

**W. Ryan James**  
Postdoctoral Associate  
Florida International University  
**Curriculum Vitae, November 30, 2020**  
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## EDUCATION

**PhD Environmental and Evolutionary Biology:** University of Louisiana Lafayette, 2020

Dissertation: A seascape approach to understanding coastal food web dynamics and species distributions

Advisor: James Nelson

**MS Biology:** University of Alabama at Birmingham, 2016

Thesis: An investigation into the developmental response the amphipod *Hyalella azteca* to different predator-related chemical cues

Advisor: James B. McClintock

**BS Biology:** University of Alabama, 2013

Summa Cum Laude, University Honors program

Advisor: Ryan L. Earley

## PUBLICATIONS

Nelson JA, Harris JM, Lesser JS, **James WR**, Suir SM, & WP Broussard III (2020) New mapping metrics to test functional response of food webs to coastal restoration. *Food webs* <https://doi.org/10.1016/j.fooweb.2020.e00179>

*\*Special issue: Restoration Initiatives Viewed Through a Lens of Food Web Structure and Dynamics*

Jones SF, Stagg CL, Yando ES, **James WR**, Buffington KJ, & MW Hester (2020) Quantifying and mapping plant community resilience along a stress gradient. *Journal of Ecology* <https://doi.org/10.1111/1365-2745.13552>

*\*Special issue: Reconciling resilience across ecological systems, species and subdisciplines.*

Baker R, Taylor MD, Beck MW, Cebrian J, Colombano DD, Connolly RM, Currin C, Deegan LA, Feller IC, Gilby BL, Kimball ME, Minello TJ, Rozas LP, Simenstad C, Turner RE, Waltham NJ, Weinstein MP, Ziegler SL, zu Ermgassen PSE, ... **James WR**... (29 additional authors) (2020) Fisheries rely on threatened salt marshes. *Science* DOI: 10.1126/science.abe9332

**James WR**, Topor ZM, & RO Santos (2020) Seascape structure influences the community structure of marsh nekton. *Estuaries & Coasts* doi: 10.1007/s12237-020-00853-7

*\*Special issue: Concepts and controversies in tidal marsh ecology revisited.*

Harris JM<sup>†</sup>, **James WR**<sup>†</sup>, Lesser JS<sup>†</sup>, Doerr JC, & JA Nelson (2020) Foundation species shift alters the energetic landscape of marsh nekton. *Estuaries & Coasts* doi: 10.1007/s12237-020-00852-8

<sup>†</sup>Contributed equally

*\*Special issue: Concepts and controversies in tidal marsh ecology revisited.*

Lesser JS, **James WR**, Stallings CD, Wilson RM, & JA Nelson (2020) Trophic niche size and overlap decrease with increasing ecosystem productivity. *Oikos* doi: 10.1111/oik.07026

**James WR**, JS Lesser, SY Litvin, & JA Nelson (2020) Assessment of food web recovery following restoration using resource use metrics. *Science of the Total Environment* doi: 10.1016/j.scitotenv.2019.134801.

Nelson JA, Lesser JS, **James WR**, Behringer DP, Furka V, & JC Doerr (2019) Food web response to foundation species change in a coastal ecosystem. *Food Webs* e00125  
<https://doi.org/10.1016/j.fooweb.2019.e00125>

Eggenberger CW, Santos RO, Frankovich T, **James WR**, Madden C, Nelson JA, & JS Rehage (2019) Coupling telemetry and stable isotope techniques to unravel movement: Snook habitat use across variable nutrient environments. *Fisheries Research* 218:35-47  
<https://doi.org/10.1016/j.fishres.2019.04.008>

**James WR**, Styga JM, White S, Marson KM, & RL Earley (2018) Developmentally plastic responses to predation threat in the mangrove rivulus fish (*Kryptolebias marmoratus*): behavior and morphology. *Evolutionary Ecology* 32:453-468 <https://doi.org/10.1007/s10682-018-9952-5>

**James WR** & JB McClintock (2017) Conspecific chemical cues influence the efficacy of individual defensive responses to chemical cues from predators. *Hydrobiologia* 797:277-288 doi: 10.1007\_s10750-017-3191-6

Smith KE, Aronson RB, Steffel BV, Amsler MO, Thatje S, Singh H, Anderson J, Brother CJ, Brown A, Ellis DS, Havenhand JN, **James WR**, Mosknes P, Randolph AW, Sayre-McCord T, & JB McClintock (2017) Climate change and the threat of novel marine predators in Antarctica. *Ecosphere* 8(11):e02017. 10.1002/ecs2.2017

## **Pre-prints**

**James WR**, Santos RO, Rehage JS, Doerr JC, & JA Nelson (2020) *E-scape: consumer specific energetic landscapes derived from stable isotope analysis and remote sensing*. *bioRxiv* doi: <https://doi.org/10.1101/2020.08.03.234781>

## **RESEARCH EXPERIENCE**

**Postdoctoral Associate**, September 2020-present

**Florida International University**- Worked on various projects related to coastal food web dynamics, seascape ecology, and fisheries. Helped mentor graduate and undergraduate students, develop and write research proposals, assist with preparation of yearly reports to federal agencies, and coordinated field and sample processing.

**Acoustic Telemetry Technician**, June 2019-August 2020

**Jesco Environmental**- Service and deploy acoustic telemetry array, download and analyze data, assist with final report to monitor sturgeon movement and habitat use in the Piscataqua and Elizabeth rivers.

**Menhaden Port Sampler**, May 2019- January 2020

**Gulf States Marine Fisheries Commission**- Weigh, measure, and plate scales to age fish collected from commercial fisherman in Abbeville, LA to help monitor and manage gulf menhaden fisheries stock.

**Visiting Student Researcher**, July 2016-August 2016

**Stanford University**- Remote sensing of turbidity with UAVs for improved management of water quality in San Francisco Bay. Helped design and run experiments to test the use of NASA's remote sensing MiDAR to detect suspended sediment concentration in the water column.

**A.C.E.S. Intern**, June 2016-August 2016

**NASA Ames Research Center**- Advanced Computing for Earth Sciences (A.C.E.S) Intern in the Laboratory for Advanced Sensing at NASA Ames Research Center. Worked on various projects in remote sensing included the testing and development of the remote sensing technology Multispectral imaging Detection, Active Reflectance (MiDAR), and using computer vision to identify marine benthic organisms.

**Research Assistant**, February 2015-March 2015

**LMG 15-02**- Climate change and the predatory invasion of the Antarctic marine environment

by king crabs (Anomura: Lithodidae)- Helped with the deployment and retrieval of crab pots, processing of crab and other benthic organisms, and analysis of seafloor images aboard the *R/V Laurence M. Gould* to study the effects of climate change on the seafloor community off the coast of the western Antarctic Peninsula.

**Research Assistant**, August 2012- December 2013

**Earley Lab**- Worked on various projects related to understanding animal behavior related to predation and reproduction. Responsibilities included running behavioral trials, video observation for behavioral analysis, geometric morphometric analysis, DNA extraction, and running PCR (microsatellites) and agarose gels.

**Aquarist Intern**, June 2012- August 2012

**McWane Science Center**- Gave short interactive and educational presentations with visitors, as well as fed, cleaned, and maintained the health of aquatic organisms and their environments in the World of Water at the McWane Science Center.

## **PRESENTATIONS AND PUBLISHED ABSTRACTS**

Coastal and Estuarine Research Federation; Mobile, AL (11/19). **James WR**, Geary B, Karubian J, Leberg PL, & Nelson JA. Tracking foraging behavior using consumer-specific energetic landscapes.

Coastal and Estuarine Research Federation; Mobile, AL (11/19). Nelson JA, Lesser JS, & **James WR**. A new niche for isotope ecology: Combining MixSIAR and hypervolume metrics to understand resource use.

Greater Everglades Ecosystem Restoration; Coral Springs, FL (4/19) **James WR**, Santos RO, Rodemann JR, Rehage JS, & JA Nelson. Consumer-specific energetic landscapes in Florida Bay: linking seagrass die off to economically-valuable fisheries.

Gulf Estuarine Research Society; Galveston, TX (11/18) **James WR**, Lesser JS, Litvin SY & Nelson JA. Assessment of food web recovery following restoration using hypervolume analysis.

Gulf Estuarine Research Society; Galveston, TX (11/18) Lesser JS, **James WR**, Doerr J & Nelson JA. Food web effects of mangrove encroachment on estuarine consumers.

LTER Network All Scientists' Meeting; Pacific Grove, CA (9/18) **James WR**, Santos RO, Rehage JS, Doerr J & Nelson JA. Consumer specific energetic landscapes derived from stable isotope analysis and habitat cover.

State of the Coast; New Orleans, LA (5/18) **James WR**, Litvin SY & Nelson JA. Measuring food web response to restoration in coastal ecosystems.

American Geophysical Union; New Orleans, LA (12/17) **James WR** & Nelson JA. Food Web Response to Habitat Restoration in Various Coastal Wetland Ecosystems.

Coastal and Estuarine Research Federation; Providence, RI (11/17). **James WR**, Deegan L, Garritt R & Nelson JA. Residence time of water in estuary alters resource use on multiple trophic levels.

University of Louisiana Graduate Student Symposium; Lafayette, LA (11/16) **James WR** & McClintock JB. Conspecific chemical cues influence the efficacy of individual defense response to chemical cues from predators.

Ocean Optics XXIII; Victoria, BC (10/16). Adelson J, **James WR**, Chirayath V & Fringer O. A novel approach for estimating vertical profiles of suspended sediment concentration.

Society of Integrative & Comparative Biology; Portland, OR (1/16). **James WR** & McClintock JB. Do conspecific chemical cues from prey groups influence individual phenotypic plasticity in response to predators?

Ecological Society of America; Baltimore, MD (8/15). **James WR** & McClintock JB. Prey groups influence the efficacy of individual defensive responses to chemical cues from predators.

University of Alabama at Birmingham Darwin Days: Birmingham, AL (2/15). **James WR** & McClintock JB. An evaluation of phenotypic plasticity in the early life history of the freshwater amphipod *Hyaella azteca* in response to a predator-related-cue.

Society of Integrative & Comparative Biology; West Palm Beach, FL (1/15). **James WR** & McClintock JB. An evaluation of phenotypic plasticity in the early life history of the freshwater amphipod *Hyaella azteca* in response to a predator-related-cue.

Society of Integrative & Comparative Biology; Austin, TX (1/14). **James WR**, White S & Earley RL. Developmental response to predator-related cues.

University of Alabama Undergraduate Research & Creative Activities Conference (4/13). White S, **James WR** & Earley RL. Developmental response to predator-related cues.

University of Alabama Undergraduate Research & Creative Activities Conference (4/13). Lenox A, White S, **James WR** & Earley RL. Effect of male presence on outcrossing in *Kryptolebias marmoratus*.

## **GRANTS**

UL Graduate Student Organization Research Supply Grant; \$1060 total (2016-2020)  
UL Graduate Student Organization Travel Grant; \$1240 total (2017, 2018, 2019)  
Coastal and Estuarine Research Federation Travel Grant; \$300 (2017)  
Ted Beaulieu Sr. Coastal Conservation Association Louisiana Scholarship; \$5000 (2016)  
UAB Biology Department Travel Grant; \$400 (2015)  
Society for Integrative and Comparative Biology Grant in Aid of Research; \$850 (2015)  
Sigma Xi Grant in Aid of Research; \$400 (2015)

## **AWARDS AND HONORS**

University of Louisiana Graduate School Research Showcase Paper Competition Winner (2020)  
University of Louisiana Graduate School ‘Say it in 6’ Winner (2020)  
Louisiana Sea Grant Discovery, Integration, Application (LaDIA) Graduate Research Scholar (2018)  
Louisiana Sea Grant Coastal Connections 3 Minute Thesis Competition Winner; \$500 (2017)  
University of Louisiana Doctoral Fellowship (2016)  
National Science Foundation Antarctic Service Medal (2016)  
Charlotte Magnum Student Support Program (2014, 2015)  
UAB Graduate Teaching Fellowship (2014)  
Honorable Mention in the Division of Natural Sciences and Mathematics at the Annual University of Alabama Undergraduate Research and Creative Activities Conference (2013)  
University of Alabama Department of Chemistry Outstanding General Chemistry Student Award (2011)

## **PROFESSIONAL DEVELOPMENT**

**Louisiana Sea Grant Coastal Immersion Program**, December 2018,  
**Louisiana Sea Grant**- One-week coastal immersion field course combining community engagement and science communication to highlight the needs of coastal residents and the importance of responsive, integrated research initiatives.

**Small Boat Operations for Marine Scientists**, June 2017,  
**Louisiana Universities Marine Consortium (LUMCON)**- One-week training course on how to operate small boats for scientific research.

**Use of Stable Isotopes & Fatty Acids in Aquatic Ecology: Theory & Practice**, January 2017, **Universidad de Antofagasta**- One-week course on the use of stable isotopes and fatty acids in aquatic ecology and the statistical and modeling approaches needed for stable isotope and fatty acid analysis.

**Advanced Computing for Earth Sciences**, June 2016, **University of Virginia**- Three-week course on python based programming and introduction into advanced programming and supercomputing computing.

## **ACADEMIC AND PROFESSIONAL SERVICE**

### **Peer Reviewer**

- *Marine Biology* (11/20)
- *Ecological Engineering* (11/20)
- *Estuarine, Coastal and Shelf Science* (8/20)
- *Proceedings of the Royal Society B* (10/19)
- *Biology Letters* (1/19, 8/19)
- *Marine Ecology Progress Series* (7/17, 8/19)
- *Thalassas* (9/17)
- *Invertebrate Biology* (8/15)

### **Florida Coastal Everglades LTER Graduate Student Executive Board – 2018 - 2019**

- Served as off-campus representative to help plan and organize FCE LTER graduate student events.

### **UL Graduate Student Symposium Committee Member – Univ of Louisiana, 2017- 2019**

- Helped organize, fundraise, and plan the University of Louisiana Graduate Student Symposium.

### **LTER Network All Scientists' Meeting Workshop Organizer – 2018**

- Co-organized the workshop session “Incorporating the spatial ecology of consumers into long-term research”

### **Ecological Society of America Student Section Travel Award Reviewer – 2018**

- Reviewed applications for the student section travel award to attend the Ecological Society of America Annual meeting in New Orleans

### **Science Fair Judge - Avondale Elementary School Science Fair, 2015**

- Judged the poster presentations of K-5 students competing in the science fair

## EDUCATIONAL OUTREACH

### UL Undergraduate Student Research Mentor – 2017- present

- Laura McDonald – The energy storage of nekton species in coastal Louisiana habitats
  - Presented at the Coastal and Estuarine Research Federation meeting (CERF 2019) in Mobile, AL
  - Presented research at the UL Biology undergraduate research conference
- The effect of feeding mode on energy storage in three fish species
  - Presented research at the UL honors program undergraduate research conference
- Blake Kitchen - The role of food quality in growth and energy storage in killifish

### UAB Undergraduate Student Research Mentor - 2015-2016

- Ciara Duncan - Predators effect the foraging behavior of the amphipod *Hyaella azteca*
  - Received 2<sup>nd</sup> place award for poster presentation at UAB Undergraduate Student Research Days
- Keegan McFarland and Deontae Mitchell - Transgenerational effects of predator exposure of the amphipod *Hyaella azteca*

### Participant- UAB in Antarctica, 2015

- Regularly communicated with 5<sup>th</sup> grade science classes from the Birmingham City School System while aboard the R/V Laurence M. Gould
- Gave classroom presentations on the effects of climate change in Antarctica
- Research featured in *The Birmingham News* and UAB's website

### Student Mentor- Birmingham Elementary School Science Fair Mentorship Pilot Program, 2014

- Mentored two 5<sup>th</sup> grade students in the development, execution, and presentation of their experiments for the school science fair

## TEACHING EXPERIENCE

### Teaching Assistant

- **BIOL 446** (Fish Ecology and Management at ULL)
  - Spring 2020
- **BIOL 595** (Introduction to R at ULL)
  - Fall 2019
- **BIOL 113** (Fundamentals of Biology II Lab at ULL)
  - Spring 2018
- **BIOL 495** (Landscape Ecology at ULL)



- Fall 2017
- **BY 123 Lab** (Introductory Biology Lab for Majors at UAB)
  - Fall 2014 - Spring 2016, 9 total sections

### **Guest Lectures**

- “Introduction to food webs” February 2020, BIOL 312 (Intro to Coastal Ecology)
- “Data wrangling in R” (2 part) September 2019, BIOL 502 (Quantitative Ecology)
- “Effect of landscape pattern on ecological processes” (3 part) April 2019, BIOL 495/595 (Ecosystem landscape ecology)
- “Maximum entropy ecological niche modeling in R” April 2019, BIOL 503 (Ecological models and data)
- “Long distance prey finding” October 2015, BY 474 (Chemical Ecology)

### **SKILLS**

**Field:** Small boat operation; NAUI Open Water Certified Diver; Acoustic telemetry- tagging, deploying, data download; Specimen collection- Seine, gillnet, longline, crab pots, trawl, drop samplers, hook and line

**Computer Software:** R, ArcGIS, QGIS, Python, MATLAB, ImageJ, Jwatcher