

Current Projects in the Department of Aquaculture and Fisheries

- The effects of aquaculture-related pollutants – ammonia and environmental stressors (such as individual metal and mixture metal) on the physiological and the ecological fitness of fish, and study their compensatory responses at physiological, biochemical and molecular levels
- Dysregulation of junctional complexes in the *Danio rerio* (zebrafish) skin, gill and gut epithelium in response to pathogenic insult and elicited immune response
- Antimicrobial activity of herbs and spices on *Flavobacterium columnare*; *Aeromonas hydrophila*; and *Edwardsiella ictaluri*
- Molecular mechanisms underlying CyHV-2 infections in Goldfish
- Understanding the mode of CyHV-2 transmission from mother to offspring at Molecular level
- Examining the effects of bigheaded carp invasions on fish assemblages in lower White River oxbow lakes
- Examining the effects of bigheaded carp invasions on juvenile fish dynamics in lower White River oxbow lakes
- Techniques to improve Calcein Marking of Fish
- Alligator Gar Movements and Habitat Use of a Low-Head Lock and Dam
- Distribution and Abundance of the Strawberry darter (*Etheostoma fragi*) in the Main Stem and Tributaries of the Strawberry River
- Assessing Arkansas Game and Fish Commission Crappie Stock Enhancement (AGFC)
- Catfish split pond and intensive aeration verification project
- Toxic algae monitoring project
- Effects of Non-GM soy meals on performance of hybrid striped bass
- Interactive effects of plant and animal protein sources with vitamin A on performance of largemouth bass
- Prebiotics and Probiotic effects on standard performance and health of golden shiners
- Cost-effective local feedstuffs to enhance performance and product quality of Nile tilapia in Ghana

- Digestibility of diets with different feed additives in Nile tilapia
- Effects of modified sorghum meals on performance of Nile tilapia
- Effects of mechanically modified or fermented soy products on the performance and gut microflora composition of largemouth bass
- Development of a biotech-plant-produced catfish IL-22 to use as a novel vaccine against ESC
- Cost effective treatments for aquatic weed problems
- Hydrogen sulfide and the disappearing golden shiner phenomenon
- Kaolin as a treatment for columnaris in sportfish
- Clay for reduction in toxic algal blooms
- Probiotic to stabilize algal blooms
- Winter feeding in channel catfish
- Comparison of diploid and triploid grass carp food consumption
- Columnaris genotyping
- Electrophoresis/qPCR as a method to determine pure channel catfish strains
- Bacterial profiling in natural water systems
- Flow cytometry enumeration of biofloc used in aquaculture
- Use of aerial technologies as a bird scaring device on aquaculture ponds
- Use of aerial technology for bloom discrimination on aquaculture ponds
- Flow cytometry as a method to determine ploidy in larval fish
- Winter fish losses
- Characterization of TLR4 in fathead minnows challenged with *Flavobacterium columnare*
- Comparison of largemouth bass with tilapia as an engine for aquaponics

- Differences in Growth and Southern Naiad (*Najas guadalupensis*) Consumption between Diploid and Triploid Grass Carp (*Ctenopharyngodon idella*)
- A Case Study on Developing and Sustaining a Successful and Adaptive Collegiate Fishing Organization in Arkansas
- Designing and Testing New Catfish Products to Enhance Competitiveness of the U.S. Catfish Industry
- Improving the competitiveness of U.S. Aquaculture in the global seafood system
- Aquaculture Economics
 1. Economic feasibility and profitability of selected fish feed technologies developed at the UAPB for catfish production
 2. Impact of the UAPB Aquaculture and Fisheries Center in Arkansas
 3. Contribution of Aquaculture and Fisheries to the Economy of Arkansas
 4. Brand Equity in Shrimp Across Metro Markets in USA: An Analysis of Store-based Scanner Data

Funding Sources for the Current Projects:

- AFC Fund
- USFWS-ANS
- Evans-Allen1890 Research Program
- AGFC State Wildlife Grant
- USDA Southern Region Aquaculture Center (SRAC)
- Arkansas Catfish Promotion Board
- Arkansas Soy Promotion Board
- United Sorghum Checkoff Program
- H.J. Baker, Bros.
- USAID/Aquafish
- Brazilian government (post-doc on vitamin A work – Dr. Rebecca Lochmann’s Lab).
- FishVet
- Imerys
- Extension
- Producers
- Catfish Farmers of Arkansas
- J.M. Malone and Son Inc and Extension funding
- National Institute for Food and Agriculture (NIFA)
- USDA (1890 Capacity Building Grants Program)

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