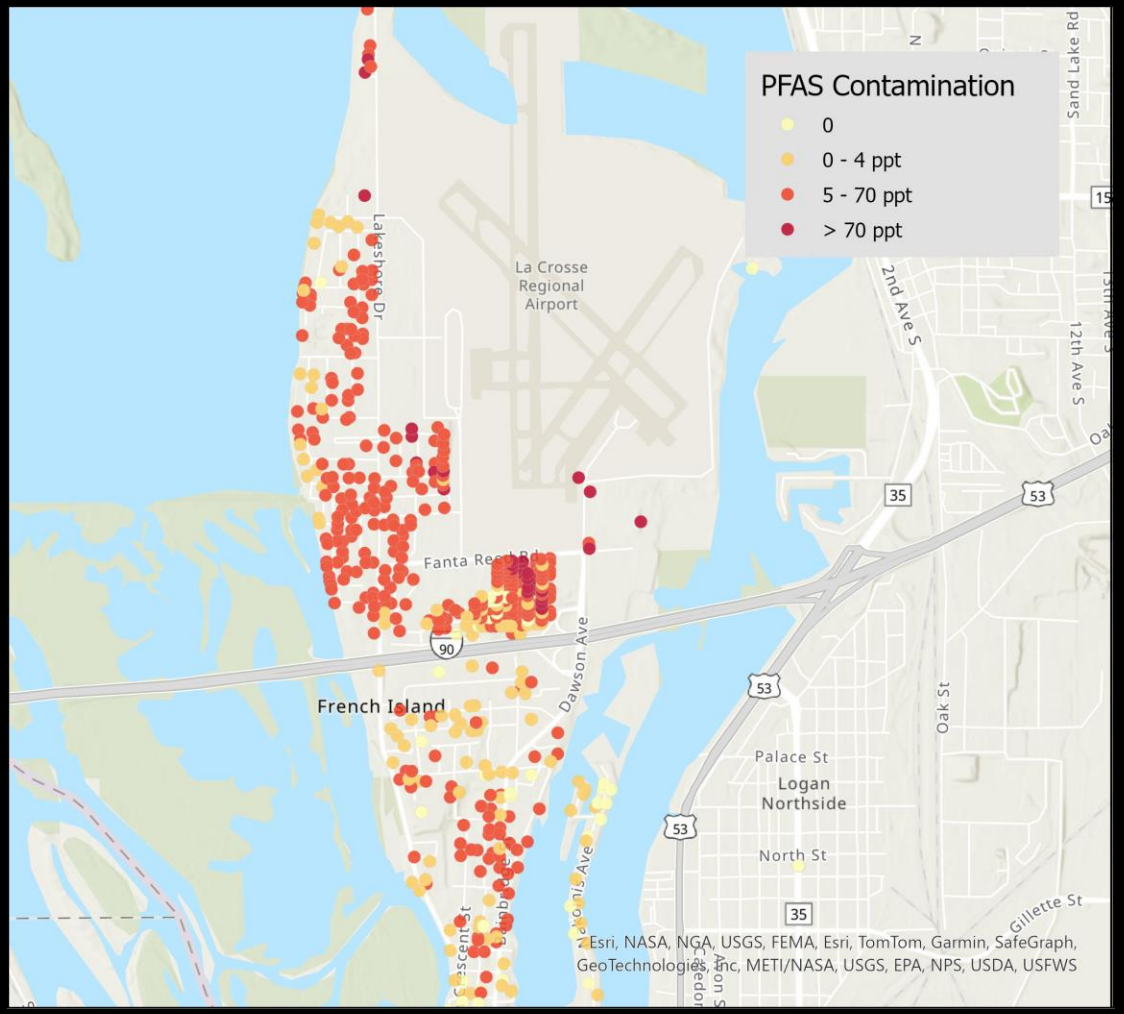
Current PFAS Research in Wisconsin

Lightning talks

9.19.25

Household Coping Strategies and Perceptions of Health Risk to PFAS Water Contamination on French Island, WI



Research Objectives:

- ✓Household Coping Strategies
- ✓Unmet needs of Response
- ✓**Perceived Health Risk**

Researcher: Dr. Brian Pompeii
Department of Geography & Environmental Science
University of Wisconsin, La Crosse

Distributive Environmental Justice of PFAS in WI Drinking Water

To what extent do **geospatial correlations** exist between **presence of disadvantaged or vulnerable populations** and **PFAS contamination** in drinking water?

American Community Survey data on race, age, & income

1867 PFAS samples of community water supply entry points

450 PFAS samples of private water wells

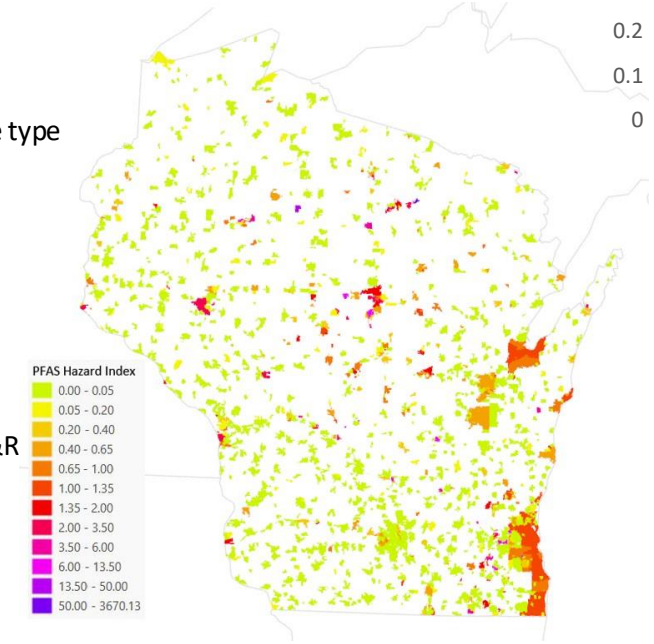
Use data within a buffer of each well, or whole community for surface water sources

Convert to Hazard Index Values

Regression to examine EJ Concerns

Related work:

- Principal Component Analysis of PFAS in WI Water Supplies, by source type
- Fingerprinting of PFAS Sources in Domestic Wastewater in WI



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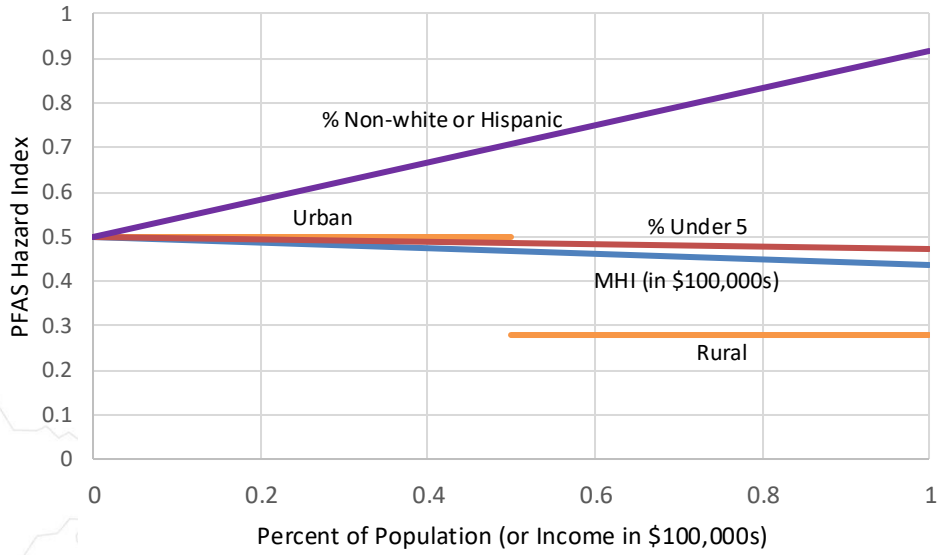
Socioeconomic Variables vs. PFAS Hazard Index



$$P_i = \beta_0 + \beta_1 R_i + \beta_2 I_i + \beta_2 A_i + \beta_3 U_i + \in$$

P = PFAS Hazard Index
R = % Non-white or Hispanic
I = Median Household Income
A = % under Age 5
U = Urban/Rural Dummy Variable

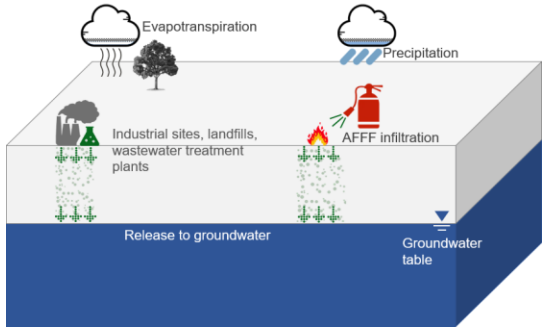
Recent WDNR PFAS Research in the Bureau of Water Quality

Patrick Gorski, Research Scientist

- Determine relationship between PFOS fish tissue and surface water (SW) concentrations for WI, MN and CO.
- Assess statewide SW PFAS concentrations and their PFAS signatures.
- Can a single SW grab water sample represent the entire water column?
- Determine seasonality of PFAS concentration in a lake.
- Develop method for filtration of surface water PFAS in particulate and “dissolved” PFAS.
- Develop method for PFAS in biota and analyze them: zooplankton, algae, macroinverts, macrophytes, mussels and non-prey fish.
- Analyze PFAS in sediment porewater and asses several sites across a range of PFAS SW concentrations.

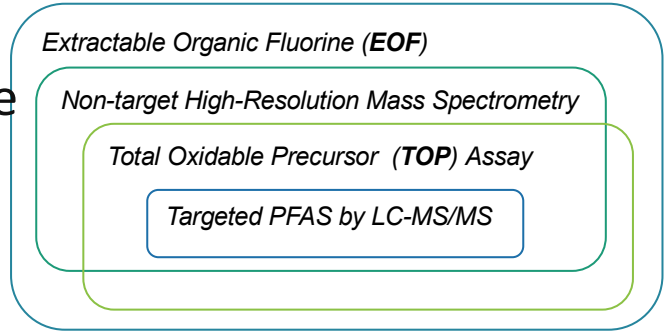
Remucal: PFAS in aquatic systems

- PFAS sources to aquatic systems
  - Loadings to the Great Lakes
  - Inputs to groundwater

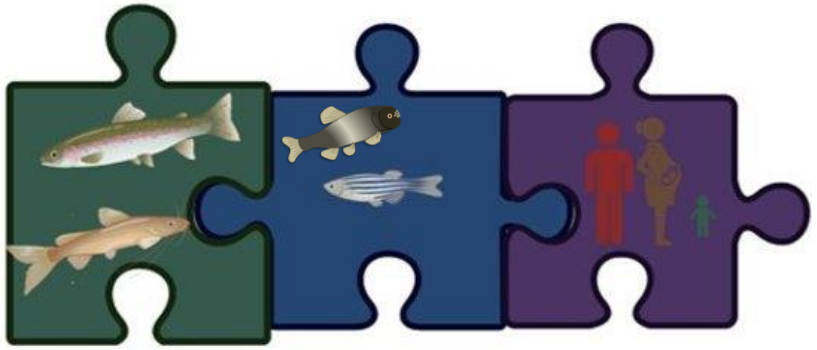


- Environmental behavior
  - Partitioning to sediment, foam, ice…

- PFAS forensics
  - What PFAS are we missing?



KING-HEIDEN – Dev Tox/DBAD



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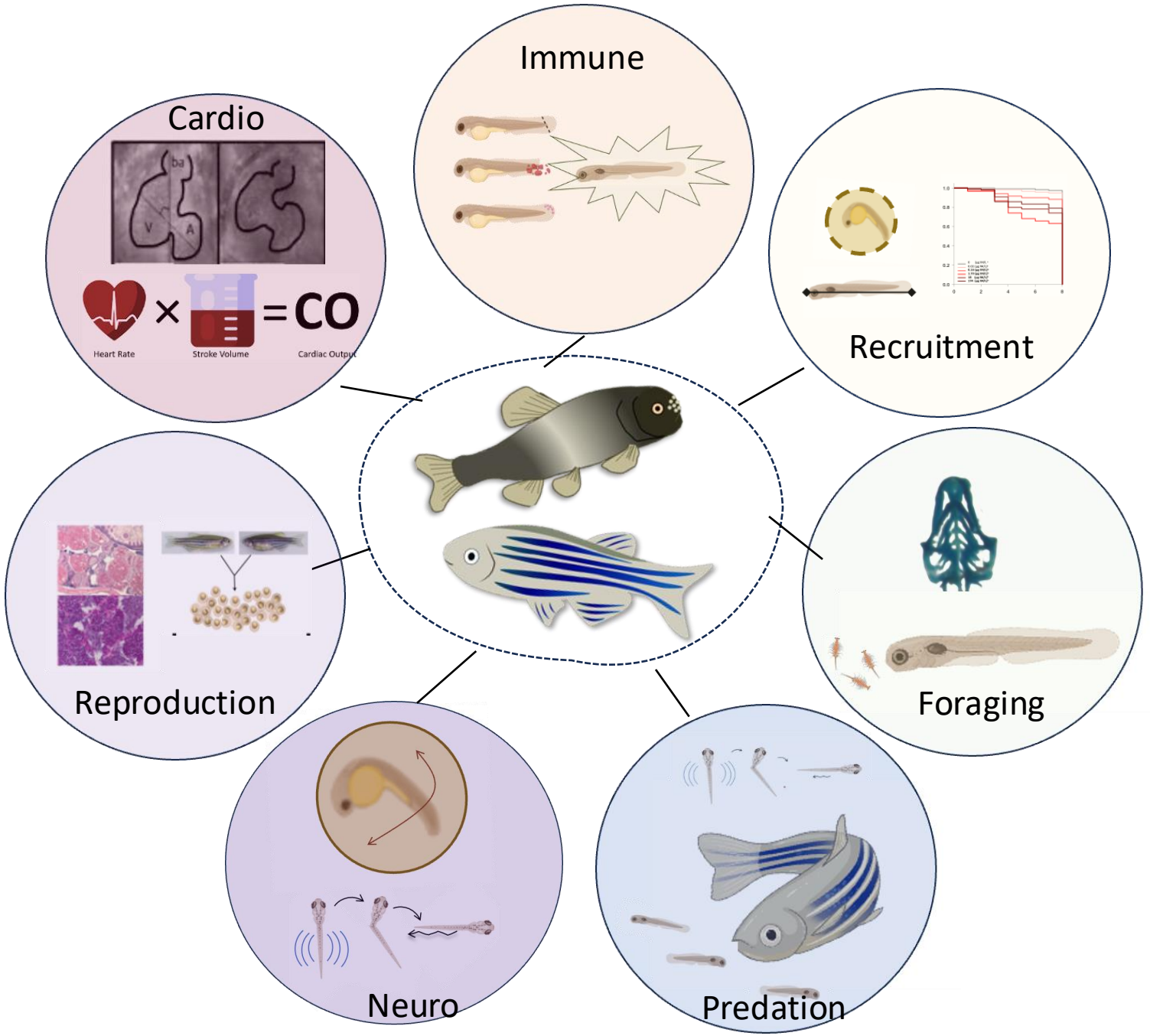
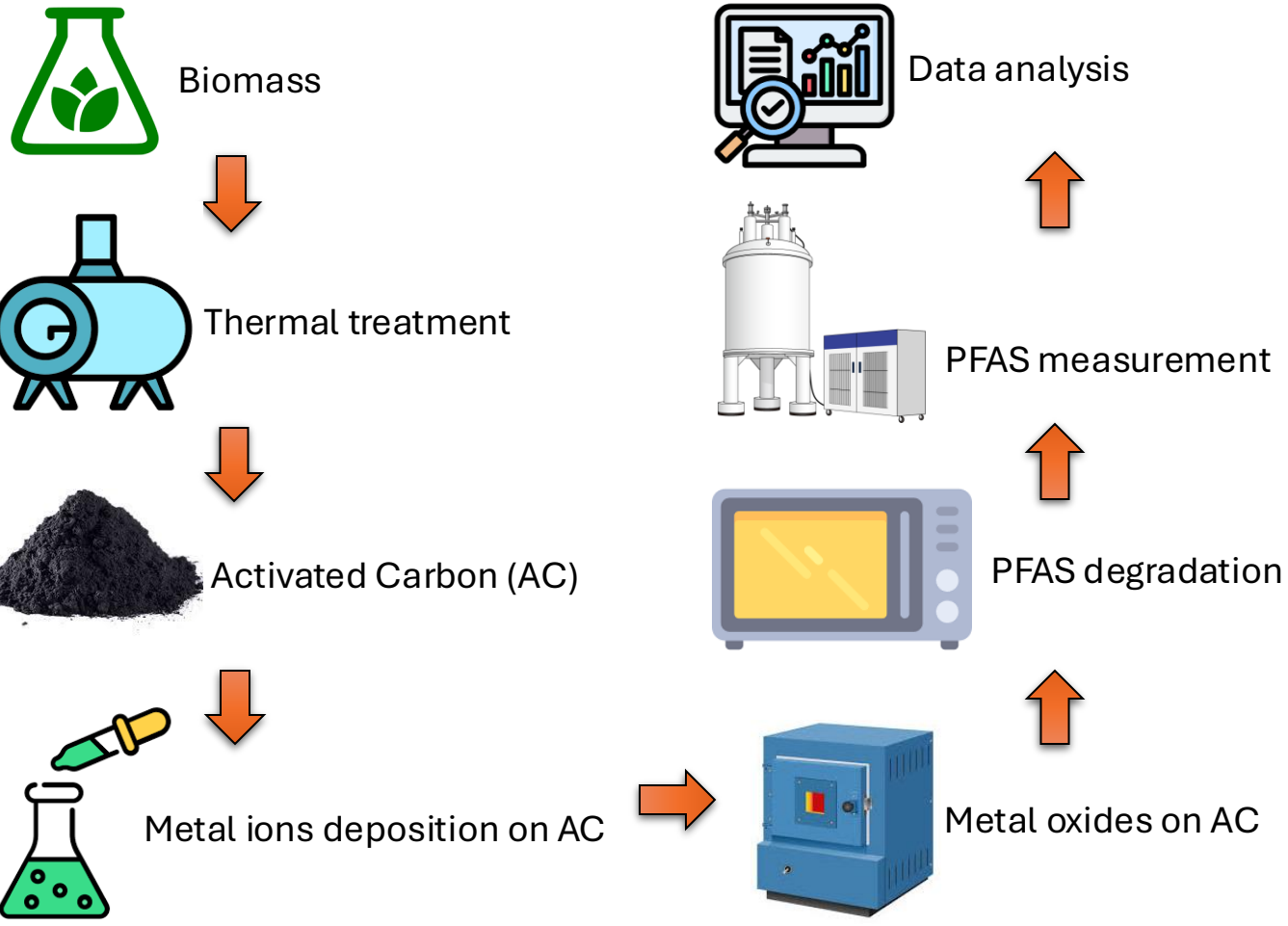


Developing Metal-Enhanced Carbon Adsorbents for PFAS Removal

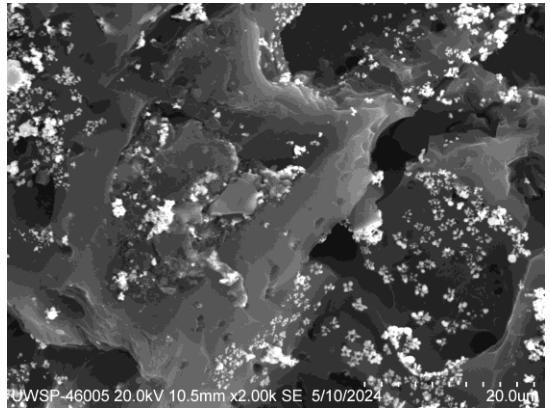
Seyd Amirfakhri (UW-Stevens Point) and Xuejun Pan (UW-Madison)

Methods



Project Goals

- Develop metal-impregnated carbon adsorbents for PFAS removal & destruction
- Test adsorption, decomposition, and reusability in batch & continuous systems
- Understand the effects of different parameters on the efficiency of PFAS decomposition
- Train students in water treatment technologies & PFAS analysis
- Engage community through K-12 outreach & local presentations
- Provide data to guide treatment solutions for Wisconsin communities



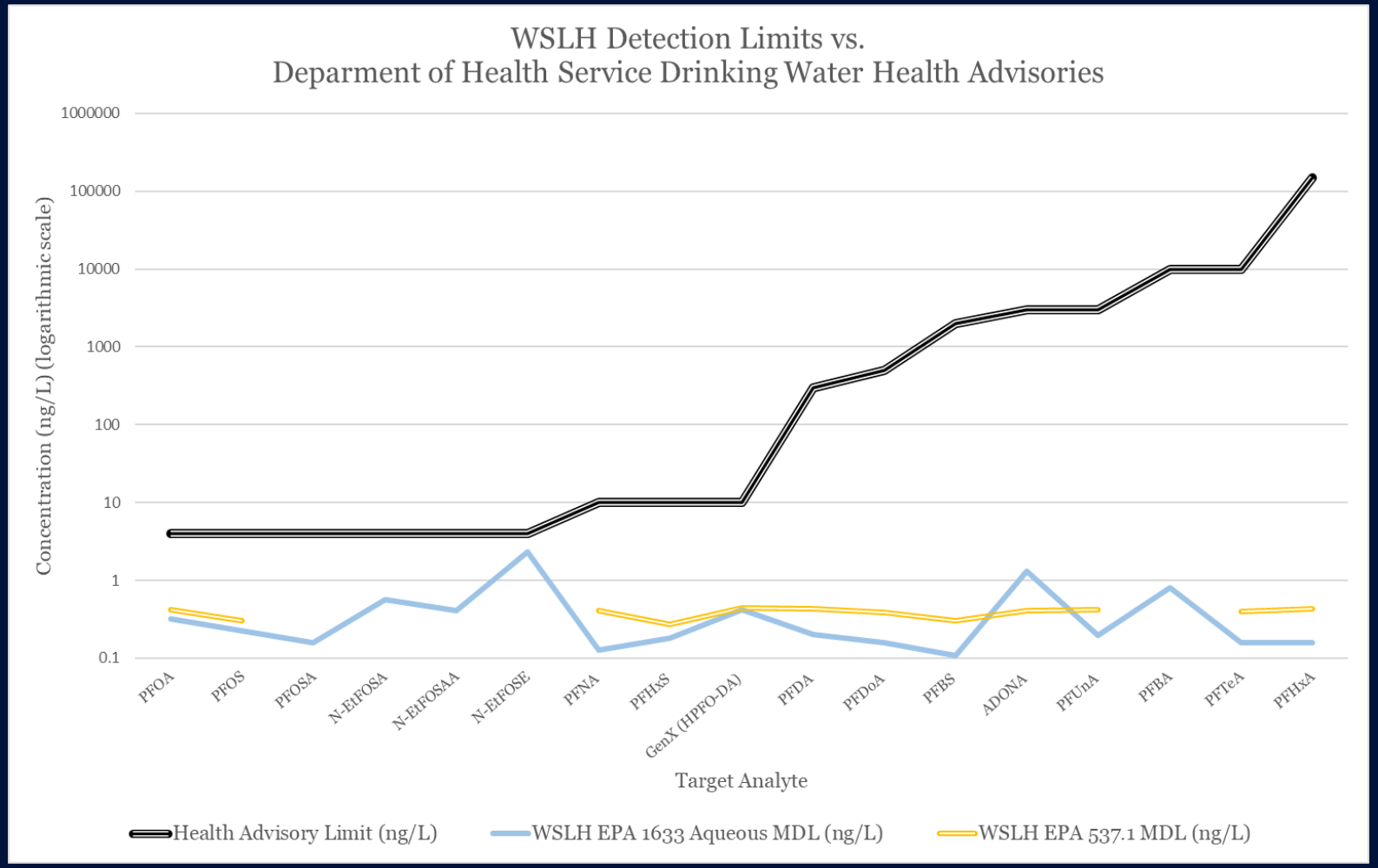
Silver –impregnated activated carbon

Wisconsin State Laboratory of Hygiene

PFAS methodology:

- EPA 1633A
  - Aqueous
    (from drinking water to wastewater, leachate)
  - Solids
    (from sediments & soils to papers & wood)
  - Biosolids
  - Tissue (fish, deer, fowl, etc.)
  - "Organic Material"
    catch-all procedure for food, vegetation, invertebrates, etc.
- EPA 537.1
  - Drinking Water

At a Glance: Detection of PFAS in Aqueous Matrices



Kyle Burke – Chemist, WSLH