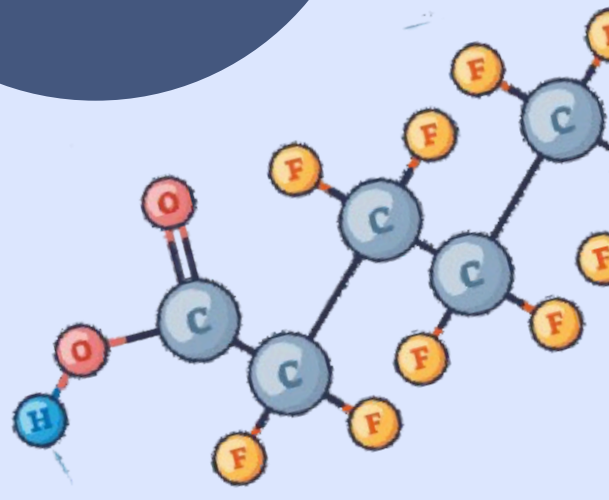


# Break the Chain

## Detecting PFAS Through Surfactant Testing

E18



### The Problem

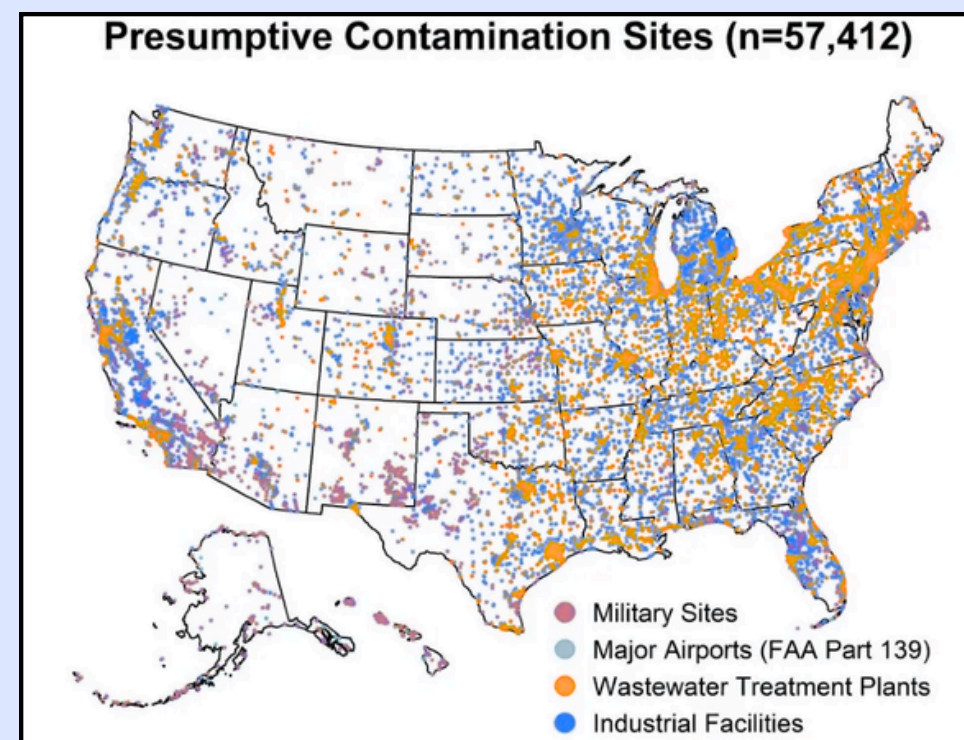
Forever chemicals stay... **forever.**

97%

Affects 97% of Americans



Present in 60+ product categories



Can lead to cancer, birth defects, etc

### What are surfactants?

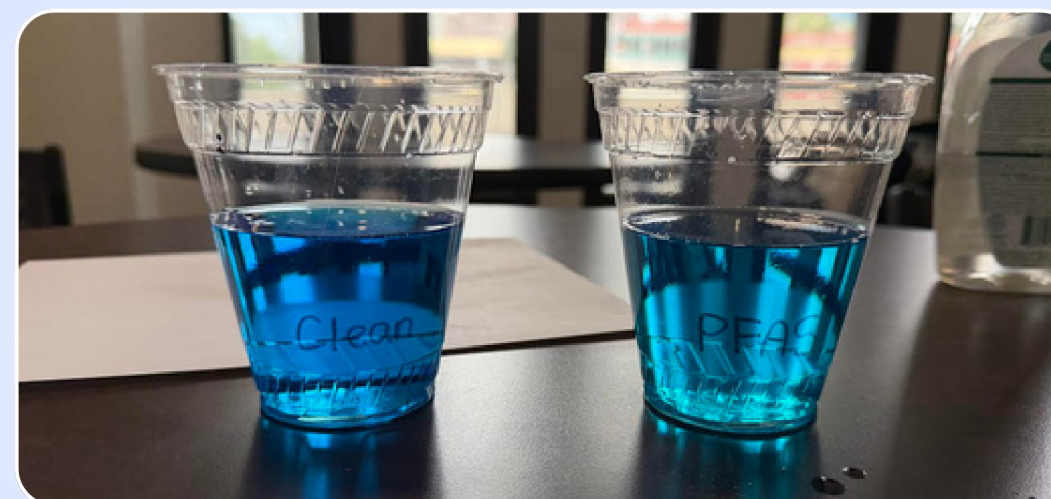
- One end is hydrophobic
- One end is hydrophilic
- They break surface tension
- Can disrupt cell membranes if in the human body
- All PFAS are surfactants

HOW MIGHT WE lessen the burden on rural communities that face disproportionately high PFAS levels?

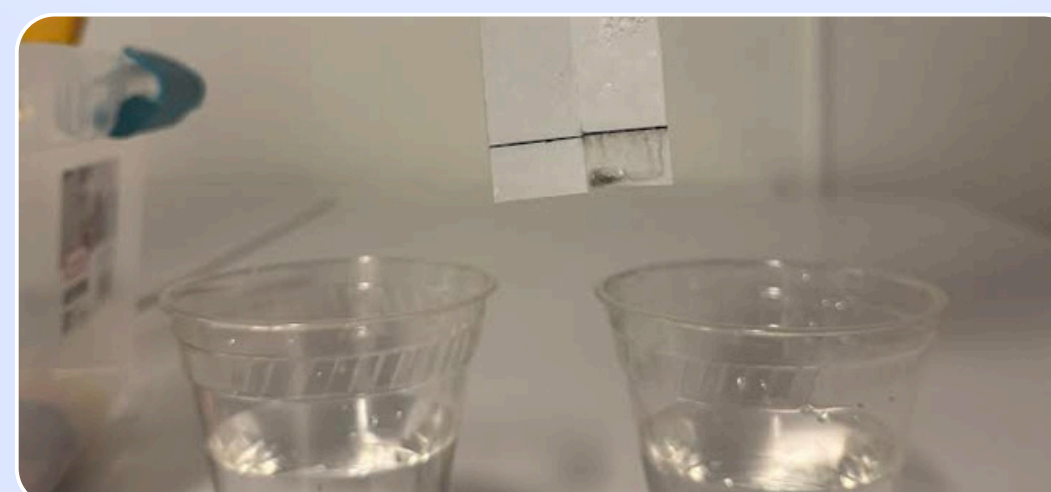
### Status Quo

- Expensive lab equipment
- Requires professional education and training
- Underserved communities

### Testing and Experimentation



**Methylene Blue Colorimetric Test:** Methylene blue, buffer and salt



**Chromatographic Rise Test:** Surfactants soak paper faster



**Surface Tension Test:** Pepper models decreased surface tension



### Our Solution

#### AT-HOME DETECTION KIT

- 1 Run household water through carbon filter
- 2 Send in filter containing PFAS particles
- 3 Get quick, cheap results and next steps

#### Educate:

- Educational brochures + surfactant tests instructions
- Instructions on how to gather and send their results to a lab

### Costs:

- 20%+ of Americans who purchase bottled water claim they don't trust their household drinking water.
- The avg household spends \$250 - \$2700 on bottled water a year.
- Current lab testing for PFAS costs \$300 - \$600.

**Our kit is ~\$20.**

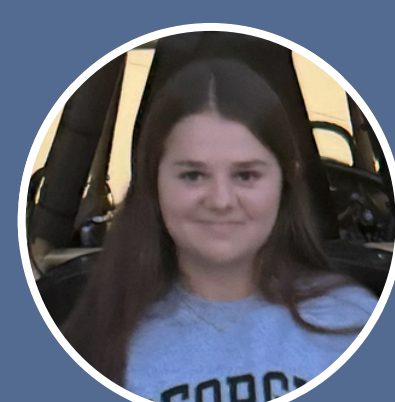
### MEET THE TEAM!



CLARISSA HOESLEY



COLRAINE DING



LILLY JACKSON



MISHA CHOU



ZOEY CHO

### FUTURE STEPS

- Website/App to check status of lab tests, learn more about PFAS, and chat with experts
- Research conditions needed to preserve filter particles throughout the mailing process
- Consider possibility of a subscription service to annually test water for changes in quality