PURDUE UNIVERSITY | School of Sustainability Engineering and Environmental Engineering

SEE Research Seminar

Date: September 30th, 2025, at 10:30AM
Location: POTR 234 (Fu Room)

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PFAS Analyses and Human Exposure: What's next?

Abstract

Growing concerns about human exposure to perfluorooctanoate (PFOA) and perfluorooctane sulfonate (PFOS), two members of the broad family of poly- and perfluoroalkyl substances (PFASs), have recently led to significant public and regulatory interest. However, society's path forward is not immediately evident for these chemicals, particularly if they are broadly defined. In particular, many efforts aiming to measure and monitor PFASs in the environment focus on a relatively narrow list of PFASs. Evidence from sites impacted by the use of aqueous fire fighting foam (AFFF) provide the strongest evidence of a need for more expansive analyses, but the need to go beyond standard EPA methods for PFAS analysis goes beyond AFFF-impacted sites. This is particularly true in light of the complex behavior of PFASs as well as the complex routes of human exposure to PFASs. PFASs are likely to be a dominant environmental and public health challenge for years to come, and having the right analytical tools will be key to our efforts to tackle this challenge. In this presentation, these issues will be discussed in the context of characterizing PFASs in the environment and evaluating human exposures to PFASs. Further, the need for a broader societal conversation on PFASs will be discussed.

Bio

Christopher P. Higgins is an environmental chemist at the Colorado School of Mines. Dr. Higgins' received his A.B. in Chemistry from Harvard University, and graduate degrees in Civil and Environmental Engineering from Stanford University. He joined Mines in 2009, attaining the title of AMAX Distinguished Chair in Civil and Environmental Engineering in 2025. He was the recipient of the 2019 Huber Prize in Civil Engineering Research awarded by the American Society of Civil Engineers, and was the lead Principal Investigator for the 2020 Environmental Restoration Project of the Year for the U.S. DoD's Strategic Environmental Research & Development Program. His research focuses on the movement of contaminants in the environment. In particular, he studies chemical fate and transport in natural and engineered systems, with a focus on poly- and perfluoroalkyl substances (PFASs). Dr. Higgins has authored over 180 peer-reviewed publications. His research has been supported by NSF, NIH, EPA, USDA, and the DoD.