

CARLA L. ATKINSON

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EDUCATION

- 2013** Ph.D. Ecology and Evolutionary Biology, University of Oklahoma. Advisor: Dr. Caryn C. Vaughn. Dissertation title: Hierarchical controls on the impact of consumer stoichiometric regulation: from species traits to ecosystem level consequences
- 2008** M.S. Ecology, University of Georgia. Advisor: Dr. Alan P. Covich. Thesis title: Food resource quality and its utilization by a native and invasive bivalve in a Gulf Coastal Plain stream
- 2006** B.S. Biology (summa cum laude), Missouri State University, Advisor: Dr. Alexander Wait. Minors: Chemistry, Environmental Science and Policy.

PROFESSIONAL EXPERIENCE

- 2015-Current** **Assistant Professor**, University of Alabama, Department of Biological Sciences
- 2013-14** **Postdoctoral Research Associate**, Cornell University. EVOTRAC project. Advisor: Alex Flecker.
- 2010-13** **Graduate Research Fellow (EPA STAR Fellow)**, University of Oklahoma. Advisor: Caryn Vaughn
- 2011** **Biological Technician**. Robert S. Kerr Laboratory, Ada, OK. Environmental Protection Agency. Supervisor: Ken Forshay
- 2010-11** **Graduate Teaching Assistant**. BIOL 1005 – Concepts in Biology. University of Oklahoma
- 2009-10** **Graduate Research Assistant**. University of Oklahoma. Advisor: Caryn Vaughn
- 2009** **Research Technician II**. J.W. Jones Ecological Research Center. Supervisor: Stephen W. Golladay
- 2009** **Research Assistant**. Elevation Gradient Project. Luquillo LTER, Puerto Rico. Supervisor: Alan P. Covich
- 2006-08** **Graduate Research Assistant**. University of Georgia, Odum School of Ecology, Advisors: Alan P. Covich and Stephen P. Opsahl
- 2006** **Field Research Technician**. Environmental Monitoring and Assessment Project (EMAP) on the Missouri River. Supervisor: John Havel
- 2003-06** **Laboratory Assistant**. Missouri State Inorganic Chemistry Laboratory. Supervisor: Richard Biagioni.
- 2002-05** **Field and Laboratory Assistant**. Missouri State Geomorphology Laboratory. Supervisor: Robert Pavlowsky.

PUBLICATIONS (* indicates student author)

Peer-Reviewed Publications:

1. Pfeiffer, J., **C.L. Atkinson**, A. Sharpe, K.A. Capps, K. Emery, and L. Page. *Accepted*. Phylogenetic analysis of Mesoamerican freshwater mussels and a revised tribe-level classification of the Ambleminae (Bivalvia, Unionidae). *Zoologica Scripta*.
2. Smith, L.L., A.L. Subalusky, **C.L. Atkinson**, J.E. Earl, D.M. Mushet, D.E. Scott, S.L. Lance, and S.A. Johnson. *Early View*. Biological connectivity of seasonally ponded wetlands across spatial and temporal scales. *Journal of the American Water Resources Association*. DOI: 10.1111/1752-1688.12682 ^Invited Review.

3. Hopper, G.W., K.B. Gido, C.C. Vaughn, T.B. Parr, T.G. Popejoy, K.K. Gates, and **C.L. Atkinson**. 2018. Comparing fish and mussel communities as biogeochemical hotspots. *Oecologia* 188:1133-1144. DOI:10.1007/s00442-018-4277-1
4. Larson, E.I., N.L. Poff, **C.L. Atkinson**, and A.S. Flecker. 2018. Extreme non-seasonal flood disturbance decreases stream consumer autochthony. *Freshwater Biology* 63:1483-1497. DOI: 10.1111/fwb.13177
5. **Atkinson, C.L.**, A.C. Encalada, A.T. Rugenski, S.A. Thomas, A. Landeira-Dabarca, N.L. Poff, and A.S. Flecker. 2018. Determinants of food resource assimilation by stream insects along a tropical elevation gradient. *Oecologia* 187:731-744. DOI: 10.1007/s00442-018-4142-2.
6. Castro, A.J., C. Quintas-Soriano, J. Brandt, C.V. Baxter, B. Martin López, M. Garcia-Llorente, J.P. Julian, C.C. Vaughn, **C.L. Atkinson**, H. Liao, B. Egoh, K. Running, M. Burnham, and BA. Norström. 2018. Applying place-based social-ecological research to address water scarcity: insights for future research. *Sustainability* 10:1516. DOI: 10.3390/su10051516.
7. Trentman, M.T., **C.L. Atkinson**, and J.D. Brant. 2018. Native freshwater mussel effects on nitrogen cycling: impacts of nutrient limitation and biomass dependency. *Freshwater Science* 37:276-286 DOI: 10.1086/697293.
8. **Atkinson, C.L.**, B.J. Sansom, C.C. Vaughn, and K.J. Forshay. 2018. Consumer aggregations drive nutrient dynamics and ecosystem metabolism in nutrient-limited systems. *Ecosystems* 21: 521-535. DOI: [10.1007/s10021-017-0166-4](https://doi.org/10.1007/s10021-017-0166-4).
9. **Atkinson, C.L.**, D.C. Allen, L. Davis, and Z.L. Nickerson*. 2018. Incorporating ecogeomorphic feedbacks to better understand resiliency in streams: a review and directions forward. *Geomorphology* 305:123-140. DOI: 10.1016/j.geomorph.2017.07.016. +Special Issue: Resilience and Bio-Geomorphic Systems (as part of the Binghampton Symposium)
10. **Atkinson, C.L.**, K.A. Capps, A.T. Rugenski, and M.J. Vanni. 2017. Consumer-driven nutrient dynamics in freshwater ecosystems: from individuals to ecosystems. *Biological Reviews* 92: 2003-2023.
11. **Atkinson, C.L.**, L.L. Smith, and S.W. Golladay. 2017. Larval anuran stable isotope signatures and stoichiometry across multiple geographically isolated wetlands in the southeastern United States. *Southeastern Naturalist* 16: 87-104.
12. Sansom, B., **C.L. Atkinson**, and C.C. Vaughn. 2016. Growth and longevity estimates for mussel populations in three Ouachita Mountain Rivers. *Freshwater Mollusk Biology and Conservation* 19: 19-26.
13. **Atkinson, C.L.** and J.T. Cooper. 2016. Benthic algal community composition across a watershed: coupling processes between land and water. *Aquatic Ecology* 50: 315-326.
14. Castro, A.J., C.C. Vaughn, M. Garcia-Llorente, and **C.L. Atkinson**. 2016. Willingness to pay for ecosystem services among stakeholder groups in a South Central U.S. watershed with regional conflict. *Journal of Water Resources Planning and Management*. doi: 10.1061/(ASCE)WR.1943-5452.0000671
15. Sitters, J., **C.L. Atkinson**, N. Guelzow, P. Kelly, and L.L. Sullivan. 2015. Spatial stoichiometry: cross-ecosystem material flows and their impact on recipient ecosystems and organisms. *Oikos* 124: 920-930. *Woodstoich III paper
16. Capps, K.A., **C.L. Atkinson**, and A.T. Rugenski. 2015. Implications of species addition and species loss on nutrient dynamics in freshwaters. *Freshwater Science* 34:485-496.
17. Vaughn, C.C., **Atkinson, C.L.**, and J.P. Julian. 2015. Multiple droughts lead to long-term losses in mussel-provided ecosystem services. *Ecology and Evolution* 5: 1291-1305.
18. **Atkinson, C.L.** and C.C. Vaughn. 2015. Temporal and spatial scaling of the impact of freshwater mussels on ecosystem function. *Freshwater Biology* 60: 563-574. +Special Issue: Synthesizing Ecosystem-Level Effects of Consumer-Driven Nutrient Dynamics in Fresh Waters
19. Capps, K.A., **C.L. Atkinson**, and A.T. Rugenski. 2015. Consumer-driven nutrient dynamics in freshwater ecosystems: an introduction. *Freshwater Biology* 60: 439-442. +Special Issue: Synthesizing Ecosystem-Level Effects of Consumer-Driven Nutrient Dynamics in Fresh Waters

20. **Atkinson, C.L.**, J.P. Julian, and C.C. Vaughn. 2014. Species and function lost: interaction between drought and land cover. *Biological Conservation* 176:30-38.
21. **Atkinson, C.L.**, J.F. Kelly, and C.C. Vaughn. 2014. Tracing consumer-derived nitrogen in riverine food webs. *Ecosystems* 17:485-496. +Nominated and chosen for the Hynes Award, Society of Freshwater Science
22. **Atkinson, C.L.**, A.D. Christian, D.E. Spooner, and C.C. Vaughn. 2014. Long-lived organisms provide an integrative footprint of agricultural land use. *Ecological Applications* 24:375-384.
23. **Atkinson, C.L.**, C.C. Vaughn, K.J. Forshay, and J.T. Cooper. 2013. Aggregated filter-feeding consumers alter nutrient limitation: Consequences for ecosystem and community dynamics. *Ecology* 94: 1359-1369. +The Faculty of 1000 recommended this paper.
24. **Atkinson, C.L.** 2013. Razor-backed musk turtle (*Sternotherus carinatus*) diet across a gradient of invasion. *Herpetological Conservation and Biology* 8: 561-570.
25. **Atkinson, C.L.**, J.P. Julian, and C.C. Vaughn. 2012. Scale-dependent longitudinal patterns in mussel community composition. *Freshwater Biology* 57: 2272-2284.
26. **Atkinson, C.L.** 2012. *Sternotherus carinatus* (Razor-backed musk turtle). Reproduction. *Herpetological Review* 43: 517.
27. **Atkinson, C.L.**, S.W. Golladay, and M.R. First. 2011. Water quality and planktonic microbial assemblages of isolated wetlands in an agricultural landscape. *Wetlands* 35: 885-894.
28. **Atkinson, C.L.**, M.R. First, A.P. Covich, S.P. Opsahl, and S.W. Golladay. 2011. Suspended material availability and filtration-biodeposition processes performed by native and invasive bivalve species in streams. *Hydrobiologia* 667: 191-204.
29. **Atkinson, C.L.**, S.P. Opsahl, A.P. Covich, S.W. Golladay, and L.M. Conner. 2010. Stable isotopic signatures, tissue stoichiometry, and nutrient cycling (C and N) of a native and invasive bivalve. *Journal of the North American Benthological Society* 29: 496-505.
30. **Atkinson, C.L.**, S.W. Golladay, S.P. Opsahl, and A.P. Covich. 2009. Stream discharge and floodplain connections affect seston quality and stable isotopic signatures in a coastal plain stream. *Journal of the North American Benthological Society* 28: 360-370.
31. Sterrett, S.C., L.L. Smith, M.B. Howze, A.M. Heupel and **C.L. Atkinson**. 2008. *Pseudemys concinna* (Eastern River Cooter) movement. *Herpetological Review* 39:464.

Book Chapters and Reviews:

- Smith, L.L., A.L. Subalusky, **C.L. Atkinson**, and L.K. Kirkman. 2017. Geographically Isolated Wetlands: Embedded Habitats in Longleaf Pine Forests. Pp. 153-171, In: Ecology and Restoration of the Longleaf Pine Ecosystem. CRC Press, Boca Raton, FL.
- Atkinson, C.L.** 2013. A comprehensive review of North America's most imperiled faunal group: setting the framework for new hypotheses. Invited review, *Ecology* 94: 2657-2658.

Other publications:

- Atkinson, C.L.**, K.J. Forshay, and C.C. Vaughn. 2013. Native mussels alter nutrient availability and reduce blue-green algae abundance. *EPA Science Brief*. EPA/600/F-13/231.
- Capps, K.A., **C.L. Atkinson**, A. Rugenski, C. Baxter, K.S. Boersma, C.C. Carey, P.B. McIntyre, J.W. Moore, W.H. Nowlin, and C.C. Vaughn. 2012. Organized oral session: Impacts of species addition and species loss on ecosystem function in freshwater systems. *Bulletin of the Ecological Society of America* 93:402-408.

Media Coverage:

Birmingham NPR (WBHM). <https://wbhm.org/feature/2018/university-alabama-receives-1-8-million-study-mussel-biodiversity/>

University of Alabama Research News. <https://www.ua.edu/news/2018/10/ua-leads-effort-to-understand-imperiled-mussel-biodiversity/>

University of Mississippi News. <https://news.olemiss.edu/biology-professors-receive-nsf-award-study-biodiversity/>

New Scientist Magazine. Article Title: Shell Shock. March 10, 2018.

National Geographic. <https://news.nationalgeographic.com/2016/11/animals-parasites-mussels-fish-freshwater/>

Natural Resource Defense Council. <https://www.nrdc.org/onearth/why-we-need-improve-sex-lives-mussels>

Oklahomans for Responsible Water Policy. <http://www.orwp.net/2015/03/studies-mussels-key-to-water-quality-food-web-life/>

GRANTS AND SCHOLARSHIPS

Awarded Research and Travel Grants:

- 2018** National Science Foundation. Dimensions of Biodiversity. *Dimensions: Collaborative Research: Processes that Generate and Maintain Phylogenetic, Genetic, and Functional Diversity of the Freshwater Mussel Holobiont across Multiple Scales*. PI: Atkinson; co-PIs: Colin Jackson (UM), Jeff Lozier (UA), Ryan Garrick (UM). Grant Period: Sept 2018-Aug 2022. Project Request: \$977,466 to UA; \$799,476 to Ole Miss.
- 2018** U.S. Fish and Wildlife Service and Alabama Department of Conservation and Natural Resources, Cooperative Endangered Species Conservation Fund Grant. *Assessment of thermal and diet optima for medium and large-river freshwater mussel species*. Grant Period: October 2018 to September 2019. (Atkinson UA PI: \$25,000)
- 2018** Weyerhaeuser NR Company Research Grant. *Sediment stability and the behavioral and physiological responses of mussels to flow and temperature in the Sipsey River*. Grant Period: January 2018 to December 2018. (Atkinson UA PI: \$15,000)
- 2018** College of Arts and Sciences Scholarly and Creative Activity Grant, University of Alabama. *Amphibians as Indicators of Landscape Connectivity*. Grant Period: January 2018 to December 2018. (Atkinson UA PI: \$6,000)
- 2018** Jones Ecological Research Center. *Research Center Fellowship: Daniel Knapp*. August 2018 to July 2017 (UA PI: \$18,000)
- 2017** Weyerhaeuser NR Company Research Grant. *Habitat Preferences and Behavior Responses Of Mussels To Flow And Temperature And Their Impact On Biogeochemical Cycling*. Grant Period: March 2017 to December 2017. (Atkinson UA PI: \$15,000)
- 2017** Joseph Center Fellowship. Joseph W. Jones Ecological Research Center. Grant Period: May-June 2017. (\$9,324)
- 2016** U.S. Fish and Wildlife Service and Alabama Department of Conservation and Natural Resources. *Interdisciplinary Research To Identify and Eliminate Propagation Bottlenecks For Unionids*. Grant Period: January 2016 to December 2018. (Atkinson UA PI: \$41,918)

- 2016** U.S. Fish and Wildlife Service and Kentucky Waterways Alliance. *Freshwater Mussel Metabolism*. Grant Period: January 2016 to December 2018. (Atkinson UA PI: \$39,997)
- 2016** Weyerhaeuser NR Company Research Grant. *Characterization of flow and mussel habitat requirements in the Sipsey River, Alabama*. Grant Period: March 2016 to December 2016. (Atkinson UA PI: \$25,000)
- 2016** Center for Freshwater Studies, University of Alabama. *Untangling the sediment lifecycle web: Working towards a unified, biophysical framework for understanding river functionality*. Grant Period: June 2016 to January 2018. (Atkinson UA PI: \$7,000; Dr. Lisa Davis UA co-PI; \$2,550)
- 2015** Weyerhaeuser NR Company Research Grant. *Mussel Diversity, Abundance, and Habitat in the Sipsey River, Alabama*. (Atkinson UA PI: \$4,999)
- 2015** Alabama Department of Conservation and Natural Resources, Summer Cooperative (Atkinson UA PI: \$6,000)
- 2015** Travel Award, Royal Society Meeting – Elements, genomes, and ecosystems: cascading nitrogen and phosphorus impacts across levels of biological organization, Buckinghamshire, United Kingdom (\$500)
- 2014** Travel Award, Woodstoich Symposium, Sydney, Australia (\$1,600)
- 2013** T.H. Williams International Travel Award, Graduate College, University of Oklahoma (\$1,800)
Travel Grant, College of Arts and Sciences, University of Oklahoma (\$750)
Conference Exhibition Grant, Graduate Student Senate, University of Oklahoma (\$472)
- 2012** General Endowment Award, Society of Freshwater Science (\$1,000)
Research Grant, Graduate Student Senate, University of Oklahoma (\$285)
Travel Award, Ecological Society of America, Aquatic Ecology Section (\$300)
Travel Grant, College of Arts and Sciences, University of Oklahoma (\$750)
Conference Exhibition Grant, Graduate Student Senate, University of Oklahoma (\$375)
Travel Grant, Dept. of Zoology, University of Oklahoma (\$250)
- 2011** Grant-in-Aid of Research, Sigma Xi (\$600)
OFWIM Travel Grant, Organization of Fish and Wildlife Managers (\$600)
Robberson Travel Grant, Graduate College, University of Oklahoma (\$500)
Travel Grant, College of Arts and Sciences, University of Oklahoma (\$750)
Travel Grant, Dept. of Zoology, University of Oklahoma (\$250)
- 2010** Research Grant, Graduate Student Senate, University of Oklahoma (\$370)
Travel Award, American Society of Limnology and Oceanography (\$250)
Travel Grant, College of Arts and Sciences, University of Oklahoma (\$750)
Travel Grant, Dept. of Zoology, University of Oklahoma (\$250)
Conference Exhibition Grant, Graduate Student Senate, University of Oklahoma (\$213)

Fellowships and Scholarships:

- 2011-13** EPA Science to Achieve Results (STAR) Fellowship (\$126,000)
- 2009-13** W.O. Wethington Fellowship, University of Oklahoma Graduate College (\$20,000)
- 2012** Corinne Price Scholarship, College of Arts and Sciences, University of Oklahoma (\$1,200)
- 2011** Adams Scholarship, University of Oklahoma, Zoology Department (\$3,500)
- 2010** Robert E. and Mary B. Sturgis Scholarship, University of Oklahoma, College of Arts and Sciences (\$1,000)
- 2006-08** University-Wide Research Assistantship, University of Georgia (\$42,000)
- 2002** Board of Governor's Scholarship (full-tuition scholarship)
- 2002** White River Valley Electric Scholarship, White River Electric (\$2,500)
- 2002** A+ Scholarship, Missouri State-Wide Scholarship (\$2,800)

AWARDS AND HONORS

- 2015** Hynes Award – for Early Career Scientists, Society of Freshwater Sciences
2014 Provost’s Best Ph.D. Dissertation Award, Science and Engineering, University of Oklahoma
2013 Best Poster Award – Science A. Graduate College Research and Performance Day, University of Oklahoma
2013 Parkyn Legacy Award, British Ecological Society
2013 Best Student Presentation Symposium Finalist, American Fisheries Society
2012 Best Poster Award, Biology Dept. Retreat, University of Oklahoma BioStation
2010 Clark Hubbs Best Student Poster Award, Southwestern Association of Naturalists
2004 Leadership Award, Opening the Horizons (sponsored by National Science Foundation)
2002-06 Dean’s List, Missouri State University

INVITED TALKS

1. Louisiana Tech University, Department of Biological Sciences Seminar Series, November 2018. Linking community structure to stream ecological function: Do species and genetic distance matter? Invited by Natalie Clay
2. Missouri State University, Department of Biology Seminar Series, October 2018. Does community structure dictate stream ecological function? Invited by Deb Finn
3. Binghamton Symposium, Texas State University, San Marcos, TX. October 2017. Including ecogeomorphic feedbacks for enhancement of ecological function and resiliency in streams. Invited by Jason Julian.
4. University of Southern Mississippi, Department of Biological Sciences Seminar Series, Hattiesburg, MS. September 2017. Teasing apart species-specific ecosystem functions in diverse communities. Invited by Hal Halvorson.
5. J.W. Jones Ecological Research Center, Research Seminar Series, Newton, GA. June 2017. Ecosystem functions provided by biodiverse aquatic communities. Invited by Lora Smith.
6. Woods Hole Oceanographic Institute, Ocean Carbon and Biogeochemistry Workshop, Woods Hole, MA. June 2017. Exploring the role of bottom-up provisioning by consumers across ecosystems. Invited by Deborah Steinberg and Michael Roman.
7. Alabama Fisheries Association, Tuscaloosa, AL. March 2017. Factors regulating mussel distributions and the ecosystem functions they provision. Invited by Cal Johnson.
8. University of Alabama at Birmingham, Department of Biology Seminar Series, Birmingham, AL. November 2016. Ecosystem functions provided by diverse aquatic communities. Hosted by James McClintock.
9. University of Mississippi, Department of Biology Seminar Series, Oxford, MS. April 2016. Considering spatial and temporal scale in the response of ecosystems to consumer-driven nutrient dynamics. Hosted by Marjorie Holland.

10. Miami University, Department of Zoology Seminar Series, Oxford, OH. April 2015. The role of organisms in nutrient cycling in aquatic ecosystems. Hosted by Michael Vanni.
11. Cornell University, Biogeochemistry and Environmental Science and Sustainability (BESS) Seminar Series, Ithaca, NY. October 2014. Role of consumers in driving ecosystem function and services across environmental gradients. Invited by Lily Twining
12. Universidad San Francisco Quito, Biology Departmental Seminar, Quito, Ecuador. February 2014. Ecosystem-level consequences of animal nutrient cycling in streams. Hosted by Andrea Encalada.
13. University of Oklahoma, Biology Departmental Seminar, Norman, OK. November 2013. Ecosystem-level consequences of consumer-mediated nutrient cycling in streams. Organized by Mike Kaspari.
14. The Ohio State University, Columbus, OH. July 2013. Mussels as a model: Impact of consumer-driven nutrient recycling on stream ecosystems. Hosted by Stuart Ludwin.
15. University of Oklahoma BioStation, Kingston, OK. June 2013. Freshwater mussels: Ecological engineers and sentinels of ecosystem change. Hosted by Gary Wellborn.
16. Kansas State University, Manhattan, KS. November 2012. Translocation of nutrients by freshwater mussels - alteration of ecosystem and community processes. Hosted by Keith Gido.
17. University of Texas Tyler. Tyler, TX. September 2012. The functional roles of unionid mussels on ecosystem processes impact community structure. Hosted by Neil Ford.
18. University of Oklahoma, Zoological Society, Norman, OK. November 2009. The natural history and ecology of native freshwater mussels. Hosted by Kenneth Hobson.
19. University of Georgia, Graduate School Board, Athens, GA. April 2008. Ecosystem services and resource utilization by a native and non-native bivalve: How do they compare? Invited by Dean Maureen Grosso.

SELECTED PRESENTATIONS (77 total, + *denotes invited*, * *student author*)

- +**Atkinson, C.L.**, B.C. van Ee, and M. Winebarger. Stoichiometric niches in a species-rich community. Society for Freshwater Science Meeting. May 2018. Detroit, MI.
- *Nickerson, Z.L. *, B. Mortazavi, B.C. van Ee*, and **C.L. Atkinson**. Influence of native freshwater mussel functional traits and community structure on nitrogen transformations in benthic sediments. Society for Freshwater Science Meeting May 2018. Detroit, MI.
- *van Ee, B.C. and **C.L. Atkinson**. Trophic niche width and differentiation within unionid mussel communities. Society for Freshwater Science Meeting. May 2018. Detroit, MI.
- Atkinson, C.L.** and B.C. van Ee*. Describing community controls on nutrient sequestration and fluxes with spatial models. Society for Freshwater Science Meeting. June 2017. Raleigh, NC.
- Atkinson, C.L.**, S. McLeay*, L.L. Smith, and S.W. Golladay. Biotic Connections: Drivers of community dynamics, nutrient dynamics, and subsidy strength. American Water Resources Association Meeting. April 2017. Snow Bird, UT.

- +Atkinson, C.L.**, A.S. Flecker, and A.C. Encalada. Process rates of aquatic insects across latitude and elevation gradients: Does daily and annual variability lead to greater adaptability in stream insects? Ecological Society of America Meeting. August 2015. Baltimore, MD.
- *Lopez-Lloreda, C.D., A.S. Flecker, E.I. Larson, K.L. MacNeill, **C.L. Atkinson**, L. Poff, and S.A. Thomas. Variation in animal-mediated nutrient cycling across a flood-disturbance gradient in Colorado mountain streams. Ecological Society of America Meeting. August 2015. Baltimore, MD.
- Gates, K.K., C.C. Vaughn, **C.L. Atkinson**, and J.P. Julian. An ecosystem services framework to sustain biodiversity in a watershed in conflict: Supply of consumer-provided services. Ecological Society of America Meeting. August 2015. Baltimore, MD.
- Atkinson, C.L.**, A.S. Flecker, A.C. Encalada, and S.A. Thomas. Both quantity and quality of food resources impact resource assimilation. Royal Society Meeting on Elements, genomes and ecosystems: cascading nitrogen and phosphorus impacts across levels of biological organisation. June 2015. Buckinghamshire, United Kingdom.
- Atkinson, C.L.**, A.S. Flecker, A.C. Encalada, and S.A. Thomas. Insect diet and stoichiometry along a tropical elevation gradient. Society for Freshwater Science Meeting. May 2015. Milwaukee, WI.
- Atkinson, C.L.**, M. Trentman, and J. Brant. Do native unionid mussels create coupled denitrification-nitrification hotspots? Freshwater Mollusk Conservation Society Meeting. March 2015. St. Charles, MO.
- +Atkinson, C.L.**, C.C. Vaughn, and A.S. Flecker. Species traits: Are stoichiometric and thermal traits linked? Joint Aquatic Sciences Meeting. May 2014. Portland, Oregon.
- Vaughn, C.C. and **C.L. Atkinson**. Scaling up nutrient regeneration hotspots: Two approaches with freshwater mussels. Joint Aquatic Sciences Meeting. May 2014. Portland, Oregon.
- Atkinson, C.L.**, J.F. Kelly, and C.C. Vaughn. Tracing mussel-derived nitrogen in riverine food webs. INTERCOL/British Ecological Society Joint Meeting. August 2013. London.
- +Atkinson, C.L.** and C.C. Vaughn. Alteration of relative storage and cycling of nutrients by freshwater mussels. *Special Session invitation*. Society of Freshwater Science Meeting. May 2013. Jacksonville, Florida.
- +Vaughn, C.C.**, J.P. Julian, and **C.L. Atkinson**. Modeling the relationship between mussel ecosystem services and environmental flows. *Oral presentation – Special Session invitation*. Society of Freshwater Science Meeting. May 2013. Jacksonville, Florida.
- +Capps, K.A.**, **C.L. Atkinson**, and A.T. Rugenski. Summarizing the patterns of consumer-driven nutrient dynamics in freshwater ecosystems. *Oral presentation – Special Session invitation*. Society of Freshwater Science Meeting. May 2013. Jacksonville, Florida.
- Atkinson, C.L.** and C.C. Vaughn. Tracing mussel-derived nitrogen in riverine food webs. Freshwater Mollusk Conservation Society Meeting. March 2013. Guntersville, Alabama.
- +Atkinson, C.L.**, K.A. Capps, K.A., and A. Rugenski. The effects of species gain and species loss on nutrient storage and cycling in freshwater ecosystems: Summarizing patterns across ecosystems. *Oral Presentation*. Ecological Society of America Meeting. August 2012. Portland, Oregon.
- Atkinson, C.L.**, C.C. Vaughn, and K.J. Forshay. Translocation of nutrients by freshwater mussels – alteration of ecosystem and community processes. Society of Freshwater Science Meeting. May 2012. Louisville, Kentucky.
- +Rugenski, A.**, K.A. Capps, and **C.L. Atkinson**. Building a framework for predicting the effects of species addition and species loss on nutrient dynamics in freshwater ecosystems. Ecological Society of America. August 2012. Portland, Oregon.
- Vaughn, C.C., **C.L. Atkinson**, A.J. Riggsbee, and D.E. Spooner. Mussels, drought and ecosystem services. Oral Presentation. Ecological Society of America. August 2012. Portland, Oregon.
- Vaughn, C.C., **C.L. Atkinson**, A.J. Riggsbee, and D.E. Spooner. Drought reduces ecosystem services provided by freshwater mussels. *Oral Presentation*. Society of Freshwater Science Meeting. May 2012. Louisville, Kentucky.

- Atkinson, C.L.** Translocation of nutrients by freshwater mussels alters ecosystem and community processes. *Poster Presentation*. Freshwater Mollusk Conservation Society Workshop. April 2012. Athens, Georgia.
- Atkinson, C.L.** Translocation of nutrients by freshwater mussels alters ecosystem and community processes: the potential consequences of future losses. *EcoMunch Seminar Series*. February 2012. University of Oklahoma, Norman Oklahoma.
- Atkinson, C.L.** Mussel species turnover along the river continuum. Organization of Fish and Wildlife Information Managers Meeting. October 2011. St. Louis, Missouri.
- Atkinson, C.L.** and C.C. Vaughn. Modification of nutrient limitation by unionid mussels. *Oral Presentation*. North American Benthological Society. May 2011. Providence, Rhode Island.
- Vaughn, C.C., J.P. Julian, **C.L. Atkinson**, and D.C. Allen. How do we quantify ecosystem services provided by freshwater mussels? *Oral Presentation*. North American Benthological Society. May 2011. Providence, Rhode Island.
- Atkinson, C.L.** and C.C. Vaughn. Alteration of nutrient dynamics by unionid mussels. *Oral Presentation*. Freshwater Mollusk Conservation Society. April 2011. Louisville, Kentucky.
- Atkinson, C.L.** and C.C. Vaughn. Potential facilitation of *Corbicula fluminea* by unionid mussels. *Poster Presentation*. Freshwater Mollusk Conservation Society. April 2011. Louisville, Kentucky.
- Atkinson, C.L.**, S.W. Golladay, and M.R. First. Differences in water column heterotrophs attributed to water chemistry across a gradient of agricultural impacts. *Poster Presentation*. American Society of Limnology and Oceanography / North American Benthological Society Joint Meeting. June 2010. Santa Fe, New Mexico.
- Golladay, S.W., E.M. Vedas, G. Knothe, M. Blackmore, N. Smith, and **C.L. Atkinson**. Water quality and larval mosquito populations in isolated agricultural and reference wetlands in the Gulf Coastal Plain. *Oral Presentation*. American Society of Limnology and Oceanography / North American Benthological Society Joint Meeting. June 2010. Santa Fe, New Mexico.
- Vaughn, C.C., D.E. Spooner, D.E. Allen, and **C.L. Atkinson**. Using freshwater mussel communities to examine how changes in community structure and environmental gradients interact to influence ecosystem function. *Oral Presentation*. American Society of Limnology and Oceanography / North American Benthological Society Joint Meeting. June 2010. Santa Fe, New Mexico.
- Atkinson, C.L.** and S.W. Golladay. Ecosystem services performed by native freshwater mussels: Filter-feeding and nutrient cycling. *Poster Presentation*. Southwestern Association of Naturalists. April 2010. Junction, Texas.
- Atkinson, C.L.** Potential nutrient limitation initiated by invertebrate consumers. *Oral Presentation*. EcoMunch Seminar Series. March 2010. University of Oklahoma, Norman, Oklahoma.
- Atkinson, C.L.** Reproductive and dispersal mechanisms utilized by freshwater mussels. *Oral Presentation*. Darwinian. November 2009. University of Oklahoma, Norman, Oklahoma.
- Atkinson, C.L.** Functional roles of native freshwater mussels. *Oral Presentation*. Zoology Department Retreat. September 2009, University of Oklahoma Biological Station, Kingston, Oklahoma.
- Atkinson, C.L.** A.P. Covich, S.P. Opsahl, S.W. Golladay, L.M. Conner. Trophic niche space of a native mussel and *Corbicula fluminea* in a coastal plain stream. *Oral Presentation*. North American Benthological Society. May 2009. Grand Rapids, Michigan.
- Atkinson, C.L.** Controls on food quality and its utilization by freshwater bivalves in a coastal plain stream. *Oral Presentation*. Thesis Defense Seminar. November 2008. Odum School of Ecology, University of Georgia, Athens, Georgia.
- Atkinson, C.L.**, S.P. Opsahl, A.P. Covich, and S.W. Golladay. Environmental flows: variation in discharge fuels stream productivity. *Poster Presentation*. Southeastern Environmental Flows Partnership Conference. October 2008. Athens, Georgia.

- Atkinson, C.L.,** S.P. Opsahl, A.P. Covich, and S.W. Golladay. Differences in feeding ecology and ecological services provided by native mussels versus an invasive bivalve, *Corbicula fluminea*. *Oral Presentation*. North American Benthological Society. May 2008. Salt Lake City, Utah.
- Atkinson, C.L.,** S.P. Opsahl, A.P. Covich, and S.W. Golladay. Resource utilization and ecosystem services provided by *Corbicula fluminea* compared to a native mussel. *Oral Presentation*. Southeastern Ecology and Evolution Conference. March 2008. Florida State University, Tallahassee, Florida.
- Atkinson, C.L.,** S.P. Opsahl, A.P. Covich, and S.W. Golladay. Isotopic and elemental composition of bivalves and their food resources: Implications for resource utilization among species and stream nutrient cycling. *Oral Presentation*. Odum School of Ecology Graduate Student Symposium. January 2008. University of Georgia, Athens, Georgia.
- Atkinson, C.L.** and T. Muenz. Ecosystem services provided by native freshwater mussels: Feeding and nutrient cycling. *Poster Presentation*. Georgia Department of Natural Resources. December 2007. J.W. Jones Ecological Research Center, Newton, Georgia.
- Atkinson, C.L.,** S.P. Opsahl, S.W. Golladay, and A.P. Covich. Food resource quality and who's eating what in a coastal plain stream. *Oral Presentation*. J.W. Jones Ecological Research Center Seminar Series. August 2007. Newton, Georgia.
- Atkinson, C.L.,** S.P. Opsahl, S.W. Golladay, and A.P. Covich. Flow regime affects on basal food resources in a coastal plain stream. *Poster Presentation*. North American Benthological Society. June 2007. Columbia, South Carolina.

PROFESSIONAL SERVICE

Special Issue Organizer:

Freshwater Biology, Issue Title: *Ecosystem-level effects of consumer-driven nutrient dynamics*, Organized with Krista Capps and Amanda Rugenski. Proposal for issue accepted and issue published March 2015.

Session Organizer:

Society of Freshwater Science Meeting. Session title: *Biogeomorphic agents: Role of organisms in propagating change in fluvial ecosystems*. May 2019. Organized with Lindsey Albertson.

American Water Resources Association Meeting Specialty Conference, Connecting the Dots: The Emerging Science of Aquatic System Connectivity. Session title: *Biological Connectivity Within and Among Wetlands*. April 2017. Organized with Lora L. Smith and Kay Kirkman.

Society of Freshwater Science Meeting. Session title: *Our Freshwater Futures: a session particularly for undergraduates*. May 2015.

Joint Aquatic Sciences Meeting. Session title: *From individuals to ecosystems: consumer driven nutrient cycling across aquatic ecosystems*. May 2014. Organized with Amanda Rugenski, Eric Moody, and Matt Trentman.

Society of Freshwater Science Meeting (formerly the North American Benthological Society). Session title: *More than just P in a bag: using consumer-driven nutrient dynamics to understand community interactions and ecosystem processes*. May 2013. Organized with Krista Capps and Amanda Rugenski

Ecological Society of America Meeting. Session title: *Impacts of Species Addition and Species Loss on Ecosystem Function in Freshwater Systems*. August 2012. Organized with Krista Capps and Amanda Rugenski

Society of Freshwater Science Meeting (formerly the North American Benthological Society). Session title: *Species addition and loss: effects on ecosystem processes*. May 2012. Organized with Krista Capps and Amanda Ruginski

Associate Editor: *Journal of Freshwater Science*

Program Committee:

2018- Society for Freshwater Science, Awards Committee
2014- Freshwater Mollusk Conservation Society, Ecosystem Services Committee
2014- Society for Freshwater Science, Education and Diversity Committee
2015-17 Society for Freshwater Science, Social Media Committee
2011-14 Society for Freshwater Science, Graduate Resources – Mentor-Mixer Committee
2012 Freshwater Mollusk Conservation Society Workshop, Program Committee, Athens, GA, USA

Session Moderator:

American Water Resources Association, Session title: *Biological Connectivity Within and Among Wetlands*. April 2017. Snowbird, UT, USA

Ecological Society of America, Special session: *Solving complex problems in coupled natural and human systems: Socio-ecological research at the frontier of global change*, August 2015, Baltimore, MD, USA

Freshwater Mollusk Conservation Society, Life History and Ecology Section, March 2015, St. Charles, MO, USA

British Ecological Society/INTERCOL Joint Meeting, Aquatic Ecology Section, August 2013, London, UK

Society of Freshwater Science, Mollusk Section, May 2009, Grand Rapids, MI, USA

Ad hoc Peer Review:

Journals: *Aquatic Sciences, Biogeochemistry, Canadian Journal of Fisheries and Aquatic Sciences, Diversity and Distributions, Ecohydrology, Ecological Applications, Ecological Entomology, Ecology, Ecology Letters, EcoSphere, Environmental Management, Freshwater Biology, Freshwater Mollusk Conservation and Biology, Freshwater Science (formerly Journal of the North American Benthological Society), Functional Ecology, Global Change Biology, Herpetologica, Herpetological Conservation and Biology, Hydrobiologia, Journal of Shellfish Management, Limnology and Oceanography, Marine Ecology Progress Series, New Zealand Journal of Marine and Freshwater Research, Oikos, Proceedings of the Royal Society-B, Southwestern Naturalist, Wetlands*

Grantors: National Science Foundation Equipment Grant, National Science Foundation Research Experiences for Undergraduates Grant, National Science Foundation Long-Term Research in Environmental Biology Grant, Biodiversa (Pan-European call for projects on Promoting Synergies and reducing trade-offs between food supply, biodiversity and ecosystem services)

UNIVERSITY SERVICE

2018- Facilities and Instrumentation Committee, Dept. of Biological Sciences, University of Alabama
2018 Undergraduate Creative Activity Conference Judge, College of Arts and Sciences, University of Alabama
2015-18 Seminar Committee, Dept. of Biological Sciences, University of Alabama

- 2015-18** **Public Relations Committee**, Dept. of Biological Sciences, University of Alabama
- 2015** **Undergraduate Creative Activity Conference Judge**, College of Arts and Sciences, University of Alabama
- 2014** **Undergraduate Thesis Reviewer**, Dept. of Ecology and Evolutionary Biology, Cornell University
- 2012-13** **Seminar Committee**, Graduate student representative, Biology Department, University of Oklahoma
- 2010-12** **Zoological Association of Graduate Students (ZAGS) President**, Zoology Department, University of Oklahoma, Norman, OK
- 2011-12** **Department Retreat Planning Committee**, Biology Department, University of Oklahoma
- 2012** **Organizer**, Getting a Postdoc and Faculty Position in Life Sciences, Panel discussion with newly hired faculty. University of Oklahoma, Norman, OK
- 2012** **Graduate Student Retreat Planning Committee**, Zoological Association of Graduate Students, University of Oklahoma BioStation at Lake Texoma
- 2009-10** **Animal Facilities Committee**, Graduate student representative, Zoology Department, University of Oklahoma, Norman, OK
- 2007** **Audio-Visual Committee**, Institute of Ecology Graduate Student Symposium, University of Georgia
- 2006-07** **Seminar Committee**, Graduate student representative, Institute of Ecology, University of Georgia

STUDENT RESEARCH MENTORING

Graduate Advisor (student ##presented findings at a meeting or **published findings)

2017-present: Graduate Advisor (M.S.): Daniel Knapp, University of Alabama##

2015-present: Graduate Advisor (Ph.D.): Brian van Ee, University of Alabama ##

2017-present: Graduate Advisor (Ph.D.): Monica Winebarger, University of Alabama##

2016-2018: Graduate Advisor (M.S.): Zach Nickerson, University of Alabama##

2015-2017: Graduate Advisor (M.S.): Scotty McLeay, University of Alabama##

Graduate Committee Member

2018-present: Graduate Dissertation Committee (Ph.D.): Phoenix Rogers, Dept. of Biological Sciences, University of Alabama

2018-present: Graduate Dissertation Committee (Ph.D.): Edward Higgins, Dept. of Biological Sciences, University of Oklahoma

2018-present: Graduate Thesis Committee (M.S.): Kyle Madoni, Dept. of Biological Sciences, University of Alabama

2017-present: Graduate Dissertation Committee (Ph.D.): Denzell Cross, School of Ecology, University of Georgia

2017-present: Graduate Dissertation Committee (Ph.D.): Riley Lovejoy, Dept. of Biological Sciences, University of Alabama

2017-present: Graduate Thesis Committee (M.S.): Matthew Kroener, Dept. of Geography, University of Alabama

2017-present: Graduate Thesis Committee (M.S.): Derek Tollette, Marine Sciences, University of Alabama

2016-present: Graduate Dissertation Committee (Ph.D.): Rebecca Bearden, Dept. of Biological Sciences, University of Alabama

2016-present: Graduate Dissertation Committee (Ph.D.): Traci DuBose, Dept. of Biological Sciences, University of Oklahoma

2015-present: Graduate Dissertation Committee (Ph.D.): Jennifer Gresham, Dept. of Biological Sciences, University of Alabama

2015-present: Graduate Dissertation Committee (Ph.D.): Shelly McCain, Dept. of Biological Sciences, University of Alabama

2015-present: Graduate Dissertation Committee (Ph.D.): Peng Shang, Dept. of Geological Sciences, University of Alabama

2015-present: Graduate Thesis Committee (M.S.): Evan Back, Dept. of Geological Sciences, University of Alabama

2016: Graduate Dissertation Committee (Ph.D.): Demi Lee, Dept. of Biological Sciences, University of Alabama

Undergraduate Mentoring (student ##presented findings at a meeting or **published findings)

2018-present: Maya Owens-Freeman, University of Alabama

2018-present: Ansley Hamid, University of Alabama

2017-present: Abby Rankin, University of Alabama^{##}

2017-present: Lucas Glisson, University of Alabama^{##}

2017-present: Lucas Edgren, University of Alabama

2017-present: Jillian Hochstrasser, University of Alabama

2017-present: Brenden Northcutt, University of Alabama

2016-present: Gabrielle Dickinson, University of Alabama

2015-present: Jane Kunberger, Emerging Scholars Program, University of Alabama^{##}

2016-2017: Lauren Shouse, University of Alabama^{##}

2016-2017: Elspeth Pierce, University of Alabama^{##}

2016-2017: Paige Anne Marie Green, University of Alabama^{##}

2017: J.P. Pow, University of Alabama

2017: Carson Freeman, University of Alabama

2015-2016: Cole Howie, University of Alabama

2014: Independent Study Research Mentor for Ecological Society of America SEED student: Carla Lopez^{##}, Cornell University

2013-2014: Keith Shane, Cornell University

2011: Jessie Tanner, University of Oklahoma

TEACHING

2018 Aquatic Ecology Literature Review (BSC 695), Course Instructor, University of Alabama

2016-18 Ecology and Evolution (BSC 385), Course Instructor, Spring semesters, University of Alabama

2016-18 Freshwater Studies (BSC 320), Course Instructor, Even year Fall semesters, University of Alabama

2018 Invertebrate Conservation in Palau, Course Lecturer, SUNY Syracuse

2015, 2017 Foundations of Ecology (BSC 695), Course Instructor, University of Alabama

2013 Stream Ecology (BIOL 4423/5423), Teaching Assistant, University of Oklahoma

2012 Principles of Ecology (BIOL 3403), Guest Lecturer, University of Oklahoma

2010-11 Concepts in Biology (BIOL 1005), Teaching Assistant, University of Oklahoma

2006 Limnology (BIO 562), Guest Lecturer, Missouri State University

2005 Opening the Horizons Program, Mentor, Sponsored by the National Science Foundation, Missouri State University. Taught middle-school age girls about biology and chemistry.

2002 Missouri A+ program, Creative writing tutor, Ozark High School, Ozark, MO

OUTREACH AND SERVICE

2018 Presenter, Blount Scholars Program, University of Alabama

2017 Presenter, University of Alabama Environmental Council students, University of Alabama

2016-17 Science Olympiad Captain, Invasive Species Event, Regional Competition, University of Alabama

2016 Presenter, Honors Biology (BSC 120), University of Alabama

2015 Presenter, College of Arts and Sciences Homecoming Tent, University of Alabama

- 2015** **Presenter and Workshop Assistant**, Freshwater Mussels of the ACF Basin, J.W. Jones Ecological Research Center, Newton, GA
- 2013** **Presenter**, Biology Day at the BioStation – Mollusks of Lake Texoma, Madill High School, University of Oklahoma BioStation, Kingston, OK
- 2013** **Presenter**, Invertebrate Day, Wilson Elementary, Norman, OK
- 2012** **Presenter**, Sideshow Science – Oklahoma’s Aquatic Resources, Oklahoma City Science Museum, Oklahoma City, OK
- 2011-12** **Earth Day Presenter**, Freshwater Resources, Oklahoma East Central University, Ada, OK
- 2009** **BioBlitz Volunteer**, Oklahoma Biological Survey, Robber’s Cave State Park, OK
- 2008-09** **Science Fair Judge**, Darton College/Merck Regional Science Fair, Darton College, Albany, GA.
- 2008-09** **Presenter**, Freshwater Mussel Workshop, J.W. Jones Ecological Research Center, Newton, GA.
- 2008** **Presenter**, Biology of Freshwater Ecosystems – Flint River, After-School Program for elementary school students. LaGrange College, Albany, GA.
- 2006-09** **Rivers Alive Volunteer**, Georgia.
- 2006** **Presenter**, Biology of Streams, Girl Scout Troop, Ozark, MO
- 2004-05** **Presenter and Organizer**, Biodiversity and Health of Ozark Streams, Missouri State University Earth Day, Springfield, MO
- 2004** **Trail Volunteer**, Olympic National Park, Port Angeles, WA. Supervisor: Jack Galloway
- 2001-02** **State Forest Volunteer**, Busiek State Forest, Missouri Department of Conservation. Supervisor: Frances Dilsaver

TRAINING AND WORKSHOPS

- 2018** **Communicating Science to the Public**, American Association for the Advancement of Science, University of Alabama, Tuscaloosa, AL
- 2018** **Adobe Illustrator Workshop**, University of Alabama, Tuscaloosa, AL
- 2017** **Kaplan Grant Writing Workshop**, University of Alabama, Tuscaloosa, AL
- 2015** **Learning in Action Workshop**, University of Alabama, Tuscaloosa, AL
- 2014** **Woodstoich III**, Sydney, Australia (<http://grantome.com/grant/NSF/DEB-1347502>)
- 2014** **Active Learning Workshop**, Cornell University, Ithaca, NY
- 2013** **SWAT (Soil and Water Assessment Tool) Beginner’s Workshop**, Texas A&M, College Station, TX
- 2012** **Python Scripting for ArcGIS**, South Central Arc Users Group, Oklahoma City, OK
- 2010** **Aquatic GIS Workshop**, St. Louis University, St. Louis, MO
- 2010** **Lab Safety Training**, Robert S. Kerr Environmental Research Center, U.S. Environmental Protection Agency, Ada, OK
- 2008** **Prescribed Fire Course**, J.W. Jones Ecological Research Center, Newton, GA
- 2005** **SCUBA Certification**, SCUBA Schools International
- 2002-06** **Level 2 Volunteer Monitor**, Missouri Stream Team. President of Missouri State University Stream Team (2004-2006), Springfield, MO

PROFESSIONAL MEMBERSHIPS

- American Water Resources Association
- Ecological Society of America
- Freshwater Mollusk Conservation Society
- Society of Freshwater Science (formerly the North American Benthological Society)
- Sigma Xi