

PROFESSIONAL APPOINTMENTS

- 2023 – Present** **Assistant Professor**
Department of Biology and Biochemistry
University of Houston
- 2021 – 2023** **Postdoctoral Scholar**
Utah State University
Advisor: Dr. Molly Womack
- 2019-2021** **Postdoctoral Scholar**
Northeastern University Marine Science Center
Advisors: Dr. Katie Lotterhos, Dr. Geoff Trussell
- 2018-2019** **Postdoctoral Scholar**
East Carolina University
Advisor: Dr. Michael McCoy

EDUCATION

- 2013-2018** **Ph.D.** East Carolina University
Interdisciplinary Doctoral Program in Biological Sciences
Dissertation Director: Dr. Michael W. McCoy
- 2009-2011** **M.S.** East Carolina University
Department of Biology
Thesis Director: Dr. Heather Vance-Chalcraft
- 2003-2007** **B.S.** University of Mary Washington
Department of Biology, Department of American Studies

PEER-REVIEWED PUBLICATIONS

† Undergraduate mentee

12. McCoy MW, Hamman, E., **Albecker, M.A.**, Wodjak, J. Vonesh, JR, Bolker, BM. 2022. Incorporating nonlinearity with generalized functional responses to simulate multiple predator effects. *PeerJ*. DOI. 10.7717/peerj.13920.
11. **Albecker, M.A.**, Trussell, G.C., Lotterhos, K.E. 2022. A novel quantitative approach for co-gradient variation and countergradient variation. *Ecology Letters*. DOI. 10.1111/ele.14020
10. Lotterhos, K.E., **Albecker, M.A.**, Trussell, G.C. 2021. Evolution in Changing Seas. *Proceedings of the Royal Academy of Science, Biology*.
Editorial for Special Issue on *Evolution in Changing Seas*.
<https://doi.org/10.1098/rspb.2021.2443>.

9. **Albecker, M.A.*** Wilkins, L.*, Krueger-Hadfield, S.A., Bashevkin, S., Sewell, M.A., Hare, M., Hahn, M., Lotterhos, K.E., Kindsvater, H., & Reitzel, A. 2021. Does a complex life cycle promote or constrain adaptation to environmental change? Genome-informed approaches and insights for characterizing selection across stages of a life cycle. *Proceedings of the Royal Academy of Science, Biology*. Special Issue on *Evolution in Changing Seas*. 288: 20212122. <https://doi.org/10.1098/rspb.2021.2122> *Co-first authors
8. **Albecker, M.A.**, Stuckert, A.M.M., Balakrishnan, C.N., McCoy, M.W. 2021. Functional genomics of local adaptation to saltwater environments in an amphibian. *Molecular Ecology*. <https://onlinelibrary.wiley.com/doi/abs/10.1111/mec.15867>
7. **Albecker, M.A.**, † M. Pahl, † M. Smith, † J.G. Wilson, M.W. McCoy. 2020. Influence of density and salinity larval development of salt-adapted and salt-naïve frog populations. *Ecology and Evolution*. <https://onlinelibrary.wiley.com/doi/pdf/10.1002/ece3.6069>
6. Walker, D.M., Hill, A.J., **Albecker, M.A.**, McCoy, M.W., Grisnik, M., Romer, A., Grajal-Puche, A., Camp, C., Kelchear, C., Wooten, J., Rheubert, J., Graham, S.P., 2019. Variation in the slimy salamander (*Plethodon* spp.) skin and gut microbial assemblages is explained by geographic distance and host affinity. *Microbial Ecology*. 1-13. <https://doi.org/10.1007/s00248-019-01456-x>
5. **Albecker, M.A.** and McCoy, M.W. 2019. Local adaptation for enhanced salt tolerance reduces non-adaptive plasticity caused by osmotic stress. *Evolution*. doi:10.1111/evo.13798
4. **Albecker, M.A.**, Belden, L.K., and McCoy, M.W. 2018. Comparative analysis of anuran skin microbiome in freshwater and saltwater invaded wetlands. *Microbial Ecology*, 78 (2), 348-360.
3. **Albecker, M.A.**, † Brantley Jr., W.B., and M.W. McCoy. 2018. Habitat salinity alters dietary content and nematode infection in the American Green Treefrog, *Hyla cinerea*. *Southeastern Naturalist*, 17(1), 155-165.
2. **Albecker, M.A.** and McCoy, M.W. 2017. Adaptive responses to salinity stress across multiple life stages in anuran amphibians. *Frontiers in Zoology*. 14 (1), 40. <https://doi.org/10.1186/s12983-017-0222-0>
1. **Albecker, M.A.** and Vance-Chalcraft, H.D. 2015. Mismatched anti-predator behavioral responses in predator-naïve larval anurans. *PeerJ*. 3:e1472; DOI 10.7717/peerj.1472

MANUSCRIPTS IN PREP OR REVIEW

(drafts available upon request)

- a. **Albecker, M.A.**, Peniston, J. Barfield, M., R.D. Holt, M.W. McCoy. Adaptation to environmental change in organisms with complex life cycles: The influence of stage-specific selection and density dependence. *In prep.*
- b. **Albecker, M.A.**, Bittar, T.B., Trussell, G.C., Lotterhos, K.E. Meta-analysis reveals patterns of cogradient and countergradient variation. *In prep.*
- c. **Albecker, M.A.**, M.W. McCoy. Proteomic signatures of adaptation to saltwater environments in coastal anuran populations. *In prep.*

GRANTS AND AWARDS

2019	Darwin Fellowship, University of Massachusetts Amherst (<i>Declined</i>)	
2019	Recipient of ECU Life Sciences Doctoral Dissertation Award	
2017	National Science Foundation Doctoral Dissertation Improvement Grant	\$19,175.00
2017	Ecology Society of America Aquatic Section Travel Award	\$200.00
2016	Pitt County Wildlife Club Scholarship	\$1,500.00
2016	Graduate Women in Science Student Fellowship	\$6,321.00
2016	Garden Club of America Scholarship	\$5,000.00
2015	ECU Undergraduate Research and Creativity Award to Sarah Gill	\$1,000.00
2014	Coastal Maritime Council Research Grant	\$1,000.00
2013	North Carolina Sea Grant (* <i>Co-P.I. with M.W. McCoy</i>)	\$76,415.00
2013	Explorer's Club Grant	\$2,500.00
2013	North Carolina Herpetological Society Grant	\$780.00
2011	Martha N. Jones Scholarship	\$500.00

INVITED SEMINARS

2022	University of Houston Department of Biology, Ecology and Evolution, Houston TX
2022	University of North Florida Department of Biology, Jacksonville FL
2021	Utah State University Department of Biology seminar series, Logan UT
2021	Northeastern University Marine Science Center seminar series, Boston MA
2020	Invited Biology Seminar Speaker: Vassar University (<i>Cancelled due to Covid-19</i>)
2019	Invited Ecology and Evolution Seminar: University of Massachusetts, Amherst
2018	Invited EEBio Seminar: University of Virginia, Charlottesville, VA

SELECTED PRESENTATIONS

- 2022** Albecker, MA, Wilkins, L, Krueger-Hadfield, SA, Bashevkin, S, Sewell, M.A., Hare, M., Hahn, M., Lotterhos, K.E., Kindsvater, H., & Reitzel, A.
Research Coordination Network for Evolution in Changing Seas Workshop
- 2021** Albecker, MA, Trussell, GC, Lotterhos, KE.
Virtual Evolution: Society for Study of Evolution Annual Meeting
- 2021** Albecker, MA, Lotterhos, KE, Trussell, GC.
Virtual Asilomar: American Society of Naturalists Meeting
- 2018** Albecker, MA, McCoy, MW.
Ecological Society of American annual conference: New Orleans, Louisiana
- 2018** Albecker, MA, Peniston, J, Barfield, M, Holt, RD, McCoy, MW.
American Naturalist Annual Meeting: Asilomar, California
- 2017** Albecker, MA, McCoy, MW.
Research in Progress Seminar: East Carolina University
- 2017** Albecker, MA, Peniston, J, Barfield, M, Holt, RD, McCoy, MW.
Ecological Society of America annual conference: Portland, Oregon
- 2017** Albecker, MA, Beldon LK, McCoy, MW.
Research and Creative Week: East Carolina University
** Winner – Best Presentation for Doctoral Oral Natural Sciences*
- 2016** Albecker, MA, McCoy, MW.
Three-minute Thesis competition: East Carolina University.
**Finalist*
- 2016** Albecker, MA, McCoy, MW. Lightning talk.
American Naturalist Annual Meeting: Asilomar, California
- 2016** Albecker, MA, Beldon LK, McCoy, MW.
Ecological Society of America annual conference: Fort Lauderdale, Florida
- 2015** Albecker, MA, McCoy, MW.
Ecological Society of America annual conference: Baltimore, Maryland

TEACHING

Instructor of Record

2017-2018 Principles of Biology I (2 semesters)

2015 Principles of Ecology (1 semester)

Teaching Assistant

2009-2011 Principles of Biology II Laboratory (4 semesters)

Workshop Instructor

2020 Generalized Linear Mixed Effects Modeling Workshop (Virtual)

MENTORING AND OUTREACH

- 2021** Native American Summer Mentorship Program at USU (mentor)
2019-2021 Thesis committee member for master's student at ECU
2019 Northeastern University BEACHES program (mentor)
"Bridging Each Applicant's Chance for Higher Education Success"
2017 Ecological Society of America SEEDS program (mentor)
2014-2016 Invite-A-Scientist • Bayboro Middle School
2013-2017 SciRen Teaching Network contributor/presenter

Undergraduate Mentorship

- 2021** **Alia Donley, Austin John** – Utah State University
Laboratory assistance, trained in animal husbandry
- 2020-2021** **Dylan F. Titmus** – Northeastern University
Honors Thesis: Inter- and intra-specific variation in survival of *Littorina spp.*
marine snails after exposure to hot and cold extremes
- 2015-2016** **Sarah Gill** – East Carolina University
Honors Thesis: Osmoregulatory Adaptations of *Hyla cinerea* in coastal wetlands
* *Undergraduate Research and Creative Activity Award: \$1,000.00*
- 2016-2018** **Ben Brantley** – East Carolina University
Honors Thesis: Diet and nematode infection differ between coastal and inland
populations of green tree frogs (*Hyla cinerea*)
* *Published in Southeastern Naturalist*
- 2017-2018** **Matt Pahl, Melanie Smith, Jefferson Gray Wilson** – East Carolina University
Performed laboratory work for "Influence of density and salinity larval
development of salt-adapted and salt-naïve frog populations"
* *Co-authors on manuscript published in Ecology and Evolution*
- 2015-2016** **Anisah Nwokolo, Hannah Bergman** – East Carolina University
Trained to perform histology and immunohistochemistry
- 2013-2015** **Tara McFarland, Christopher Thaxton** – East Carolina University
Trained to perform fieldwork and amphibian surveys

SERVICE

- Peer Reviewer:** *Global Change Biology, Aquatic Ecology, Ecology and Evolution, Biotropica, Oecologia, Behavioral Ecology, Ecological Entomology, Scientific Reports, J. of Herpetology, Evol. Applications, Int. and Comp. Biology, Microbial Ecology*
- 2022** Panelist for Research Coordination Network Workshop on Meta-analysis
2021 Co-Editor for *Proc. Royal Soc. Biol.* Special Issue on *Evolution in Changing Seas*
2020-2021 Director of Research Coordinated Network for Evolution in Changing Seas
(RCN-ECS) readings discussion series
2019-2021 Diversity and inclusion committee member for RCN-ECS

- 2016-2018** Panel Member: Graduate student funding workshop
2016-2017 Graduate Student Rep., Rho Tau Chapter of Graduate Women in Science
2016 Founding member of Rho Tau Chapter of Graduate Women in Science
2016 Research in Progress seminar Series: Graduate Student Funding Panelist at ECU
2015 Vice President of Biology Graduate Student Association
2014 Treasurer of Biology Graduate Student Association

POSTER PRESENTATIONS

- 2017** Graduate Education Day – North Carolina Legislative Building
2014 Climate Change Symposium hosted by NC State and NOAA
2014 NC Sea Grant Poster Reception
2014 NC Sea Grant Funded Research Symposium

PROFESSIONAL MEMBERSHIPS

- 2017-Present** Society for Study of Evolution
2017-Present American Society of Naturalists
2017-Present Ecological Society of America
2016-2018 Graduate Women in Science
2016-2017 Society of Integrative and Comparative Biology
2013-2017 The Coastal Society
2013-2017 North Carolina Herpetological Society
2013-2018 ECU Biology Graduate Student Association

MEDIA HIGHLIGHTS

- 2017** **Video Interview by WRAL (NC)**
Tree Frogs Adapt to Saltwater Intrusion
<https://www.wral.com/sea-change-/16961739/>
- 2017** **Blog Post for NC Sea Grant Website by Molly Albecker**
Indicators of Hope: Coastal green treefrogs develop salt tolerance
<https://ncseagrant.ncsu.edu/currents/2017/10/indicators-of-hope-coastal-green-treefrogs-develop-salt-tolerance/>
- 2016** **Virginian-Pilot Article by Jeff Hampton**
Amphibians don't like salt water... until now, and the little green treefrog in N.C.
https://www.pilotonline.com/news/environment/article_f01c993f-3ddc-5543-ae22-f00c86a97d29.html
- 2016** **CoastWatch Magazine article by Janna Sasser**
Leaping out of the lab: Green treefrogs show adaptation, offer inspiration.
<https://ncseagrant.ncsu.edu/coastwatch/previous-issues/2016-2/spring-2016/leaping-out-of-the-lab-green-tree-frogs-show-adaptation-offer-inspiration/>

2015

Wildlife Society Article by Joshua Rapp Learn

How frogs cope with road salt and brackish water

<https://wildlife.org/how-frogs-cope-with-road-salt-and-brackish-water/>

2015

East Carolina News Article by Doug Boyd

#Science: Graduate students share research on social media

<https://biology.ecu.edu/graduate-students-share-research-on-social-media/>