

Updated Summer 2016

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University of South Carolina Aiken

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Summary of Scholarly Activities

In my USCA research laboratory, we examine ecosystem, community, and species responses to anthropogenic impacts in aquatic systems along the watershed gradient including freshwater, estuarine, and marine environments. We also investigate issues relating to human dimensions of aquaculture and fisheries management including benefits and risks associated with fish and other seafood consumption.

- Collaborations with scientists at the SC Department of Natural Resources Inshore Fisheries Lab, Offshore Fisheries Lab, and Anadromous Fishes Group include research focusing on investigating the life history of reef fish species such as triggerfish, grouper, snapper, tilefish, and amberjack; estuarine species such as southern kingfish, longnose gar, sheepshead, shortnose sturgeon, and American eels.
- Collaboration with scientists at the SC Department of Natural Resources Aquaculture Group and College of Charleston includes research on population genetic structure of several marine fish species.
- Collaboration with scientists at NOAA focuses on describing the relationship between chemical contaminants and life history strategies of fishes and mollusks from a range of aquatic systems.
- Collaboration with the Puerto Rico Department of Environmental and Natural Resources and the University of Puerto Rico Mayaguez focuses on collaborative research with commercial fishers investigating the ecology of over 20 tropical reef fishes and deepwater fishes.
- Collaboration with scientists at the University of the Virgin Islands and the USVI Department of Environmental Protection focuses on monitoring spawning aggregations for multiple grouper and snapper species and conducting age, growth, and reproduction research investigating these aggregating species. As the only scientist working with age estimation for U.S. Caribbean fisheries species, I also provide extensive training for fisheries managers in the U.S. Virgin Islands.
- Collaboration with Dr. Windsor Aguirre, DePaul University, investigates conservation biology and evolutionary ecology of freshwater fishes in western Ecuador.

PUBLICATIONS

PUBLICATIONS (*GRADUATE STUDENTS IN MY LAB)

Smylie M*, McDonough C, Reed L, Shervette V. 2016. Mercury Bioaccumulation in an Estuarine Predator: Biotic Factors, Abiotic Factors, and Assessments of Fish Health. *Environmental Pollution* 214: 169-176.

- Aguirre WE, Navarrete R, Malato G, Calle P, Loh MK, Vital WF, Valadez G, Vu V Shervette VR, Granda JC. 2016. Body shape variation and population genetic structure of *Rhoadsia altipinna* (Characidae: Rhoadsiinae) in southwestern Ecuador. *Copeia* 104: 554-569.
- Smylie M*, Shervette V, McDonough C. 2016. Age, growth, and reproduction in two coastal populations of longnose gar. *Transactions of the American Fisheries Society* 145: 120-135.
- Margiotta AM, Shervette VR, Hadley NH, Plante CJ, Wilber DH. 2016. Species-specific responses of resident crabs to vertical habitat complexity on intertidal oyster reefs. *Journal of Experimental Marine Biology and Ecology* 477: 7-13.
- Leidig J*, Shervette V, McDonough C, Darden T. 2015. Genetic population structure of Black Drum in U.S. waters. *North American Journal of Fisheries Management* 35: 464-477.
- Smylie M*, Shervette V, McDonough C. 2015. Prey composition and ontogenetic shift in coastal populations of Longnose Gar *Lepisosteus osseus* in Two South Carolina Estuaries. *Journal of Fish Biology* 87: 895-911.
- Loh M, Vital W, Vu V, Navarrete R, Calle P, Shervette V, Torres A, Aguirre W. 2014. Isolation of sixteen microsatellite loci for *Rhoadsia altipinna* (Characiformes: Characidae) from an impacted river basin in western Ecuador. *Conservation Genetics Resources* 6:229-231.
- Aguirre WE, Shervette VR, Navarrete R, Calle P, Agorastos S. 2013. Morphological and genetic divergence of *Hoplias microlepis* (Characiformes, Erythrinidae) in rivers and artificial impoundments of western Ecuador. *Copeia* 2013:312-323.
- Ruehl CB, Shervette V, DeWitt T. 2011. Replicated shape variation between simple and complex habitats in two estuarine fishes. *Biological Journal of the Linnean Society* 103: 147-158.
- Shervette, VR, Hadley N, Gelwick F. 2011. Decapod utilization of adjacent oyster, vegetated marsh, and non-vegetated bottom habitats in a Gulf of Mexico estuary. *Journal of Crustacean Biology* 31: 660-667.
- Porter DE, Chandler GT, Shervette V, Gaertner K, Scott C, Powell S, Kingsmore B, DeLorenzo M, Fulton M, Pullaro T. 2009. Coastal Integrated Demographic-Economic-Environmental Prediction (CIDEEP) Program: Public Health and Environmental Health State-of-Knowledge Final Report. Submitted to the NOAA/NOS/NCCOS. 173pp.
- Coen L, Hadley N, Shervette V, Anderson WD. 2009. Managing Oysters in South Carolina: A Five Year Program to Enhance/Restore Shellfish Stocks and Reef Habitats through Shell Planting and Technology Improvements. SCDNR, Marine Resources Center, Technical Report. 121 pp.
- Shervette VR, Gelwick F. 2008. Assessment of Essential Fish Habitat as nurseries for juvenile white shrimp *Litopenaeus setiferus*. *Wetlands Ecology and Management* 16: 405-419.
- Shervette VR, Gelwick F. 2008. Seasonal and habitat variations in fish and macroinvertebrate communities in a Mississippi estuary. *Estuaries and Coasts* 31: 584-596.
- Shervette VR, Gelwick F. 2007. Habitat related growth of juvenile pinfish *Lagodon rhomboides*. *Transactions of the American Fisheries Society* 136(2): 445-451.
- Shervette VR, Aguirre WE, Gelwick F, Blacio E. 2007. Fish communities of a disturbed mangrove wetland and an adjacent tidal river in Ecuador. *Estuarine, Coastal and Shelf Science* 72:115-128.
- Shervette VR, Ibarra N, Gelwick F. 2007. Influences of salinity on growth and survival of juvenile pinfish *Lagodon rhomboides*. *Environmental Biology of Fishes* 78:125-134.
- Zeug S, Shervette VR, Hoeninghaus D, Davis SE. 2007. Differences in fish and invertebrate assemblages in natural and created areas of a Texas wetland. *Estuarine, Coastal and Shelf Science* 71:457-466.

- Shervette VR 2006. Assessment of estuarine habitats for resident and estuarine-dependent species: tools for conservation and management. Doctoral Dissertation in the Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station, TX.
- Aguirre WE, Shervette VR. 2006. Occurrence of *Sphoeroides rosenblatti* Bussing (Teleostei: Tetraodontidae) along the continental coast of Ecuador, with a comparison to sympatric *Sphoeroides annulatus* (Jenyns, 1842). *Revista de Biología Marina y Oceanografía* 41: 231-238.
- Aguirre WE, Shervette VR. 2005. Morphological diversity of the *Cynoscion* group (Perciformes: Sciaenidae) in the Gulf of Guayaquil region, Ecuador: a comparative approach. *Environmental Biology of Fishes* 73: 403-413.
- Shervette, VR, Perry HM, Rakocinski CF, Biesiot, PM. 2004. Recruitment of post-settlement stone crab *Menippe adina* juveniles in Mississippi Sound: factors influencing shelter occupation. *Journal of Crustacean Biology* 24(4): 652-665.
- Shervette VR, Perry H, Larsen K., Warren JT. 2001. Build it, but will they come? Preliminary results of the refuge limitation bottleneck hypothesis in juvenile *Menippe adina* in the Mississippi Sound. *Gulf and Caribbean Fisheries Institute Proceedings* 52: 531-540.
- Soto MA., Lotz JM., Shervette VR. 2001. Relative susceptibility of *Litopenaeus vannamei* (Kona stock) to white spot syndrome virus and *Taura* syndrome virus. *Aquaculture 2001: Book of Abstracts* p 602.
- Soto MA, Shervette VR, Lotz JM. 2000. Transmission of white spot syndrome virus (WSSV) from the cephalothorax, abdomen, and whole cadaver of infected *Litopenaeus vannamei* and tests of epidemiological model assumptions. *Diseases of Aquatic Organisms* 47(2):81-87.
- Soto MA, Shervette VR., Lotz JM. 2000. Susceptibility of *Litopenaeus vannamei*, *Farfantepenaeus duorarum* to white spot syndrome virus (WSSV) and infection of *Menippe adina* with WSSV. *Proceedings of the Gulf and Caribbean Fisheries Institute Proceedings* 53.

RECENT RESEARCH PRESENTATIONS (* indicates Undergraduate Student; ** Indicates Graduate Student)

2016

- Sinkus W**, Shervette V, White B. 2016. Bioaccumulation of Hg in grouper, snapper, and tilefish species of the South Atlantic coast of the U.S. SC American Fisheries Society Annual Meeting, Seabrook Is, SC.
- Mason M*, Shervette V. 2016. Largemouth bass and bluegill Hg concentrations from and popular fishing pond in SC. SC American Fisheries Society Annual Meeting, Seabrook Is, SC.
- Grey R**, Ballenger J, Sotka E, Wilber D, Wyanski D, Shervette V. 2016. From Honduras to South Carolina: Initial findings on lionfish biology and ecology. SC American Fisheries Society Annual Meeting, Seabrook Is, SC.
- Shervette V, Rivera J**, Peña N. 2016. Queen Triggerfish Life History: Preliminary Findings from U.S. Caribbean. SC American Fisheries Society Annual Meeting, Seabrook, SC.
- Cannon T**, Shervette V, Reed L. 2016. Mercury Bioaccumulation in three Drum (Sciaenidae) species from coastal SC. SC American Fisheries Society Annual Meeting, Seabrook, SC.

2015

- Rivera-Hernández J**, Shervette V, Peña N, Appeldoorn R. 2015. Filling critical information gaps of data-poor fisheries: Preliminary age, growth, and reproduction in Queen Triggerfish from Puerto Rico. *Gulf and Caribbean Fisheries Institute Conference*, Panama City, Panama.

- Sinkus W**, Shervette V, Ballenger J, Reed L, Plante C, White B. 2015. Mercury Bioaccumulation in six species of marine fishes from the southeastern U.S. Gulf and Caribbean Fisheries Institute Conference, Panama City, Panama.
- Margiotta A**, Hadley N, Shervette V, Plante C, Wilber D. 2015. Rugosity is related to oyster spat and associated resident fauna on intertidal oyster reefs. Benthic Ecology Meeting, Ontario, Canada, Mar 2015.
- Sinkus W**, Shervette V. 2015. Mercury Bioaccumulation in Six Reef Fish Species from the Atlantic Waters of the Southeastern United States. SC American Fisheries Society Meeting, Santee State Park, Mar 2015.
- Margiotta A**, Hadley N, Shervette V, Plante C, Wilber D. 2015. Rugosity is related to oyster spat and associated resident fauna on intertidal oyster reefs. SC American Fisheries Society Meeting, Santee State Park, Mar 2015.
- Shervette V, Smylie M**. 2015. Comparison of two aging structures for Longnose Gar. Southern Division American Fisheries Society Meeting, Savannah, GA, Jan 2015.
- Margiotta A**, Hadley N, Shervette V, Plante C, Wilber D. 2015. Rugosity is related to oyster spat and associated resident fauna on intertidal oyster reefs. Southern Division American Fisheries Society Meeting, Savannah, GA, Jan 2015.
- Sinkus W**, Shervette V, Reed L, Ballenger J, White B. 2015. Mercury Bioaccumulation and Muscle Tissue Concentration in Six Species from the Snapper/Grouper Complex in the Atlantic Waters of the Southeastern United States. Southern Division American Fisheries Society Meeting, Savannah, GA, Jan 2015.

2014

- Cannon T**, Harvin A*, Shervette V. 2014. Mercury bioaccumulation in Southern Kingfish from coastal South Carolina. Southeastern Estuarine Research Society (SEERS) Meeting, Ocean City, NC, Nov 2014.
- Smylie M**, Shervette V. 2014. Age, growth, and reproduction in two coastal populations of Longnose Gar *Lepisosteus osseus*. Southeastern Estuarine Research Society (SEERS) Meeting, Ocean City, NC, Nov 2014.
- Margiotta A**, Shervette V, Hadley N, Plante C, Wilber D. 2014. Is rugosity on intertidal oyster reefs related to spat and associated fauna? 16th International Conference on Shellfish Restoration, Charleston, SC, Dec 2014.
- Kelly A**, Shervette V, Reichert M, Smart T. 2014. Life history trends of gray triggerfish in the US South Atlantic. Southern Division-American Fisheries Society Annual Meeting. Charelston, SC.
- Shervette V, Laban E, Adams C*, Jowers B*, Clark N*, Dean J. 2014. Age estimation in two triggerfish (*Balistes*) species: Preliminary findings concerning vertebrae and otoliths as alternatives to the dorsal spine. Southern Division-American Fisheries Society Annual Meeting. Charelston, SC.
- Corley B*, Shervette V, White B, Dean J, Lindell A, Mills G. 2014. Mercury bioaccumulation in reef fishes from the South Atlantic Bight: Preliminary findings. Southern Division-American Fisheries Society Annual Meeting. Charelston, SC.
- Rivera J**, Shervette V, Peña Alvarado N, Flynn K, Augustine C*. 2014. Queen triggerfish: Initial findings on aspects of life history for a data-poor species in US Caribbean waters. Southern Division-American Fisheries Society Annual Meeting. Charelston, SC.
- Clark N*, Shervette V, Jowers B*, Adams C*, Harvin A*, Corley B*, Augustine C*, Kelly A**. 2014. Age and growth of gray triggerfish from South Carolina commercial and recreational fisheries. Southern Division-American Fisheries Society Annual Meeting. Charelston, SC.

- Leidig J**, Shervette V, McDonough C, Darden T. 2014. Genetic population structure of black drum in US waters. Southern Division-American Fisheries Society Annual Meeting. Charleston, SC.
- Smylie M**, Shervette V, Reed L, McDonough C. 2014. Mercury toxicity in the longnose gar: a model for examining potential negative health effects of Hg among fishes. Southern Division-American Fisheries Society Annual Meeting. Charleston, SC.
- Shervette V, Smylie M**, Thomas P*. 2014. Age determination of coastal longnose gar populations using otoliths and branchialstegal rays. Southeastern Estuarine Research Society Spring Meeting. Savannah, GA.

2013

- Bossle B*, Shervette V, Dean J, Lindell A, Mills G. 2013. Mercury bioaccumulation in bluegill and largemouth bass from a hunting and fishing site in South Carolina, USA. American Fisheries Society Annual Meeting. Little Rock, Arkansas.
- Smylie M**, Shervette V, McDonough C, Reed L. 2013. Mercury bioaccumulation in longnose gar: a model species for examining patterns of MeHg uptake. American Fisheries Society Annual Meeting. Little Rock, Arkansas.
- Leidig J**, Shervette V, Darden T, McDonough C. 2013. Genetic population structure of black drum in US waters. American Fisheries Society Annual Meeting. Little Rock, Arkansas.
- Kelly A**, Shervette V, Reichert M, Smart T, Kolmos K, Ballenger J, Wyanski D, Laban E. 2013. Life history trends of gray triggerfish in the South Atlantic Bight from 1991-2012. American Fisheries Society Annual Meeting. Little Rock, Arkansas.
- Leidig J**, Shervette V, McDonough C, Darden T. 2013. Genetic population structure of black drum in US waters. SC American Fisheries Society Meeting.
- Smylie M**, Shervette V, Reed L, McDonough C. 2013. Preliminary results of mercury toxicity in the longnose gar: a model for examining potential negative health effects of Hg among fishes. SC American Fisheries Society Meeting.
- Kelly A**, Shervette V, Reichert M, Smart T. 2013. Preliminary findings of life history trends of gray triggerfish in the US South Atlantic. SC American Fisheries Society Meeting.
- Shervette V. 2013. Pacific sailfish movements from satellite tag data off the coast of Costa Rica. SC American Fisheries Society Meeting.

2012

- Henzler JM**, Murray D*, Shervette VR. 2012. Insights into the ecology of longnose gar in coastal waters of South Carolina. SC American Fisheries Society Meeting. Charleston, SC.
- Kelly A**, Shervette VR. 2012. Investigating the importance of mangrove habitat to basic ecological aspects of the longtail goby in coastal Ecuador. SC American Fisheries Society Meeting. Charleston, SC.
- Losavio M*, Ware K*, Shervette VR. 2012. Age validation in planehead filefish using multiple aging structures. SC American Fisheries Society Meeting. Charleston, SC.
- Ellis JH**, Shervette VR, Porter D. 2012. An evaluation of fishing and fish consumption patterns in the Gullah Population. USC Nutrition Center Symposium: Healthy Eating in Context: Local Solutions, Global Challenges. Columbia, SC.

Invited Seminars

- Shervette V. 2015. Documenting fish biodiversity: applications toward conservation. Charleston Natural History Society. Citadel, SC. Jan 2015.
- Shervette V. 2014. Nemo and Marlin are hermaphrodites and other fascinating findings in marine fish ecology research. Bio/Geo Seminar Series, University of South Carolina Aiken.

GRANTS

External Grant Programs

NOAA/MARFIN. Principal Investigator on Filling critical life history information gaps of data-poor fisheries in U.S. Caribbean waters: Age, growth, and reproduction of queen triggerfish and four species of parrotfish. \$476,267. Funded (2015-2018).

NSF/UGA Research Foundation. Co-Investigator on REU Site in Radioecology. Total Amount Requested (USCA amount): \$301,150 (\$36,900). Funded (2015-2018).

USEPA and Gills Creek Watershed Association. Co-Investigator on “Exposure to mercury through subsistence fishing: Assessment and community outreach in lower Gills Creek, SC.” Requested amount for USCA: \$10,691. Funded (2015-2016).

NOAA/MARFIN: Principal Investigator on Gray Triggerfish Age, Growth, and Reproduction in the South Atlantic Bight. \$146,345. Funded (2011-2014).

Internal University Grant Programs

2016

RISE: PI on Tools for Marine Conservation: Invasive Lionfish (*Pterois* spp) Biology in Two Regions of the Western Atlantic Ocean. \$5994 *Funded (2016-2017)*

2015

USC Flood Research: Principle Investigator on “Conservation Biogeography of Freshwater Fauna: Community Dynamics and Habitat Shifts in Response to 1,000-Year Rainfall Event and Intense Flooding.” \$15,000. *Funded (2015-2016)*

ASPIRE III: Co-Investigator on “Request for funds for a fluorescent confocal laser-scanning microscope to advance research activities at USC Aiken.” \$100,000. *Funded (2015-2016)*

2012

ASPIRE I: Conservation Biogeography of Freshwater Fishes in Southeastern USA: Freshwater Fish Diversity and Evolution Using River-Oxbow Lake Systems in SC and GA as a Case Study. \$15,000. *Funded (2012-2014)*

ASPIRE III: The Promotion of Transgenic and Controlled-Environment Greenhouse Research at USC Aiken. Dyer A, Hancock AN, Harmon SM, Shervette V. \$100,000. *Funded (2012-2014)*

Manuscripts Reviewer

North American Journal of Fisheries Management,

Transactions of the American Fisheries Society,

Environmental Pollution

Chinese Journal of Oceanology and Limnology

Revista Bosque

Journal of Crustacean Biology

Review Panels

2013 Served as a primary reviewer for the Magellan Scholarship Committee Fall 2013. This entailed reviewing eight proposals and participating in a one-day meeting at which we discussed merits of the top proposals.

2013 Served as reviewer for USC ASPIRE II Grant Proposal Review Panel. This entailed reviewing six proposals and participating in a one-day meeting at which we discussed merits of the top proposals.

Professional Research Society Service

2015

- Secretary and Board Member, Southeastern Research Society (SEERS) – 2013-2015
- Member, American Fisheries Society
- Member, South Carolina Fisheries Workers Association

2014

- Secretary and Board Member, Southeastern Research Society (SEERS)
- Session Chair for Southern Division American Fisheries Society Meeting, Charleston SC, January 2014
- Member, American Fisheries Society
- Member, South Carolina Fisheries Workers Association

2013

- Conference Organizer for 24th Annual Conference of the International Conference of Environmental Epidemiologists (Aug 26-30th 2013 at USC).
- Secretary and Board Member, Southeastern Research Society (SEERS)
- Member, American Fisheries Society
- Member, South Carolina Fisheries Workers Association

2012

- Member, American Fisheries Society
- Member, South Carolina Fisheries Workers Association
- Member, Southeastern Estuarine Research Society (SEERS)

Graduate Students that I have worked with since starting at USCA

Served as Advisor of Masters Thesis Research

Fallon Parker, Masters in Environmental Studies, College of Charleston 2015-2017

Wiley Sinkus, Graduate Program in Marine Biology, College of Charleston 2013-2016

Taylor Cannon, Environmental Health Sciences, University of South Carolina 2011-2016

Amanda Kelly, Graduate Program in Marine Biology, College of Charleston 2011-2014

Meredith Smylie, Graduate Program in Marine Biology, College of Charleston 2011-2014

Jackie Leidig, Graduate Program in Marine Biology, College of Charleston 2011-2014

Served on Thesis/Dissertation Committee

Sara Thomas, Marine Biology, University of the Virgin Islands 2015-2017

Kevin Mack, Graduate Program in Marine Biology, College of Charleston 2014-2017

Victoria Ruddle, Graduate Program in Marine Biology, College of Charleston 2014-2017

Jesús M. Rivera-Hernández, Marine Biology, University of Puerto Rico Mayaguez 2013-2017

Andrea Margiotta, Graduate Program in Marine Biology, College of Charleston 2012-2015

Educational History

Doctor of Philosophy, Department of Wildlife and Fisheries Sciences, Texas A&M University—2006

Masters of Science, Dept Biological Sciences, University of Southern Mississippi—2000

Bachelors of Arts, Biology and Spanish, *Magna Cum Laude*, Mercer University, Macon, GA—June 1997