

**Samantha Levell, PhD**

Assistant Professor of Marine Biology, New College of Florida

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**Education**

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**University of California, Riverside**      Riverside, CA      Evolution, Ecology & Organismal Biology  
PhD awarded Sept. 2022  
Dissertation Title: The Evolution of Reproductive Mode and Associated Familial Conflict in Livebearing Fishes (Advisor: David Reznick)

**Florida State University**      Tallahassee, FL      Biological Sciences  
BS awarded April 2016  
Honors Thesis Title: Maternal Effects on Reproduction and Fitness in the Least Killifish, *Heterandria formosa* (Advisor: Joseph Travis)

**Teaching**

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New College of Florida      *Assistant Professor of Marine Biology*      Aug. 2023-Present

- *Courses*
  - BIOL3362: Estuary Ecology Lab (Spring 2025; 14 students)
  - BIOL3600: Fish Biology Lecture (Spring 2025, 18 students)
  - BIOL3610, Fish Biology Laboratory (Fall 2024, 13 students)
  - FYS2010, QUEST: Introduction to the Marine Biology of Sarasota Bay (Fall 2024, 13 students)
  - BIOL3700, Biology of Sharks, Skates, and Rays (Spring 2024, 23 students)
  - BIOL3052, Fish Behavior Laboratory (Spring 2024, 8 students)
  - BIOL2135, Evolutionary Biology (Fall 2023, 8 students)
  - BIOL2155, Biological Data Analysis Laboratory (Fall 2023, 7 students)
- *Group Independent Study Project (ISP)*
  - Toxic Tides: Investigating Brevetoxins in Sarasota Bay Fish and Sharks (January 2025, 15 students: an ELISA-based analysis of brevetoxins in catfish and blacktip sharks)
  - Assessing Syngnathidae-Seagrass Decline (January 2024, 22 students: An exploration of seahorses and pipefish in Sarasota Bay, including seagrass and plankton characterization)
- *Independent Study Project (ISP)*
  - January 2024, 3 students/projects: Intertidal comparison of invertebrates between Atlantic and Pacific Oceans; Sand Tiger Shark Behavioral Analysis; Literature Review: The environmental effects of tourism in Hawaii
- *Tutorials*
  - Thesis pod (Fall 2024; Spring 2025, 6 students): Writing-focused workshop for thesis-year students.
  - Pipefish Ecology (Spring & Fall 2024, 16 students): Research-focused tutorial allowing students to specialize in ecological research areas of their choosing utilizing seahorses and pipefish.
  - Aquarium Design & Signage (Fall 2024, 14 students): Scientific communication and husbandry focus at the Pritzker Marine Biology Research Center.
  - Oyster Restoration (Spring 2024, 8 students): Studying oyster biology including settlement and water quality in Sarasota Bay.
  - Aquarium Systems (Fall 2023, 6 students): An aquarium science tutorial with a focus on creating large and/or complex systems for research, outreach, and education. Students built one research system, one outreach aquarium, and created a protocol and design.

Oregon State University *E-campus Adjunct Instructor* Sept. 2023-Dec. 2024

- BI 319, Theory and Discourse Life Science (Spring 2024, 30 students)
- BI 30x, Introductory Biology I and III (Fall 2023 and 2024, 60 students each)

Western Oregon University *Visiting Assistant Professor* Sept. 2022-June 2023

- BI101, General Biology: The Foundations of Life Online (Fall 2023, Winter 2024, 30 students each)
- BI 360, Marine Ecology (Spring 2023, 20 students)
- BI 360L, Marine Ecology Laboratory (Spring 2023, 20 students)
  - Guided students in developing independent marine ecology research projects in teams of two. Students conducted their projects in the local rocky intertidal, or brought specimens back to the campus seawater room. Guided students through analysis and presentation of data using the program RStudio. Hosted a student research showcase where students presented their research posters to the department.
- BI 357, General Ecology (Winter 2023, 17 students; Fall 2022, 14 students)
- BI 357L, General Ecology Laboratory (Winter 2023, 16 students; Fall 2022, 14 students)
  - Led students in a CURE that utilized a local creek to survey macroinvertebrate diversity and richness in different habitats. Guided students through analysis and presentation of data using the program RStudio. Hosted a student research showcase where students presented their research posters to the department.
- BI 102L, General Biology: The Foundations of Life (Spring 2023, 20 students; Winter 2023, 40 students)
- BI 102L, General Biology: The Foundations of Life Laboratory (Spring 2023, 20 students; Winter 2023; Fall 2022, 40 students/each)

University of California, Riverside *Instructor of record* Sept. 2018-Aug. 2021

- Biol005C, Introduction to Ecology and Evolution (Summer 2021, 100 students)
- EEOB “Lunch Bunch” seminar (Spring 2019, Fall 2020, Spring 2021, 20-30 students/each)
- Biol105, Online Evolution (Summer 2020, 80 students)

*Graduate Teaching Assistant* Sept. 2018-June 2021

- Biol20, Dynamic Genome (Spring 2021, 50 students)
- Biol30, Human Sexuality and Reproductive Behavior (Spring 2019, Fall 2020, 75 students/each)
- Biol005C, Introduction to Ecology and Evolution Lab (Spring 2020, Summer 2020, 50 students/each)
- Biol105, Online Evolution (Fall 2018, 2019, Winter 2019, 2020 80 students/each)

Florida State University *Undergraduate Teaching Assistant* Aug. 2015-April 2016

- BSC1005L, Biology for Non-majors (Fall 2015, Spring 2016, 50 student/each)

### **Research & Academic Development Grants**

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- 2025 Environmental Discovery Awards Program (EDAP); 2 paid summer interns
- 2024-2025 Sarasota Bay Estuary Program Natural Science Colloquium Award
- 2024 Cross College Alliance (CCA) Environmental Discovery Awards Program (EDAP); 4 paid summer interns
- 2023 WOU Foundation Competitive Grant “Get in the Swim with Aquarium Science: Opportunities for Aquarium Science students to build and host displays with associated outreach”
- 2021 Theodore Roosevelt Memorial Fund
- 2020 Irwin M. Newell Graduate Research Fund

- 2019 Vaughan H. Shoemaker Graduate Fellowship
- 2019 Society for Integrative and Comparative Biology (SICB) Grants in Aid of Research Award
- 2018 American Livebearer's Association Vern Parish Fund
- 2018 American Society for Ichthyology and Herpetology Raney Award Fund
- 2017 UC MEXUS Student and Postdoctoral Research Small Grant (April competition) April 2017
- FSU 2016 Bess H. Ward Thesis Award

### **Fellowships, Scholarships & Awards**

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- NCF 2024 Faculty Development Summer Funding (\$4500)
- Faculty Development Award – Category 1A (Conference with presentation; Ecological Society of America)
- Faculty Development Award – Category 2A (Conference attendance; Northwest Biology Instructor's Organization)
- UCR Dissertation Year Fellowship Spring 2022
- UCR Graduate Research Mentorship Fellowship Award 2021
- Earle C. Anthony Graduate Student Travel Award February 2020
- ALA Travel Award for the KY ALA Convention May 2019
- ASN Travel Award for the Poeciliid Meeting May 2017
- UCR GradSlam Semifinalist April 2017
- UCR GradFest Recruitment Weekend March 2017
  - Award, 2<sup>nd</sup> Place for Best Graduate Student Presentation
- Graduate Assistance in Areas of National Need Fellowship 2016-2017
- UCR Chancellor's Distinguished Fellowship 2017-2018
- National Oceanic Atmospheric Administration (NOAA) Ernest F. Hollings Scholar, Class of 2016
- FSU 2014 Kevin L. McKeown Scholarship
- FSU 2015 John Mark Caffrey Scholarship
- WIMSE Colloquiums 2013-2016
  - Award, Best Overall Life Sciences Oral Presentation 2015
- Oral Presentation, NOAA Hollings 2015 Colloquium
  - Award, Outstanding Oral Presentation in NOAA's Healthy Oceans Goal
- Dr. Eugenie Clark 2013 Garden Eel Expedition to Andros Island, Bahamas Award
- FSU Garnet and Gold Scholar Society
- Mote Marine Laboratory and Aquarium 2012 High School Scholarship
- Pine View School 2012 Sol Malinsky Scholarship

### **Publications (\*Indicates a mentored undergraduate author)**

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1. **Levell, S.T.**, Bedgood, S.A., Travis, J., Reznick, D. 2024. Can females differentially allocate resources to offspring sired by different males? *Biological Journal of the Linnean Society*. <https://doi.org/10.1093/biolinnean/blae011>
2. S. A. Bedgood, **S. T. Levell**, M. E. S. Bracken. 2023. Sea anemone microhabitats enhance the diversity and biomass of mobile invertebrates on temperate rocky shores. *Marine Ecology Progress Series*, Prepress DOI: <https://doi.org/10.3354/meps14352>
3. **Levell, S.T.**, Bedgood, S.A. and Travis, J., 2023. Plastic maternal effects of social density on reproduction and fitness in the least killifish, *Heterandria formosa*. *Ecology and Evolution*, 13(5), p.e10074.

4. Bedgood, S. A., M. E. S. Bracken, W. Ryan, **S. T. Levell**, J. Wulff. 2020. Nutritional drivers of adult locomotion and asexual reproduction in a symbiont-hosting sea anemone *Exaiptasia diaphana*. *Marine Biology*. 167.4:1-12.
5. Tang, T.\*, **S. T., Levell**, and D. N. Reznick. 2019. Reproductive Behaviors of Live-Bearing Poeciliids. University of California Riverside Undergraduate Research Journal.
6. **Levell, S. T.**, J. Travis. 2018. Activity Level and Predation Risk in the Least Killifish, *Heterandria formosa*. *Copeia* 106.3: 436-442.

#### Peer-review

1. Ecology and Evolution, 2024, 1 manuscript
2. Journal of Evolutionary Biology, 2023, 1 manuscript
3. Biology Now, 4<sup>th</sup> Edition, entire textbook (19 chapters) publisher slides

#### Interviews, Podcasts, Book Chapters & Informal Science Writing

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- Guest for “Reef Relief” Marine Biology Careers Interview series, November 2024
- Guest on Mighty Banyans Podcast, November 2024
- **Levell, S. T.** 2018. Smoking dad's gift: son at risk of lower fertility. *Sparrho 3-minute Digest*.
- Reznick, D. N., **Levell, S. T.**, K. M. Edwards, R. M. Conway, M. D. Green, J. G. Randall, and S. A. Bedgood. 2019. Biology Laboratory 101 Series. *Journal of Visualized Experiments*.
  - Lab Chapters (\* indicates myself as first author): The Scientific Method, Macromolecules\*, Artificial Selection, Mathematical Modeling, Evolutionary Relationships, Cell Structure, Diffusion and Osmosis\*, Photosynthesis, Transpiration, Animal Behavior\*, Cellular Respiration\*, Enzyme Activity
- Reznick, D. N., **Levell, S. T.**, K. M. Edwards, S. A. Bedgood, and R. M. Conway. 2019. Biology Laboratory 102 Series. *Journal of Visualized Experiments*.
  - Lab Chapters (\* indicates myself as first author): Hardy-Weinberg and Genetic Drift, Evolution by Natural Selection, Mendelian Inheritance\*, Extinction, Measuring Biodiversity, Plant Diversity & Evolution, Animal Diversity & Evolution, Microbial and Fungal Diversity & Evolution, Group Behavior, Optimal Foraging\*, Sexual Selection & Mate Choice\*, Eusociality & Division of Labor, Species Distribution & Biogeography, Population Growth, Community Diversity & Ecosystem Health, Global Climate Change\*, Physiology\*

#### Invited Presentations

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- **Levell, S. T.**, D. Reznick. October 2021. “The Father’s Role in Maternal Investment in Poeciliids” (Poster Presentation). American Livebearer’s Association Convention, Coral Springs, FL.
- **Levell, S. T.** June 2021. “The A Betta Cs of Animal Behavior” Greater Akron Fishkeepers (Oral Presentation), Akron, OH.
- **Levell, S. T.**, D. Reznick. May 2019. “An Internal Tug-of-War: Consequences of Placentation in Livebearers” (Poster Presentation). American Livebearer’s Association Convention, Louisville, KY.
- **Levell, S. T.** June 2018. “The A Betta Cs of Animal Behavior” International Betta Convention (Oral Presentation), Long Beach, CA.

**Conference Presentations (\*Indicates a mentored undergraduate author)**

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- **Levell, S. T.** January 2025. “Missing males: exploring potential abiotic drivers of sex ratio bias in *Syngnathus* pipefish” (Poster Presentation). SICB Meeting 2025, Atlanta, GA.
- Waters, M\*, **S. T. Levell**. January 2025. “Assessing the potential for hybridization of three *Syngnathus* species in Sarasota Bay” (Poster Presentation). SICB Meeting 2025, Atlanta, GA.
- Braun, L.\*, **S. T. Levell**. January 2025. “Differences in diets between male and female *Syngnathus scovelli*” (Poster Presentation). SICB Meeting 2025, Atlanta, GA.
- **Levell, S. T.** August 2023. “Finding a CURE in the Creek: Curating an Authentic Research Experience in a General Ecology Course” (Poster Presentation). ESA Meeting 2023, Portland, OR.
- **Levell, S. T., D. Reznick**. January 2020. “Can Females Differentially Allocate Resources to Offspring Sired by Different Males?” (Oral Presentation). SICB Meeting 2020, Austin, TX.
- **Levell, S. T., D. Reznick**. September 2019. “How do Placental Fish Provision Resources to Offspring Sired by Different Males?” (Oral Presentation). 8<sup>th</sup> Poeciliid Meeting 2019, Mexico City, Mexico.
- **Levell, S. T., D. Reznick**. June 2019. “Can Females Differentially Allocate Resources to Offspring Sired by Different Males?” (Oral Presentation). Evolution 2019, Providence, RI.
- **Levell, S. T., D. Reznick**. March 2019. “Who controls resource investment in-utero?” (Oral Presentation). UCR GradFest Recruitment Weekend, Riverside, CA.
- **Levell, S. T.** January 2019. “Can Females Differentially Allocate Resources to Offspring Sired by Different Males?” (Oral Presentation). SICB Meeting, Tampa, FL.
- **Levell, S. T.** January 2018. “Intergenomic Conflict: Understanding Maternal Investment and Post-Zygotic Mate Choice” (Oral Presentation). SICB Meeting, San Francisco, CA.
- **Levell, S. T., J. Travis**. June 2017. “Maternal Effects Crowding on Reproduction and Fitness” (Oral Presentation). Evolution Meeting, Portland, OR.
- **Levell, S. T.** May 2017. “Maternal Effects on Reproduction and Fitness” (Oral Presentation). 7th Annual Meeting for Poeciliid Biologists, Normal, OK.
- **Levell, S. T.** April 2017. “Illuminating Maternal Investment through Artificial Insemination” (Oral Presentation). UCR GradSlam, Riverside, CA.
- **Levell, S. T., D. Reznick**. March 2017. “Maternal Investment & Post-Copulatory Mate Choice in Livebearing fishes” (Oral Presentation). UCR GradFest Recruitment Weekend, Riverside, CA.
- **Levell, S. T., J. Travis**. March 2016. “Maternal Effects in the Least Killifish, *Heterandria formosa*” (Oral Presentation). Southeastern Ecology and Evolution Conference, Tallahassee, FL.
- **Levell, S. T., J. Travis**. March 2016. “The Effects of Crowding on Reproduction in the Least Killifish, *Heterandria formosa*” (Poster Presentation). WIMSE Research Colloquium & Undergraduate Research Symposium, Tallahassee, FL.
- **Levell, S. T., C. M. Greene**. November 2015. “Habitat Selection and the Effect of Conspecific Presence in Forage Fish” (Poster Presentation). Coastal & Estuarine Research Federation Conference, Portland, OR.
- **Levell, S. T., C. M. Greene**. July 2015. “Habitat Selection and the Effect of Conspecific Presence in Forage Fish” (Oral Presentation). National Oceanic Atmospheric Administration (NOAA) Hollings Scholar Symposium, Washington, DC.
- **Levell, S. T., J. Travis**. March 2014 & 2015. “Activity Levels and Predation Risk in the Least Killifish, *Heterandria formosa*” (Poster Presentation 2014, Oral Presentation 2015). WIMSE Research Colloquium, Tallahassee, FL.

- **Levell, S. T., J. L. Wulff.** March 2013. “From Sea to Slide and Beyond: Specimen Preparation for Sponge Taxonomy and Why Sponge Identification is Important” (Poster Presentation). WIMSE Research Colloquium, Tallahassee, FL.

## **Mentorship**

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### New College of Florida

- Thesis sponsorship/co-sponsorship: 6 thesis students in progress
- Thesis committee member: 9 thesis students in progress
- Completed sponsored theses: 1
- Academic advising: 3 students

### University of California, Riverside

#### *Graduate Student Mentor & Graduate Student Mentorship Program Coordinator* Aug. 2018-March 2022

- Coordinated the GSMP’s 14 faculty mentors, 28 graduate student mentors and 75 mentees.
- Mentored 16 new graduate students weekly during a summer orientation program.
- Mentored four new, international, and domestic graduate students (to-date over two years) to help them navigate graduate school and provide information to them on how to be successful in graduate school.

#### *Graduate Student Undergraduate Mentor* Aug. 2017 to Sept. 2022

- Mentored 32 undergraduates in the Reznick lab with journal-club style lab meetings:
  - Sugjit Singh; Simon Zhu; Farrah Wali; Lovingly Ocampo; Brianna Paramo; Carol Villicana; Jose Fernan Astraquillo; Mariam Samy; Raymond Beverly; Linda Odeh; Misty Pham; Derek Ly; Leann Labra; Nathan Duong; Jonathan Banh; Emily Drake; Kaylee Nguyen; Charles Dinan; Amber Nathanson; Teresa Guerre; Hailee Goldberg; Ethan Williams; Samantha Mena; Julio Poblador; Lauren Isabelle Babao; Catherine Kan; Helen Vo; Erica Tran; Brandon Nguyen; Melissa Palmares; Maria Esparza; Andres Poblador; Emily Ta
- Mentored 11 students with independent projects († indicates successful funding of the project; manuscript preparation and research presentations are indicated in parentheses):
  - Sarah Ruckman†: The Role of Semen in the Evolution of Reproductive Mode (presented as a poster at UCR Undergraduate Research Symposium)
  - Tamara Tang†: Reproductive Behaviors of Live-Bearing Poeciliids (published in UCR undergraduate journal)
  - Danniele Lacad: Size at birth and sex at maturity in *Poeciliopsis prolifica*
  - Marco Cordero: Mating behavior in melanistic *Poeciliopsis infans* males
  - Daisy Garcia-Pascual: Testosterone levels in melanistic *Poeciliopsis infans* males
  - Max Gozon†: Mating behaviors in three *Gambusia* species
  - Ally Nguyen†: Metabolic rate in *Heterandria formosa* before and after birth (the manuscript is currently in preparation for publication in a peer-reviewed journal)
  - Mikin Patel†: The Effect of Temperature on Reproductive Behavior in the Guppy (presented as a poster at UCR RISE Research Symposium)
  - Emma Spivey†: The Effect of Progesterone on *Micropoecilia bifurca* (presented as a talk at UCR RISE Research Symposium)
  - Alena Pham†: Male color pattern as a result of domestic-wild type crosses in the guppy, *Poecilia reticulata*

- o Courtney Moulton†: Seasonal impacts on the fat and population cycles of invasive *Gambusia affinis* (presented as a poster at Western Society of Naturalists and the Society for the Advancement of Chicanos and Native Americans in Science. The manuscript is currently in preparation for publication in a peer-reviewed journal)

#### Florida State University

*Women in Math, Science, and Engineering Program (WIMSE)* Aug. 2013-Dec. 2015

- Lived with 31 first-year WIMSE students to help them transition into FSU and understand the research and scholarly opportunities available to them.

*Mentor in Joseph Travis' Lab* Nov. 2015-March 2016

- Mentored Virginia Fourqurean and Samantha Skrob on a subset of my Honor's Thesis on *Heterandria formosa* maternal effects. Samantha Skrob presented this work at the FSU Undergraduate Research symposium as a poster.

### **Service**

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#### New College of Florida

*Outreach (22+ hours)*

March 2023-Present

- Served on the Faculty Advisory Committee for the Environmental Discovery Awards Program as part of the Cross College Alliance
- Co-chaired the Natural Science Colloquium Committee to organize seminar speakers (Fall 2024-Present)
- Hosted members of the local conservation group "Oyster Boys" to bring 42 unique students cumulatively) out to survey vertical oyster gardens at NCF's dock and other docks in the area.
- Hosted over 30 students from the Out of Door Academy for a marine science exhibition.
- Volunteered with the Siesta Key Homeowners Association to assess their artificial reefs, bringing 40 unique NCF student volunteers cumulatively over one year.

#### Western Oregon University

*Outreach (10 hours)*

Sept. 2022-June 2023

- Represented the Biology Department at Girl Scouts and WOU-sponsored events, presenting biology activities to over 363 attendees.
- Hosted 21 Central High School (Monmouth) students in the Marine Ecology wet lab.

#### University of California, Riverside

*Graduate Student Volunteer (43 hours)*

Jan. 2017-May 2022

- Coordinated monthly workshops with nearby STEM Academy students to plan for their competition in the STEM Olympiad in 2017. 18 students competed in Ecology, Anatomy & Physiology, and Herpetology subjects.
- Assisted with EEOB GSA-coordinated volunteer events, such as judging science fairs, mentoring Science Olympiad students, tabling at the monthly Riverside Farmer's market and attending STEM Day events for students ranging from elementary to high school.
- Assisted with 2017 UCR Earth Day 5k Activities.

#### Florida State University

*Undergraduate Volunteer (211 hours)*

Aug. 2012-April 2016

- Organized volunteer events with WIMSE for STEM events through FSU Schools and Girl Scouts.
- Created science-related service events through the WIMSE Student Activities Council, including FSU Schools and Girl Scouts.
- Worked with WIMSE teams for Relay for Life, a cancer fundraiser, and "The Big Event" to combat pollution problems in the community.

#### Mote Marine Laboratory

*Volunteer and High School Intern (800+ Hours)*

Aug. 2009-Sept. 2014

- Assisted with the cleaning, feeding, shipping, and maintenance in the Seahorse Conservation Laboratory containing over 600 seahorses and pipefish.
- Worked with educational/overnight school and summer programs with over 20 schoolchildren at a time, ages ranging from preschool to high school.
- Assisted in Spotted Eagle Ray research and conservation outreach.
- Attended workshops and meetings where public speaking and other presentation tactics are extensively practiced.
- Worked with Dr. Eugenie Clark on pikeblennies, *Chaenopsis spp.* from Andros, Bahamas.