



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

Meet Team 5f: Construction of computer-based predictive models

**Nick Luke, Ph.D.**, project lead, is Associate Professor of Mathematics at NC A&T State University. Dr. Luke's research focus is the development and analysis of mathematical models, especially those pertaining to biological applications. His fields of interest include Epidemiology, Pharmacokinetics and Pharmacodynamics.

Team Objective: Conduct quantitative analysis of experimental immunotoxicity and systemic toxicity data and construct computer-based models to support derivation of health goals for measured PFAS. Specific aims include:

- Derive Reference Doses (RfDs) from experimental data (in collaboration with Team 5c) using Benchmark Dose Modeling Software (BMDS, US EPA).
- Construct and apply PBPK (Physiologically based pharmacokinetic) model to predict ADME properties (absorption, distribution, metabolism, excretion) of emerging PFASs.