

Anthony A. Snead

Department of Biology
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EDUCATION

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

NSF Postdoctoral Research Fellow

Summer 2023 - Present

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

PUBLICATIONS

Preprints

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)

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

(\$373,387.50 total)

Accepted

- | | |
|---|--------------------|
| 13. Ecological Society of America Conference Funding (Southeast Chapter)
<i>Portland: 2023</i> | \$500 |
| 12. National Science Foundation Postdoctoral Research Fellowship in Biology
<i>Salamanders in the City: An Integrative Investigation into Microevolutionary Change</i> | \$280,000 |
| 11. Ecological Society of America Conference Funding (Southeast Chapter)
<i>Montreal: 2022</i> | \$400 |
| 10. University of Alabama Graduate Travel Award
<i>Summer 2022</i> | \$500 |
| 9. University of Alabama Aquatic Biology Enhancement Assistantship
<i>2022-2023 Academic Year</i> | \$54,538 |
| 8. RCN for Evolution in Changing Seas 2020 Call for Working Groups
<i>Implications of Methodology on Temporal Genomic Inferences</i>
(One of Three Project Leads out of 9 Collaborators) | \$15,762.50 |
| 7. RCN for Evolution in Changing Seas
<i>2020 Virtual Lab Meeting Training Program</i> | \$500 |
| 6. 25 th Summer Institute in Statistical Genetics Scholarship
<i>Module 9, 14, & 17</i> | \$900 |
| 5. E.O. Wilson Biodiversity Fellowship Summer 2020
<i>Population Genetic and Environmental DNA Sampling in the Florida Keys</i> | \$6,944 |
| 4. Bishop-Stackman Marine Science Endowed Scholarship
<i>Environmental DNA Sampling in the Florida Keys</i> | \$500 |
| 3. Office of Research and Economic Development Small Grant Program
<i>Validating a Non-Invasive Method for Estimating Abundance in Threatened or Cryptic Marine Fishes.</i> | \$5,844 |
| 2. Sigma Xi Grants In Aid of Research
<i>Escaping the Patch: The Role of Ocean Currents in Determining Population Connectivity in <i>Kryptolebias marmoratus</i>.</i> | \$1,000 |
| 1. The College Academy of Research, Scholarship, and Creative Activity Grant
<i>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.</i> | \$5,999 |

Declined

1. Presidential Management Fellowship (PMF)
Class of 2023

TALKS AND SEMINARS**Organized**

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

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

CONFERENCE PRESENTATIONS

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

- Coalescent Simulation with msprime **2024**
Society for Modeling & Theory in Population Biology
- Introduction to Digital Morphology with SlicerMorph **2024**
Society of Integrative and Comparative Biology (SICB 2024)
- An Introduction to Mechanistic Niche Modeling with NichMapR and TrenchR **2023**
Ecological Society of America (ESA 2023)
- Machine Learning and Big Data **2023**
Pittsburgh Supercomputing Center
- Container Camp 2023 **2023**
CyVerse

Spatial Phylogenetics Workshop International Biogeography Society	2022
The Statistics Wars and Their Casualties Dr. Deborah Mayo, Dr. Roman Frigg, & Dr. Margherita Harris	2022
Explore & work with harmonized continental-scale biodiversity data from NEON and the US LTER Ecological Society of America (ESA 2022)	2022
Write a good title, give a better talk Ecological Society of America (Early Career Ecologist Section)	2022
Coral Health Index Workshop Dr. Michael Sweet, Dr. Raquel Pixoto, & Dr. Christian Woolstra	2022
Workshop on Molecular Evolution The Marine Biological Laboratory, University of Chicago	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> Ecological Forecasting Initiative & ESA Statistical Ecology Section	2022 - 2023
High-Performance Computing Cluster Workshop Series <i>Pytorch</i> <i>Miniconda</i> University of Alabama	2021
25 th 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> University of Washington	2020
5 th edition Population Genomics Physalia	2020
Southeastern Computational School: eDNA and QIIME 2 Software Training The University of Tennessee at Chattanooga	2018

TEACHING EXPERIENCE

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

Society for Modeling & Theory in Population Biology (SMTPB)	2024 - Present
New York Academy of Sciences	2023 - Present
Society for Molecular Biology & Evolution (SMBE)	2022 - Present

The Ecological Society of America (ESA)	2022 - Present
The International Biogeography Society	2022 - Present
The Society for Integrative and Comparative Biology (SICB)	2022 - Present
The Research Coordinate Network for Evolution in Changing Seas (RCN-ECS)	2020 - Present
The Society for the Study of Evolution (SSE)	2020 - Present
Sigma Xi	2020 - Present
The American Association for the Advancement of Science (AAAS)	2018 - 2022

PROFESSIONAL SERVICE

Internal

UA Biological Sciences Diversity, Equity, & Inclusion Committee Graduate Student Representative	Fall 2021 – Summer 2023
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External

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

Journals Reviewed for:

<i>Ecological Processes</i> (11/21)
<i>Molecular Phylogenetics and Evolution</i> (4/22)

Conferences Reviewed for:

<i>International Biogeography Society – Prague, Czechia (2024)</i>
<i>Ecological Society of America – Portland (2023)</i>

OUTREACH

Denver Metro Regional Science & Engineering Fair <i>Scientific Review Board</i>	Spring 2024
Clear Direction Mentoring <i>Mentor</i>	Fall 2023 - Present
Denver Metro Regional Science & Engineering Fair <i>Volunteer Judge</i>	Spring 2022
Meet a Bama Biologist <i>Scientific Volunteer</i>	Spring 2021 – Summer 2023
UA Undergraduate Research & Creative Activity Conference <i>Volunteer Judge</i>	Spring 2021, 2022
UA STEM Showcase <i>Volunteer Judge</i>	Spring 2021
Letters to a Pre-Scientist <i>Scientific Volunteer</i>	Fall 2020 - Present
UA SafeZone <i>Ally/Trainer</i>	Fall 2018 – Summer 2023
The University of Alabama’s Night at the Museum <i>Volunteer Biology Instructor</i>	Spring 2019
Skype a Scientist <i>Scientific Volunteer</i>	Spring 2018 - Present

REFERENCES

Ryan Earley PhD
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