

W. Ryan James
Research Assistant Professor
Florida International University
Curriculum Vitae, August 9, 2025
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EDUCATION

2020	PhD Environmental and Evolutionary Biology University of Louisiana at Lafayette (Advisor: James A. Nelson)
2016	MS Biology University of Alabama at Birmingham (Advisor: James B. McClintock)
2013	BS Biology University of Alabama (Advisor: Ryan L. Earley)

EMPLOYMENT

2025-Current	Research Assistant Professor - Institute of Environment Florida International University, <i>Miami, FL</i>
2022-2025	Senior Postdoctoral Research Associate - Institute of Environment Florida International University, <i>Miami, FL</i> (Advisors: Dr. Rolando O. Santos, Dr. Jennifer S. Rehage)
2020-2022	Postdoctoral Research Associate – Institute of Environment Florida International University, <i>Miami, FL</i> (Advisors: Dr. Rolando O. Santos, Dr. Jennifer S. Rehage)
2016-2020	University Doctoral Fellow – Ecosystem Ecology Lab University of Louisiana at Lafayette, <i>Lafayette, Louisiana</i>
2019-2020	Acoustic Telemetry Technician Jesco Environmental, <i>Portsmouth, New Hampshire</i>
2019-2020	Menhaden Port Sampler Gulf States Marine Fisheries Commission, <i>Abbeville, Louisiana</i>
2016	ACES Intern – Lab for Advanced Sensing NASA Ames Research Center, <i>Mountain View, California</i> (Mentor: Dr. Ved Chirayath)
2014-2016	Graduate Teaching Assistant – McClintock Lab University of Alabama at Birmingham, <i>Birmingham, AL</i>
2012-2014	Research Assistant – Earley Animal Behavior Lab University of Alabama, <i>Tuscaloosa, AL</i>

PUBLICATIONS

47. White M, **James WR**, Lesser JS, Rezek RJ, Rodemann JR, Boucek RE, Santos RO, & JS Rehage (*accepted*) Linking hydrology, temperature, and energetics: global change implications for the foraging ecology of a generalist predator. *Marine and Coastal Fisheries*
**Themed issue: Ecology and Management of Snook Centropomus spp. in the Americas*
46. Massie JA, Rezek RJ, Santos RO, **James WR**, Viadero NM, Boucek RE, & JS Rehage (*accepted*) Long-term patterns in the relative abundance of Common Snook as a factor of shifting environmental conditions in the Florida Coastal Everglades. *Marine and Coastal Fisheries*
**Themed issue: Ecology and Management of Snook Centropomus spp. in the Americas*

45. Viadero NM, Massie JA, Eggenberger CW, **James WR**, Boucek RE, Rezek RJ, RO Santos, & JS Rehage (2025) Between a dry marsh and a salty place: estuarine habitat suitability for a freshwater fish (Florida largemouth bass) and implications for ecosystem restoration and climate change. *Estuaries & Coasts* <https://doi.org/10.1007/s12237-025-01561-w>
44. Rehage JS, Castillo NA, Distrubell A, Trabelsi S, Santos RO, **James WR**, Rezek R, Cervený D, Boucek RE, Adams AJ, Fick J, & T Brodin (2025) A multi-estuary assessment of pharmaceutical exposure and risk of pharmacological effects in a recreational fishery. *Environmental Toxicology and Chemistry* <https://doi.org/10.1093/etjnl/vgaf125>
43. **James WR**, Castillo NA, Distrubell, Trabelsi S, Santos RO, Cervený D, Rezek RJ, Boucek RE, Adams AJ, Fick J, Brodin T, & JS Rehage (2025) Occurrence of pharmaceuticals in muscle tissue of red drum (*Sciaenops ocellatus*) across subtropical estuaries: comparison to blood plasma and implications for human exposure. *Science of the Total Environment* <https://doi.org/10.1016/j.scitotenv.2025.179106>
42. Rodemann JR, **James WR**, Rehage JS, Furman BT, Pittman SJ, & RO Santos (2025) Response of submerged aquatic vegetation to a large-scale seagrass die-off: a case study in Florida Bay. *Estuarine, Coastal and Shelf Science* <https://doi.org/10.1016/j.ecss.2025.109221>
41. Santos RO, **James WR**, Rehage JS, Eggenberger CW, Lesser JS, & CJ Madden (2025) Trophic niche dynamics of two fish mesoconsumers in adjacent coastal habitats with varying nutrient regimes. *Oecologia* <https://doi.org/10.1007/s00442-025-05680-w>
40. Santos RO, White M, **James WR**, Viadero NM, Massie JA, Boucek RE, & JS Rehage (2025) Cause and consequences of individual variability in space use in subtropical riverscapes. *Scientific Reports* <https://doi.org/10.1038/s41598-024-82158-4>
39. Jones BLH, Santos RO, **James WR**, Shephard S, Adams AJ, Boucek RE, Coals L, Costa SV, Cullen-Unsworth LC, & JS Rehage (2025) Diversity trumps ability: employing the Wisdom of Crowds for fisheries management. *Scientific Reports* <https://doi.org/10.1038/s41598-024-84970-4>
38. Ziegler SL, **James WR**, Alber M, & JE Byers (2024) Seascape structure likely influences resource use of marsh-associated estuarine consumers over a small spatial scale. *Marine Ecology Progress Series* <https://doi.org/10.3354/meps14755>
37. Castillo NA, Santos RO, **James WR**, Rezek RJ, Cervany D, Boucek RE, Fick J, Brodin T, & JS Rehage (2024) Widespread pharmaceutical exposure at concentrations of concern for a subtropical coastal fishery: Bonefish (*Albula vulpes*). *Marine Pollution Bulletin* <https://doi.org/10.1016/j.marpolbul.2024.117143>
(Pre-print SSRN Electronic Journal doi: 10.2139/ssrn.4394268)
36. Kahmann G, Rehage JS, Massie JA, Nelson JA, Santos RO, Viadero NM, **James WR**, Boucek RE, Crane DP, & RJ Rezek (2024) Trophic niche of a nonnative invader and environmental drivers of its increasing populations in the coastal Everglades. *Biological Invasions* <https://doi.org/10.1007/s10530-024-03444-w>
35. Castillo NA, Santos RO, **James WR**, Rezek RJ, Cervený D, Boucek RE, Adams AJ, Fick J, Brodin T, & JS Rehage (2024) Differential tissue distribution of pharmaceuticals in a wild subtropical marine fish. *Aquatic Toxicology* <https://doi.org/10.1016/j.aquatox.2024.107064>

34. Castillo NA, **James WR**, Santos RO, Rezek RJ, Cervený D, Boucek RE, Adams AJ, Trabelsi S, Distrubell A, Sanquist M, Fick J, Brodin T, & Rehage JS (2024) Identifying pathways of pharmaceutical exposure in a mesoconsumer marine fish. *Journal of Hazardous Materials* <https://doi.org/10.1016/j.jhazmat.2024.135382>
33. **James WR**, Furman BT, Rodemann JR, Costa SV, Fratto ZW, Nelson JA, Rehage JS, & RO Santos (2024) Widespread habitat loss leads to ecosystem-scale decrease in trophic function. *Global Change Biology* <https://doi.org/10.1111/gcb.17263>
32. Jones BLH, Santos RO, **James WR**, Costa SV, Adams AJ, Boucek RE, Coals LRM, Cullen-Unsworth LC, Shephard S, & JS Rehage (2024) Lack of evolution in fisheries-associated Indigenous and local knowledge research reveals opportunities for growth. *Fish and Fisheries* <https://doi.org/10.1111/faf.12831>
31. Raoult V, Phillips AA, Nelson JA, Niella Y, Skinner C, Tilcock MB, Burke PJ, Szpak P, **James WR**, & C Harrod (2024) Why aquatic scientists should use sulfur stable isotope ratios ($\delta^{34}\text{S}$) more often. *Chemosphere* <https://doi.org/10.1016/j.chemosphere.2024.141816>
30. Castillo NA, **James WR**, Santos RO, Cervený D, Boucek RE, Adams AJ, Goldberg T, Campbell L, Perez AU, Schmitter-Soto JJ, Lewis JP, Fick J, Brodin T, & JS Rehage (2024) Understanding pharmaceutical exposure and the potential for effects in marine biota: a survey of bonefish (*Albula vulpes*) across the Caribbean Basin. *Chemosphere* <https://doi.org/10.1016/j.chemosphere.2023.140949>
29. Gervasi CL, Karnauskas M, Rios A, Santos RO, **James WR**, Rezek RJ, & JS Rehage (2023) Rapid approach for assessing an unregulated fishery using a series of data-limited tools. *Marine and Coastal Fisheries* <https://doi.org/10.1002/mcf2.10270>
*2023 Best Paper in Marine and Coastal by American Fisheries Society
28. Yando ES*, Jones SF*, **James WR***, Colombano DD, Montemayor DI, Nolte S, Raw JL, Ziegler SL, Chen L, Daffonchio D, Fusi M, Rogers K, & L Sergienko. (2023) An integrative salt marsh conceptual framework for global comparisons. *Limnology and Oceanography Letters* <https://doi.org/10.1002/lol2.10346>
*Contributed equally
27. Iporac LAR, **James WR**, & Collado-Vides L (2023) Characterizing potential resource use of sargasso-dominant sea wrack by terrestrial invertebrate fauna during sargasso influxes in South Florida. *Estuarine, Coastal and Shelf Science* <https://doi.org/10.1016/j.ecss.2023.108414>
26. Rezek RJ, Massie JA, Nelson JA, Santos RO, Viadero NM, **James WR**, Boucek RE, & JS Rehage (2023) The effects of temperature and flooding duration on the structure and magnitude of a floodplain prey subsidy. *Freshwater Biology* <https://doi.org/10.1111/fwb.14145>
25. Rodemann JR, **James WR**, Rehage JS, Baktoft H, Costa SV, Ellis RD, Gonzalez L & RO Santos (2023) Residency and fine-scale habitat use of juvenile goliath grouper (*Epinephelus itajara*) in a mangrove nursery. *Bulletin of Marine Science* <https://doi.org/10.5343/bms.2022.0061>
24. Calhoun-Grosch S, Foster EM, **James WR**, Santos RO, Rehage JS, & JA Nelson (2023) Trophic niche metrics reveal long-term shift in Florida Bay food webs. *Ecosystems* <https://doi.org/10.1007/s10021-023-00825-5>

23. Massie JA, Santos, RO, Rezek, RJ, **James, WR**, Viadero, NM, Boucek, RE, Blewett DA, Trotter AA, Stevens PW, & JS Rehage (2022). Primed and cued: long-term acoustic telemetry links interannual and seasonal variations in freshwater flows to the spawning migrations of Common Snook in the Florida Everglades. *Movement Ecology* <https://doi.org/10.1186/s40462-022-00350-5>
22. Gervasi CL, Nelson JA, Swart PK, Santos RO, Rezek RJ, **James WR**, Jefferson AE, Drymon JM, Carroll J, Boucek RE, & JS Rehage (2022) Otolith stable isotope micro-sampling to discriminate poorly studied stocks: Crevalle Jack in the eastern Gulf of Mexico. *Estuarine, Coastal and Shelf Science* <https://doi.org/10.1016/j.ecss.2022.108130>
21. **James WR**, Bautista V, Rezek RJ, Zink IC, Rehage JS, & RO Santos (2022) A review of the potential impacts of commercial inshore pink shrimp fisheries on recreational flats fisheries in Biscayne Bay, FL, USA. *Environmental Biology of Fishes* <https://doi.org/10.1007/s10641-022-01319-4>
**Special issue: Conservation Connections: Science informing management for flats fisheries*
20. Rezek RJ, **James WR**, Bautista V, Zink IC, Rehage JS, & RO Santos (2022) Temporal trends of Biscayne Bay pink shrimp fisheries catch and economic indicators. *Environmental Biology of Fishes* <https://doi.org/10.1007/s10641-022-01314-9>
**Special issue: Conservation Connections: Science informing management for flats fisheries*
19. **James WR**, Santos RO, Rodemann JR, Rezek RJ, Fratto ZW, Furman BT, Hall MO, Kelble CR, Rehage JS, & JA Nelson (2022) Widespread seagrass die-off has no legacy effect on basal resource use of seagrass food webs in Florida Bay, USA. *ICES Journal of Marine Science fsac112*, <https://doi.org/10.1093/icesjms/fsac112>
18. Santos RO, **James WR**, Nelson JA, Rehage JS, Serafy J, Pittman SJ, & D Lirman (2022) Influence of seascape spatial pattern on the trophic niche of an omnivorous fish. *Ecosphere* <https://doi.org/10.1002/ecs2.3944>
17. **James WR**, Santos RO, Rehage JS, Doerr JC, & JA Nelson (2021) E-scape: consumer specific landscapes of energetic resources derived from stable isotope analysis and remote sensing. *Journal of Animal Ecology* <https://doi.org/10.1111/1365-2656.13637>
 (Pre-print bioRxiv 2020 doi: <https://doi.org/10.1101/2020.08.03.234781>)
16. Rodemann JR, **James WR**, Santos RO, Furman BT, Fratto ZW, Bautista V, Hernandez JL, Viadero NM, Linenfelser JO, Lacy LA, Hall MO, Kelble CR, Kavanaugh C, & JS Rehage (2021) Impact of extreme disturbances on suspended sediment in Western Florida Bay: Implications for seagrass resilience. *Frontiers in Marine Science* <https://doi.org/10.3389/fmars.2021.633240>
**Special issue: Environmental Threats to the State of Florida—Climate Change and Beyond*
15. Gervasi CL, Santos RO, Rezek RJ, **James WR**, Boucek RE, Bradshaw C, Kavanagh C, Osborne J, & JS Rehage (2021) Bottom-up conservation: Using translational ecology to inform conservation priorities for a recreational fishery. *Canadian Journal of Fisheries and Aquatic Sciences* <https://doi.org/10.1139/cjfas-2021-0024>
14. Kimball ME, Connolly RM, Alford SB, Colombano DD, **James WR**, Kenworth MD, Norris GS, Ollerhead J, Ramsden S, Rehage JS, Sparks EL, Waltham NJ, Worthington TA, & MD Taylor (2021) Novel applications of technology for advancing tidal marsh ecology. *Estuaries & Coasts* doi: 10.1007/s12237-021-00939-w
**Special issue: Concepts and controversies in tidal marsh ecology revisited.*

13. Pittman SJ, Yates KL, Bouchet PJ,... **James WR**... (34 additional authors) (2021) Seascape ecology: Identifying research priorities for an emerging ocean sustainability science. *Marine Ecology Progress Series* <https://doi.org/10.3354/meps13661>
12. 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*
11. Jones SF, Stagg CL, Yando ES, **James WR**, Buffington KJ, & MW Hester (2020) Stress gradients interact with disturbance to reveal alternative states in salt marsh: Multivariate resilience at the landscape scale. *Journal of Ecology* <https://doi.org/10.1111/1365-2745.13552>
**Special issue: Reconciling resilience across ecological systems, species and subdisciplines.*
10. 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
9. **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.*
8. Harris JM[†], **James WR**[†], Lesser JS[†], Doerr JC, & JA Nelson (2020) Foundation species shift alters the energetic landscape of marsh nekton. *Estuaries & Coasts* doi: 10.1007/s12237-020-00852-8
[†]Contributed equally
**Special issue: Concepts and controversies in tidal marsh ecology revisited.*
7. 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
6. **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.
5. 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>
4. 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* <https://doi.org/10.1016/j.fishres.2019.04.008>
3. **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* <https://doi.org/10.1007/s10682-018-9952-5>
2. **James WR** & JB McClintock (2017) Anti-predator responses of amphipods are more effective in the presence of conspecific chemical cues. *Hydrobiologia* <https://doi.org/10.1007/s10750-017-3191-6>

1. 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* <https://doi.org/10.1002/ecs2.2017>

Manuscripts under review

- Geary B, **James WR**, Karubian J, Nelson JA, & PL Leberg (*in revision*) Remote sensing and foraging data illustrate landscape-scale considerations for coastal restoration and avian management.
- Sturges JW, **James WR**, Rezek RJ, Santos RO, White M, Badlowski GA, Trabelsi S, Massie, JA, Nelson JA, Trexler JC, & JS Rehage (*in revision*) Seasonality drives green and brown energy pathways in food webs across an ecosystem gradient.
- Linenfelter JO, **James WR**, Rezek RJ, Santos RO, Frankovich TA, Madden C, Nelson JA, & JS Rehage (*in review*) Tracing the source of nutrients entering North-Central Florida Bay: a stable isotope approach.
- Rivas N, **James WR**, Bautista V, Sandquist M, Guerriero AF, Arias SB, Mercado A, Rehage JS, & RO Santos (*in review*) Tipping the balance: Reef community shifts after a regional urchin population collapse.
- Rodemann JR, **James WR**, Rehage JS, Santos RO, Fratto ZW, Strazisar T, Madden CJ, & TA Frankovich (*in revision*) Drivers of Spatiotemporal SAV Dynamics in the Coastal Lakes of Everglades National Park.
- Rodemann JR, White M, **James WR**, Santos RO, Griffin LP, Costa SV, Furman BT, Pittman SJ, Gann D, & JS Rehage (*in review*) Hierarchical habitat selection by a predatory fish in a patchy seascape.
- Massie JA, Rezek RJ, **James WR**, Santos RO, Viadero NM, Boucek RE, & JS Rehage (*in revision*) When the timing is right: linking a seasonal freshwater prey subsidy to the body condition of an estuarine consumer in a subtropical coastal river.
- Herlan JJ, Staniczenko PPA, Loh JM, Santos RO, **James WR**, Gleason ACR, Edwards C, Gosnell JS, McDonald KC, Friedlander AM, & C Gaymer (*in review*) Impact of wave exposure and habitat structural complexity on the reefscape ecology at Rapa Nui
- Goldner VS, White M, Eggenberger C, Jones AA, Atkinson CC, Rodemann JR, **James WR**, Massie JA, Kroetz AM, O'Donnell PM, Boucek RE, Santos RO, & JS Rehage (*in review*) Gone but not forgotten: collaborative telemetry network provides insight into out-of-system movements of Common Snook (*Centropomus undecimalis*).

FUNDING (\$7,114,701.93 total funding)

- 2025** A holistic assessment of the Florida Keys flats food web – PI: Funded by Bonefish and Tarpon Trust, \$277,000 (2025-2027)
- Coastal Riverine Fish Dynamics and Marsh-Mangrove Habitat Use in Shark River Slough, Florida – Co-PI: Funded by United States Army Core of Engineers REStoration COordination and VERification (RECOVER) program of the Comprehensive Everglades Restoration Plan (CERP), \$883,142 (2025-2030)

- 2024** Understanding seascapes, susceptibility, and food web impacts of the fish spinning phenomenon in the Florida Keys – PI: Funded by Bonefish and Tarpon Trust, \$227,053 (2024-2025)
- SAV Mapping of Biscayne Bay, Florida for SIMM – Co-PI: Funded by Florida Fish and Wildlife Commission, \$48,000 (2024-2025)
- The role of coastal lakes in Florida Bay as fish habitat for critical recreational fisheries: Movement and trophic research – Co-PI: Funded by South Florida Water Management District, \$98,847 (2024-2025)
- Assess Impacts of Trawling on Species and Habitats within Biscayne Bay – Co-PI: Funded by National Park Service, \$245,804 (2024-2026)
- Assessing spatiotemporal responses to CERP by coastal fish assemblages across Everglades National Park – Co-PI: Funded by National Park Service, \$225,101 (2024-2026)
- Assessing the resilience of coastal fisheries to press and pulse disturbances in Everglades National Park through a comprehensive analysis of fisheries-dependent records – Co-PI: Funded by National Park Service, \$283,498 (2024-2026)
- Enhancing our understanding of seagrass health: critical thresholds and effects of land based pollution from nutrients & emergent contaminants in Biscayne Bay – Co-PI: Funded by US Environmental Protection Agency South Florida Geographic Program, \$649,956 (2024-2025)
- 2023** A nationwide survey of pharmaceutical exposure in national parks – PI: Funded by National Park Service, \$60,000 (2023-2025)
- Spatiotemporal variation of Permit diet and resource use across the Florida Keys – PI: Funded by Bonefish and Tarpon Trust, \$5,000 (2023-2024)
- Developing a standardized assessment protocol for flats fisheries – Co-PI: Funded by Bonefish and Tarpon Trust, \$216,406 (2023-2024)
- Role of coastal lakes as habitat for recreational fisheries – Co-PI: Funded by South Florida Water Management District (2023) \$142,482
- Increasing knowledge of Biscayne Bay's science status and trends: Identify monitoring course of action through a synthesis of experts' knowledge – Co-PI: Funded by Florida Sea Grant (2023), \$9,708
- 2022** Seagrass seascape state, stability, and function in relation to water quality in Biscayne Bay – PI: Funded by US Environmental Protection Agency South Florida Geographic Program (2022-24), \$347,738
- RAPID: Here we go again - The fate of *Diadema antillarum* and Caribbean reefs in the 21st century – Co-PI: Funded by National Science Foundation, Biological Oceanography (2022-2023), \$199,676

An examination of the risk of pharmaceuticals in South Florida: extent and pathways of exposure in a valuable recreational fishery, bonefish – Co-PI: Funded by US Environmental Protection Agency South Florida Geographic Program (2022-24), \$292,530

A Statewide survey of pharmaceutical exposure: Red Drum in 9 Florida estuaries – Co-PI: Funded by Bonefish and Tarpon Trust (2022), \$158,149

Quantifying ecological importance, historical threat exposure and resilience potential for coral reef Areas of Special Interest in Puerto Rico’s Northeast Marine Corridor to support efficient conservation goals – Co-PI: Funded by Puerto Rico Sea Grant College Program (2022-24), \$181,942

Redesign of the Everglades fishing guide reporting system – Co-PI: Funded by Everglades National Park (2022-2023), \$109,028

Role of coastal lakes as habitat for recreational fisheries – Co-PI: Funded by South Florida Water Management District (2022), \$170,000

An Examination of Wastewater Treatment in Miami-Dade and Monroe Counties: a focus on the removal of pharmaceuticals and potential threat to water quality in the Everglades and Biscayne Bay – Co-PI and REU mentor: Funded by National Science Foundation, Florida Coastal Everglades Long-term Ecological Research (DEB-2025954), Research Experiences for Undergraduates (REU) (2022), \$6,750

2021 FISHSCAPE Project (Fish In Seagrass Habitats: Seascape Connectivity Across Protected Ecosystems)– Postdoc and grant writer: Funded by NOAA National Centers for Coastal Ocean Science (2021-25), \$1,916,914

Biscayne Bay shrimp commercial harvest and its potential ecological impacts on the recreationally fish species – Co-PI: Funded by Bonefish and Tarpon Trust (2021), \$16,575

The effects of the legacies of a large-scale seagrass die-off on energy resources and foraging of a top consumer – Co-PI and REU mentor: Funded by National Science Foundation, Florida Coastal Everglades Long-term Ecological Research (DEB-2025954), Research Experiences for Undergraduates (REU) (2021), \$6,750

2016-2020 UL University Fellow; \$90,000

UL Graduate Student Organization Research Supply Grant; \$1060 total

2017-2019 UL Graduate Student Organization Travel Grant; \$1240 total

2017 Coastal and Estuarine Research Federation Travel Grant; \$300

2016 Ted Beaulieu Sr. Coastal Conservation Association Louisiana Scholarship; \$5000

2015 UAB Biology Department Travel Grant; \$400

Society for Integrative and Comparative Biology Grant in Aid of Research; \$850

Sigma Xi Grant in Aid of Research; \$400

Proposals pending or not selected for funding

2024 An evaluation of climate-driven changes in South Atlantic Fisheries – PI: Submitted to South Atlantic Fisheries Management Council, \$324,874 (*Pending*)

- 2023** Accentuating natural defenses: strategic mangrove planting to enhance coastal wetland resilience – Co-PI: Submitted to NOAA Transformational Habitat Restoration, \$3,084,004 (*Not selected for funding*)
- Assessing the functionality and coral demographic performance of reefs as a function of environmental and sediment-turf conditions to inform restoration suitability across South Florida – Co-PI: Submitted to US Environmental Protection Agency South Florida Geographic Program, \$644,158 (*Not selected for funding*)
- Influence of habitat degradation on the ecology, behavior and health status of coastal bottlenose dolphins in Biscayne Bay - Co-PI: Submitted to US Environmental Protection Agency South Florida Geographic Program, \$391,573 (*Not selected for funding*)
- Quantifying coral demographic performance across trait space: Assessing functionality of coral reefs across South Florida Reef Tract – Co-PI: Submitted to Florida Sea Grant College Program, \$185,502 (*Not selected for funding*)
- 2022** Visual identification, population assessment, and habitat suitability of juvenile Goliath Grouper (*Epinephelus itajara*) in South Florida – Co-PI: Submitted to NOAA Marine Fisheries Initiative, \$524,566 (*Not selected for funding*)
- Examining juvenile Goliath Grouper habitat use and abundance patterns in Florida Bay and the Florida Keys – Co-PI: Submitted to NOAA Cooperative Research Program, \$198,623 (*Not selected for funding*)
- Standardizing and comparing food web structure and function across LTER sites - PI: Submitted to National Center for Ecological Analysis and Synthesis, \$109,200 (*Not selected for funding*)
- 2021** The influence of nearshore inputs (freshwater inflows) on the habitat use of an ecosystem indicator species: Spotted Seatrout in Florida Bay – Co-PI: Submitted to the US Coastal Research Program, \$279,158 (*Not selected for funding*)
- Assessing the resilience of coastal fisheries through a comprehensive analysis of fisheries-dependent records: the Everglades as a case study – Co-PI: Submitted to the US Coastal Research Program, \$283,844 (*Not selected for funding*)
- Quantifying coral demographic performance within a functional trait space to inform coastal ecosystem conservation – Co-PI: Submitted to the US Coastal Research Program, \$299,005 (*Not selected for funding*)
- 2020** Critical data for Dolphin (*Coryphaena hippurus*) fisheries sustainability: Assessing stock structure, properties, trends & vulnerabilities across U.S. jurisdictions – Co-PI: Submitted to NOAA Marine Fisheries Initiative, \$524,000 (*Not selected for funding*)

MENTORING

2022-Present Graduate Mentorship and Committee Service

Co-Major Advisor – Alia Jones, PhD Earth & Environment, FIU, 2024-present

Co-Major Advisor – Camille Demaire, PhD Earth & Environment, FIU, 2024-present

Committee Member – Hannah-Marie Lamle, PhD Biology, FIU, 2023-present

Committee Member – Gina Badlowski, PhD Biology, FIU, 2022-present

Committee Member – Marianna Coppola, PhD Biology, FIU, 2022-present
Committee Member – Sophia Costa, PhD Biology, FIU, 2022-present
Committee Member – Andy Distrubell, MS Earth & Environment, FIU, 2023-present
Committee Member – Valentina Bautista, MS Biology, FIU, 2022-2024

2020-Present **Graduate and Undergraduate Student Research Mentor**, Florida International University – Part of the lab leadership team that has mentored 19 graduate students, 7 REUs, and 6 undergraduate research technicians

2016-2020 **Undergraduate Student Research Mentor**, University of Louisiana at Lafayette
 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*

2015-2016 **Undergraduate Student Research Mentor**, University of Alabama at Birmingham
 Ciara Duncan - *Predators effect the foraging behavior of the amphipod Hyalella azteca*
 - Received 2nd place award for poster presentation at UAB Undergraduate Student Research Days
 Keegan McFarland and Deontae Mitchell - *Transgenerational effects of predator exposure of the amphipod Hyalella azteca*

TEACHING EXPERIENCE

Teaching

2022-Present *R workshop on population and community ecological modeling* – Co-Instructor, Florida International University
2025 *Using a multivariate tool to assess population and community dynamics* – Instructor; Florida International University
2024 *Hypervolume modelling: a multivariate tool for seagrass ecosystem assessments* – Workshop Convener, 15th International Seagrass Biology Workshop, Naples, Italy
2020 *Fish Ecology and Management* – Teaching Assistant, University of Louisiana at Lafayette
2019 *Introduction to R* – Teaching Assistant, University of Louisiana at Lafayette
2018 *Fundamentals of Biology II Lab* – Teaching Assistant, University of Louisiana at Lafayette
2017 *Landscape Ecology* – Teaching Assistant, University of Louisiana at Lafayette
2014-2016 *Introductory Biology Lab* – Teaching Assistant, University of Alabama at Birmingham

Guest Lectures

2021 “Intro into R: data types, loops, functions, random sampling, and plotting” (2 part), *Advanced Ecology: Populations and Communities*
 “Habitat loss and fragmentation effects in seascapes”, *Biodiversity Across Ecosystems*
2020 “Introduction to food webs”, *Intro to Coastal Ecology*
2019 “Data wrangling in R” (2 part), *Quantitative Ecology*
 “Effect of landscape pattern on ecological processes” (3 part), *Ecosystem landscape ecology*
 “Maximum entropy ecological niche modeling in R”, *Ecological models and data*
2015 “Long distance prey finding”, *Chemical Ecology*

SELECTED PRESENTATIONS (*undergraduate mentee)

- 2025** **James WR**, Rehage JS, & RO Santos. The impact of mass mortality of keystone herbivores on food web energy flow and community trophic niche dynamics; Ecological Society of America Annual Meeting; Baltimore, MD
- James WR**, An ecosystem approach to fisheries in a changing world. University of Hawai'i at Mānoa (Invited)
- 2024** **James WR**, Santos RO, Hensel E, Baustista V, Kabat L, White M, Strickland B, Kominoski J, & CJ Patrick. Coastal fish communities' trait composition shifts in response to tropical cyclones, Hurricane Ecosystem Response Synthesis Seminar Series (Invited)
- James WR**, An ecosystem approach to fisheries in a changing world. Chesapeake Biological Laboratory, University of Maryland Center for Environmental Science (Invited)
- James WR**, Castillo NA, Distrubell A, Trabelsi S, Santos RO, & JS Rehage. A statewide survey of pharmaceutical exposure in a valuable recreational fishery, Red Drum (*Sciaenops ocellatus*), across 9 Florida Estuaries; Gulf of Mexico Conference; Tampa, FL
- James WR**, Incorporating ecosystem function into fisheries management. University of Vermont (Invited)
- 2023** **James WR**, Coppola M, Badlowski G, Rezek RJ, Rehage JS, & RO Santos. Spatiotemporal patterns of seagrass seascape state and stability in South Florida. Coastal and Estuarine Research Federation Biennial Conference; Portland, OR
- James WR**, Rodemann JR, Badlowski G, Bautista B, Castillo NA, Costa SV, Distrubell A, Eggenberger CW, Kabat L, Linenfelser JO, Rivas N, Sandquist M, Sturges J, Trabelsi S, White M, Rehage JS, & RO Santos. Seasonal variation in trophic niche size and overlap in a seagrass food web. Benthic Ecology Meeting; Miami, FL
- 2022** **James WR**, Drivers of ecosystem function: from pharmaceuticals to seascapes. University of Memphis (Invited)
- James WR**, *Bautista V**, Rezek RJ, Zink IC, Rehage JS, & Santos RO. The Biscayne Bay commercial shrimp harvest and its potential ecological impacts of recreational fish species. Bonefish & Tarpon Trust Science Symposium and Flats Expo; Palm Beach, FL
- James WR**, Rodemann JR, Fratto ZW, Furman BT, Rehage JS, & Santos RO. Using *E*-scapes to quantify the change in trophic function of seagrass habitats in response to large-scale seagrass die-off. International Seagrass Biology Workshop; Annapolis, MD
- James WR**, Rodemann JR, *Gonzalez L**, Baktoft H, Ellis RD, Santos RO, & Rehage JS. Fine scale movement of juvenile Goliath Grouper. FACT Network; Melbourne, FL
- 2021** **James WR**, A seascape approach to consumer movement, distribution, and resource use. Virtual Colloquium, Department of Biological Sciences Walla Walla University (Invited)

James WR, Rodemann JR, Rezek RJ, Fratto ZW, Furman BT, Rehage JS, & Santos RO. Using *E*-scapes to quantify the change in energetic resource distribution and foraging of seagrass consumers. Coastal and Estuarine Research Federation Biennial Conference

*Ajavon A**, **James WR**, Rodemann JR, Rezek RJ, Fratto ZW, Furman BT, Rehage JS, & Santos RO. The role of seascape configuration on seagrass food web structure and function. Coastal and Estuarine Research Federation Biennial Conference

James WR, Rehage JS, & Santos RO. Mapping energy flow: *E*-scapes as a system-level tool to evaluate restoration and ecosystem function. Greater Everglades Ecosystem Restoration

2019 **James WR**, Geary B, Karubian J, Leberg PL, & Nelson JA. Tracking foraging behavior using consumer-specific energetic landscapes. Coastal and Estuarine Research Federation Biennial Conference; Mobile, AL

*McDonald L**, **James WR**, Robinson KL, & Nelson JA. The energy storage of nekton species across a continuum of coastal Louisiana habitats. Coastal and Estuarine Research Federation Biennial Conference; Mobile, AL

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

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. Greater Everglades Ecosystem Restoration; Coral Springs, FL

2018 **James WR**, Lesser JS, Litvin SY & Nelson JA. Assessment of food web recovery following restoration using hypervolume analysis. Gulf Estuarine Research Society Biennial Meeting; Galveston, TX

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

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

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

2017 **James WR** & Nelson JA. Food Web Response to Habitat Restoration in Various Coastal Wetland Ecosystems. American Geophysical Union Annual Meeting; New Orleans, LA

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

2016 Adelson J, **James WR**, Chirayath V & Fringer O. A novel approach for estimating vertical profiles of suspended sediment concentration. Ocean Optics XXIII; Victoria, BC

AWARDS AND HONORS

2024 Best paper in Marine and Coastal Fisheries – American Fisheries Society
2023 Florida Coastal Everglades LTER Collaborator of the Year
2020 University of Louisiana Graduate School Research Showcase Paper Competition Winner
 University of Louisiana Graduate School ‘Say it in 6’ Winner
2018 Louisiana Sea Grant Discovery, Integration, Application (LaDIA) Graduate Research Scholar
2017 Louisiana Sea Grant Coastal Connections 3 Minute Thesis Competition Winner
2016 National Science Foundation Antarctic Service Medal

PROFESSIONAL AND COMMUNITY SERVICE

2022-Present **Committee member** – Florida Coastal Everglades LTER Internal Executive Committee
2022-Present **Chair** – Florida Coastal Everglades LTER Broadening Participation Committee
2022-Present **Committee member** – Florida Coastal Everglades LTER representative for the LTER network Broadening Participation Committee
2015-Present **Peer reviewer for:** *Estuarine, Coastal and Shelf Science, Scientific Reports, Marine Biology, Ecological Engineering, Proceedings of the Royal Society B, Biology Letters, Marine Ecology Progress Series, Thalassas, Invertebrate Biology, Aquatic Biology, Journal of Marine Science and Engineering, Marine Biology Research, Estuaries and Coasts, Wetlands, Applications in Plant Science, Diversity, Plos One, Water, Frontiers in Marine Science, Journal of Applied Ecology, Journal of Experimental Marine Biology and Ecology, Coral Reefs, Journal of Applied Ecology, Ecosphere, Freshwater Biology, Science of the Total Environment, Environmental Pollution*
2021-2023 **Peer reviewer**, British Ecological Society Review College
2022 **Judge**, Florida International University Biology Graduate Student Symposium
2021 **Guest Reviewer**, Biodiversity Across Ecosystems Collaborative Online International Learning Student Research Proposals
Judge, Florida International University Biology Graduate Student Symposium
2018-2019 **Off-campus representative**, Florida Coastal Everglades LTER Graduate Student Executive Board.
2017-2019 **Organizing Committee**, UL Lafayette Graduate Student Symposium
2018 **Workshop Organizer**, “Incorporating the spatial ecology of consumers into long-term research” at LTER Network All Scientists’ Meeting
Reviewer, Ecological Society of America Student Section Travel Award
2015 **Science Fair Judge**, Avondale Elementary School Science Fair
Student mentor, Avondale Elementary School Science Fair
Participant, UAB in Antarctica

PROFESSIONAL DEVELOPMENT

2024 **Functional Trait Analysis in R**, Physalia
2023 **Fieldwork Harassment Prevention and Intervention**, FieldFutures
Identifying and Eliminating Micro-aggressions, Office to Advance Women, Equity & Diversity, FIU
Safe Zone Advocate Training, Office to Advance Women, Equity & Diversity, FIU
2022 **STRIDE: Strategies and Tactics for Recruitment to Increase Diversity and Excellence**, Office to Advance Women, Equity & Diversity, FIU
Zero-inflated GLM and GLMM in R, Highland Statistics Ltd.
Movement Ecology in R, Physalia Courses

2021 **Advanced Ecological Niche Modeling Using R**, PR Statistics
2018 **Louisiana Sea Grant Coastal Immersion Program**, Louisiana Sea Grant
2017 **Small Boat Operations for Marine Scientists**, Louisiana Universities Marine Consortium (LUMCON)
 Use of Stable Isotopes & Fatty Acids in Aquatic Ecology: Theory & Practice, Universidad de Antofagasta
2016 **Advanced Computing for Earth Sciences**, University of Virginia

AFFILIATIONS

Florida Coastal Everglades Long Term Ecological Research Program –Collaborator
FIU Institute of Environment CREST Center for Aquatic Chemistry and Environment – Collaborator
Hurricane Ecosystem Response Synthesis Network – Collaborator
Department of Biology, Florida International University – Graduate Faculty

SKILLS

Field: Small boat operation; 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