

## Rebecca Thoms Lochmann

### Education

Louisiana State University, USA	Zoology	BS
Florida Institute of Technology	Marine Biology	MS
Texas A&M University	Wildlife & Fisheries Sciences	PhD

### Employment

- July 2015-present: Chair/Center Director/Professor  
Department of Aquaculture & Fisheries, University of Arkansas  
at Pine Bluff, Pine Bluff, AR ([lochmannr@uapb.edu](mailto:lochmannr@uapb.edu))
- 1996-2004: Associate Professor, Department of Aquaculture & Fisheries, University  
of Arkansas at Pine Bluff, Pine Bluff, AR
- 1993-1996: Assistant Professor, Department of Aquaculture & Fisheries, University of  
Arkansas at Pine Bluff, Pine Bluff, AR

### Scientific & Professional Organizations

- World Aquaculture Society (and US Chapter)
- Catfish Farmers of Arkansas
- Arkansas Bait and Ornamental Fish Grower's Association
- Sigma Xi
- Arkansas Research Alliance

**Research Overview:** Studies address the interaction between nutrition, growth, stress resistance, immune responses and product quality for multiple fish species of commercial importance. Specific topics include the effects of alternative protein and lipid sources on growth and health of cyprinids, catfish, largemouth bass, and hybrid striped bass; plant ingredients and feed additives to enhance tilapia performance, manipulating diets to improve the fatty acid composition of foodfish for human consumers; prebiotics and probiotics in cyprinids, channel catfish, and bass; broodstock diet development for channel catfish; and mitigation of water-borne stressors in aquaculture.

### Recent/Current Professional Contributions

1. Generated major body of knowledge on cyprinid baitfish nutrition and feeding
2. Secretary, Vice President and President, Sigma Xi, Central Arkansas Chapter
3. President, United States Aquaculture Society
4. Secretary, World Aquaculture Society
5. President-Elect, President and Immediate Past President of the World Aquaculture Society

### Honors and Awards

- Arkansas Research Alliance Fellow, 2017
- Catfish Farmers of Arkansas – Excellence in Catfish Nutrition Research, 2010
- Gamma Sigma Delta Teaching Awards 2006, 2007
- B.D. Mayberry Young Scientist Award (Research), 1997

## Publications

- Jones, M.N., and R.T. Lochmann. 2020. Increasing nutrient utilization of soybean meals for largemouth bass through the combined use of fermentation and prebiotics. Pages 240-244 in: J. Ross, editor. Arkansas Soybean Research Studies 2019. <https://aaes.uark.edu/communications/publications/>
- Sinha, A.K., N. Egnew, N. Renukdas, N. Romano, A.M. Kelly, J. Lohakare, W.M. Bishop, and R.T. Lochmann. 2020. Assessment of physio-biochemical responses, metabolic nitrogen excretion and ion-regulatory modulations induced by high environmental iron in freshwater fish using largemouth bass (*Micropterus salmoides*) as a model. *Ecotoxicology and Environmental Safety*, In Press.
- Ramena, Y., S.D. Rawles, R. Lochmann, T.G. Gaylord, M.E. McEntire, B.D. Farmer, C.D. Webster, B.H. Beck, B.W. Green, and L.M. Barnett. 2020. Growth, nutrient retention, innate immune response, and intestinal morphology of juvenile, soy-naïve hybrid striped bass, *Morone saxatilis* x *M. chrysops* fed commercial-type, soy-based, ideal protein, fish meal replacement diets. *Aquaculture* <https://doi.org/10.1016/j.aquaculture.2020.735150>
- Egnew, N., N. Renukdas, Y. Ramena, A. Yadav, A.M. Kelly, R.T. Lochmann and A.K. Sinha. 2019. Physiological insights into largemouth bass (*Micropterus salmoides*) survival during long-term exposure to high environmental ammonia. *Aquatic Toxicology* 207:72-82.
- Sinha, H., M. Eggleton and R. Lochmann. 2018. An environmentally friendly approach for mitigating cyanobacterial bloom and their toxins in hypereutrophic ponds: potentiality of a newly developed granular hydrogen peroxide-based compound. *Science of the Total Environment* 637-638:524-537.
- Ramos, M.A., J.F. Goncalves, B. Costas, S. Batista, R. Lochmann, M.A. Pires, P. Rema, and R. Ozorio. 2016. Commercial *Bacillus* probiotic supplementation of rainbow trout (*Oncorhynchus mykiss*) and brown trout (*Salmo trutta*): growth, immune responses and intestinal morphology. *Aquaculture Research*. doi:10.1111/are.13090.
- Green, B., Engle, C., Lochmann, R., and H. Phillips. 2016. Low-intensity, stocker-based channel catfish culture. *North American Journal of Aquaculture* 78(2):125-135.
- Thompson, M., R. Lochmann, H. Phillips and T.D. Sink. 2015. A dietary dairy/yeast prebiotic and flaxseed oil enhance growth, haematological and immunological parameters in channel catfish at a suboptimal temperature (15°C). *Animal*, published online, doi:10.1017/S1751731115000300.
- Faukner, J., S.D. Rawles, T.D. Sink, R. Lochmann, A. Proctor, R. Chen and H. Phillips. 2015. The effects of diets containing standard soybean oil, soybean oil enhanced

- with conjugated linoleic acids, menhaden fish oil, or an algal docosahexaenoic acid supplement on juvenile channel catfish performance, hematology, body composition, and nonspecific immune response. *North American Journal of Aquaculture* 69:1–13.
- Ozorio, R.O.A., J. Kopecka-Pilarczyk, R. Lochmann, R.J. Santos, G. Santos, B. Weber, J. Calheiros, L. Ferraz-Arruda, P. Vaz-Pires, and J.F.M. Goncalves. 2015. Dietary probiotic supplementation in juvenile rainbow trout (*Oncorhynchus mykiss*) reared under cage culture production: Effects on growth, fish welfare, flesh quality and intestinal microbiota. *Aquaculture Research*, 2015, 1–16  
doi:10.1111/are.12724.
- Subhadra, B., R. Lochmann, and A. Goodwin. 2014. Potential use of proximate and fatty acid composition to distinguish between cultured and wild largemouth bass (*Micropterus salmoides*). *Open Agriculture Journal* 8:48-5.
- Kasiga, T., R. Chen, T. Sink and R. Lochmann. 2014. Effects of reduced soybean-meal diets containing *Moringa oleifera* or *Leucaena leucocephala* leaf meals on growth performance, plasma lysozyme, and total intestinal proteolytic enzyme activity of juvenile Nile tilapia, *Oreochromis niloticus* in outdoor tanks. *Journal of the World Aquaculture Society* 45(5):508-522.
- Renukdas, N., C. Engle, R. Lochmann, M.S. Li, J. Avery, C.S. Tucker, and B. Bosworth. 2014. Performance of alternative diets containing solvent-extracted distillers dried grains with solubles compared to traditional diets for pond-raised channel catfish, *Ictalurus punctatus* and hybrid catfish, *Ictalurus punctatus* × *Ictalurus furcatus*. *Journal of the World Aquaculture Society* 45(3):290-300.
- Kasiga, T., and R. Lochmann. 2014. Nutrient digestibility of reduced-soybean-meal diets containing *Moringa* or *Leucaena* leaf meals for Nile tilapia, *Oreochromis niloticus*. *Journal of the World Aquaculture Society* 45(2):183-191.
- Lochmann, R., H. Phillips, D. Weldon, N. Stone and C. Engle. 2014. Effects of dietary protein and fish density on performance and production economics of golden shiner in pools. *North American Journal of Aquaculture* 76:130-137.
- Sink, T., and R. Lochmann. 2014. The effects of soybean lecithin supplementation to a practical diet formulation on juvenile channel catfish, *Ictalurus punctatus*, growth, survival, hematology, innate immune activity, and lipid biochemistry. *Journal of the World Aquaculture Society* 45(2):163-172.
- Engle, C., G. Kumar, R. Lochmann, B. Bosworth, and M. Thompson. 2013. Effects of 28% protein diets differing in quality on channel catfish performance, processing traits, and production economics in a multi-batch system. *Journal of Applied Aquaculture* 25:102-112.

- Lochmann, R. S. Islam, H. Phillips, Z. Adam, and J. Everette. 2013. Effects of dietary sweet- potato-leaf meal on the growth, non-specific immune responses, total phenols, and antioxidant capacity in channel catfish *Ictalurus punctatus*. *Journal of the Science of Food and Agriculture* 93(6):1365-1369.
- Faukner, J., S.D. Rawles, A. Proctor, T.D. Sink, R. Chen, H. Phillips, and R.T. Lochmann. 2012. The effects of diets containing standard soybean oil, soybean oil enhanced with conjugated linoleic acids, menhaden fish oil, or an algal docosahexaenoic acid extract on channel catfish performance, body composition, sensory evaluation and storage characteristics. *North American Journal of Aquaculture* 75:252-265.
- Lochmann, R., C. Engle, G. Kumar, M.H. Li, J.L. Avery, B.G. Bosworth, and C.S. Tucker. 2012. Multi-batch catfish production and economic analysis using alternative (low-cost) diets with corn gluten feed and traditional diets with meat and bone meal. *Aquaculture* 366-367:34-39.
- Pugliese, N., D. Heikes, C. Engle, B. Bosworth, and R. Lochmann. 2012. Evaluation of the economics of multi-batch channel catfish *Ictalurus punctatus* production fed an industry standard and three alternative diets. *Journal of Applied Aquaculture* 24:271–282.
- Lochmann, R., and H. Phillips. 2012. Effects of diets with 28- or 32% protein and meat and bone meal or corn gluten feed on performance of golden shiner in pools. *North American Journal of Aquaculture*. 74(4):457-462.
- Suja, B., R. Lochmann, T. Sink, H. Phillips, and R. Chen. 2012. Effect of diets supplemented with soybean, flaxseed, or menhaden fish oil on the growth, feed utilization, immune status, and sensory properties of channel catfish in a recirculating system at 22°C. *Journal of Applied Aquaculture* 24(1):16-31.
- Lochmann, R., H. Phillips, and L. Xie. 2011. Effects of a dairy-yeast probiotic and water hardness on the growth performance, mineral composition and gut microflora of fathead minnow (*Pimephales promelas*) in recirculating systems. *Aquaculture* 320:76-81.
- Lochmann, R.T., T.D. Sink, and H. Phillips. 2011. Effects of dietary lipid concentration and a dairy/yeast probiotic on growth, body composition, and survival of stressed goldfish challenged with *Flavobacterium columnare*. *North American Journal of Aquaculture* 73:239-247.
- Sink, T.D., R.J. Strange, and R.T. Lochmann. 2010. Hatchery methods and natural, hormone-implant-induced, and synchronized spawning of captive Atlantic croaker (*Micropogonias undulatus*). *Aquaculture* 307: 35-43.

- Lochmann, R., T.D. Sink, H. Phillips, and R. Chen. 2010. Evaluation of a dietary dairy/yeast prebiotic in juvenile golden shiner *Notemigonus crysoleucas* in ponds. *North American Journal of Aquaculture* 72:164-171.
- Sink, T.D., R.T. Lochmann, C. Pohlenz, A. Buentello, and Delbert Gatlin III. 2010. Effects of dietary protein source and protein-lipid source interaction on channel catfish (*Ictalurus punctatus*) egg biochemical composition, egg production and quality, and fry hatching percentage and performance. *Aquaculture* 298:251-259.
- Sink, T.D., R. Lochmann, and N. Kinsey. 2010. Growth and survival of channel catfish *Ictalurus punctatus* fry fed diets with 36 or 45% total protein and all-plant or animal-protein sources. *Journal of the World Aquaculture Society* 40:124-129 .
- Trushenski, J., and R. Lochmann. 2009. Potential, implications and solutions regarding the use of rendered animal fats in aquafeeds. *American Journal of Animal and Veterinary Sciences* 4(4):108-128.
- Li, P., B. Ray, D.M. Gatlin, III, T. Sink, R. Chen, and R. Lochmann. 2009. Effect of handling and transport on cortisol response and nutrient mobilization of golden shiner *Notemigonus crysoleucas*. *Journal of the World Aquaculture Society* 40: 803-809.
- Lochmann, R. R. Chen, F. Chu-Koo, W. Camargo, C. Kohler, and K. Casper. 2009. Effects of carbohydrate-rich alternative feedstuffs on growth, survival, body composition, hematology, and non-specific immune response of black pacu, *Colossoma macropomum*, and red pacu, *Piaractus brachypomus*. *Journal of the World Aquaculture Society* 40:33-44.
- Suja, B., H. Phillips, R. Lochmann, and R. Chen. 2009. Effect of temperature on growth, feed utilization and immune status of channel catfish in a recirculating system. *North American Journal of Aquaculture* 71:64-72.
- Lochmann, R., T. Sink, and H. Phillips. 2009. Effects of dietary lipid concentration, a dairy/yeast prebiotic, and fish and non-fish protein sources on growth, survival, and non-specific immune response of golden shiner, *Notemigonus crysoleucas*, in indoor tanks and outdoor pools. *North American Journal of Aquaculture* 71:16-23.
- Sink, T.D., and R.T. Lochmann. 2008. Effects of dietary lipid source and concentration on channel catfish (*Ictalurus punctatus*) egg biochemical composition, egg and fry production, and egg and fry quality. *Aquaculture* 283:68-75.
- Melandri, M., N. Stone, and R. Lochmann. 2008. Effects of temperature on the growth of golden shiners in aquaria. *North American Journal of Aquaculture* 70:452-458.

- Sink, T.D., and R.T. Lochmann. 2008. Preliminary observations of mortality reduction in stressed, *Flavobacterium columnare*, challenged golden shiners after treatment with a dairy-yeast prebiotic. *North American Journal of Aquaculture* 70:192–194.
- Sink, T.D., R.T. Lochmann, and K. A. Fecteau. 2008. Validation, use and disadvantages of enzyme-linked immunosorbent assay kits for detection of cortisol in channel catfish, largemouth bass, red pacu, and golden shiners. *Fish Physiology and Biochemistry* 34:95-101.
- Sink, T.D., R.T. Lochmann, A.E. Goodwin, and E. Marecaux. 2007. Mortality rates in golden shiners fed high-fat diets with or without a dairy-yeast prebiotic before challenge with *Flavobacterium columnare*. *North American Journal of Aquaculture* 69:305-308
- Kumaran, S., R. Lochmann, N. Stone, A. Kachowski, and Y.-W. Lee. 2007. Effects of diets with or without menhdaden fish meal and oil on egg size, hatchability, and fry size of rosy red fathead minnow in outdoor pools. *North American Journal of Aquaculture* 69: 419-428.
- Sink, T.D., and R.T. Lochmann. 2007. Insulin response of largemouth bass to glucose, amino acid, and diet stimulation. *North American Journal of Aquaculture* 69:429-434.
- Sink, T.D., and R.T. Lochmann. 2007. An enzyme-linked immunosorbent assay is not effective for sampling blood plasma insulin concentrations in red pacu, *Piaractus brachypomus*, and black pacu, *Colossoma macropomum*. *Journal of Fisheries International* 2(3): 219-221.
- Sink, T.D., S. Kumaran, and R.T. Lochmann. 2007. Development of a whole-body cortisol extraction procedure for determination of stress in golden shiners, *Notemigonus crysoleucas*. *Fish Physiology and Biochemistry* 33:189-193.
- Lochmann, S.E., K.J. Goodwin, R.T. Lochmann, N.M. Stone, and T. Clemment. 2007. Golden shiner egg size, lipid, fatty acid, and amino acid composition during a spawning season. *North American Journal of Aquaculture* 69:116-126.
- Sink, T. D., and R.T. Lochmann. 2007. Evaluation of cuphea meal as an ingredient replacement in channel catfish diets. *Journal of Applied Aquaculture* 19(4):85-93.
- Lochmann, R., and H. Phillips. 2006. Bait and ornamental fish nutrition. Pages 545-567 in: L. Elizabeth Cruz-Suarez, Denis Ricque-Marie, Mireya Tapia-Salazar, Martha G. Nieto-Lopez, David A. Villarreal-Cavazos, Ana C. Puella-Cruz, and Armando Garcia-Ortego, Editors. *Avances en Nutricion Acuicola VIII. VIII Simposium Internacional de Nutricion Acuicola*. November 15 – 17. Universidad Autonoma de Nuevo Leon, Monterrey, Nuevo Leon, Mexico. ISBN# 970 694 3335. (CD).

- Sink, T.D., and R.T. Lochmann. 2006. Partial validation of an enzyme-linked immunosorbent assay for sampling blood plasma insulin concentrations in largemouth bass, *Micropterus salmoides*. *Journal of Animal and Veterinary Advances* 5:1008-1013.
- Subhadra, B., R. Lochmann, S. Rawles, and R. Chen. 2006. Effect of fish-meal replacement with poultry by-product meal on the growth, tissue composition and hematological parameters of largemouth bass (*Micropterus salmoides*) fed diets containing different lipids. *Aquaculture* 260:221-231.
- Lochmann, R.T. and S. Kumaran. 2006. Effect of Practical Diets With Animal- or Vegetable-Protein Sources and Poultry Oil or Menhaden Fish Oil on Adult Fathead Minnows *Pimephales promelas* in Tanks. *North American Journal of Aquaculture* 68:281-286.
- Subhadra, B., R. Lochmann, S. Rawles, and R. Chen. 2006. Effect of dietary lipid source on the growth, tissue composition and hematological parameters of largemouth bass (*Micropterus salmoides*). *Aquaculture* 255:210-222.
- Stone, N., A. Goodwin, R. Lochmann, H. Phillips, C. Engle, and H. Thomforde. 2005. Baitfish culture. Pages 607-643 *In: Kelly, A. and Silverstein, J. (editors), Aquaculture in the 21<sup>st</sup> Century*. American Fisheries Society, Symposium 46, Bethesda, Maryland. [**Symposium chapter**].
- Chen, R., R. Lochmann, A. Goodwin, K. Praveen, K. Dabrowski, and K-J. Lee. 2004. Effects of Dietary Vitamins C and E on Alternative Complement Activity, Hematology, Tissue Composition, Vitamin Concentrations and Response to Heat Stress in Juvenile Golden Shiner (*Notemigonus crysoleucas*). *Aquaculture* 242:553-569.
- Lochmann, R., N. Stone and H. Phillips. 2004. Evaluation of 36%-protein diets with or without animal protein for rearing tank-hatched golden shiner *Notemigonus crysoleucas* fry in ponds. *North American Journal of Aquaculture* 66:271-277.
- Fernandes, J.B.K., R. Lochmann, and F. A. Bocanegra. 2004. Apparent digestible energy and nutrient digestibility coefficients of diet ingredients for pacu *Piaractus brachypomus*. *Journal of the World Aquaculture Society* 35:237-244.
- Chen, R., R. Lochmann, A. Goodwin, K. Praveen, K. Dabrowski, and K-J. Lee. 2003. Alternative complement activity and resistance to heat stress in golden shiners (*Notemigonus crysoleucas*) are increased by dietary vitamin C levels in excess of requirements for prevention of deficiency signs. *Journal of Nutrition* 133:2281-2286.
- Rawles, S. and R. Lochmann. 2003. Effects of amylopectin/amylose starch ratio on growth, body composition, and glycemic response of sunshine bass (*Morone chrysops* X *M. saxatilis*). *Journal of the World Aquaculture Society* 34:278-288.

- Lochmann, R.T., K.B. Davis, and B.A. Simco. 2002. Cortisol response of juvenile golden shiner *Notemigonus crysoleucas* diets differing in lipid content. *Fish Physiology and Biochemistry* 27:29-34.
- Goodwin, A.E., R.T. Lochmann, D.M. Tieman, and A.J. Mitchell. 2002. Massive hepatic necrosis and nodular regeneration in largemouth bass fed diets high in available carbohydrate. *Journal of the World Aquaculture Society* 33:466-477.
- Lochmann, R., and H. Phillips. 2002. Nutrition and feeding of baitfish. Pages 402-412 *In: Lim, C. and Webster, C. (editors), Nutrient Requirements and Feeding of Finfish for Aquaculture.* CAB International Publishers, U.K. [Book chapter]
- Lochmann, R., K. Dabrowski, R. Moreau, and H. Phillips. 2001. Responses of juvenile golden shiners fed semipurified or practical diets with or without supplemental ascorbic acid. *Journal of the World Aquaculture Society* 32:202-209.
- Lochmann, R., H. Phillips, S. Dasgupta, D. Gatlin, and S. Rawles. 2001. Stable carbon isotope ratios and standard production data as indices of golden shiner, *Notemigonus crysoleucas*, performance in pond feeding trials. *Journal of Applied Aquaculture* 11:21-34.
- Lochmann, R. and H. Phillips. 2001. Nutritional aspects of health and related components of baitfish performance. Pages 119-130 *In: Lim, C. and Webster, C. (editors), Nutrition and Fish Health.* Food Products Press, Binghamton, New York, USA.
- Reilly, J., and R. Lochmann. 2000. Comparative aspects of feed and feedstuff utilization by Yaqui and channel catfish. *North American Journal of Aquaculture* 62:279–284.
- Perschbacher, P. and R.L. Lochmann. 1999. Effects of feeding pelleted versus non-pelleted defatted rice bran on Nile Tilapia *Oreochromis niloticus* production and water quality in ponds. *Asian Fisheries Science*, 12: 49-55.
- Thompson, H.R., Jr., L.G. Rushing, T. Gehring, and R. Lochmann. 1999. Persistence of gentian violet and leucogentian violet in channel catfish (*Ictalurus punctatus*) muscle after water-borne exposure. *Journal of Chromatography (B)*:287-291.
- Lochmann, R. Diets of Cultured Fish. 1998. *Laboratory Animal*, 27(1): 36-39.
- Ang, C.Y.W., W. Luo, D.R. Kiessling, K. McKim, R. Lochmann, C.C. Walker, and H.C. Thompson. 1998. A bridging study between liquid chromatography and microbial inhibition assay methods for determination of amoxicillin residues in catfish muscle. *Journal of AOAC International*, 81(10): 33-39.
- Lochmann, R. and R. Brown. 1997. Soybean-lecithin supplementation of practical diets for juvenile goldfish (*Carassius auratus*). *Journal of the American Oil Chemists' Society* 74:149-152.
- Lochmann, R. and H. Phillips. 1996. Stable isotopic evaluation of the relative assimilation of natural and artificial foods by golden shiners (*Notemigonus crysoleucas*) in ponds. *Journal of the World Aquaculture Society*, 27(2):168-177.



- Lochmann, R. and H. Phillips. 1995. Comparison of rice bran oil, poultry fat and cod liver oil as lipid supplements in feeds for channel catfish and golden shiners. *Journal of Applied Aquaculture*, 5(3):47-56.
- Lochmann, R., W.R. McClain and D.M. Gatlin III. 1995. Responses of the red swamp crayfish, *Procambarus clarkii*, to different quantities and sources of dietary carbohydrates and lipids. Pp. 364-375 In: *Freshwater Crayfish VIII, Papers of the 8th International Symposium of Astacology*, Louisiana Agricultural Experiment Station, Louisiana State University Agricultural Center, Baton Rouge, LA.
- Lochmann, R. and H. Phillips. 1994. Dietary protein requirement of juvenile golden shiners (*Notemigonus crysoleucas*) and goldfish (*Carassius auratus*) in aquaria. *Aquaculture* 128: 277-285.
- Lochmann, R. and H. Phillips. 1994. Vitamin and mineral additions to golden shiners diet tested. *Arkansas Farm Research* 43(3): 8-9.
- Lochmann, R. and D.M. Gatlin III. 1993. Essential fatty acid requirement of juvenile red drum (*Sciaenops ocellatus*). *Fish Physiology and Biochemistry* 12(3): 221-235.
- Lochmann, R. and D.M. Gatlin III. 1993. Evaluation of different types and levels of triglycerides, singly and in combination with different levels of n-3 highly unsaturated fatty acid ethyl esters in diets of juvenile red drum, *Sciaenops ocellatus*. *Aquaculture* 114: 113-130.
- Lochmann, R., W.R. McClain and D.M. Gatlin III. 1992. Evaluation of practical feed formulations and dietary supplements for red swamp crayfish. *Journal of the World Aquaculture Society* 23(3): 217-227.

### **Extension/ Outreach/Popular Publications:**

- Lochmann, R. 2020. Feeding the economy through aquaculture. *Arkansas Money and Politics (ARMONEYANDPOLITICS.COM)*, Nov. 2020. [https://issuu.com/ayisaboutyou/docs/ampnovember2020-fullbook\\_cropped/10?ff](https://issuu.com/ayisaboutyou/docs/ampnovember2020-fullbook_cropped/10?ff)
- Egnew, N., N. Romano, A.K. Sinha, and R. Lochmann, 2019. Testing potential of treated feeds to reduce bird predation. *Global Aquaculture Advocate*, <https://www.aquaculturealliance.org/advocate/testing-potential-of-treated-feeds-to-reduce-bird-predation/>. Monday, Oct. 14.
- Sinha, A., N. Romano, M. Eggleton, J. Howe and R. Lochmann. 2018. Removing cyanobacteria and associated toxins in aquaculture ponds. *Global Aquaculture Advocate* 21 May, 2018. <https://www.aquaculturealliance.org/advocate/removing-cyanobacteria-toxins-aquaculture-ponds/>
- Thompson, E., and R. Lochmann. 2017. Improving soybean meals for diets of largemouth bass. *Arkansas Aquafarming* 34(1): 5.
- Lochmann, R. 2015. Feeds and feeding of hybrid striped bass. SRAC Publication No. 3001. <https://srac.tamu.edu/index.cfm/getFactSheet/whichfactsheet/283/>

- Lochmann, R., H. Phillips, P. Harper, N. Stone, D. Weldon, and C. Engle. Effects of 28% protein diets on golden shiners at two densities. *Arkansas Aquafarming* 30(2):2-4.
- Lochmann, R., and H. Phillips. 2013. Comparison of sorghum and corn distillers dried grains with solubles in diets of channel catfish. *Arkansas Aquafarming* 30(1): 1.
- Renukdas, N., C. Engle, B. Bosworth and R. Lochmann. 2013. Solvent-extracted distiller's dried grains with solubles show promise in channel catfish diets. *Arkansas Aquafarming* 30(1): 2-3.
- Sink, T. and R. Lochmann. 2012. Croaking, Marine Baitfish and Arkansas. *Arkansas Aquafarming Vol. 29(1): 3-4.*
- Avery, J., B. Bosworth, D. A. Davis, C. Engle, G. Kumar, B. Hu, M. Li, R. Lochmann, and C. Tucker. 2011. Low-cost alternative versus traditional diets for catfish: a regional study. *The Catfish Journal* (May) 25(9): 5-7.
- Lochmann, R., and H. Phillips. 2011. Supplemental feeds – a better option for baitfish? *Arkansas Aquafarming* 28(2): 4.
- Lochmann, R., and H. Phillips. 2011. Dogfood for catfish? *Arkansas Aquafarming* 28(2): 7.
- Engle, C., R. Lochmann, G. Kumar, and B. Bosworth. 2011. Results of 2010 UAPB catfish feed study. *Arkansas Aquafarming* 28(1): 2-5.
- Lochmann, R., and H. Phillips. 2011. Effects of traditional and alternative diets with 28 or 32 percent protein on performance of golden shiners in pools. *Arkansas Aquafarming* 28(1): 6.
- Sink, T.D., and R.T. Lochmann. 2011. The Atlantic croaker (*Micropogonias undulates*): An emerging candidate for multiple purpose aquaculture. *World Aquaculture* 43(3): 38-43.
- Lochmann, R. 2010. North Central Regional Aquaculture Center. Baitfish Nutrition. Fish Nutrition Launch Pad (powerpoint with voiceover).
- Lochmann, R., and H. Phillips. 2009. Nutrition and feeding of baitfish. University of Arkansas Cooperative Extension Program, University of Arkansas at Pine Bluff, United States Department of Agriculture and County Governments Cooperating. ETB256-PD-2-09RV.
- Lochmann, R., and T. Sink. 2009. Dairy/yeast prebiotic in golden shiners improved survival. *Arkansas Aquafarming* 26(1): 4.

Pomerleau, S., C. Engle, and R. Lochmann. 2009. Effect of feed formula and feeding frequency on catfish production costs. *Arkansas Aquafarming* 26(1): 5.

## **Grants**

Arkansas Research Alliance, \$32,828, A comprehensive approach to assessing dietary iron utilization in channel catfish fed plant-based diets with the goal of improving fish performance and production profitability, 1 year, May 31, 2019 – April 20, 2020.

Arkansas Soybean Promotion Board, 18,800, Increasing nutrient utilization of soybean meals for largemouth bass through combined use of fermentation and prebiotics, 1 year, April 1, 2019 – March 31, 2020.

USAID/AquaFish CRSP, \$60,000. Aquaculture development: the impact on food supply, nutrition and health in Ghana and Tanzania - Phase II. 3/1/2016 - 2/28/2018. Kwamena Quagraine and Sebastian Chenyambuga.

Arkansas Research Alliance, \$75,000. Fellows Award. Aug. 1, 2017 – Sep. 30, 2020.

Southern Regional Aquaculture Center, \$80,000. Evaluation of probiotic and prebiotic supplements with catfish, golden shiners, hybrid striped bass and tilapia under conditions of commercial production. 9/01/2015-9/30/2017.

H.J. Baker Brothers, Inc., \$54,666, Digestibility of Nutrient Supplements in Sunshine Bass and Growth Performance of Fish Fed Diets with Different Supplements, 2 years, June 1, 2016 – April 30, 2019. (Collaboration with S. Rawles, SNARC).

H.J. Baker Bros., Inc., \$68,660. Digestibility of nutrient supplements in Nile tilapia and growth performance of fish fed diets with different supplements. 6/01/2016-4/30/2018.

United Sorghum Checkoff Program, \$30,000. New uses for sorghum grains: expanding market share into fish meal and bioplastics. 03/1/2017 - 12/31/2018. Ruben Morawicki.

USAID/CRSP, \$100,001. Enhancing the nutritional value of tilapia for human health. July 1, 2013-Sept. 3, 2015. Kwamena Quagraine and Steven Amisah.

Skretting, USA, \$10,000, The effect of digestible protein, digestible energy and fish meal content on the performance of Hybrid Striped Bass grown from 10g to 500g and evaluation of commercial HSB diets. 1 year. Todd Sink.

Southern Regional Aquaculture Center, \$128,385, Improving Catfish Broodstock Management by Manipulating Diet, Stocking Densities and Sex Ratios, 3 years, current. Todd Sink, Alf Haukenes, Carole Engle, Delbert Gatlin, and Brian Bosworth

Arkansas Corn and Grain Sorghum Promotion Board, \$26,000, The Effects of Diets with Corn Distillers Dried Grains or Sorghum Distillers Dried Grains on Catfish Performance, Processing Traits, and Production Profitability, 1 year, May 1, 2013 - April 30, 2014.

Arkansas Corn and Grain Sorghum Board, \$25,200, The effects of diets with corn gluten feed or corn distillers dried grains on catfish performance, processing traits, and production profitability, 1 year, Apr. 30, 2012 – Mar. 31, 2013.

Arkansas Soybean Promotion Board, \$28,400, Digestibility of CLA-soybean oil, standard soybean oil, fish oil and algal oil in channel catfish, 1 year, April 1, 2013 - March 31, 2014. Andrew Proctor.

USDA/Capacity Building Grant, \$281,630, Biochemical and genetic techniques to advance research in lipid metabolism and nutrition of channel catfish and largemouth bass, 9/01/10 – 11/30/12. T. Sink and Andrew Goodwin.

USDA/ARS, \$103,732, The effects of lipids and a prebiotic on growth performance, immune responses, and critical maximum temperature in channel catfish and sunshine bass, 01/05/11 – 12/31/12. Steven Rawles.

Arkansas Catfish Promotion Board, \$8000, Sorghum distillers dried grains as an alternative protein source in diets of channel catfish, 01/15/11-12/15/11.

USAID/CRSP, \$67,815. Improving Health and Nutrition in Africa through Increased Use of Geographic Information, Indigenous Aquaculture Species Development and Feed Technology, and Efficient Fish Marketing. 2 years, Sept 2009 – Aug. 2011. Sebastian Chenyambuga.

Arkansas Catfish Promotion Board, \$34,576, Feed performance testing and verification through an industry-university partnership – continuation (year 2). Carole Engle and David Heikes.

Arkansas Soybean Promotion Board, \$20,000, The effects of dietary soybean lecithin on channel catfish growth, innate immune response, lipid biochemical indices, and value of fillets for human health. 1 year. Todd Sink.

Arkansas Soybean Promotion Board, \$21,476+\$9000, Effects of diets supplemented with CLA-enriched soybean oil, standard soybean oil or fish oil on feed conversion, survival, body composition, and shelf life of channel catfish. 1.5 year (amended). Jimmy Faulkner and A. Proctor.

Arkansas Catfish Promotion Board, \$28,754, Feed performance testing and verification through an industry-university partnership – (year 1). Carole Engle and David Heikes.

Southern Regional Aquaculture Center, \$36,200, Improving reproductive efficiency of cultured finfish. 3 years. Todd Sink, Richard Strange, and Delbert Gatlin.

United States Dept. of Agriculture/Agriculture Research Service, \$138,718, Replacement of menhaden fish meal and oil with Alaskan Pollock visceral meal in diets of sunshine bass and channel catfish. 3 years (current). Steven Rawles, Rick Barrows and Peter Bechtel.

US Agency for International Development/CRSP, \$66,732 + \$97,815, Development of Nile tilapia culture in Tanzania (emphasis on use of indigenous feedstuffs in diets). 4 years (current/renewed). Kwamena Quagrainie and Sebastian Chenyambuga.

Novus International, Inc., \$16,200. The effects of Novus dietary supplements (MeraMet Catfish Plus™; Mera Organic Acid blend) in premium or suboptimal 28%-protein diets on the growth, feed conversion, survival, and health of channel catfish fingerlings in aquaria. 1 year.

International Ingredient Corporation, \$6200, The effects of GroBiotic®-A on the growth and health of channel catfish fry in aquaria, 2 years.

Arkansas Catfish Promotion Board, \$8925, Nutrition and feeding strategies to improve egg and fry production of channel catfish, 1 year.

Arkansas Catfish Promotion Board, \$22,920, Effect of commercial diets supplemented with different lipid sources on growth, health, feed conversion, survival, and body composition of channel catfish of different sizes raised under different temperature regimes. Emphasis: diet and feeding strategies for cool and coldwater feeding, 1 year.

Arkansas Catfish Promotion Board, \$8925, Nutrition and feeding strategies to improve egg and fry production of channel catfish, 1 year.

USDA/CSREES-EvansAllen, \$30,000, Nutrition and feeding strategies to improve production efficiency and product quality of baitfish and catfish, 5 years (current).

Arkansas Catfish Promotion Board. \$17,070. Effect of commercial diets supplemented with different lipid sources on growth, health, feed conversion, survival and body composition of channel catfish of different sizes raised under different temperature regimes. Operation Continued. 1 year.

Arkansas Catfish Promotion Board. \$7075. Growth and survival of channel catfish fry fed all-plant-protein diets compared to standard diets containing animal protein. 1 year. Todd Sink.

Arkansas Catfish Promotion Board. \$29,050. Nutrition and feeding strategies to improve egg and fry production of channel catfish. 1 year. Todd Sink.

Arkansas Space Grant Consortium. \$4000. Functional fish as a remedy for deconditioned hearts in astronauts. 1 year. Makuba Lihono.

Catfish Promotion Board, \$11,220, Effect of commercial diets supplemented with different lipid sources on growth, health, feed conversion, survival and body composition of channel catfish of different sizes raised under different temperature regimes. Phase II: Operation – Year 3.

Dry Creek Stock Products, LLC, \$3000, The effects of Peck's Natural Blend Daily™ on the performance of channel catfish, 1 year.

USAID/CRSP, \$24,000, Effects of native Peruvian feedstuffs on growth and health of Colossoma and Piaractus, 2 years. Chris Kohler and William Camargo.

Arkansas Catfish Promotion Board, \$44,778, Effect of commercial diets supplemented with different lipid sources on growth, health, feed conversion, survival and body composition of channel catfish of different sizes raised under different temperature regimes. Phase II: Operation. (Year 1)

Southern Regional Aquaculture Center, \$84,619, Feed formulation and feeding strategies for bait and ornamental fish, 3 years. Craig Watson and Delbert Gatlin.

Arkansas Catfish Promotion Board, \$28,900, Effect of commercial diets supplemented with different lipid sources on growth, health, feed conversion, survival and body composition of channel catfish of different sizes raised under different temperature regimes, 3 years.

Arkansas State Funds, \$22,000 + graduate assistantship + tuition, Methods of assessing nutritional stress in baitfish, 2 years.

USDA/ARS, \$126,051, Development of larval feeds for golden shiners in ponds, 15 mos. Nathan Stone.

Arkansas State Funds, \$11,000, Performance of channel catfish (*Ictalurus punctatus*) fed diets containing yeast as a feed additive, 1 year

Arkansas State Funds, \$11,000, Performance of channel catfish (*Ictalurus punctatus*) fingerlings fed diets with novel lipid sources, 1 year.

US Agency for International Development/ CRSP, \$60,900, Broodstock diets and spawning of *Colossoma macropomum* and/or *Piaractus brachypomus*. 2 years. Chris Kohler, William Camargo, Fernando Alcantara,.

USAID-CRSP, \$11,999, Manipulating diet composition to improve nutrient utilization in native Peruvian fishes, 1 year. Chris Kohler, William Camargo, Fernando Alcantara.

CEM Corporation, \$4000 (equipment grant), Use of novel lipids in catfish diets to enhance the nutritive value for human consumers.

USDA/ARS, \$46,300, Practical diet development for largemouth bass, 1 year.

USDA, \$42,846, Nutrition, immunity, economics, and field demonstrations of sunshine bass, 2 years. Carl Webster.

United States Dept. of the Army, \$961,000, Determination of the hazards of isopropyl methylphosphonic acid to channel catfish (*Ictalurus punctatus*) and golden shiners (*Notemigonus crysoleucas*), 3 years. Steve Lochmann.

### **Professional Service**

World Aquaculture Society (WAS) Immediate Past President (2016-2017); President (2015-2016), President-Elect (2014-2015); WAS Secretary (2010 – 2014); WAS Policies and Procedures committee (Chair 2010-2014; Member 2015-2019).

US Aquaculture Society: Board member (2005 – 2007); US Chapter President-Elect, President, and Immediate Past President (2007 - 2009); Program Chair for Aquaculture America 2005; Chair of rules and regulations committee (2002-2003); Technical Program Committee, 2002; session moderator and judge of student presentations (multiple meetings).

- Organized and moderated a special session entitled "role of natural foods in the nutrition of non-larval fish and shellfish" for the AquaAmerica '96 meeting in Arlington, TX.  
- Co-organized and co-moderated special sessions on Lipids in Aquaculture Nutrition and Physiology (Nashville 2013, Seattle 2014, New Orleans 2015, and Las Vegas 2016)

### Southern Regional Aquaculture Center (SRAC)

SRAC - Project Leader - "Improving catfish broodstock management by manipulating diet, stocking densities and sex ratios" - 2011 - 2014.

SRAC – Steering Committee and Project Leader – “Feed formulation and feeding strategies for bait and ornamental fish” – 2003 - 2006.

SRAC Technical Committee (Research) – 2002.

Steering committee for project entitled "Optimization of diet composition, feeding strategies, and system automation to improve nutrient utilization and control waste production in warmwater aquaculture". 1995-1996.

SRAC and SERA-IEG-9 (Southern extension and research association information exchange group) -Chair of organizational committee for the SERI-IEG-9/SRAC meetings held in Pine Bluff, AR, 1996 & 2005.

Sigma Xi – Central Arkansas Chapter – Secretary/Treasurer (2003-2004); Vice President (2004-2005); President (2005-2006), Past President (2006-2007)

Kentucky State University Aquaculture Advisory Committee - 1999-2007.  
Chair of Research and Teaching subcommittees

### American Fisheries Society

Associate Editor, North American Journal of Aquaculture (2001 - 2004).  
Participated in student AFS chapter activities. Served as judge of student papers at the AFS meetings in Pine Bluff, AR, 1995, and in Anchorage, AK, 2005.

### **External Collaborations**

Maureen Dolan, Arkansas State University, plant-generated natural fish therapeutants  
Rodrigo Ozorio, trout nutrition and health, University of Porto, Portugal  
Sun-Ok Lee, University of Arkansas at Fayetteville, gut microflora analysis  
Ruben Morawicki, University of Arkansas at Fayetteville, new soy products in fish diets  
Delbert M. Gatlin, III, Texas A&M University, baitfish nutrition, catfish nutrition  
Carl Webster, Kentucky State University & SNARC, hybrid striped bass nutrition  
Steve Amisah, KNUST, Ghana, Tilapia nutrition/ product quality  
Regina Edziyie, KNUST, Ghana, Tilapia nutrition/ product quality  
Emmanuel Frimpong, Virginia Tech, international tilapia nutrition research  
Hal Thompson, National Center for Toxicological Research, Catfish therapeutants  
Cathy Ang, National Center for Toxicological Research, Catfish therapeutants  
Steven Rawles, SNARC, hybrid striped bass, largemouth bass & baitfish nutrition  
Gibson Gaylord, USDA/ARS, Bozeman, diet production  
Bart Green, USDA/ARS/SNARC, catfish production  
Rick Barrows, USDA/ARS Bozeman, diet production  
Wendy Sealey, USFWS, fish nutrition, alternative nutrient sources  
Peter Bechtel, USDA/ARS Alaska, marine product development for fish feeds  
Konrad Dabrowski, Ohio State University, vitamin C nutrition in golden shiners  
Kenneth B. Davis, ARS Catfish Genetics Unit, MS State, Stoneville, nutritional stress physiology, golden shiners and hybrid striped bass  
Bill Simco, University of Memphis, nutritional stress physiology, golden shiners and hybrid striped bass  
Chris Kohler, Southern Illinois University, Carbondale – pacu nutrition  
William Camargo, University of the South Pacific, Suva, Fiji – pacu nutrition  
Joao Batista K. Fernandes, Centro de Aquicultura da UNESP, Brazil, pacu nutrition  
Fernando Alcantara, IIAP, Iquitos, Peru - pacu nutrition  
Sidharthra Dasgupta, Kentucky State University, baitfish nutrition/statistics  
Sebastian Chenyambuga, SUA, Tanzania, tilapia nutrition  
Nazael Madalla, SUA, Tanzania, tilapia nutrition  
Fred K. Choo, Iquitos, Peru, pacu nutrition  
Dave Straus, SNARC, toxicology of baitfish and catfish  
Allen Davis, Auburn, catfish nutrition  
Menghe Li, Mississippi State University, catfish nutrition, vitamin C and E analysis  
Andy Proctor, U.of Arkansas – Fayetteville (Food Science), alternative lipids in fish diets  
Kwamena Quagrainie, Purdue, aquaculture nutrition (tilapia) in Tanzania & Ghana

### **Presentations (Research and Outreach, last 5 years)**

#### *Professional Association Meetings:*

Jones, M., R. Lochmann, K. McCann, Y. Ramena, S. Rawles, N. Egniew, and G. Gaylord.  
2020. Nutrient digestibility and growth performance of Nile tilapia *Oreochromis*



*niloticus* fed diets with different protein concentrates. Aquaculture America 2020, Feb. 9- Honolulu, Hawaii, Feb. 9-12.

Jones, M., and R. Lochmann. 2019. Fermented sorghum as a substitute for soybean in the diets of Nile tilapia *Oreochromis niloticus*. Aquaculture 2019, New Orleans, Louisiana, Mar. 7-11.

McCann, K., S.D. Rawles, R. Lochmann, G. Gaylord, and W. Sealey. 2019. Minimizing fishmeal use in hybrid striped bass *Morone chrysops* ♂ x *Morone saxatilis* ♀ diets using commercial protein concentrates designed for aquafeeds. Aquaculture 2019, New Orleans, Louisiana, Mar. 10. \*Winner - Best student oral presentation award from the U.S. Aquaculture Society.

McCann, K., S.D. Rawles, R. Lochmann, G. Gaylord, and W. Sealey. 2019. Minimizing fishmeal use in hybrid striped bass *Morone chrysops* ♂ x *Morone saxatilis* ♀ diets using commercial protein concentrates designed for aquafeeds. Association of Research Directors, 19th Biennial Research Symposium. Jacksonville, Florida, Mar. 30-April 3.

Lochmann, R., and M. Jones. 2019. Fermented sorghum as a substitute for soybean in the diets of Nile tilapia (*Oreochromis niloticus*). Association of Research Directors, 19th Biennial Research Symposium. Jacksonville, Florida, Mar. 30-April 3.

McCann, K., R. Lochmann and S. Rawles. 2018. Minimizing fishmeal in hybrid striped bass diets using commercial protein concentrates. Aquaculture America 2018. Las Vegas, Nevada, Feb. 19-22.

Smith, M.A., L.A. Roy, A.M. Kelly, M. Thompson, H.E. Quintero, R. Lochmann, and J. Park. 2018. Feeding regimes for largemouth bass at low winter temperatures. Aquaculture America 2018. Las Vegas, Nevada, Feb. 19-22.

Jones, M., and R. Lochmann. 2018. Modified soybean meals as sustainable protein sources in diets of largemouth bass (*Micropterus salmoides*). Aquaculture America 2018. Las Vegas, Nevada, Feb. 19-22.

Xie, L., N. Stone and R. Lochmann. 2017. Production functions for golden shiner growth in different culture systems. Aquaculture America 2017, San Antonio, Texas, Feb. 19-22.

Koch, J.F.A., R. Lochmann, M. Thompson, R. Chen and K. Rosentrater. 2017. Growth and health responses of juvenile largemouth bass *Micropterus salmoides* fed practical animal-based and plant-based diets with different levels of vitamin A. Aquaculture America 2017, San Antonio, Texas, Feb. 19-22.

Thompson, M., R. Lochmann and R. Morawicki. 2017. Modified soybean meals as sustainable protein sources in diets of largemouth bass (*Micropterus salmoides*). Aquaculture America 2017, San Antonio, Texas, Feb. 19-22.

Smith, M.A., L.A. Roy, A.M. Kelly, M. Thompson, H.E. Quintero, R. Lochmann, and J. Park. 2017. Feeding regimes for largemouth bass at high summer temperatures. Aquaculture America 2017, San Antonio, Texas, Feb. 19-22.

Edziyie, R., R.O. Abera, J. Afagachie, N.W. Agbo, and R. Lochmann. 2017. Protein and lipid composition of indigenous oilseeds in Ghana and their potential for use in animal feeds. Aquaculture America 2017, San Antonio, Texas, Feb. 19-22.

Ramena, Y, S. Rawles, R. Lochmann, P. Chen, T.G. Gaylord, M. McEntire, B. Beck, B. Farmer, M. Lange, and F.T. Barrows. 2016. Evaluation of growth, nutrient retention, health, and resistance to bacterial challenge in sunshine bass fed diets with new varieties of non-genetically modified soybeans. Aquaculture 2016, Las Vegas, NV, Feb. 18-28.

Ramena, Y., M. Lange, S. Rawles, R. Lochmann, P. Chen, T.G. Gaylord, M. McEntire, B. Beck, B. Farmer, and F.T. Barrows. 2016. The effect of  $\beta$ -conglycinin and gut histology of the sunshine bass fed diets with new varieties of non-genetically modified soybeans. Aquaculture 2016, Las Vegas, NV, Feb. 18-28.

Xie, L, and R. Lochmann. 2016. Discriminant analysis of gut microflora communities of fathead minnow *Pimephales promelas*. Aquaculture 2016, Las Vegas, NV, Feb. 18-28.

Thompson, M., S.D. Rawles, and R. Lochmann. 2015. Dietary lipid and prebiotic effects on sunshine bass growth, performance, and survival. Aquaculture America 2015, New Orleans, Louisiana, Feb. 20-22.

Ramena, Y., S. Rawles, R. Lochmann, P. Chen, T.G. Gaylord, and F.T. Barrows. 2015. Nutrient digestibility of standard and new varieties of non-genetically modified soybeans in sunshine bass. Aquaculture America 2015, New Orleans, Louisiana, Feb. 20-22.

Maina, A., R. Lochmann, S. Rawles, and K. Rosentrater. 2015. Digestibility of different lipids in channel catfish *Ictalurus punctatus*. Aquaculture America 2015, New Orleans, Louisiana, Feb. 20-22.

### ***Presentations at Producer Workshops/Meetings***

Lochmann, R. 2020. UAPB Aquaculture and Fisheries Center Research and Extension update. Catfish Farmers of Arkansas, Hot Springs, Arkansas, January 31.

Lochmann, R. 2020. UAPB Aquaculture and Fisheries Center Research and Extension update. Arkansas Bait and Ornamental Fish Growers Association, Lonoke, Arkansas, Feb. 6.

McCann, K., S.D. Rawles, R. Lochmann, G. Gaylord, W. Sealey, and J. Abernathy. 2019. Minimizing fish meal in hybrid striped bass (*Morone chrysops*♂ x *Morone saxatilis*♀) diets using commercial protein concentrates. 2019 Lonoke Aquaculture Workshop and

Arkansas Bait and Ornamental Fish Growers Association Annual Meeting, Lonoke, Arkansas, Feb. 7.

Lochmann, R. 2019. UAPB Aquaculture and Fisheries Center Research and Extension update. Arkansas Bait and Ornamental Fish Growers Association, Lonoke, Arkansas, Feb. 7.

Lochmann, R. 2018. Overview of aquaculture research at UAPB. Greene County Field Day, Paragould, AR, July 19.

Lochmann, R. 2018. UAPB Aquaculture and Fisheries Center Research and Extension update. Catfish Farmers of Arkansas, Hot Springs, Arkansas, January 12.

Lochmann, R. 2018. UAPB Aquaculture and Fisheries Center Research and Extension update. Arkansas Bait and Ornamental Fish Growers Association, Lonoke, Arkansas, Feb. 8.

Ramena, Y., S. Rawles, R. Lochmann, P. Chen, T.G. Gaylord, M. McEntire, B. Beck, B. Farmer, M. Lange, and F.T. Barrows. 2017. Effect of dietary non-GM soybean meal on growth, nutrient retention, and health in sunshine bass. Arkansas Bait and Ornamental Fish Grower's Association Meeting, Lonoke, AR, Feb. 9.

Thompson, M., J. Koch, and R. Lochmann. 2017. Vitamin A supplementation in the diets of largemouth bass. Arkansas Bait and Ornamental Fish Grower's Association Meeting, Lonoke, AR, Feb. 9.

Thompson, M., R. Lochmann and R. Morawicki. 2017. Modified soybean meals as sustainable protein sources in diets of largemouth bass (*Micropterus salmoides*). Arkansas Bait and Ornamental Fish Grower's Association Meeting, Lonoke, AR, Feb. 9.

Lochmann, R. 2017. Overview of the UAPB Aquaculture/Fisheries Center. Arkansas Bait and Ornamental Fish Grower's Association Meeting, Lonoke, AR, Feb. 9.

Lochmann, R. 2016. UAPB Aquaculture & Fisheries Center Research and Extension Update. Catfish Farmer's of Arkansas meeting, Hot Springs, AR, Jan. 14 and 15.

Lochmann, R. 2016. UAPB Aquaculture & Fisheries Center Research and Extension Update. Farm Bureau, North Little Rock, Feb. 3.

Lochmann, R. 2016. UAPB Aquaculture & Fisheries Center Research and Extension Update Arkansas Bait and Ornamental Fish Grower's Association meeting, Feb. 11.

Lochmann, R., H. Phillips, P. Harper, N. Stone, D. Weldon, and A. Haukenes. 2013. Will alternative baitfish diets improve profitability? 2013 Lonoke Aquaculture Workshop and Arkansas Bait and Ornamental Fish Growers Association Annual Meeting, February 7.

Engle, C., B. Bosworth, N. Renukdas, and R. Lochmann. 2012. Catfish regional study – Arkansas trial. Arkansas Aquaculture, Hot Springs, AR, Jan. 13.

Lochmann, R. 2012. Effects of diets with standard soy oil, soy oil with CLA's, menhaden fish oil, or algal oil on performance, composition, sensory traits, and shelf life of channel catfish. 2012 Arkansas Soybean Research Summit, Forrest City, AR, Dec. 4.

Lochmann, R. 2011. Catfish feed experiments: what have we learned? Texas Aquaculture Association 41<sup>st</sup> Annual Conference and Trade Show, Bay City, Texas, January 26-28, 2011.

Lochmann, R., H. Phillips, J. Faulkner, and R. Chen. 2011. Effects of traditional and alternative diets with 28- or 32% protein on performance of golden shiners *Notemigonus crysoleucas* in pools. Arkansas Bait and Ornamental Fish Grower's Association Annual Meeting, Feb. 14, 2011, Lonoke, Arkansas.

Lochmann, R. 2010. Feed experiments: what have we learned? Arkansas Aquaculture, Hot Springs, AR, Jan. 22.

Lochmann, R., 2010. Baitfish nutrition update. Arkansas Bait and Ornamental Fish Grower's Association, Lonoke, AR, Feb. 11.

Lochmann, R. 2009. Criteria for choosing feeds: cost-of-gain versus feed cost. Catfish Farmer's of Arkansas annual meeting, Hot Springs, AR, January 23.

Sink, T.D., and R.T. Lochmann. 2009. Improving reproductive efficiency in channel catfish: the effects of broodstock dietary lipid and protein sources on egg and fry production. Catfish Farmer's of America Annual Convention, Natchez, MS, March 6.

Lochmann, R. 2009. Diet makeovers and fish performance: A balancing act. Catfish Producer Workshop, Lake Village, AR, April 2.

### ***Presentations – Miscellaneous***

Lochmann, R. 2020. Use of dietary prebiotics and lipids to enhance performance of commercially important aquaculture species in Arkansas. Invited seminar, Sigma Xi, Central Arkansas Chapter, National Center for Toxicological Research, Jefferson, Arkansas, Feb. 19.

Lochmann, R. and A. Kelly, 2018, 2019 and 2020. Arkansas aquaculture – the best kept agriculture secret. University of Arkansas at Fayetteville, invited seminar for the Introduction to Animal Science class, Fayetteville, AR, November.

Lochmann, R. 2018. Women in aquaculture. Girls of Promise conference, 4-H conference center, Little Rock, AR, April 12.

Lochmann, R., J. Faulkner, H. Phillips and T. Sink. 2018. Effects of diets with standard soy oil, soy oil with CLAs, Menhaden fish oil, or algal oil on performance, composition, sensory traits, and shelf life of channel catfish. Invited seminar given to the faculty at the Sokoine University of Agriculture, Morogoro, Tanzania, May 3.

McCann, K., R. Lochmann and S. Rawles. 2018. Minimizing fishmeal in hybrid striped bass diets using commercial protein concentrates. 31st Annual Showcase – UAPB faculty, staff and student research forum. Pine Bluff, Arkansas, March 8.

Jones, M., and R. Lochmann. 2018. Modified soybean meals as sustainable protein sources in diets of largemouth bass (*Micropterus salmoides*). 31st Annual Showcase – UAPB faculty, staff and student research forum. Pine Bluff, Arkansas, March 8.  
Lochmann, R. 2017. Overview of the UAPB Aquaculture/Fisheries Center. Arkansas House of Representatives - Agriculture Committee. Little Rock, Arkansas, Feb. 8.

Maina, A., R. Lochmann, S. Rawles and K. Rosentrater. 2017. Digestibility of practical dietary lipids in channel catfish. 61<sup>st</sup> Annual Rural Life Conference, Pine Bluff Convention Center, March 3.

Ramena, Y., S. Rawles, R. Lochmann, P. Chen, T.G. Gaylord, M. McEntire, B. Beck, B. Farmer, M. Lange, and F.T. Barrows. 2017. Effect of dietary non-GM soy proteins on growth, body composition, and resistance to bacterial challenge in sunshine bass. 61<sup>st</sup> Annual Rural Life Conference, Pine Bluff Convention Center, March 3.

Thompson, M., R. Lochmann and R. Morawicki. 2017. Modified soybean meals as sustainable protein sources in diets of largemouth bass (*Micropterus salmoides*). 61<sup>st</sup> Annual Rural Life Conference, Pine Bluff Convention Center, March 3.

Ramena, Y., R. Lochmann and S. Rawles. 2017. Functional histological study of gut enteritis and inflammation in sunshine bass fed diets with new varieties of non-genetically modified soybeans. 30<sup>th</sup> Annual Showcase of Faculty, Staff and Students Research Forum. UAPB STEM conference building, Pine Bluff, Arkansas, Mar. 28.

Lochmann, R. 2017. Overview of the UAPB Aquaculture/Fisheries Center, University of Arkansas Board of Trustees meeting, Pine Bluff, Arkansas, Mar. 30.

Ramena, Y., S. Rawles and R. Lochmann. 2016. Assessment of nutrient retention of novel non-GMO soy proteins compared to fish meal in diets of sunshine bass. UAPB Research Forum, Pine Bluff, AR, April 5. (*Best graduate student presentation*).

Thompson, E., and R. Lochmann. 2016. Modified soybean meals as sustainable protein sources in diets of largemouth bass. UAPB Research Forum, Pine Bluff, AR, April 5.

Lochmann, R. 2016. UAPB Aquaculture & Fisheries Center Overview. Rotary Club meeting, Pine Bluff, AR, April 12.

Lochmann, R. 2016. Update on UAPB Aquaculture & Fisheries Center. Board of Trustees meeting, Cossatot Community College, Nashville, AR, May 25.

Lochmann, R. 2016. UAPB Aquaculture & Fisheries Center Overview. Jefferson Country Alliance, Pine Bluff, AR, June 7.

### **Teaching/Academic activities**

#### **Courses taught (past or present):**

Aquatic animal nutrition (graduate and undergraduate)

Graduate seminar

Research methods & scientific writing (graduate; team taught)

Limnology (undergraduate)

Fisheries seminar (undergraduate)

#### **Thesis Committees**

Chair – 14 MS students; 2 PhD students

Member – 10 MS students; 1 PhD student

#### **Post-Doctoral Research Associates**

João Batista K. Fernandes, Todd Sink, João Fernando Albers Koch