

Curriculum Vitae

Jimmy Nelson

Assistant Professor

Department of Marine Science University of Georgia

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Teaching and research interests: Coastal and estuarine ecosystem ecology; salt marsh biogeochemistry and nutrient enrichment legacies; seascape ecology and cross-habitat food-web coupling; trophic niche theory and stable isotope ecology; climate-driven range expansions; and remote sensing, UAVs, and AI/ML for ecological monitoring and restoration assessment.

EDUCATION

- 2011** Florida State University
Ph.D., Chemical Oceanography
Supervisor: Dr. Jeffrey Chanton
- 2004** Florida State University
B.S., Biology
Honors: Certificate in Marine Resource Ecology

EMPLOYMENT

- 2023-Present** Assistant Professor, Department of Marine Science, University of Georgia, Athens, GA
- 2020-2023** Associate Professor, Department of Biology, University of Louisiana, Lafayette, LA
- 2015-2020** Assistant Professor, Department of Biology, University of Louisiana, Lafayette, LA
- 2013-2015** Assistant Research Scientist, Marine Biological Laboratory, Woods Hole, MA
- 2011-2013** Plum Island LTER Postdoctoral Researcher, Northeastern Climate Science Center Postdoctoral Fellow, Ecosystems Center Marine Biological Laboratory, Woods Hole, MA
Mentored by Dr. Linda Deegan

PUBLICATIONS

All publications listed are peer-reviewed. () Undergraduate Author (+) Graduate Student Author*
H-index: 22, i10-index: 28, Total Citations: 1570, [Google Scholar Profile](#)

1. Koo, K. A., **Nelson, J. A.**, Davenport, E. S., & Hopkinson, C. S. (2025). Clam diet and production in relation to the spatial pattern of food source inputs and quality: A stable isotope approach. *Estuarine, Coastal and Shelf Science*, 313, 109059.
2. Harris, J. M., Broussard III, W. P., & **Nelson, J. A.** (2024). Evaluating Coastal Wetland Restoration Using Drones and High-Resolution Imagery. *Estuaries and Coasts*, 47(6), 1359-1375.

3. James, W. R., Furman, B. T., Rodemann, J. R., Costa, S. V., Fratto, Z. W., **Nelson, J. A.**, ... & Santos, R. O. (2024). Widespread habitat loss leads to ecosystem-scale decrease in trophic function. *Global Change Biology*, 30(4), e17263.
4. Kahmann, G., Rehage, J. S., Massie, J. A., **Nelson, J. A.**, Santos, R. O., Viadero, N. M., ... & Rezek, R. J. (2024). Trophic niche of a nonnative invader and environmental drivers of its increasing populations in the coastal Everglades. *Biological Invasions*, 26(12), 4245-4263.
5. Calhoun-Grosch, S., Foster, E. M., James, W. R., Santos, R. O., Rehage, J. S., & **Nelson, J. A.** (2023). Trophic Niche Metrics Reveal Long-Term Shift in Florida Bay Food Webs. *Ecosystems*, 26(6), 1183-1194.
6. Stallings, C. D., **Nelson, J. A.**, Peebles, E. B., Ellis, G., Goddard, E. A., Jue, N. K., ... & Koenig, C. C. (2023). Trophic ontogeny of a generalist predator is conserved across space. *Oecologia*, 201(3), 721-732.
7. Gervasi, C. L. †, **Nelson, J. A.**, Swart, P. K., Santos, R. O., Rezek, R. J., James, W. R., ... & Rehage, J. S. 2022. Otolith stable isotope micro-sampling to discriminate poorly studied stocks: Crevalle Jack in the eastern Gulf of Mexico. *Estuarine, Coastal and Shelf Science*, 278, 108130.
8. James, W. R., Santos, R. O., Rodemann, J. R., Rezek, R. J., Fratto, Z. W., Furman, B. T., ... & **Nelson, J. A.** 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*.
9. Santos, R. O., James, W. R., **Nelson, J. A.**, Rehage, J. S., Serafy, J., Pittman, S. J., & Lirman, D. 2022. Influence of seascape spatial pattern on the trophic niche of an omnivorous fish. *Ecosphere*, 13(2), e3944.
10. James, W. R. †, Santos, R. O., Rehage, J. S., Doerr, J. C., & **Nelson, J. A.** 2022. E-scape: Consumer-specific landscapes of energetic resources derived from stable isotope analysis and remote sensing. *Journal of Animal Ecology*, 91(2), 381-390.
11. Osland, M. J., Hughes, A. R., Armitage, A. R., Scyphers, S. B., Cebrian, J., Swinea, S. H., **Nelson, J.A.**,... & Bardou, R. 2022. The impacts of mangrove range expansion on wetland ecosystem services in the southeastern United States: Current understanding, knowledge gaps, and emerging research needs. *Global Change Biology*.
12. Lesser, J. S. †, Floyd, O. †, Fedors, K. *, Deegan, L. A., Johnson, D. S., & **Nelson, J. A.** (2021). Cross-habitat access modifies the ‘trophic relay in New England saltmarsh ecosystems. *Food Webs*, 29, e00206.

13. Babitch, J. W. [‡], **Nelson, J. A.**, Deegan, L. A., Sullivan, H. [‡], & Stauffer, B. A. 2021. Resolving Estuarine Nitrogen Use by Phytoplankton Communities Using a Whole Ecosystem Tracer Approach. *Estuaries and Coasts*, 44(7), 1883-1898.
14. Ziegler, S. L., R. Baker, S. C. Crosby, M. A. Barbeau, J. Cebrian, D. D. Colombano, R. M. Connolly, L. A. Deegan, B. L. Gilby, D. Mallick, C. W. Martin, **J. A. Nelson**, J. F. Reinhardt, C. Simenstad, N. J. Waltham, T. A. Worthington, L. P. Rozas. 2021. Geographic variation in salt marsh structure and function for nekton: finding commonality across multiple scales, *Estuaries and Coasts*
<https://doi.org/10.1007/s12237-020-00894-y>
15. Sloey, T. M., Roberts, B. J., Flaska, S. R., & **Nelson, J. A.** 2021. Critical Research Gaps for Understanding Environmental Impacts of Discharging Treated Municipal Wastewater into Assimilation Wetlands. *Wetlands*, 41(1), 1-14.
16. Pittman, S. J., Yates, K. L., Bouchet, P. J., Alvarez-Berastegui, D., Andréfouët, S., Bell, S. S., **Nelson, J.A.** ... & Young, M. 2021. Seascape ecology: identifying research priorities for an emerging ocean sustainability science. *Marine Ecology Progress Series*, 663, 1-29.
17. **Nelson, J. A.**, J. M Harris⁺, J. S. Lesser⁺, W. R. James⁺, G. M. Suir, W. P. Broussard, 2020. New mapping metrics to test functional response of food webs to coastal restoration, *Food Webs* 25, e00179
18. Rezek, R. J., J.A. Massie, **J.A. Nelson**, R. O. Santos, N. M. Viadero, R. E. Boucek, and J. S. Rehage, 2020. Individual consumer movement mediates food web coupling across a coastal ecosystem, *Ecosphere* 11:12: e03305
19. Bowen, J.L, A. E. Giblin, A. E. Murphy, A. N. Bulseco, L. A. Deegan, D. S. Johnson, **J.A. Nelson**, T. J. Mozdzer, and H. L. Sullivan, 2020. Not all nitrogen is created equal: Differential effects of nitrate and ammonium enrichment in coastal wetlands, *BioScience* 70:12, pg 1108-1119
20. Baker, R., M.D. Taylor, K. W. Able, M. W. Beck, J. Cebrian, D. D. Colombano, R. M. Connolly, W.R. James⁺, J.S. Lesser⁺, **J.A. Nelson**, et al. 2020. Fisheries Rely on Threatened Salt Marshes. *Science*, 370 (6517): 670
<https://doi.org/10.1126/science.abe9332>.
21. Harris, J.M. ⁺, W.R. James⁺, J.S. Lesser⁺, J.C. Doerr, **J.A. Nelson**, 2020. Foundation Species shift alters the energetic landscape of Marsh Nekton, *Estuaries and Coasts*,
<https://doi.org/10.1007/s12237-020-00852-8>
22. Lesser, J.S. ⁺, C. A. Bechtold*, L. A. Deegan, **J. A. Nelson**, 2020. Habitat decoupling via saltmarsh creek geomorphology alters connection between spatially-coupled food webs. *Estuarine, Coastal and Shelf Science*, Volume 241, 106825,
<https://doi.org/10.1016/j.ecss.2020.106825>

23. Lesser, J.S.⁺, W.R. James⁺, C.D. Stallings, R.M. Wilson, **J.A. Nelson**, 2020. Trophic niche volume decreases with increasing ecosystem productivity. *Oikos* doi:10.1111/oik.07026
24. McClain, C.R., T. Webb, C.C. Nunnally, S.R. Dixon[†], S. Finnegan, **J.A. Nelson**, 2020. Metabolic Niches and Biodiversity in the Deep Sea. *Frontiers in Marine Science* 7, 216
25. James, W. R.⁺, L.S. Lesser⁺, S.Y. Litvin, **J. A. Nelson**, 2020. Assessment of food web recovery following restoration using resource niche metrics. *Science of the Total Environment*. <https://doi.org/10.1016/j.scitotenv.2019.134801>
26. Johnson, D.S., C. Crowley⁺, K. Longmire^{*}, **J.A. Nelson**, B. Williams⁺, S. Wittyngham⁺. 2019. The fiddler crab, *Minuca pugnax*, follows Bergmann's rule. *Ecology and Evolution* <https://doi.org/10.1002/ece3.5883>
27. **Nelson, J.A.**, J.S. Lesser⁺, W. Ryan James⁺, D.P. Behringer⁺, V. Furka^{*}, J.C. Doerr. 2019. Food web response to foundation species change in a coastal ecosystem. *Food Webs*, 21. e00125
28. **Nelson, J.A.**, D.S. Johnson, L.A. Deegan, A.C. Spivak, N.R. Moore^{*}. 2019. Geomorphology modifies bottom-up control on food webs. *Ecosystems*, 22 (2), 229-242.
29. Harris, J.M. ⁺, **J.A. Nelson**, G. Rieucan, W.P. Broussard III. 2019. Use of drones in fisheries science, *Transactions of the American Fisheries Society*, 148 (4), 687-697
30. Eggenberger, C.W.⁺, R.O. Santos, T.A. Frankovich, W.R. James⁺, C.J. Madden, **J.A. Nelson**, J.S. Rehage. 2019. Coupling telemetry and stable isotope techniques to unravel movement: Snook habitat use across variable nutrient environments. *Fisheries Research*, 218, 35-47
31. Dornelas, M., L. H. Antao, F. Moyes, B.E. Bates, A.E. Magurran, D. Adam, ..., **J.A. Nelson**, ... & Ayyappan, N. 2018. BioTIME: A database of biodiversity time series for the Anthropocene. *Global Ecology and Biogeography*, 27(7), 760-786.
32. Wilson, R. M., R. B. Tyson, **J. A. Nelson**, B. C. Balmer, J. P. Chanton, and D. P. Nowacek. 2017. Niche Differentiation and Prey Selectivity among Common Bottlenose Dolphins (*Tursiops truncatus*) Sighted in St. George Sound, Gulf of Mexico. *Frontiers in Marine Science* 4, 235
33. Baker, H. K.^{*}, **J. A. Nelson**, and H. M. Leslie. 2016. Quantifying Striped Bass (*Morone saxatilis*) Dependence on Saltmarsh-Derived Productivity Using Stable Isotope Analysis. *Estuaries and Coasts* 39 (5), 1537-1542.
34. Moulton, O. M.⁺, M. A. Altabet, J. M. Beman, L. A. Deegan, J. Lloret, M. K. Lyons, **J. A. Nelson**, and C. A. Pfister. 2016. Microbial associations with macrobiota in

- coastal ecosystems: patterns and implications for nitrogen cycling. *Frontiers in Ecology and the Environment* 14 (4), 200-208.
35. **Nelson, J. A.**, L. Deegan, and R. Garritt. 2015. Drivers of spatial and temporal variability in estuarine food webs. *Marine Ecology Progress Series* 533, 67-77.
 36. Stallings, C. D., **J. A. Nelson**, K. L. Rozar, C. S. Adams, K. R. Wall, T. S. Switzer, B. L. Winner, and D. J. Hollander. 2015. Effects of preservation methods of muscle tissue from upper-trophic level reef fishes on stable isotope values ($\delta^{13}\text{C}$ and $\delta^{15}\text{N}$). *PeerJ* 3:e874.
 37. Stallings, C. D., A. Mickle*, **J. A. Nelson**, M. G. McManus, and C. C. Koenig. 2015. Faunal communities and habitat characteristics of the Big Bend seagrass meadows, 2009–2010. *Ecology* 96 (1) 304-304.
 38. Wilson, R., **J.A. Nelson**, B. Balmer, D. Nowacek, and J. Chanton. 2013. Stable isotope variation in the northern Gulf of Mexico constrains bottlenose dolphin (*Tursiops truncatus*) foraging ranges. *Marine Biology* 159, 2967-2980.
 39. **Nelson, J. A.**, C. D. Stallings, W. M. Landing, and J. Chanton. 2013. Biomass Transfer Subsidizes Nitrogen to Offshore Food Webs. *Ecosystems* 16 (6), 1130-1138.
 40. **Nelson, J. A.**, R. M. Wilson, F. C. Coleman, C. C. Koenig, D. DeVries, C. Gardner, and J. Chanton. 2012. Flux by fin: fish mediated carbon and nutrient flux in the northeastern Gulf of Mexico. *Marine Biology* 159, 365-372.
 41. **Nelson, J. A.**, C. W. Hanson, C. C. Koenig, and J. Chanton. 2011. Influence of diet on stable carbon isotope composition in otoliths of juvenile red drum, *Sciaenops ocellatus*. *Aquatic Biology* 13 (1), 89-95.
 42. **Nelson, J. A.**, J. P. Chanton, F. C. Coleman, and C. C. Koenig. 2010. Patterns of stable carbon isotope turnover in gag, *Mycteroperca microlepis*, an economically important marine piscivore determined with a non-lethal surgical biopsy procedure. *Environmental Biology of Fishes* 90 (3), 243-252.

FUNDING

2023

PI: “Ecological Function and Recovery of Biological Communities within Sand Shoal Habitats within the Gulf of Mexico (MM-23-01)”, Funded by US Department of the Interior, Bureau of Ocean Energy Management, Award Total: \$1,892,310

PI: “Research Infrastructure: Increasing Capacity at the University of Louisiana Lafayette Ecology Center”, Funded by the National Science Foundation, Award Total \$412,064

2022

PI: “Effects of nutrient effluent on a forested Louisiana Wetland”

Funded by Louisiana Department of Environmental Quality, Award Total \$514,412

CoPI: “LTER: Plum Island Ecosystems, the impact of changing landscapes and climate on interconnected coastal ecosystems” Funded by the National Science Foundation, Award Total \$7,649,999

2021

PI: “Restoration of Gulf of Mexico Islands and Beaches for Wildlife: Reducing the Uncertainty”, Funded by NOAA RESTORE Science Program, Award Total \$102,694

PI: “CAREER: Integrating Seascapes and Energy Flow: learning and teaching about energy, biodiversity, and ecosystem function on the frontlines of climate change.” Funded by the National Science Foundation, Award Total \$688,849

2020

PI: “Effects of dredging on offshore sand shoals for coastal restoration in Louisiana”, Funded by the Coypu Foundation, Award Total \$24,257

PI: “Assessment of Ecological Function and Recovery of Biological Communities within a Sand Shoal Habitat in the Gulf of Mexico Subjected to Dredging-Telemetry Study”, Funded by Bureau of Ocean Energy Management, Award Total \$80,000

CoPI: “Understanding food resources and winter habitat use of coastal nesting birds to promote better conservation”, Funded by the Coypu Foundation, Award Total \$45,990

CoPI: “Optimizing the use of Unmanned Aerial Vehicles (UAVS) to Identify and Track Finfish Schools for the Commercial Fishing Industry”, Funded by Louisiana Sea Grant, Award Total \$49,989

2019

PI: “Ecological Function and Recovery of Biological Communities within Sand Shoal Habitats within the Gulf of Mexico (MM-19-01)”, Funded by US Department of the Interior, Bureau of Ocean Energy Management, Award Total \$2,459,995

CoPI: “Collaborative Research: TIDE: Legacy effects of long-term nutrient enrichment on recovery of saltmarsh ecosystems”, Funded by National Science Foundation, Award Total \$1,337,907

PI: “Early-Career Fellowship”, Funded by National Academies of Sciences, Engineering, and Medicine Gulf Research Program, Award Total \$76,000

PI: “2019 Flooding impacts in Wax Lake and Morgan City mapped with drones”, Funded by Louisiana Sea Grant, Award Total \$16,021

PI: “LTER: Drivers of Abrupt Change in the Florida Coastal Everglades” Funded by National Science Foundation, Award Total \$33,500

2018

PI: “Effects of nutrient effluent on a forested Louisiana Wetland”

Funded by Louisiana Department of Environmental Quality, Award Total \$223,003

CoPI: “Effects of freshwater inflows and seagrass die-offs on recreational fisheries: A trophic & movement ecology approach”, Funded by US Department of the Interior, Parks Service, Award Total \$747,300

2017

PI: “Core submission; Development of Restoration Assessment Tools and Educational Products with Drones”, Funded by Louisiana Sea Grant, Award Total \$124,000

HONORS

2021	Outstanding Doctoral Student Mentor College of Sciences UL Lafayette
2021	Excellence in Externally Funded Research UL Lafayette
2020	Outstanding Achievement in Externally Funded Research UL Lafayette
2020	Fritz Lang BoRSF Endowed Professor of Environmental Biology
2019	National Academies of Sciences, Engineering, and Medicine Gulf Research Program Early Career Fellow
2017	Louisiana Sea Grant LADIA Fellowship
2015	U.S. Department of the Interior Climate Science Center Research Fellow

TEACHING

Current Courses Taught	Terms
BIOL-446 Ecosystem Ecology & Lab	Fall 2016, 2018, 2020, 2022
BIOL-447 Fish Ecology and Management	Spring 2016-2023
BIOL-646 Quantitative Ecology in R	Fall 2017, 2019, 2021,2023

GRADUATE MENTORING

Ph.D. Students	Years
Justin Lesser	2016-2021
W. Ryan James	2016-2021
Herbert Leavitt	2020-
Coy LeBlanc	2021-

M.Sc. Students	Years
David Behringer	2016-2019
Mason Harris	2017-2020
Emelie Foster	2019-2023
Olivia Floyd	2019-2023
Jessica Courson	2020-
Alex Thomas	2021-
Alex Doves	2021-
Jaqueline Valladares	2023-

UNDERGRADUATE MENTORING

Capstone Thesis Advisor

Jessica Moravek, Marine Biological Laboratory, 2014
Julia McMahon, Marine Biological Laboratory, 2014
Alison Tucker, Marine Biological Laboratory, 2015
Henry Baker, Brown University, 2016
Natalie Sommer, William & Mary, 2017
Emma Weiser, University of Louisiana Lafayette, 2018
Laura McDonald, University of Louisiana Lafayette, 2019
Kaeryel Dowl, University of Louisiana Lafayette 2023

NSF REU Mentor

Plum Island Ecosystems LTER 2011-Present
University of Louisiana Lafayette 2016-2019

PROFESSIONAL ACTIVITIES

Associate Editor Journal of Experimental Marine Biology and Ecology
Estuary, Coastal, and Shelf Science
Faculty Advisor SEEDS Chapter UL Faculty Coordinator
Working Groups Estuarine Ecology Expert- Sediment Diversion Operations Expert
Working Group- Environmental Defense Fund, Louisiana Marine
Consortium GAPPLE panel, CERF Odum Award Committee

Selected Presentations

2017-Present Coastal and Estuarine Research Federation National Meeting
Ecological Society of American Annual Meeting
State of the Coast
Benthic Ecology Meeting
Marine Biological Laboratory – Invited Speaker
Brown University-Invited Speaker
University of South Florida – Invited Speaker
Louisiana State University – Invited Speaker
Louisiana Universities Marine Consortium –Invited Speaker

Selected Peer Review Referee

2015-Present Proceedings of the National Academy of Science, Proceedings of the Royal
Society B, Ecology, Frontiers in Ecology and Environment, Nature
Communications, Ecology, Marine Biology, National Science Foundation,
National Oceanic and Atmospheric Administration, Ecosystems, Oecologia

UNIVERSITY and COMMUNITY SERVICE

2015-Present Graduate Faculty Committee, Departmental Search Committees, St. Thomas
Moore Fishing Club science advisor, Opelousas Rotary Club Presentation,
Milton Elementary and Middle School Presentation, 4H Club/Louisiana Sea
Grant Marsh Maneuvers, FIRST LEGO League coach Ascension Episcopal
School.