

Anthony A. Snead

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EDUCATION

Ph.D. Biology

Fall 2018 – Spring 2023 (Projected)

University of Alabama, Tuscaloosa, AL

Dissertation: Integrative Approaches to Estimate Abundance and Illuminate Factors Governing Population Connectivity in the mangrove rivulus fish, *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

PUBLICATIONS

Peer-Reviewed

- X. **Snead AA**, Quackenbush CR, Trojahn S, McDonald A, Lins L, Cornelius C, Adams PE, Ma D, Haag E, Silvestre F, Kanamori A, Earley RL, Kelley JL (202X) Plasticity in Gene Expression in Response to Embryonic Environment. Manuscript draft available – anticipated submission date, April 2023
- X. **Snead AA**, Marson K, Earley RL (202X). Disentangling Associations between abiotic variables, biotic variables and species abundance in the intertidal. *Under Revision: Journal of Animal Ecology*
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 In Press* (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

GRANTS AND FELLOWSHIPS

(\$299,887.50 total)

Accepted

12. National Science Foundation Postdoctoral Research Fellowship in Biology <i>Salamanders in the City: An Integrative Investigation into Microevolutionary Change</i>	\$207,000
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 Kryptolebias marmoratus.</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***

Temporal Genomics Lecture Series (Virtual) Funded by RCN-ECS	2021
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Invited

Stranded within the Intertidal: Species-specific Responses to Environmental Change Fresno State (Virtual; April 1 st , 2022)	2022
Crossing Disciplines: An Integrative Approach to Evolutionary Ecology Saint Leo University (Virtual; February 9 th , 2021)	2021

PRESENTATIONS

Oral

- 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 2023
- Temporal Genomics Working Group Update **2022**
René Clark, Brendan Reid, Allyson Salazar Sawkins, John Whalen, Katrina Catalano, Kyra Fitz, Eric Garcia, Kyle Jaynes, **Anthony A. Snead**, Malin Pinsky
RCN for Evolution in Changing Seas 2022 Integration and Training Workshop
- Life within the intertidal: Abiotic and biotic drivers of species abundance **2022**
Anthony A. Snead, Kristy Marson, Ryan L. Earley
CSEE & ESA 2022 Joint Meeting
- Left behind: habitat suitability shifts of a euryhaline fish **2022**
Anthony A. Snead & Ryan L. Earley
FSBI Symposium (*3-minute Speed Talk & Poster*)

Poster

- 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

WORKSHOPS ATTENDED

- Container Camp 2023 **2023**
CyVerse
- Spatial Phylogenetics Workshop **2022**
International Biogeography Society
- The Statistics Wars and Their Casualties **2022**
Dr. Deborah Mayo, Dr. Roman Frigg, & Dr. Margherita Harris
- Explore & work with harmonized continental-scale biodiversity data from NEON and the US LTER **2022**
Ecological Society of America (ESA 2022)
- Write a good title, give a better talk **2022**
Ecological Society of America (Early Career Ecologist Section)
- Coral Health Index Workshop **2022**
Dr. Michael Sweet, Dr. Raquel Pixoto, & Dr. Christian Voolstra
- Workshop on Molecular Evolution **2022**
The Marine Biological Laboratory, University of Chicago
- Statistical Methods Seminar Series **2022 - 2023**
Zero Inflated GLM and GLMM
Integrated Step-Selection Analysis
Multi-Species (Species Interactions) Occupancy Modeling
Nimble
Hidden Markov Models in Ecology
Ecological Forecasting Initiative & ESA Statistical Ecology Section

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

RESEARCH EXPERIENCE

Graduate Researcher **Fall 2018 - Present**

The Earley Lab, University of Alabama

- Quantifies the impact of abiotic variables on levels of gene flow and genetic divergence between populations of *Kryptolebias marmoratus*.
- Investigates eDNA concentration's relation to density as a proxy for species abundance.
- Evaluates the abiotic and biotic factors which impact occupancy and abundance in *Kryptolebias marmoratus* through ecological niche modeling and Bayesian hierarchical models.
- Identifies the genomic and epigenomic variants driving sexual plasticity while quantifying associated gene expression patterns.

Undergraduate Researcher **Fall 2016 - Summer 2018**

Freshwater Ecology Lab, University of South Florida

- Surveyed and identified littoral benthic invertebrates throughout the Tampa Bay area to assess urban pond health.
- Sampled, identified, and measured over 5,000 fish to assess the difference between urban pond types for direct application within urban planning.
- Assessed differences between pond types for both benthic invertebrate and littoral fish community composition and biodiversity.
- Completed geospatial analysis to derive pond characteristics from satellite imagery.

Undergraduate Researcher **Fall 2012 - Spring 2013**

Saint Leo University, Saint Leo, FL

- Quantified mangrove forest health throughout Tampa Bay using quartile plots.
- Measured the abundance and distribution of galls located on red mangroves throughout Tampa Bay.
- Investigated the relationship between salinity and gall formation on red mangroves.
- Aided in artificial oyster reef experiments to quantify the abiotic factors affecting reef success.

Research Volunteer **Fall 2012 - Spring 2013**

*Mangrove Watch,
Tampa, FL*

- Conducted mangrove forest surveys throughout Tampa Bay.
- Employed video surveillance of shoreline habitat throughout Tampa Bay to assess mangrove health.
- Quantified mangrove forest health through individual tree tagging and measurements.
- Led groups of volunteers in collecting key data to serve as mangrove forest health baselines used in long-term monitoring programs.

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 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
The Fisheries Society of the British Isles (FSBI)	2018 - Present
University of Alabama Biology Graduate Student Association (UA BGSA)	2018 - Present

PROFESSIONAL SERVICE

Internal

UA Biological Sciences Diversity, Equity, & Inclusion Committee
Graduate Student Representative **Fall 2021 – Present**

External

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:

Ecological Processes (11/21)

Molecular Phylogenetics and Evolution (4/22)

Conferences Reviewed for:

Ecological Society of America – Portland (2023)

OUTREACH

Denver Metro Regional Science & Engineering Fair
Volunteer Judge **Spring 2022**

Meet a Bama Biologist
Scientific Volunteer **Spring 2021 - Present**

UA Undergraduate Research & Creative Activity Conference
Volunteer Judge **Spring 2021, 2022**

UA STEM Showcase
Volunteer Judge **Spring 2021**

Letters to a Pre-Scientist
Scientific Volunteer **Fall 2020 - Present**

UA SafeZone
Ally/Trainer

Fall 2019 - Present

The University of Alabama's Night at the Museum
Volunteer Biology Instructor

Spring 2019

Skype a Scientist
Scientific Volunteer

Spring 2018 - Present

REFERENCES

Dr. Ryan Earley
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The University of Alabama
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Dr. Malin Pinsky
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