

## CURRICULUM VITAE

Edward D. Burruss  
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## Education

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2017	Ph.D.	Biology, Auburn University
2012	M.S.	Biology, Appalachian State University
2009	B.S.	Biology, Lees-McRae College

## Appointments

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2020 -	<b>Postdoctoral Associate</b> , Department of Ecology and Evolutionary Biology, Yale University
2017-2020	<b>Postdoctoral Scholar</b> , Department of Evolution and Ecology, University of California, Davis

## Preprints

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Ghezelayagh, A., R.C. Harrington, [Burruss, E.D.](#) et al. (20 authors). Prolonged morphological expansion of spiny-rayes fishes following the end-Cretaceous. bioRxiv:  
<https://www.biorxiv.org/content/10.1101/2021.07.12.452083v1>

## Manuscripts Under Review/Submitted

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[Burruss, E.D.](#) & M.M. Muñoz. Rapid parallel morphological and mechanical diversification of South American pike cichlids (*Crenicichla*). Revision Under Review, Systematic Biology.  
[Burruss, E.D.](#) & M.M. Muñoz. Functional trade-offs asymmetrically promote phenotypic diversification. Under Review, Systematic Biology.  
[Burruss, E.D.](#) & M.M. Muñoz. River-to-lake transitions decouple tempo and mode of evolution via macroevolutionary recycling. Revision Under Review, The American Naturalist.

## Publications

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**Metrics:** 463 citations; H-index = 14; i10-index = 18 (via Google Scholar)

- (28) [Burruss, E.D.](#) & M. M. Muñoz. 2021. Ecological limits on the decoupling of prey capture and processing in fishes. Integrative and Comparative Biology, icab148. In Press.  
 (27) [Burruss, E.B.](#) & M.M. Muñoz. 2021. Ecological opportunity from innovation, not islands, drove the anole lizard adaptive radiation. Systematic Biology, syab031. In Press.  
 (26) Corn, K.A., C.M. Martinez, [E.D. Burruss](#), & P.C. Wainwright. 2020. A multifunction trade-off has contrasting effects on the evolution of form and function. Systematic Biology, syaa091.  
 (25) [Burruss, E.D.](#), C.M. Martinez, & P.C. Wainwright. 2020. Decoupled jaws promote trophic diversity in cichlid fishes. Evolution 74: 950-961.  
 (24) [Burruss, E.D.](#) & P.C. Wainwright. 2020. A Peacock Bass (*Cichla*) functional novelty relaxes a constraint imposed by the classic cichlid pharyngeal jaw innovation. Biological Journal of the Linnean Society 130: 382-394.  
 (23) Hart, P.B., M.L. Niemiller, [E.D. Burruss](#), J.W. Armbruster, W.B. Ludt, & P. Chakrabarty. 2020. Cave-Adapted Evolution in the North American Amblyopsid Fishes Inferred Using Phylogenomics and Geometric Morphometrics. Evolution 74: 936-949.  
 (22) [Burruss, E.D.](#), M. Tan, & P.C. Wainwright. 2019. Head shape modulates the diversification of a classic cichlid pharyngeal jaw innovation. American Naturalist 194: 693-706.

- (21) Burress, E.D. & P.C. Wainwright. 2019. Adaptive radiation in labrid fishes: a central role for functional innovations during 65 My of relentless diversification. *Evolution* 73:346-359.
- (20) Burress, E.D., L. Piálek, J.R. Casciotta, A. Almirón, M. Tan, J.W. Armbruster, O. Říčan. 2018. Lake- and island-like adaptive radiations replicated in rivers. *Proceedings of the Royal Society B*, 20171762.
- (19) Burress, E.D., F. Alda, A. Duarte, M. Loureiro, J.W. Armbruster, P. Chakrabarty. 2018. Phylogenomics of pike cichlids (Cichlidae: Crenicichla): the rapid ecological speciation of an incipient species flock. *Journal of Evolutionary Biology* 31: 14-30.
- (18) Piálek, L., E.D. Burress, K. Dragová, A. Almirón, J. Casciotta, O. Říčan. 2018. Phylogenomics of pike cichlids (Cichlidae: *Crenicichla*) of the *C. mandelburgeri* species complex: rapid ecological speciation in the Iguazú River and high endemism in the Middle Paraná basin. *Hydrobiologia* 832:355-375.
- (17) Kokubun, E.E., K.O. Bonato, E.D. Burress, C.B. Fialho. 2018. Diet and body shape among populations of *Bryconamericanus iheringii* (Otophysi: Characidae) across the Campos Sulinos ecosystem. *Neotropical Ichthyology* 16, e170167.
- (16) Burress, E.D. & M. Tan. 2017. Ecological opportunity alters the timing and shape of adaptive radiation. *Evolution* 71: 2650-2660.
- (15) Bonato, K.O., E.D. Burress, C.B. Fialho, J.W. Armbruster. 2017. Resource partitioning among syntopic Characidae corroborated by gut content and stable isotope analyses. *Hydrobiologia* 805: 311-324.
- (14) Burress, P.B.H., E.D. Burress, J.W. Armbruster. 2017. Body shape variation within the Southern Cavefish, *Typhlichthys subterraneus* (Percopsiformes: Amblyopsidae). *Zoomorphology* 136: 365-377.
- (13) Bonato, K.O., Burress, E.D., & Fialho, C.B. 2017. Dietary differentiation in relation to mouth and tooth morphology of a neotropical characid fish community. *Zoologischer Anzeiger* 267: 31-40.
- (12) Burress, E.D., Holcomb, J.M., Tan, M., & Armbruster, J.W. 2016. Ecological diversification associated with the benthic-to-pelagic transition by North American minnows. *Journal of Evolutionary Biology* 30: 549-560.
- (11) Burress, E.D. 2016. Ecological diversification associated with the pharyngeal jaw diversity of Neotropical cichlid fishes. *Journal of Animal Ecology* 85: 302-313.
- (10) Burress, E.D., Holcomb, J.M., Orlandi-Bonato, K., & Armbruster, J.W. 2016. Body size is negatively correlated with trophic position among cyprinids. *Royal Society Open Science* 3: 150652.
- (9) Burress, E.D., Holcomb, J.M., & Armbruster, J.W. 2016. Ecological clustering within a diverse minnow assemblage according to morphological, dietary and isotopic data. *Freshwater Biology* 61: 328-339.
- (8) Burress, E.D., Duarte, A., Serra, W.S., & Loureiro, M. 2015. Rates of piscivory predict pharyngeal jaw morphology in a piscivorous lineage of cichlid fishes. *Ecology of Freshwater Fish* 25: 590-598.
- (7) Burress, E.D. 2015. Cichlid fishes as models of ecological diversification: patterns, mechanisms, and consequences. *Hydrobiologia* 748: 7-27.
- (6) Burress, E.D., A. Duarte, W.S. Serra, M. Loureiro, M.M. Gangloff, & L. Siefferman. 2013. Functional diversification of a predatory species flock. *PLOS One* e80929.
- (5) Burress, E.D., M.M. Gangloff, & L. Siefferman. 2013. Trophic analysis of two subtropical South American freshwater crabs using stable isotope ratios. *Hydrobiologia* 702: 5-13.
- (4) Burress, E.D., A. Duarte, M.M. Gangloff, & L. Siefferman. 2013. Isotopic trophic guild structure of a diverse subtropical South American fish community. *Ecology of Freshwater Fish* 22: 66-72.
- (3) Burress, E.D., A. Duarte, W.S. Serra, M.M. Gangloff & L. Siefferman. 2013. Species-specific ontogenetic diet shifts among Neotropical *Crenicichla*: using stable isotopes and tissue stoichiometry. *Journal of Fish Biology* 82: 1904-1915.
- (2) Serra, W.S., M. Zarucki, A. Duarte, E.D. Burress, F. Teixeira-de-Mella, I. GonzálezBergonzoni & M. Loureiro. 2013. New records of characiform fishes (Ostariophysi: Characiformes) for Uruguay. *Checklist* 9: 1576-1579.

- (1) Serra, W.S., A. Duarte, E.D. Burress, & M. Loureiro. 2011. Pisces, Perciformes, Cichlidae, *Crenicichla tendybaguassu* Lucena & Kullander, 1992: First record for Uruguay. Checklist: 7: 357-359.

#### Academic Awards and Funded Grants

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- 2017 Dean's Graduate Student Research Award, College of Science and Mathematics, Auburn University
- 2016 *Stoye General Ichthyology* Award for best student oral presentation, American Society of Ichthyologists and Herpetologists
- 2014 Best Student Talk, Southeastern Fishes Council
- 2012 M.S. Thesis nominated for Outstanding Thesis Award in Science, Technology, and Mathematics; Appalachian State University
- 2014 Jim Smith Fund
- 2013 Guy Jordan Endowment Fund.
- 2010 Sigma Xi Grants-In-Aid
- 2010 Paul V. Loisel Conservation Fund
- 2010 Office of Student Research, International Research Grant, Appalachian State University
- 2009 Office of Student Research, International Research Grant, Appalachian State University

#### Teaching Experience

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##### **Department of Biological Sciences, Auburn University**

- 2017 *Ecology*, Instructor of Record (Summer Semester)
- 2016 *Ecology*, Instructor of Record (Summer Semester)
- 2015 *Ecology*, Instructor of Record (Summer Semester)

#### Additional Teaching Experience

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##### **Department of Biological Sciences, Auburn University**

- 2017 *Ecology*, T.A.
- 2016 *Ecology*, T.A.
- 2015 *Ecology*, T.A.
- 2014 *Ecology*, T.A.
- 2013 *Ecology*, T.A.
- 2012 *Ecology*, T.A.

##### **Biology Department, Appalachian State University**

- 2012 *Ecology*, T.A.
- 2011 (F) *Ichthyology*, T.A.
- 2011 (S) *Concepts in Biology II*, T.A.
- 2010 (F) *Concepts in Biology I*, T.A.
- 2010 (S) *Animal Behavior*, T.A.
- 2009 (F) *Concepts in Biology I*, T.A.

#### Conference Presentations

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##### **Contributed Talks (as presenting author)**

- Burress, E.D., C.M. Martinez, & P.C. Wainwright. 2020. Functional decoupling of the jaws promotes trophic diversity in cichlid fishes. Society for Integrative and Comparative Biology. Austin, Texas.
- Burress, E.D. & Wainwright, P.C. 2019. Adaptive radiation in labrid fishes: a central role for functional innovations during 65 My of relentless diversification. Society for Integrative and Comparative Biology. Tampa, Florida.
- Burress, E.D. & Tan, M. 2018. Ecological opportunity alters the timing and shape of adaptive radiation. Society for Integrative and Comparative Biology. San Francisco, California.

- Burress, E.D., Tan, M., & Armbruster, J.W. 2017. Evolution of pharyngeal jaw shape, size, and associated musculature across the Neotropical cichlid phylogeny. Society for comparative and integrative biologists. New Orleans, LA.
- Burress, E.D., Oldrich, O., Pialek, P., Casciotta, J., Almiron, Tan, M., & Armbruster, J.W. 2016. Parallel phenotypic diversification and rapid speciation of *Crenicichla* species flocks: riverine analogs to the East African Great Lake cichlids. Joint Meeting of Ichthyologists and Herpetologists. Baton Rouge, LA. \*Awarded ASIH Stoye General Ichthyology Award.
- Burress, E.D., Oldrich, O., Pialek, P., Casciotta, J., Almiron, Tan, M., & Armbruster, J.W. 2016. Parallel phenotypic diversification and rapid speciation of *Crenicichla* species flocks: riverine analogs to the East African Great Lake cichlids. Evolution. Austin, TX.
- Burress, E.D., Holcomb, J.M., Tan, M., & Armbruster, J.W. 2016. Ecological diversification associated with the benthic-to-pelagic transition by North American minnows. Southeastern Fishes Council. Jackson, MS. \*Awarded 3rd Place student talk.
- Burress, E.D., Tan, M., & Armbruster, J.W. 2015. Craniofacial diversification among cichlid fishes. Joint Meeting of Ichthyologists and Herpetologists. Reno, NV.
- Burress, E.D., Holcomb, J.M., & Armbruster, J.W. 2015. Body size is negatively correlated with trophic position among minnows. Southeastern Fishes Council. Gainesville, FL.
- Burress, E.D., J.M. Holcomb, J.W. Armbruster. 2014. The influence of phylogeny on minnow morphology, behavior, and physiology. Southeastern Fishes Council. Asheville, NC. \*Awarded best student talk.
- Burress, E.D., M. Tan, & Jonathan W. Armbruster. 2014. Ecological diversification among Neotropical cichlid fishes. Joint Meeting of Ichthyologists and Herpetologists. Chattanooga, TN.

#### Reviewer contributions

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*Evolution, Journal of Evolutionary Biology, Functional Ecology, Integrative and Comparative Biology, Oikos, Freshwater Biology, Freshwater Science, Journal of Fish Biology, Ecology of Freshwater Fish, Hydrobiologia, Biological Journal of the Linnean Society, Neotropical Ichthyology, Royal Society Open Science, PeerJ, Zootaxa, Ecology and Evolution*

#### Society Affiliations

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Society for the Study of Evolution  
Society for Integrative and Comparative Biology

#### Outreach

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2018-2020	Biodiversity Museum Day, University of California, Davis
2013-2016	Writing Consultant, Auburn University Miller Writing Center
2014-2016	AU Explore, College of Science and Mathematics, Auburn University
2014-2016	Auburn University Museum of Natural History open house, Auburn University
2014-2015	Mentoring Brazilian Intern in the use of stable isotopes in food web and dietary studies for her dissertation.

#### Administrative Positions

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2016-2017	President. Biological Sciences Graduate Student Association. Auburn University.
2014-2015	Vice President. Biological Sciences Graduate Student Association. Auburn University.

#### Outreach: Online media

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My wildlife photography is featured for educational purposes on the following websites:  
<http://aquaesfera.org/>  
<http://www.ciklid.org/>  
<http://www.planetainvertebrados.com.br/>

References

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\*Jon was my doctoral advisor

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\*Martha is my current postdoctoral advisor

Dr. Peter C. Wainwright  
University of California Davis  
One Shields Ave.  
Davis, CA 95616  
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530-752-6782

\*Peter was my previous postdoctoral advisor