

Bradley Michael Richardson

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EDUCATION**Doctor of Philosophy, Mississippi State University 2016 - 2020***Major – Forest Resources (Wildlife, Fisheries, & Aquaculture)**Minor – Secondary Education**Advisors – Michael E. Colvin and David J. Wise**Dissertation – Improved monitoring and decision-making to manage atypical Aeromonas hydrophila (aAh) in catfish aquaculture ponds***Master of Science, Murray State University 2013 - 2015***Major – Biology**Advisor – Michael B. Flinn**Thesis – A dietary comparison of the reintroduced alligator gar Atractosteus spatula and three sympatric gar relatives (family: Lepisosteidae) in the Clarks River, Kentucky***Bachelor of Science, Murray State University 2010 - 2013***Major – Aquatic Biology/Fisheries**Minor – Chemistry*

TECHNICAL PUBLICATIONS

Mischke CC, **Richardson BM**, Tiwari A, Griffin MJ, Rehman JU, Ashfaq MK, Nanayakkara NPD, Khan IA, and Wise DJ. 2023. *Copper toxicity to the Ghost Rams-horn Snail Biomphalaria havanensis*. North American Journal of Aquaculture 85: 116-122. <https://doi.org/10.1002/naaq.10279>

Armwood AR, Griffin MJ, **Richardson BM**, Wise DJ, Ware C, and Camus AC. 2022. *Pathology and virulence of Edwardsiella tarda, Edwardsiella piscicida, and Edwardsiella anguillarum in channel (Ictalurus punctatus), blue (Ictalurus furcatus), and channel x blue hybrid catfish*. Journal of Fish Diseases 00: 1-16. <https://doi.org/10.1111/jfd.13691>

López-Porras A, Griffin MJ, Ware C, **Richardson BM**, Greenway TE, Rosser TG, Aarattuthodiyi S, and Wise DJ. 2022. *Cross-protective efficacy of a live-attenuated Edwardsiella ictaluri vaccine against heterologous Edwardsiella piscicida isolates in channel and channel x blue catfish hybrids*. Journal of Fish Diseases 45: 1001-1010. <https://doi.org/10.1111/jfd.13623>

Richardson BM, Mischke CC, Rosser TG, Woodyard ET, Ware C, Wise DJ, and Griffin MJ. 2022. *Activation of Henneguya ictaluri Actinospores by Nonictalurid Fish Species, with*

Implications for Management of Proliferative Gill Disease in Catfish Aquaculture. North American Journal of Aquaculture 84(3): 313-324. <https://doi.org/10.1002/naaq.10242>

Tumolo BB, **Richardson BM**, Labeda DM, and Flinn MB. 2022. *Phytoplankton survival in hindgut of invasive Silver Carp (Hypophthalmichthys molitrix)*. The American Midland Naturalist 187(1): 29-38. <https://doi.org/10.1674/0003-0031-187.1.29>

Stilwell JM, Rosser TG, Woodyard ET, **Richardson BM**, López-Porras A, Leary JH, Mischke CC, Camus AC, and Griffin MJ. 2021. *Characterisation of myxozoan fauna of western mosquitofish, Gambusia affinis (Baird and Gerard) (Cyprinodontiformes: Poeciliidae), inhabiting experimental catfish ponds in Mississippi, USA*. Systematic Parasitology 98(4): 423-41. <https://doi.org/10.1007/s11230-021-09987-z>

Richardson BM, Griffin MJ, Colvin ME, Wise DJ, Ware C, Mischke CC, Greenway TE, Byars TS, Hanson LA, and Lawrence ML. 2020. *Using quantitative polymerase chain reaction (qPCR) and occupancy models to estimate atypical Aeromonas hydrophila (aAh) prevalence in catfish*. Aquaculture 530: 735687. <https://doi.org/10.1016/j.aquaculture.2020.735687>

Richardson BM, Flinn MB. 2019. *Increased probability and efficiency of gar capture using multi- versus monofilament gill nets*. Journal of Fish and Wildlife Management 10(2): 551-562; e1944-687X. <https://doi.org/10.3996/112018-JFWM-101>

FUNDED PROJECTS

US Animal and Plant Health Inspection Service (APHIS). 2022. *Integrated Pest Management of Invasive Apple Snails in Rice/Crawfish Production Systems*. AL Roda (PI), BM Richardson (Co-PI), BE Wilson (Co-PI), TG Rosser (Co-PI), and MJ Griffin (Co-PI). \$423,670

US Environmental Protection Agency (EPA). 2019. *Developing Bankfull Regional Curves: A First Step to Restore Streams Functionality in Mississippi*. JJ Ramirez-Avila (PI), SL Ortega-Achury (Co-PI), JL Martin (Co-PI), and **BM Richardson** (Co-PI). \$259,043

GRANTS AND AWARDS

Research Achievement Award (\$2000) – USDA Agricultural Research Unit	2022
3 rd Place, Best Student Oral Presentation (\$100) – Mississippi Chapter, American Fisheries Society	2020
Preparing Future Faculty Program Graduate – Mississippi State University	2019
Ernest A. Gluesing Outstanding Wildlife and Fisheries Ph.D. Student (\$100) – Department of Wildlife, Fisheries, and Aquaculture, Mississippi State University	2019
David Nabi Memorial Award – Department of Wildlife, Fisheries, and Aquaculture, Mississippi State University	2019
Mississippi AFS Excellence in Public Outreach – Mississippi Chapter, American Fisheries Society	2019
3-Minute Thesis Grand Champion Finalist (\$250) – Office of the Graduate School, Mississippi State University	2018
Best Student Abstract/Travel Award (\$400) – Fish Culture Section, American Fisheries Society	2018
Best Doctoral Student Oral Presentation – Graduate Student Research Symposium, Office of the Graduate School, Mississippi State University	2018

Best Student Abstract/Travel Award (\$400) – Fish Culture Section, American Fisheries Society	2017
Outstanding Graduate Researcher – Department of Biology, Murray State University	2015
Innovative Graduate Research Assistantship (\$8,000) – Murray State University	2014
Larry D. Pharris Memorial Wildlife Biology Scholarship (\$2,000) – Department of Biology, Murray State University	2014
Outstanding Graduate Poster – Murray State University Sigma Xi Chapter	2014
Undergraduate Instars Fellowship – Society for Freshwater Science	2013
Undergraduate Research Fellowship (\$2,000) – Office of Undergraduate Research and Scholarly Activities, Murray State University	2012
Dr. Alfred M. Wolfson Memorial Scholarship (\$2,000) – Department of Biology, Murray State University	2012
Undergraduate Research Grant (\$500) – Office of Undergraduate Research and Scholarly Activities, Murray State University	2011

TEACHING AND MENTORSHIP

Teaching Assistantships

WFA 4313 – Fisheries Management. Department of Wildlife, Fisheries, and Aquaculture, Mississippi State University. 3 credit hours. (2019)
WFA 4133 – Fisheries Science. Department of Wildlife, Fisheries, and Aquaculture, Mississippi State University. 3 credit hours. (2018)
WFA 3133 – Applied Aquatic and Terrestrial Ecology. Department of Wildlife, Fisheries, and Aquaculture, Mississippi State University. 3 credit hours. (2017, 2018)
WFA 4173/6173 – Fish Physiology. Department of Wildlife, Fisheries, and Aquaculture, Mississippi State University. 3 credit hours (2016)
BIO 101 – Introduction to Biology (Lab Instructor). Department of Biology, Murray State University. 4 credit hours (2014)
BIO 221 – Zoology. Department of Biology, Murray State University. 4 credit hours. (2013, 2014, 2015)

Guest Lectures

R: Syntax and Applications – College of Veterinary Medicine, Mississippi State University. Summer 2022
Macroinvertebrate Function in Stream Health – Stream Recon. Department of Civil and Environmental Engineering, Mississippi State University. Fall 2019
Length-Weight Relationships – Fisheries Science. Department of Wildlife, Fisheries, and Aquaculture, Mississippi State University. Spring 2019
Hatchery Creek: Beyond Stream Restoration – Hydro-environmental Analysis. Department of Civil and Environmental Engineering, Mississippi State University. Fall 2018
Biological Indices: How, What, and Why Macroinvertebrates are Good Stream Indicators – Hydro-environmental Analysis. Department of Civil and Environmental Engineering, Mississippi State University. Fall 2018

Mentorships (1 – graduate, 2 – undergraduate, 3 – high school)

Lorena Chavarro Chau ¹	Mississippi State University	2019
Iveth Navarro Torres ¹	Mississippi State University	2019

Shanika Musser ²	Mississippi State University	2018-2019
Taylor Noble ²	Mississippi State University	2018
Donavan McCranie ³	Columbus High School	2018
Jeremiah Ramsey ³	Columbus High School	2018
Miracle Watson ³	Columbus High School	2018
Claire Ray ²	Mississippi State University	2017
Jennifer Deignan ²	Mississippi State University	2017
Tori Savors ³	Columbus High School	2017-2018
Hunter Brooks ³	Columbus High School	2017-2018
David Alavarez ³	Columbus High School	2017
Wynter Brooks ³	Columbus High School	2017
Amiyah Porter ³	Columbus High School	2017
Nathan Tillotson ²	Murray State University	2014-2015

Other Teaching Experience

Substitute Teacher	Century Jr./Sr. High School, Ullin, IL 62992	2016
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OUTREACH AND SERVICE

9 th International Symposium on Aquatic Animal Health (AFS-FHS) <i>Special Session Organizer – Modeling Applications in Aquatic Animal Health</i>	2022
46 th Annual Meeting of the Mississippi Chapter of the American Fisheries Society <i>Student Moderator</i>	2020
Conference of Research Workers in Aquatic Diseases <i>Student Moderator</i>	2019
Mississippi State University Student Sub-unit of the American Fisheries Society <i>President</i>	2018-2019
Kidz Outdoor Zone – Jonesboro, IL <i>Presentation - Critters in the Creek</i>	2018
Department of Wildlife, Fisheries, and Aquaculture Graduate Student Association <i>Department Representative</i>	2018
Mississippi State University Student Sub-unit of the American Fisheries Society <i>Presentation - Three States and A Thousand Connections</i>	2017
Mississippi State University Student Sub-unit of the American Fisheries Society <i>President-elect</i>	2017-2018
Mississippi Region V Science Fair <i>Judge</i>	2017-2020
Mississippi State University Undergraduate Research Symposium <i>Judge</i>	2017-2020
Land Between the Lakes “Cool and Crawly Critter Day”	

<i>Exhibit – “Fun Fishes of Kentucky”</i>	2014
Murray State University Chapter of The Wildlife Society	
<i>Presentation - Searching for Morphological Differences in Four Sympatric Gar Species</i>	2013

RESEARCH PRESENTATIONS

(* indicates presenting author, if not first author; † indicates undergraduate student)

Richardson BM, Colvin ME, Griffin MJ, Mischke CC, Greenway TE, and Wise DJ. *A stochastic model to investigate atypical Aeromonas hydrophila disease dynamics in catfish aquaculture ponds*. 9th International Symposium on Aquatic Animal Health, September 2022. (Virtual Presentation)

Nguyen JA, **Richardson BM**, Woodyard ET, Stilwell JM, Slifka CM, Rose D, McAllister C, Marcquenski S, and Rosser TG. *A morphological and molecular comparison of Clinostomum metacercariae and adults of the United States*. 9th International Symposium on Aquatic Animal Health, September 2022.

Slifka CM, Waldbieser GC, Ware C, **Richardson BM**, Wood M, Balami S, Rose D, Walker CM, Older CE, Mischke CC, Wise DJ, Griffin MJ, and Rosser TG. *Water's in the water: identifying Planorbella trivolvis and Biomphalaria havanensis DNA using real-time qPCR*. 9th International Symposium on Aquatic Animal Health, September 2022.

Rose D, Older CE, **Richardson BM**, Ware C, Lewis M, Waldbieser GC, Khoo LH, Tekedar H, Perkins A, Hanson LA, Rosser TG, Wise DJ, and Griffin MJ. *Diversity of microbial community between medicated and non-medicated catfish ponds in the Mississippi Delta*. 9th International Symposium on Aquatic Animal Health, September 2022.

Armwood AR, Griffin MJ, **Richardson BM**, Wise DJ, Ware C, Camus AC. *Comparative Pathogenicity and Cross-protective Potential of Edwardsiella tarda, Edwardsiella piscicida, and Edwardsiella anguillarum in Channel, Blue, and Channel ♀ x Blue ♂ Hybrid Catfish*. 9th International Symposium on Aquatic Animal Health, September 2022. (Virtual Presentation)

Richardson BM, Walker CM, Reifers G, Wood M, Byars TS, Mischke CC, Griffin MJ, and Wise DJ. *Snail trap prototype for use in monitoring trematode parasite risk in catfish aquaculture ponds*. Catfish Farmers of America Annual Convention and Research Symposium, March 2022.

Richardson BM, Waldbieser GC, Ware C, Liles MR, Khoo LH, Gaunt PS, Hanson LA, Lawrence ML, Wise DJ, and Griffin MJ. *Genomic variability of atypical Aeromonas hydrophila isolated from catfish aquaculture ponds of the southeastern United States*. Aquaculture America, February 2022. (Attendance Cancelled - Covid-19)

Richardson BM, Griffin MJ, Liles M, Lawrence M, and Wise DJ. *Protective effects of vaccine and killed culture against atypical Aeromonas hydrophila (aAh) in Ictalurus punctatus*. Conference of Research Workers in Animal Diseases, December 2020. (Virtual – COVID 19)

Richardson BM, Griffin MJ, Mischke CC, Greenway TE, Colvin ME, Waldbieser GC, Liles M, Hanson LA, Lawrence M, and Wise DJ. *Haplotype and genomic variation in atypical*

Aeromonas hydrophila (aAh) of channel catfish aquaculture in the US. Conference of Research Workers in Animal Diseases, December 2020. (Virtual – COVID 19)

Richardson BM, Griffin MJ, Waldbieser GC, Mischke CC, Greenway TE, Colvin ME, Wise DJ, Khoo LH, Lawrence M, and Liles M. Genomic analysis of atypical *Aeromonas hydrophila* (aAh) from catfish aquaculture in the southeastern United States with evidence of haplotype shifts from diagnostic case submissions. AFS FHS Online Fish Health Seminar Series, May 2020. (Replaced 45th Annual Eastern Fish Health Symposium – COVID 19)

Richardson BM, Colvin ME, Griffin MJ, Mischke CC, Greenway TE, and Wise DJ. Leaving nothing on the table: using structured decision-making to evaluate management decisions in catfish aquaculture. Southern Division of the American Fisheries Society, Little Rock, Arkansas. February 2020.

Richardson BM, Mischke CC, Rosser TG, Woodyard ET, Khoo LH, Wise DJ, and Griffin MJ. Presence of non-ictalurid fish can reduce transmission of *Henneguya ictaluri* to channel catfish. Southern Division of the American Fisheries Society, Little Rock, Arkansas. February 2020. (Poster)

Richardson, BM, Colvin ME, Griffin MJ, Mischke CC, Greenway TE, and Wise DJ. They are the same, but different: comparative genomics of two atypical *Aeromonas hydrophila* pathotypes found in catfish aquaculture of the southeast. Mississippi Chapter of the American Fisheries Society, Gulf Port, Mississippi. February 2020.

Richardson BM, Colvin ME, Griffin MJ, Mischke CC, Wise DJ, and Greenway TE. Modeling atypical *Aeromonas hydrophila* (aAh) dynamics in catfish aquaculture ponds of the southeast. Conference of Research Workers in Aquatic Diseases, Chicago, Illinois. November 2019.

Richardson BM, Colvin ME, Griffin MJ, Mischke CC, Wise DJ, and Greenway TE. Atypical *Aeromonas hydrophila* (aAh) dynamics in catfish aquaculture ponds of the southeast. Eastern Fish Health Workshop, Lake Placid, New York. April 2019.

Wilmoth B[†], Schumann DA, **Richardson BM**, Aldridge CA, and Colvin ME. Ontogeny of Southern Brook Lamprey, *Ichthyomyzon gagei*, with emphasis on abundance, distribution, and morphology in a small watershed. Shackouls Honors College 2019 Spring Undergraduate Research Symposium. April 2019. (Poster)

Wilmoth B[†], Schumann DA, **Richardson BM**, Aldridge CA, and Colvin ME. Ontogeny of Southern Brook Lamprey, *Ichthyomyzon gagei*, with emphasis on abundance, distribution, and morphology in a small watershed. 45th Annual Meeting of the Mississippi Chapter of the American Fisheries Society, Jackson, Mississippi. February 2019. (Poster)

Richardson BM, Colvin ME, Wise DJ, Griffin MJ, Mischke CC, and Greenway TE. State boundaries draw hard lines in *Aeromonas hydrophila* disease strains of farm-raised channel catfish *Ictalurus punctatus*. 45th Annual Meeting of the Mississippi Chapter of the American Fisheries Society, Jackson, Mississippi. February 2019.

Aldridge CA, **Richardson BM**, Schumann DA, and Colvin ME. Identifying barriers to the use and detection of passive integrated transponder (PIT) tags in Southern Brook Lamprey ammocoetes (*Ichthyomyzon gagei*, Hubbs & Trautman, 1937). Southeastern Fishes Council 44th Annual Meeting, McCormick, South Carolina. November 2018.

Richardson BM, Colvin ME, Wise DJ, Griffin MJ, Mischke CC, and Greenway TE. Evaluating atypical *Aeromonas hydrophila* (aAh) in catfish aquaculture of the Mississippi delta region. 8th International Symposium on Aquatic Animal Health, Charlottetown, Prince Edward Island, Canada. September 2018.

Richardson BM, Aldridge CA, Schumann DA, and Colvin ME. Assessing viability of passive integrated transponder (PIT) tags for ecological studies of lamprey ammocoetes. 148th Annual Meeting of the American Fisheries Society, Atlantic City, New Jersey. August 2018. (Poster)

Richardson BM, Colvin ME, Wise DJ, Greenway TE, Griffin MJ, and Mischke CC. Status of Atypical *Aeromonas hydrophila* (aAh) in Mississippi. 148th Annual Meeting of the American Fisheries Society, Atlantic City, New Jersey. August 2018.

Richardson BM, Colvin ME, Wise DJ, Griffin MJ, Mischke CC, and Greenway TE. Using occupancy models to investigate atypical *Aeromonas hydrophila* (aAh) prevalence in cultured catfish. Graduate Student Research Symposium Hosted by the Mississippi State University Office of the Graduate School, Mississippi State, Mississippi. February 2018.

Richardson BM, Colvin ME, Wise DJ, Griffin MJ, Mischke CC, and Greenway TE. Occupancy modeling to assess atypical *Aeromonas hydrophila* (aAh) prevalence in farm-raised catfish. Meeting of the Mississippi Chapter of the American Fisheries Society, Jackson, Mississippi. February 2018.

Richardson BM, Colvin ME, Wise DJ, Greenway TE, Griffin MJ, and Mischke CC. Virulent *Aeromonas hydrophila* (vAh) – not just another “hole-in-the-head”. 147th Annual Meeting of the American Fisheries Society, Tampa, Florida. August 2017.

Tumolo BB, **Richardson BM**, Jackson N, and Flinn MB. Organismal response to human manipulated ecosystems: varying body condition in paddlefish (*Polyodon spathula*) across large river impoundments. Annual Meeting of the Society for Freshwater Science, Sacramento, California. May 2015. (Poster)

Richardson BM and Flinn MB. Diet ecology of four sympatric gar species (family Lepisosteidae) in Clarks River, Kentucky. Midwest Ecology and Evolution Conference, Bloomington, Indiana. March 2015.

Richardson BM and Flinn MB. 7 years later: ecology and population dynamics of the gar community within Clarks River, KY. Alligator Gar Technical Committee Meeting, Annual Meeting of the Southern Division of the American Fisheries Society, Savannah, Georgia. January 2015.

Richardson BM and Flinn MB. Strong diet overlap in four sympatric gar relatives (family Lepisosteidae): including reintroduced alligator gar (*Atractosteus spatula*) of western Kentucky. Annual Meeting of the Southern Division of the American Fisheries Society. Savannah, Georgia. January 2015.

Richardson BM and Flinn MB. Overlap in the diets of four sympatric gar species of western Kentucky. Society for Freshwater Science Annual Meeting, Milwaukee, Wisconsin. April 2015.

Richardson BM and Flinn MB. Investigating the diet ecology of four sympatric gar species (family Lepisosteidae) in western Kentucky. 6th Annual Research Symposium of the Watershed Studies Institute, Murray State University Scholars Week, Murray, Kentucky. April 2014.

Richardson BM and Flinn MB. A dietary comparison of four sympatric gar species: alligator gar (*Atractosteus spatula*), longnose gar (*Lepisosteus osseus*), shortnose gar (*L. platostomus*), and spotted gar (*L. oculatus*). Southeastern Ecology and Evolution Conference, Georgia Southern University, Statesboro, Georgia. October 2014. (Poster)

Richardson BM and Flinn MB*. A dietary comparison of four sympatric relatives: alligator gar (*Atractosteus spatula*), longnose gar (*Lepisosteus osseus*), shortnose gar (*L. platostomus*), and spotted gar (*L. oculatus*). Joint Aquatic Sciences Meeting, Portland, Oregon. May 2014

Richardson BM and Flinn MB. New gar in town: diet overlap of reintroduced alligator gar with three sympatric relatives. 100th Annual Meeting of the Kentucky Academy of Science, Lexington, Kentucky. November 2014.

Richardson BM and Flinn MB. A dietary comparison of four sympatric gar species: alligator gar, longnose gar, shortnose gar, and spotted gar. Joint Meeting of Ichthyologists and Herpetologists, Hosted by the American Society of Ichthyologists and Herpetologists, Chattanooga, Tennessee. August 2014.

PROFESSIONAL EXPERIENCE

Intermittent Worker (Researcher) <i>Mississippi State University</i> <i>Supervisor: Michael E. Colvin and</i> <i>David J. Wise</i>	2020
Graduate Teaching Assistant <i>Mississippi State University</i> <i>Advisors: Michael E. Colvin and</i> <i>David J. Wise</i>	2016 - 2020
Critical Species (Fisheries) Technician II <i>Kentucky Department of Fish and Wildlife Resources</i> <i>Supervisor: Neal Jackson</i>	2015
Graduate Teaching Assistant <i>Murray State University</i> <i>Advisor: Michael B. Flinn</i>	2013-2015
Project Manager <i>Droptine Management</i> <i>Supervisor: Chris Hodges</i>	2007 - 2011

MEDIA APPEARANCES

MSU Graduate School 3-Minute Thesis	Media Appearance	2018
MSU FWRC Annual Report	Student Spotlight	2018
For the Love of Animals – <i>Gone Fishin' II</i>	Media Appearance	2014
For the Love of Animals – <i>Gone Fishin' I</i>	Media Appearance	2013

OTHER PROFESSIONAL ACTIVITIES

Working Groups

“Southern Brook Lamprey Research Group”. *Mississippi State University, Department of Wildlife, Fisheries, and Aquaculture.*

“Arthropod Genomics Group”. *USDA Agricultural Research Service*

“Joint Agency Microbiome Service”. *USDA*

Professional Organization Membership

Ecological Society of America (ESA)

National Science Teachers Association (NSTA)

American Fisheries Society (AFS)

World Aquaculture Society (WAS)

Catfish Farmers of America (CFA)

PROFESSIONAL REFERENCES

Michael E. Colvin, Research Ecologist

US Geological Survey
Columbia, MO

David J. Wise, Research Professor & Coordinator of Delta Research and Extension Center

Department of Wildlife, Fisheries, and Aquaculture
Mississippi State University
Thad Cochran National Warmwater Aquaculture Center
Stoneville, MS

Matt Griffin, Associate Research Professor

College of Veterinary Medicine
Mississippi State University
Aquatic Diagnostic Laboratory
Stoneville, MS

Michael B. Flinn, Associate Professor & Director of Hancock Biological Station

Department of Biology
Murray State University
Murray, KY

Chelsea Tucker, Arkansas River Biologist

Arkansas Game and Fish Commission
Russellville, AR