Missouri S&T Chemistry Seminar

Margaret Taiwo, PhD Student

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Monday, 3 November, 2025

4:00 pm in 126 Schrenk Hall

PFAS bioaccumulation in freshwater fish tissues

Bio: Margaret Taiwo is a third-year Ph.D. student in the Eze Research Lab, where she studies PFAS in environmental systems. She is a recipient of the AAPG Grant-in-Aid (Bernold M. "Bruno" Hanson Memorial Environmental Grant, 2025) in support of her research, as well as the ACS Younger Chemists Conference Travel Grant, which funded her presentation at the ACS Spring 2025 national meeting. Margaret holds a Diploma and Bachelor's degree in Science Laboratory Technology (Chemistry major) from Yaba College of Technology and Ladoke Akintola University of Technology, Nigeria, respectively. She is passionate about studies focused on mitigating environmental contaminants, and improving the state of the environment and human health.

Abstract: Per- and polyfluoroalkyl substances (PFAS) are persistent environmental contaminants of global concern due to their stability, ubiquity, bioaccumulative potential, and detrimental effect on human health. Aquatic ecosystems serve as major sinks for PFAS, with fish acting as both sentinels of contamination and vectors of human exposure through dietary intake. In this study, bioaccumulation pattern of 10 PFAS compounds was investigated in grass carp (*Ctenopharyngodon idella*), common carp (*Cyprinus carpio*), and flathead catfish (*Pylodictis olivaris*), alongside water samples collected from their habitat. Following sample extraction and clean-up, PFAS levels were quantified using validated liquid chromatography-tandem mass spectrometry (LC–MS/MS) methods, across all analytes. Our result showed that short-chain PFAS were more prevalent in the water samples, while the long-chain sulphonic acids, specifically perfluorooctane sulfonic acid (PFOS), were highly concentrated in the fish tissues. Considering that ingestion via human consumption of aquatic organisms is one of the main entry routes of PFAS, this study provides insights into species-specific and tissue-specific PFAS accumulation in aquatic animals. This study contributes to a deeper understanding of PFAS bioaccumulation within aquatic food webs, and underscores the need for ongoing monitoring and risk assessment of PFAS in aquatic environments and food products.