

MING LIU

Shellfish Researcher, PhD

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PROFESSIONAL PREPARATION

Ocean University of China, Ph.D. Fishery Resource, 2010

Ocean University of China, B.S. Marine Fishery Science and Technology, 2005

APPOINTMENTS

Shellfish Researcher, PEARL, Morgan State University, 2017-present.

Post-doctoral Research Fellow, HSRL, Rutgers University, 2013-2017.

Assistant Professor, Marine Biology Institute of Shandong Province, China, 2010-2013.

Visiting Scholar, Hokkaido University, Japan, 2007-2008.

PRODUCTS

Selected publications (12/54)

- Puritz, J.B., Guo, X., Hare, M., He, Y., Hillier, L., Jin, S., **Liu, M.**, Lotterhos, K., Minx, P., Modak, T. and Proestou, D. (2023). A second unveiling: Haplotig masking of the eastern oyster genome improves population-level inference. *Molecular Ecology Resource*, in press.
- Liu, M.**, Wolfe-Bryant, B., Farrington, J., Bhandari, S., & Wolfe-Bryant, L. (2023). Genomic selection models for the eastern oyster's growth and survival traits in low salinity water. National Shellfisheries Association 115th Annual meeting, Baltimore, MD.
- Guo, X., Puritz, J. B., Wang, Z., Proestou, D., Allen, S., Small, J., ... **Liu, M.**, ... & Wilbur, A. (2023). Development and Evaluation of High-Density SNP Arrays for the Eastern Oyster *Crassostrea virginica*. *Marine Biotechnology*, 1-18.
- Liu, M.**, Ge, S., Bhandari, S., Fan, C., Jiao, Y., Gai, C., Wang, Y. & Liu, H. (2022). Genome characterization and comparative analysis among three swimming crab species. *Frontiers in Marine Science*, 9.
- Wang, L., Song, J., Bi, H., Gray, M., Fan, C., **Liu, M.**, & Mao, X. (2020) Adaptive feeding in the American oyster *Crassostrea virginica*: complex impacts of pulsatile flow during pseudofecal ejection events. *Limnology and Oceanography*, DOI:10.1002/lno.11433
- Jiao, Y., Cao, Y., Zheng, Z., **Liu, M.**, & Guo, X. (2019) Massive expansion and diversity of nicotinic acetylcholine receptors in lophotrochozoans. *BMC genomics*, 20(1), 937.
- Purnell, D., Yeboah, K., Butt, P., DeMarr, A., & **Liu, M.** Identifying low salinity eastern oysters (*Crassostrea virginica*) to develop a superior oyster line. Annual Biomedical Research Conference for Minority Students, Anaheim, CA, November 13-16, 2019
- Guo, X., **Liu, M.**, Xu, B., Chen, Y., Dong, Y., Lv, L., Whiteside, M., & DeBrosse, G. (2017) Improving triploid eastern oysters by selecting tetraploids. National Shellfisheries Association 109th Annual meeting, Knoxville, TN.
- Proestou, D. A., Vinyard, B. T., Corbett, R. J., Piesz, J., Allen, S. K., Small, J. M., Li, C., **Liu, M.**, DeBrosse, G., Guo, X. & Rawson, P. (2016). Performance of selectively-bred lines of eastern oyster, *Crassostrea virginica*, across eastern US estuaries. *Aquaculture*, 464, 17-27
- Liu, M.**, & Guo, X. (2017). A novel and stress adaptive alternative oxidase derived from alternative splicing of duplicated exon in oyster *Crassostrea virginica*. *Scientific Reports*, 7(1), 10785.
- Liu, M.**, Li, C., Wang, G. & Guo, X. (2016). Identification of disease-resistance markers by next-generation sequencing in the eastern oyster. World Aquaculture Society Meeting, Aquaculture 2016, Las Vegas, NV.
- Thongda, W., Zhao, H., Zhang, D., Jescovitch, L. N., **Liu, M.**, Guo, X., & Peatman, E. (2018).

Development of SNP Panels as a New Tool to Assess the Genetic Diversity, Population Structure, and Parentage Analysis of the Eastern Oyster (*Crassostrea virginica*). *Marine Biotechnology*, 1-11

Patents

Liu, M. Polyculture method of soft-shell clams. Publication number US-2023-0 0404045-A1

Liu, M., Yu, D., Liu, H. & Guan, S. A simple adjustable aquaculture drainage device. Publication Number: CN204014790U. Granted date: December 17, 2014.

Yu, D., Jiang, Y., Guan, S., Liu, H. & **Liu, M.** Large-scale seed cultivation method for the Yellow Sea stock of Pacific cod. Publication Number: CN104067973B. Granted date: January 20, 2016.

Wang, Q., Liu, H., **Liu, M.**, Liu, M., & Zhou, J. An indoor rearing system for *Perinereis aibuhitensis*. Publication Number: CN203027931U. Granted date: July 3, 2013.

Guan, J., Liu, H., Guan, S., Zheng, Y., Yu, D., & **Liu, M.** A thermal stimulation device for aquatic animals. Publication Number: CN202489072U. Granted date: October 17, 2012.

GRANTS

Diversification of Maryland Shellfish Aquaculture: Development and Assessment of a Subtidal Grow-out Method for Culture of Soft-shell Clams (*Mya arenaria*). Maryland Sea Grant. Principle Investigator, 2022-2024.

Development of triploid and tetraploid eastern oysters for Maryland aquaculture. Maryland Sea Grant. Principle Investigator, 2020-2022.

From sequence to consequence: genomic selection to expand and improve selective breeding for the eastern oyster. National Oceanic and Atmospheric Administration (NOAA), Atlantic States Marine Fisheries Commission Regional Shellfish Aquaculture Research Consortia. co- Principle Investigator, subaward with Rutgers University, 2020-2024.

Enhancing research and education infrastructure of the Bioenvironmental Science PhD program at Morgan State University: Microplastics in estuarine ecosystem. National Science Foundation, Research Infrastructure for Science and Engineering. Senior Personal. 2021-2024

Mark Street Ventures / PEARL Algae Project. Maryland Industrial Partnerships (MIPS), Principle investigator, 2021.

Development of Chesapeake PEARL oysters. Morgan State University I-GAP Prototype grant. Principle Investigator, 2020.

Comparing the performance of diploid and triploid eastern oysters in the Northeast. National Institute of Food and Agriculture and U.S. Department of Agriculture (NIFA/USDA), Northeastern Regional Aquaculture Center (NRAC) Aquaculture Program, co- Principle Investigator, subaward with Stony Brook University, 2021-2023.

Validation of markers and marker-assisted selection of hard clam for resistance to QPX disease. NIFA/USDA Aquaculture Program. Post-doc, 2016-2018.

Advancing eastern oyster aquaculture through marker-assisted selection. New Jersey Sea Grant. Post-doc, 2014-2016.

Development of a theoretical basis for modeling disease processes in marine invertebrates. NSF, Ecology and Evolution of Infectious Diseases Program. Post-doc, 2012 – 2016.

SYNERGISTIC ACTIVITIES

Member Eastern Oyster Breeding Consortium (EOBC), member, Feb 2019-

Grant Reviewer: Genome Canada's Genomic Applications Partnership Program, NOAA S-K Grant, American Association for the Advancement of Science (AAAS) Research Competitiveness Program, Maryland Industrial Partnerships. New York Sea Grant.

Journal reviewer: *Fish & Shellfish Immunology*, *Heredity*, *Marine Ecology Progress Series*, *Molecular Genetics and Genomics*, *Marine Genomics*, *BMC Genomics*, *Journal of the World Aquaculture Society*, *Biochemical Systematics and Ecology*, *Invertebrate Survival Journal*, *Mitochondrial DNA*, *Journal of the Marine Biological Association of the United Kingdom*, *Frontiers Marine Science*, etc.