

## PROFESSIONAL APPOINTMENTS

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- 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

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- 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

15. (*In prep*) **Albecker, M.A.**, Bittar, T.B. Trussell, G.C., Lotterhos, K.E. Meta-analysis reveals patterns of co-gradient and counter-gradient variation.
14. (*Accepted*) **Albecker M.A.**, and McCoy M.W. Responses to saltwater exposure vary across species, populations, and life-stages in anuran amphibians. *Conservation Physiology*.
13. **Albecker, M.A.**, Strobel, S.M.K., and Womack, M.C. 2023. Developmental plasticity in anurans: Meta-analysis reveals effects of larval environments on metamorphosis timing and body size. DOI:10.1093/icb/icad059. *Integrative and Comparative Biology*.
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

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- 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.**, M.W. McCoy. Proteomic signatures of adaptation to saltwater environments in coastal anuran populations. *In prep.*

## GRANTS AND AWARDS

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<b>2023</b>	NSF: Collaborative Research: Organismal Responses to Climate Change Saltwater Rising: Understanding how sea level rise affects coastal amphibians.	\$375,842.00
<b>2019</b>	Darwin Fellowship, University of Massachusetts Amherst ( <i>Declined</i> )	
<b>2019</b>	Recipient of ECU Life Sciences Doctoral Dissertation Award	
<b>2017</b>	NSF Doctoral Dissertation Improvement Grant	\$19,175.00
<b>2017</b>	Ecology Society of America Aquatic Section Travel Award	\$200.00
<b>2016</b>	Pitt County Wildlife Club Scholarship	\$1,500.00
<b>2016</b>	Graduate Women in Science Student Fellowship	\$6,321.00
<b>2016</b>	Garden Club of America Scholarship	\$5,000.00
<b>2015</b>	ECU Undergraduate Research and Creativity Award to Sarah Gill	\$1,000.00
<b>2014</b>	Coastal Maritime Council Research Grant	\$1,000.00
<b>2013</b>	North Carolina Sea Grant (*Co-P.I. with M.W. McCoy)	\$76,415.00
<b>2013</b>	Explorer's Club Grant	\$2,500.00
<b>2013</b>	North Carolina Herpetological Society Grant	\$780.00
<b>2011</b>	Martha N. Jones Scholarship	\$500.00

## INVITED SEMINARS

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- 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 (*Cancelled due to Covid-19*)  
**2019** Invited Ecology and Evolution Seminar: University of Massachusetts, Amherst  
**2018** Invited EEBio Seminar: University of Virginia, Charlottesville, VA

## SELECTED PRESENTATIONS

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- 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

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### Instructor of Record

- 2023** U. Houston – Evolution (Biology 3306) - Spring  
**2017-2018** ECU - Principles of Biology I (2 semesters)  
**2015** ECU - Principles of Ecology (1 semester)

### Teaching Assistant

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

### Workshop Instructor

- 2020** NU - Generalized Linear Mixed Effects Modeling Workshop (Virtual)

## MENTORING AND OUTREACH

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- 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

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**Peer Reviewer:** *Global Change Biology, Functional Ecology, 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

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- 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

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- 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

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- 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](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/>