



## PFAS Network (Per- and Polyfluoroalkyl Substance Testing Network)

Meet Team 4: Air emissions and atmospheric deposition

**Ralph Mead, Ph.D.**, co-lead, is a Professor of Chemistry & Biochemistry at UNC Wilmington. He is an organic geochemist focused on developing and applying molecular and isotopic analytical techniques to trace naturally derived organic carbon in the marine environment.

**Barbara Turpin, Ph.D.**, co-lead, is Professor and Chair of Environmental Sciences and Engineering at UNC Chapel Hill. She is an atmospheric chemist and environmental engineer studying fundamental processes and effects of airborne particles from air pollution emissions on human health.

**G. Brooks Avery, Ph.D.**, co-investigator, is Professor and Assistant Chair of Chemistry & Biochemistry at UNC Wilmington. He studies global carbon cycling in the atmosphere, factors that influence remineralization of organic matter in coastal and estuarine sediments, and biogeochemical controls on methyl mercury production and flux in estuarine sediments.

**Robert Kieber, Ph.D.**, co-investigator, is Assistant Professor of Chemistry & Biochemistry at UNC Wilmington. His research in Marine and Atmospheric Chemistry focuses on metal ion speciation in rain and seawater, photochemistry of natural waters, and air-sea exchange processes.

**Steve Skrabal, Ph.D.**, co-investigator, is Associate Director for Education in Marine Sciences at UNC Wilmington. He conducts trace metal analysis and research in geochemistry and environmental, estuarine, and sediment chemistry.

**Joan Willey, Ph.D.**, co-investigator, is Professor of Chemistry & Biochemistry at UNC Wilmington. Her research in Marine and Atmospheric Chemistry includes metal ion speciation in rain and seawater, photochemistry of natural waters, and air-sea exchange processes.

**Karsten Baumann, Ph.D.**, co-investigator, is Assistant Professor in Environmental Sciences and Engineering at UNC Chapel Hill. He studies atmospheric processes leading to air pollution and its effects on ecosystem and human health.

**Jiaqi Zhou, Ph.D.**, Postdoc at UNC Chapel Hill, atmospheric sampling and mass spec analysis

**Megumi Shimizu, Ph.D.**, Postdoc at UNC Wilmington, wet/dry deposition sampling and mass spec analysis

Team Objective:

To better understand the airborne composition, distribution and concentrations of gas-and particle-phase PFAS. Specific aims include:

- Measure atmospheric gas- and particle-phase concentrations of PFAS compounds in Wilmington, Chapel Hill, Charlotte, Greenville, and Fayetteville (Honeycutt) sites
- Measure highly polar gas-phase PFAS species in real-time at one location during a single, intensive (1-2 week) field study by high resolution time-of-flight chemical ionization mass spec
- Conduct preliminary experiments to examine multi-phase chemistry (or reactive uptake) of HFPO with atmospheric aerosol
- Determine the concentration of PFAS in rainwater at the Wilmington site (intensive sampling)
- Examine the influence of air mass back trajectory and season on the atmospheric concentration and distribution of PFAS at the Wilmington site



## **PFAST Network** (Per- and Polyfluoroalkyl Substance Testing Network)

- Determine PFAS concentration and distribution in wet and dry deposition at other selected locations on a less frequent basis (e.g., ECU, UNCCH, UNCC, WCU, Bald Head Island)
- Determine the wet/dry areal deposition of GenX and other PFAS to surface waters including the Cape Fear River drainage basin