

Bradley Michael Richardson

Department of Wildlife, Fisheries, and Aquaculture

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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

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>

Richardson BM, Griffin MJ, Colvin ME, Greenway T, Mischke C, Wise DJ, and Lawrence M. 2020. *Using quantitative polymerase chain reaction (qPCR) and occupancy models to estimate atypical *Aeromonas hydrophila* (aAh) prevalence in catfish*. *Aquaculture*. <https://doi.org/10.1016/j.aquaculture.2020.735687> (pre-print)

MANUSCRIPTS IN PREPARATION

Richardson BM and Flinn MB. *An evaluation of diet composition and overlap in four sympatric gar species (family: *Lepisosteidae*)*. Target Journal: *Kentucky Academy of Science*.

Richardson BM, Ramirez-Avila J, and Ortega-Archury SL. *Preliminary bioassessment of tributary streams with varying degrees of anthropogenic impacts*. Target Journal: *Journal of Environmental Quality*

Tumolo BB, **Richardson BM**, Labeda DM, and Flinn MB. *Phytoplankton survival in invasive Silver Carp (*Hypophthalmichthys molitrix*) hindgut*. Target Journal: Food Webs.

Richardson BM and Walker R. *Evaluating the use of radial notes in the college classroom*. Target Journal: Bioscene.

Rosser TG, Woodyard E, and **Richardson BM**. *Morphometric and genetic analysis for evaluating taxonomic designations of the genus *Apharyngostrigea**. Target Journal: Journal of Parasitology.

Richardson BM, Ramirez-Avila JJ, Ortega-Achury SL, Martin JL. *Effect of habitat variation and quality on macroinvertebrate communities in two tributaries of the Catalpa/Red Bud Creek in Mississippi*. Target Journal: Journal of Environmental Quality.

Griffin, MJ, **Richardson BM**, Wise DJ, Rosser TG, Greenway T, Khoo L, and Mischke CC. *Biological control of proliferative gill disease (PGD) by co-stocking *Gambusia sp.* in catfish ponds*. Target Journal: North American Journal of Aquaculture.

FUNDED PROJECTS

US Environmental Protection Agency. (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

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

<i>Macroinvertebrate Function in Stream Health</i> – Stream Recon. Department of Civil and Environmental Engineering, Mississippi State University.	Fall 2019
<i>Length-Weight Relationships</i> – Fisheries Science. Department of Wildlife, Fisheries, and Aquaculture, Mississippi State University.	Spring 2019
<i>Hatchery Creek: Beyond Stream Restoration</i> – Hydro-environmental Analysis. Department of Civil and Environmental Engineering, Mississippi State University.	Fall 2018
<i>Biological Indices: How, What, and Why Macroinvertebrates are Good Stream Indicators</i> – 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

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, 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. The 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, 662.325.3592</i>	2020
Graduate Teaching Assistant <i>Mississippi State University</i> <i>Advisors: Michael E. Colvin, 662.325.3592 and</i> <i>David J. Wise, 662.686.3242</i>	2016 - 2020
Critical Species (Fisheries) Technician II <i>Kentucky Department of Fish and Wildlife Resources</i> <i>Supervisor: Neal Jackson, 618.579.3129</i>	2015
Graduate Teaching Assistant <i>Murray State University</i> <i>Advisor: Michael B. Flinn, 270.809.2272</i>	2013-2015
Project Manager <i>Droptine Management</i> <i>Supervisor: Chris Hodges, 618.614.0302</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 – Gone Fishin’ II	Media Appearance	2014
For the Love of Animals – Gone Fishin’ I	Media Appearance	2013

OTHER PROFESSIONAL ACTIVITIES

Working Groups

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

“Developing Bankfull Regional Curves: A First Step to Restore Streams Functionality in Mississippi”. *Mississippi State University, Department of Civil and Environmental Engineering.*

Professional Organization Membership

Ecological Society of America (ESA)

National Science Teachers Association (NSTA)

American Fisheries Society (AFS)

PROFESSIONAL REFERENCES

Michael E. Colvin, Associate Professor

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Mississippi State University
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Email: michael.colvin@msstate.edu

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
Phone: 662.686.3242
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Matt Griffin, Associate Research Professor

College of Veterinary Medicine
Mississippi State University
Aquatic Diagnostic Laboratory
Phone: 662.686.3580
Email: griffin@cvm.msstate.edu

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

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Murray State University
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Chelsea Tucker, Arkansas River Biologist

Arkansas Game and Fish Commission
Phone: 877.967-7577
Email: chelsea.tucker@agfc.ar.gov

Caleb Aldridge, Doctoral Candidate

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