

# Anthony A. Snead

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## EDUCATION

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### Ph.D. Biology

Fall 2018 – Summer 2023

University of Alabama, Tuscaloosa, AL

Dissertation: Environmental Responses Across Biological Scales: Abiotic Drivers of Species Range, Population Size, and Genetic Variation in the Mangrove Rivulus, *Kryptolebias Marmoratus*

Committee Members: Ryan L. Earley, Julia Cherry, William Ellis, Paige Ferguson, Jeff Lozier

GPA: 4.0

### B.S. Environmental Biology

Fall 2016 - Summer 2018

University of South Florida

GPA: 3.75

## APPOINTMENTS

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NSF Postdoctoral Research Fellow

Summer 2023 - Present

Winchell Lab, Department of Biology, New York University, New York, NY

## PUBLICATIONS

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### Preprints

2. Kosch TA et al. [including **Snead AA**] (2024). The Amphibian Genomics Consortium: advancing genomic and genetic resources for amphibian research and conservation. *bioRxiv* (doi: 10.1101/2024.06.027.601086) *Under Review: BMC Genomics*
1. Gustafson JA et al. [including **Snead AA**] (2024). Nanopore sequencing of 1000 Genomes Project samples to build a comprehensive catalog of human variation. *medRxiv* (doi: 10.1101/2024.03.05.24303792) *Under Review: Genome Research*

### Accepted

1. **Snead AA**, Tatarenkov A, Avise JC, Taylor DS, Marson K, Earley RL (202X). Centrality to the Metapopulation is more Important for Population Genetic Diversity than Habitat Area or Fragmentation. *Accepted: Biology Letters*

### Published

6. **Snead AA**, Tatarenkov A, Avise JC, Taylor DS, Turner BJ, Marson K, Earley RL (2023). Out to sea: Ocean currents and patterns of asymmetric gene flow in an intertidal fish species. *Frontiers in Genetics* 14 (doi: 10.3389/fgene.2023.1206543)
5. Clark RD, Fitz KS, Garcia E, Jaynes KE, Reid BN, Sawkins A, **Snead AA**, Whalen J, Pinsky ML (2023) The Practice and Promise of Temporal Genomics for Measuring Evolutionary Responses to Global Change. *Molecular Ecology Resources* (doi: 10.1111/1755-0998.13789).
4. **Snead AA** & Clark RD (2022). The Biological Hierarchy, Time, and Temporal ‘Omics in Evolutionary Biology: A Perspective. *Integrative & Comparative Biology* 62(6), 1872-1886 (doi: 10.1093/icb/icac146).
3. **Snead AA** & Alda F (2022). Time Series Sequences for Evolutionary Inferences. *Integrative & Comparative Biology* 62(6), 1771-1783 (doi: 10.1093/icb/icac138).
2. **Snead AA** & Earley RL (2022). Predicting the in-Between: Present and future habitat suitability of an intertidal euryhaline fish. *Ecological Informatics* 68:101523 (doi: 10.1016/j.ecoinf.2021.101523)

1. Davidson J, Summerfelt S, Espmark AMO, Mota V, Marancik D, Earley RL, **Snead AA**, Good C (2021). Effects of ozone on post-smolt Atlantic salmon (*Salmo salar*) performance, health, and maturation in freshwater recirculation aquaculture systems. *Aquaculture* 533:736208 (doi: 10.1016/j.aquaculture.2020.736208)

### ***Special Issues***

1. Organizer/Associate Editor, *Integrative & Comparative Biology*, 2022. Special issue on “Temporal Genomics.”

### ***Media Coverage***

1. Schmelzer H. 2022. Microevolution can guide conservation efforts. *NatureVolve* 11:26-29.  
\* Interview & Popular Science Article Spotlight

### ***General Publications***

1. Snead AA (2023) Networking and Establishing Successful Collaborations. Early Career Ecology Section. <https://www.esa.org/earlycareer/2023/06/16/networking-and-establishing-successful-collaborations/>

## **GRANTS AND FELLOWSHIPS**

(\$336,387.50 total)

### ***Accepted***

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| 14. SPRI Grant for Genomic Research (Beckman Coulter)<br><i>Eurycea bislieniata: A model for studying salamander responses to environmental change</i>   | <b>\$3,000</b>     |
| 13. Ecological Society of America Conference Funding (Southeast Chapter)<br><i>Portland: 2023</i>  | <b>\$500</b>       |
| 12. National Science Foundation Postdoctoral Research Fellowship in Biology<br><i>Salamanders in the City: An Integrative Investigation into Microevolutionary Change</i>                      | <b>\$240,000</b>   |
| 11. Ecological Society of America Conference Funding (Southeast Chapter)<br><i>Montreal: 2022</i>  | <b>\$400</b>       |
| 10. University of Alabama Graduate Travel Award<br><i>Summer 2022</i>  | <b>\$500</b>       |
| 9. University of Alabama Aquatic Biology Enhancement Assistantship<br><i>2022-2023 Academic Year</i>   | <b>\$54,538</b>    |
| 8. RCN for Evolution in Changing Seas 2020 Call for Working Groups<br><i>Implications of Methodology on Temporal Genomic Inferences</i><br>(One of Three Project Leads out of 9 Collaborators) | <b>\$15,762.50</b> |
| 7. RCN for Evolution in Changing Seas<br><i>2020 Virtual Lab Meeting Training Program</i>  | <b>\$500</b>       |
| 6. 25 <sup>th</sup> Summer Institute in Statistical Genetics Scholarship<br><i>Module 9, 14, &amp; 17</i>  | <b>\$900</b>       |
| 5. E.O. Wilson Biodiversity Fellowship Summer 2020<br><i>Population Genetic and Environmental DNA Sampling in the Florida Keys</i>   | <b>\$6,944</b>     |
| 4. Bishop-Stackman Marine Science Endowed Scholarship<br><i>Environmental DNA Sampling in the Florida Keys</i>   | <b>\$500</b>       |
| 3. Office of Research and Economic Development Small Grant Program<br><i>Validating a Non-Invasive Method for Estimating Abundance in Threatened or Cryptic Marine Fishes.</i>                 | <b>\$5,844</b>     |
| 2. Sigma Xi Grants In Aid of Research<br><i>Escaping the Patch: The Role of Ocean Currents in Determining Population Connectivity in <i>Kryptolebias marmoratus</i>.</i>                       | <b>\$1,000</b>     |

1. The College Academy of Research, Scholarship, and Creative Activity Grant **\$5,999**  
*If You Can't See It, It Doesn't Exist. Or Does It? Validating a Technique to Estimate Abundance in a Vulnerable, Highly Enigmatic Marine Fish.*

***Awarded but Declined***

1. Presidential Management Fellowship (PMF)  
*Class of 2023*

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**TALKS AND SEMINARS**

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***Organized***

- Temporal Genomics Lecture Series & Twitter Symposium (Virtual) **2021**  
Funded by RCN-ECS

***Invited***

- Responses to Environmental Change Across Biological Scales in an Intertidal Fish **2023**  
University of South Florida (In-Person; November 2<sup>nd</sup>, 2023)
- Stranded within the Intertidal: Species-specific Responses to Environmental Change **2022**  
Fresno State (Virtual; April 1<sup>st</sup>, 2022)
- Crossing Disciplines: An Integrative Approach to Evolutionary Ecology **2021**  
Saint Leo University (Virtual; February 9<sup>th</sup>, 2021)

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**CONFERENCE PRESENTATIONS**

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***Oral***

- Phylogenetic Niche Models Offer Insights into Past Refugia and Niche Evolution in *Plethodon* spp. **2024**  
**Anthony A Snead** & Kristin Winchell  
Society of Integrative and Comparative Biology (SICB) 2024, Seattle, Washington
- Out to sea: Ocean currents and patterns of asymmetric gene flow in an intertidal fish species **2023**  
**Anthony A Snead**, Andrey Tatarenkov , John C Avise , D Scott Taylor, Bruce J Turner, Kristine Marson, Ryan L Earley  
Ecological Society of America (ESA) 2023, Portland, Oregon
- Plastic Gene Expression in Response to Embryonic Thermal Conditions **2023**  
**Anthony A. Snead**, Corey R. Quackenbush, Shawn Trojahn, Anna McDonald, Luana Lins, Chris Cornelius, Paula E Adams, Dengke Ma, Yuying Hsu, Eric Haag, Frédéric Silvestre, Akira Kanamori, Ryan L Earley, Joanna L. Kelley  
Society of Integrative and Comparative Biology (SICB) 2023, Austin, Texas
- Life within the intertidal: Abiotic and biotic drivers of species abundance **2022**  
**Anthony A. Snead**, Kristine Marson, Ryan L. Earley  
CSEE & ESA 2022 Joint Meeting, Montreal, Canada
- Left behind: habitat suitability shifts of a euryhaline fish **2022**  
**Anthony A. Snead** & Ryan L. Earley  
FSBI Symposium (*3-minute Speed Talk & Poster*) - Virtual

***Poster***

- Temperature-induced canalization of gene expression in a genetically homogenized population **2023**  
**Anthony A. Snead**, Corey R. Quackenbush, Shawn Trojahn, Anna McDonald, Luana Lins, Chris Cornelius, Paula E Adams, Dengke Ma, Yuying Hsu, Eric Haag, Frédéric Silvestre, Akira Kanamori, Ryan L Earley, Joanna L. Kelley  
SMBE Satellite Meeting: Small Populations, Princeton, New Jersey
- Validating a non-invasive method for estimating abundance in threatened or cryptic marine fishes **2021**  
Ryan L. Earley & **Anthony A. Snead**  
University of Alabama Faculty Research Day, Tuscaloosa, Alabama

## WORKSHOPS ATTENDED

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Coalescent Simulation with msprime <b>Society for Modeling &amp; Theory in Population Biology</b>	2024
Introduction to Digital Morphology with SlicerMorph <b>Society of Integrative and Comparative Biology (SICB 2024)</b>	2024
An Introduction to Mechanistic Niche Modeling with NichMapR and TrenchR <b>Ecological Society of America (ESA 2023)</b>	2023
Machine Learning and Big Data <b>Pittsburgh Supercomputing Center</b>	2023
Container Camp 2023 <b>CyVerse</b>	2023
Spatial Phylogenetics Workshop <b>International Biogeography Society</b>	2022
The Statistics Wars and Their Casualties <b>Dr. Deborah Mayo, Dr. Roman Frigg, &amp; Dr. Margherita Harris</b>	2022
Explore & work with harmonized continental-scale biodiversity data from NEON and the US LTER <b>Ecological Society of America (ESA 2022)</b>	2022
Write a good title, give a better talk <b>Ecological Society of America (Early Career Ecologist Section)</b>	2022
Coral Health Index Workshop <b>Dr. Michael Sweet, Dr. Raquel Pixoto, &amp; Dr. Christian Voolstra</b>	2022
Workshop on Molecular Evolution <b>The Marine Biological Laboratory, University of Chicago</b>	2022
Statistical Methods Seminar Series <i>Zero Inflated GLM and GLMM</i> <i>Integrated Step-Selection Analysis</i> <i>Multi-Species (Species Interactions) Occupancy Modeling</i> <i>Nimble</i> <i>Hidden Markov Models in Ecology</i> <i>Integrated Species Distribution Models</i> <b>Ecological Forecasting Initiative &amp; ESA Statistical Ecology Section</b>	2022 - 2023
High-Performance Computing Cluster Workshop Series <i>Pytorch</i> <i>Miniconda</i> <b>University of Alabama</b>	2021
25 <sup>th</sup> Summer Institute in Statistical Genetics- Funded (\$900) <i>Module 9: Quantitative Genetics</i> <i>Module 14: Association mapping: GWAS and Sequencing Data</i> <i>Module 17: Computational Pipeline for WGS Data</i> <b>University of Washington</b>	2020
5 <sup>th</sup> edition Population Genomics <b>Physalia</b>	2020
Southeastern Computational School: eDNA and QIIME 2 Software Training <b>The University of Tennessee at Chattanooga</b>	2018

## TEACHING EXPERIENCE

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### ***University of Alabama***

#### ***Instructor of Record***

**Fall 2018 – Summer 2022**

- Biology II Laboratory
- Biology II Laboratory for Non-majors
- Introduction to Principles of Biology

\*Instructor of Record indicates that the individual formatted, developed, and presented instructional material in compliance with department and course guidelines, while also being solely responsible for grading and course management.

#### ***Graduate Teaching Assistant***

**Spring 2021**

- Research Seminars in Biology
- Biological Sciences Seminar

## PROFESSIONAL MEMBERSHIPS

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Society for Modeling & Theory in Population Biology (SMTPB)	<b>2024 - Present</b>
New York Academy of Sciences	<b>2023 - Present</b>
Society for Molecular Biology & Evolution (SMBE)	<b>2022 - Present</b>
The Ecological Society of America (ESA)	<b>2022 - Present</b>
The International Biogeography Society	<b>2022 - Present</b>
The Society for Integrative and Comparative Biology (SICB)	<b>2022 - Present</b>
The Research Coordinate Network for Evolution in Changing Seas (RCN-ECS)	<b>2020 - Present</b>
The Society for the Study of Evolution (SSE)	<b>2020 - Present</b>
Sigma Xi	<b>2020 - Present</b>
The American Association for the Advancement of Science (AAAS)	<b>2018 - 2022</b>

## PROFESSIONAL SERVICE

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### ***Internal***

UA Biological Sciences Diversity, Equity, & Inclusion Committee	<b>Fall 2021 – Summer 2023</b>
Graduate Student Representative	

### ***External***

Amphibian Genomics Consortium	<b>2024 - Present</b>
Member	
eDNA Technology Readiness level Group	<b>2023 - 2024</b>
Member	
Clear Direction Mentoring	<b>2023 - Summer 2024</b>
Mentorship Support Committee	
1000 Genomes ONT Sequencing Consortium	<b>2022 - Present</b>
Member	
RCN-ECS 2022 Reading Group - Temporal Data and Evolutionary Change	<b>Spring 2022</b>
Co-Organizer	

### ***Journals Reviewed for:***

*Ecological Processes* (11/21)  
*Molecular Phylogenetics and Evolution* (4/22)

### ***Conferences Reviewed for:***

*International Biogeography Society – Prague, Czechia (2024)*  
*Ecological Society of America – Portland (2023)*

## OUTREACH

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Denver Metro Regional Science & Engineering Fair	<b>Spring 2024</b>
<i>Scientific Review Board</i>	
Clear Direction Mentoring	<b>Fall 2023 – Summer 2024</b>
<i>Mentor</i>	

Denver Metro Regional Science & Engineering Fair <i>Volunteer Judge</i>	<b>Spring 2022</b>
Meet a Bama Biologist <i>Scientific Volunteer</i>	<b>Spring 2021 – Summer 2023</b>
UA Undergraduate Research & Creative Activity Conference <i>Volunteer Judge</i>	<b>Spring 2021, 2022</b>
UA STEM Showcase <i>Volunteer Judge</i>	<b>Spring 2021</b>
Letters to a Pre-Scientist <i>Scientific Volunteer</i>	<b>Fall 2020 - Present</b>
UA SafeZone <i>Ally/Trainer</i>	<b>Fall 2018 – Summer 2023</b>
The University of Alabama’s Night at the Museum <i>Volunteer Biology Instructor</i>	<b>Spring 2019</b>
Skype a Scientist <i>Scientific Volunteer</i>	<b>Spring 2018 - Present</b>

## REFERENCES

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Ryan Earley PhD  
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The University of Alabama  
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