



## M.S. Research Assistantships (Two Positions to be filled)

Aquaculture/Fisheries Center  
University of Arkansas at Pine Bluff  
Pine Bluff, AR 71601

### MITIGATING HIGH AMMONIA TOXICITY IN FISH

**Description:** Ammonia can be extremely toxic to fish if accumulated in the body. This event accounts for one of the main causes of substantial fish losses in aquaculture practices. Elevated ammonia and iron, the two fundamental and recurrent stress conditions often present in catfish aquaculture system, can inhibit the elimination of toxic ammonia from the fish. Therefore, under these scenarios, to prevent productivity loss, ammonia must be excreted efficiently to avoid reaching lethal/sub-lethal levels.

Developing strategies to facilitate ammonia elimination by the fish gills typically under stressful environments is a major challenge to advance aquaculture sustainability. The proposed project is aimed at developing a multi-faceted and interdisciplinary research approach (from whole-organismal to transcriptome) to identify and explore a set of Rhesus glycoproteins as an imperative ammonia excretory pathway in catfish. In addition, various factors (e.g., feeding rations, water pH, dietary cortisol) that can potentially trigger the functionality of Rhesus glycoproteins will be evaluated as potential tools to mitigate hyperammonia toxicosis induced by high environmental ammonia and iron. Key indicators of growth, ammonia-homeostasis and physio-chemical performance associated with Rhesus glycoproteins modulation under testing conditions will be determined. The outcomes will have positive impacts on aquaculture production as well as on the environment.

This project is funded by USDA-NIFA, and Principal Investigator (PI) will currently recruit two graduate research assistants to implement this project.

**Qualifications:** B.S. degree in aquaculture/fisheries, water chemistry, fish physiology, toxicology, or a related field, minimum GPA of 3.0, and GRE score of 297+ (verbal + quantitative) are required. Minimum TOEFL score of 550 on the TOEFL paper version (213 on the computer version, 79 on the internet version), or 6.5 on IELTS is required for international students. A strong interest in water quality, fish biology toxicology as well as good writing skills, excellent work ethic, and demonstrated ability to work independently are required. Prior experience with fish biology and water quality management is desirable.

**Stipend:** Two years of assured funding @ \$18,800/year.

**Closing Date:** Desired starting date is Fall Semester 2023 (or even earlier). Descriptions of application procedures and necessary forms can be found at the UAPB Aquaculture/Fisheries Center website,

[http://www.uapb.edu/academics/school\\_of\\_agriculture\\_fisheries\\_and\\_human\\_sciences/aquaculture\\_fisheries/jobsnews.aspx](http://www.uapb.edu/academics/school_of_agriculture_fisheries_and_human_sciences/aquaculture_fisheries/jobsnews.aspx)

For further information on this specific opportunity, please contact:

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