

Exponent®
Engineering & Scientific Consulting

Kathleen Roark, Ph.D.

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Professional Profile

Kathleen Roark is a Scientist in Exponent's Ecological and Biological Sciences practice with a background in emerging contaminants (e.g., PFAS, 6PPD), marine ecosystem dynamics, aquatic ecotoxicology, and benthic invertebrate communities. Her work has focused on the fate and transport of PFAS in marine ecosystems, developmental impacts of toxicants and environmental stressors to early life stage fishes, and the molecular level effects of PFAS across multiple species. Dr. Roark has participated in multiple cross-disciplinary collaborations related to the impacts of anthropogenic and naturally occurring stressors on aquatic biota. Before joining Exponent, Dr. Roark earned her doctorate in Marine Science from the University of Texas at Austin's Marine Science Institute.

Academic Credentials & Professional Honors

Ph.D., Marine Science, University of Texas - Austin, 2026

B.S., Ecology, University of North Texas, 2020

Southern Association of Marine Laboratories (SAML) Student Award, National Association of Marine Laboratories, 2025

Barton Regents Endowed Scholar, The University of Texas at Austin Marine Science Institute, 2024

E.J. Lund Scholar, Founders Fellowship for Graduate Students of Exceptional Merit, 2023, 2024

Allen Jacoby Memorial and Coastal Conservation Association Scholar, 2023, 2024

The Texas Gulf Coast Research Center Predoctoral Award, The University of Texas at Austin Marine Science Institute, 2023

Licenses and Certifications

40-Hour Hazardous Waste Operation and Emergency Response Certification (HAZWOPER)

Prior Experience

Graduate Research Assistant, The University of Texas at Austin, Port Aransas, Texas, 2020-2026

Undergraduate Field and Lab Technician, The University of North Texas, Denton, Texas, 2019–2020

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Student Consultant – Leadership in Energy and Environmental Design, The University of North Texas, Denton, Texas, 2017–2019

Publications

Presentations

Roark KJ. Assessing the risk of PFHxS to the early life stages of an estuarine dependent sportfish, the red drum. Invited talk, Emerging Issues in Risk Assessment, Geosyntec, 2026.

Roark KJ, Nielsen K. A transcriptomic approach to assessing the effects of hypersalinity and PFHxS on red drum. Invited Talk, South-Central SETAC North America Annual Meeting, Portland, OR, 2025.

Roark KJ, Ackerly KL, Hladyniuk R, Nielsen K. Assessing the solubility of PFAS across multiple salinities and experimental conditions. Oral presentation, South-Central SETAC Regional Chapter Annual Meeting, Baton Rouge, LA, 2025.

Roark KJ, Ackerly KL, Walsh G, Hladyniuk R, Nielsen K. Comparing the interfacial interactions and impacts of legacy PFAS with next-generation replacements in saltwater. Oral presentation, SETAC North America Annual Meeting. Fort Worth, TX, 2024.

Roark KJ, Ackerly KL, Rivera TM, Hladyniuk R, Nielsen K. Comparing the interfacial interactions and impacts of legacy PFAS with next-generation replacements in saltwater. Oral presentation, South-Central SETAC Regional Chapter Annual Meeting, Kerrville, TX, 2024.

Roark KJ, Ackerly KL, Nielsen K. In the context of estuaries: impacts of hypersalinity, temperature, and PFAS on early life stage red drum. Poster Presentation, SETAC North America Annual Meeting, Louisville, KY, 2023.

Roark KJ, Ackerly KL, Nielsen K. Developmental impacts of hypersalinity and PFAS on early life stage red drum. Poster Presentation, SETAC North America Annual Meeting. Pittsburgh, PA, 2022.

Roark KJ, Ackerly KL, Nielsen K. Developmental impacts of hypersalinity and PFAS on early life stage red drum. Poster Presentation, Texas Bays and Estuaries Meeting. Port Aransas, TX, 2022.

Roark KJ, Ackerly KL, Nielsen K. Developmental impacts of hypersalinity and PFAS on early life stage red drum. Poster Presentation, Texas Bays and Estuaries Meeting. Port Aransas, TX, 2022.

Roark KJ, Soulen BK, Condini MV, Garcia AM, Hoeinghaus DJ, Roberts AP. Mercury concentrations in Dusky Grouper along the Southern Brazilian coast. Poster Presentation, Texas Chapter of the American Fisheries Society, Waco, TX, 2020.

Project Experience

Demonstrated that multiple estuarine species had both shared and unique responses to PFHxS at the molecular level, and cumulative impacts of simultaneous exposure to PFHxS and hypersalinity

Assisted in the quantification of PFAS contamination in theTexas Coastal Bend, and conducted toxicity assays on sheepshead minnow (*Cyprinodon variegatus*) and red drum (*Sciaenops ocellatus*) grounded in environmentally detected concentrations

Investigated the presence of PFAS in proximity to point sources and quantified differences in fate and transport within estuarine systems

Participated in both field and lab research investigating the whole ecosystem effects of 6PPD-q in lake mesocosms

Evaluated effects of 6PPD-q on early life stage Gulf Coast fish species; red drum and southern flounder (*Paralichthys lethostigma*)

Served as the lead benthic macroinvertebrate taxonomist in routine habitat assessments quantifying changes to aquatic community structures downstream of agricultural sites