- **Research Assistant (2010-2013)**
Institute of Oceanology, Chinese Academy of Sciences, Qingdao, China
Research topic: Sediment Provenance and Paleoenvironment Records of the central Okinawa Trough for the last 17000 years
Expertise: Clay mineral XRD analysis; mineral and foraminifera identification; grain size analysis; AMS C-14 dating

Teaching Experience

- **Introduction to Statistical Analysis**, lab lecturer (2018 Spring)
Instructing undergraduate students in lab practice of statistical analysis twice a week and tutoring undergraduate students on statistical analysis three times a week.
- **Introduction of Oceanography**, guest lecturer and teaching assistant (2017 Fall)
Guest lecturing and tutoring both undergraduate and graduate students once a week.

Publications

- **In Review**
Xu, K.H., **Wang, J.Z.**, Li, C.Y., Bentley, S.J., Miner, M.D., 2021. Geomorphic and Hydrodynamic Impacts on Sediment Transport in the Inner Louisiana Shelf. *Geomorphology*, in review.
Wang, J.Z., Coles, V.J., Stukel, M.R., Mason, O.U., The ecological implication of special habitats for priming the ocean for disturbances. *Frontiers in Marine Science*, in review.
- **In Prep.**
Wang, J.Z., Xu, K.H., Chen, J.Q., Johnson, C., Sediment budget from shallow water to surrounding wetland along wave-dominated coast.
Coles, V.J., **Wang, J.Z.**, Mason, O.U., Stukel, M.R., Understanding how trait-based modeling (Genome-based EmergeNt Ocean Microbial Ecosystem Model) influences predictions of biogeochemical, ecological, and microbial system responses.
- **Peer-Reviewed**
Dukhovskoy, D.S., Morey, S.L., Chassignet, E.P., Chen, X., Coles, V.J., Cui, L., Harris, C.K., Hetland, R., Manning, A., Stukel, M., Thyng, K., **Wang, J.Z.**, 2021. Development of the CSOMIO coupled ocean-oil-sediment-biology model. *Frontiers in Marine Science* 8.
Yang, H.F., Yang, S.L., Li, B.C., **Wang, J.Z.**, Zhang, Z.L., Xu, K.H., Huang, Y.G., Shi, B.W., 2021. Different survival potentials between the Yangtze and Mississippi deltaic wetlands under riverine sediment decline and sea-level rise. *Geomorphology* 381.

- Wang, J.Z.**, Xu, K.H., Bentley, S.J., White, C., Zhang, X.K., Liu, H.R., 2019. Degradation of the Plaquemines sub-delta and relative sea-level in eastern Mississippi deltaic coast during late Holocene. *Estuarine, Coastal and Shelf Science* 227.
- Restrepo, G.A., Bentley, S.J., **Wang, J.Z.**, Xu, K.H., 2019. Riverine Sediment Contribution to Distal Deltaic Wetlands: Fourleague Bay, LA. *Estuaries and Coasts* 42, 55-67.
- Li, A., Tsai, F.T.C., Xu, K.H., **Wang, J.Z.**, White, C.M., Bentley, S.J., Chen, Q.J., 2019. Modeling sediment texture of river-deltaic wetlands in the Lower Barataria Bay and Lower Breton Sound, Louisiana, USA. *Geo-Marine Letters* 39, 161-173.
- Wang, J.Z.**, Xu, K.H., Restrepo, G.A., Bentley, S.J., Meng, X.L., Zhang, X.K., 2018. The coupling of bay hydrodynamics to sediment transport and its implication in micro-tidal wetland sustainability. *Marine Geology* 405, 68-76.
- Wang, J.Z.**, Xu, K.H., Li, C.Y., Obelcz, J.B., 2018. Forces Driving the Morphological Evolution of a Mud-Capped Dredge Pit, Northern Gulf of Mexico. *Water* 10.
- Cui, X.Q., Bianchi, T.S., Kenney, W.F., **Wang, J.Z.**, Curtis, J.H., Xu, K.H., Savage, C., 2017. Carbon Dynamics Along a Temperate Fjord-Head Delta: Linkages With Carbon Burial in Fjords. *Journal of Geophysical Research-Biogeosciences* 122, 3419-3430.
- Xu, K.H., Mickey, R.C., Chen, Q., Harris, C.K., Hetland, R.D., Hu, K.L., **Wang, J.Z.**, 2016. Shelf sediment transport during hurricanes Katrina and Rita. *Computers & Geosciences* 90, 24-39.
- Wang, J.Z.**, Li, A.C., Xu, K.H., Zheng, X.F., Huang, J., 2015. Clay mineral and grain size studies of sediment provenances and paleoenvironment evolution in the middle Okinawa Trough since 17 ka. *Marine Geology* 366, 49-61.
- Wang, J.Z.**, Li, A., Huang, J., 2013. The Provenance of the sediments in the Central Okinawa Trough since the Holocene and the Environment Evolution. *Marine Geology & Quaternary Geology* 33, 105-114.
- **Conference proceeding**

Johnson, C., Chen, Q. J., Karimpour, A., Bentley, S.J., White, C., Xu, K.H., **Wang, J.Z.**, 2015. Geological and geotechnical characterization of coastal marshes in the Mississippi River Delta. In: *The Proceedings of the Coastal Sediments 2015*.

Presentations

- Wang, J.Z.**, Coles, V.J., Mason, O.U., Stukel, M.R., Rapid adaption of the microbial community to abrupt environmental change in the Gulf of Mexico modeled with the Genome-based EmergeNt Ocean Microbial Ecosystem Model, AGU Ocean Sciences Meeting, 2020, San Diego, CA. (Oral)
- Wang, J.Z.**, Coles, V.J., Kelly, T.B., Mason, O.U., Shropshire, T., Stukel, M.R., Oil-Microbe interactions in the Gulf of Mexico (GoM) modeled with the Genome-based EmergeNt Ocean Microbial Ecosystem Model, ASLO Aquatic Sciences Meeting, 2019, San Juan, Puerto Rico. (Oral)

- Wang, J.Z.**, Coles, V.J., Kelly, T.B., Mason, O.U., Shropshire, T., Stukel, M.R., Oil-Microbe interactions in the Gulf of Mexico (GoM) modeled with the Genome-based EmergeNt Ocean Microbial Ecosystem Model, Gulf of Mexico Oil Spill & Ecosystem Science Conference (GoMOSES), 2019, New Orleans, LA. (poster)
- Wang, J.Z.**, Yin, D.M., Zhang, X.K., He, S.J., Liu, H.R., Long term eco-geomorphological response of wetland to rapid relative sea level rise in micro-tidal environment, AGU Fall Meeting, 2018, Washington D.C. (poster)
- Wang, J.Z.**, Xu, K., Bentley, S.J., Restrepo, G., The coupling of bay hydrodynamics to sediment supply and micro-tidal wetland stability under high rates of relative sea level rise, AGU Fall Meeting, 2017, New Orleans, LA. (poster)
- Restrepo, G., Bentley, S.J., **Wang, J.Z.**, Xu, K., Trends in Accretion Rates of Riverine Sediments in a Distal Bay and Wetlands Using 7-Beryllium as a Tracer: Fourleague Bay, Louisiana, AGU Fall Meeting, 2017, New Orleans, LA. (oral)
- Hu, K., Chen, J.Q., Xu, K., Bentley, S.J., **Wang, J.Z.**, A Numerical Study of Hydrodynamics and Sediment Transport in Fourleague Bay, Louisiana, AGU Fall Meeting, 2017, New Orleans, LA. (poster)
- Wang, J.Z.**, Li, A., Xu, K., Huang, J., Interaction of Kuroshio Current with Global Oceanic and Atmospheric Circulations: Evidences of Grain Size from Okinawa Trough, AGU Fall Meeting, 2016, San Francisco, CA. (poster)
- Restrepo, G., Bentley, S.J., **Wang, J.Z.**, Xu, K., Short Term Sediment Exchange Between Marshes and Bays Using Beryllium-7 as a Tracer, Fourleague Bay, Louisiana, AGU Fall Meeting, 2016, San Francisco, CA. (poster)
- Wang, J.Z.**, Xu, K., Bentley, S.J., Restrepo, G., Bottom Boundary Layer Sediment Transport Processes in Fourleague Bay of Louisiana and Their Implication to Sediment Diversion and Coastal Restoration, The Ocean Society Ocean Optics XXIII, 2016, Victoria, BC, Canada. (poster)
- Wang, J.Z.**, Xu, K., Bentley, S.J., Restrepo, G., Bottom Boundary Layer Sediment Transport Processes in Fourleague Bay of Louisiana and Their Implication to Sediment Diversion and Coastal Restoration, State of the Coast Conference, 2016, New Orleans, LA. (oral)
- Obelcz, J., Xu, K., Bentley, S.J., Li, C., Miner, M.D., O'Connor, M., **Wang, J.Z.**, 2016. Evolution of Mud-capped Dredge Pits following Excavation: Sediment Trapping and Slope Instability, AGU Ocean Sciences Meeting, 2016, New Orleans, LA. (oral)
- Johnson, C., Chen, Q.J., Karimpour, A., Bentley, S.J., White, C., Xu, K., **Wang, J.Z.**, Geological and Geotechnical Characterization of Coastal Marshes in the Mississippi River Delta, AGU Ocean Sciences Meeting, 2016, New Orleans, LA. (poster)
- Wang, J.Z.**, Xu, K., Bentley, S.J., Chen, Q.J., White, C., Maloney, J., Obelcz, J., The delta evolution records and stratigraphy structures in Lower Breton Sound, Mississippi delta lobe, The Geological Society of America 50th Annual Meeting: South-Central Section, 2016, Baton Rouge, LA. (poster)

Wang, J.Z., Li, A., Huang, J., Xu, K., Sediment provenances and paleoenvironment evolution in the middle Okinawa Trough since 8 ka, AGU Ocean Sciences Meeting, 2014, Honolulu, HI. (poster)

Professional Services

- **Session co-chair:** “Dynamic Systems: Human-Landscape Interactions Under Changing Environmental Conditions”, American Geophysical Union, Fall meeting, 2018, Washington, D.C.
- **Session co-chair:** “Coastal and Shelf Sediment Transport Processes and Products of the Northern Gulf of Mexico session”, Geological Society of America, South-Central meeting, 2016, Baton Rouge, LA
- **CEGO Academic seminar coordinator:** College of the Coast & Environment, LSU, 2014-2016
- **Panel Reviewer: DOE**
- **Reviewer:** *Geophysical Research Letters; Geochemistry, Geophysics, Geosystems; Marine Geology; Estuarine, Coastal and Shelf Science; Estuaries and Coasts; Continental Shelf Research; Geomorphology; Water; Applied Clay Science*
- **Guest Editor:** *Journal of Marine Science and Engineering*

Professional Society Memberships

The Oceanography Society
American Geophysical Union
The Geological Society of America
Society for Women in Marine Science
Mentoring Physical Oceanography Women to Increase Retention
Association for the Sciences of Limnology and Oceanography

Educational Services

UMCES-HPL open house outreach
CEGO Education and Outreach coordinator: College of the Coast & Environment, LSU
AGU Fall meeting T-shirt Design Competition (2016)

Honors and Awards

AGU Fall meeting travel award (2016)
Ocean Optics XXIII travel award (2016)
Louisiana State Graduate School travel award (2014, 2016)
CEGO travel award (2014, 2016)
Excellent Master Scholarship of Institute of Oceanology, CAS (2012)
Excellent B.S. of Shandong, China (2010)
China Petroleum Scholarship (2009)
National Scholarship (2008)

National Inspirational Scholarship (2007)

Excellent B.S. Scholarship of Ocean University of China (2007-2009)

Social Networking Scholarship of Ocean University of China (2007)