

# NC PFAST NETWORK FAYETTEVILLE FORUM

February 26, 2020



# Legislative Mandate: 2018 Appropriations Act (S99; SL 2018-5)

## **FUNDING TO ADDRESS PER- AND POLY-FLUOROALKYL SUBSTANCES, INCLUDING GENX/USE OF EXPERTISE AND TECHNOLOGY AVAILABLE IN INSTITUTIONS OF HIGHER EDUCATION LOCATED WITHIN THE STATE**

**SECTION 13.1.(f)** The General Assembly finds that (i) per- and poly-fluoroalkyl substances (PFAS), including the chemical known as "GenX" (CAS registry number 62037-80-3 or 13252-13-6), are present in multiple watersheds in the State, and impair drinking water and (ii) these contaminants have been discovered largely through academic research not through systematic water quality monitoring programs operated by the Department of Environmental Quality or other State or federal agencies. The General Assembly finds that the profound, extensive, and nationally recognized faculty expertise, technology, and instrumentation existing within the Universities of North Carolina at Chapel Hill and Wilmington, North Carolina State University, North Carolina A&T State University, Duke University, and other public and private institutions of higher education located throughout the State should be maximally utilized to address the occurrence of PFAS, including GenX, in drinking water resources.

# Legislative Mandate: 2018 Appropriations Act (S99; SL 2018-5)

**Section 13.1.(f)** – NC General Assembly finds that academic expertise & instrumentation in public and private universities in NC should be “maximally utilized to address the occurrence of PFAS, including GenX, in drinking water resources.”

**NC STATE**  
UNIVERSITY



**Duke**  
UNIVERSITY



THE UNIVERSITY  
of NORTH CAROLINA  
at CHAPEL HILL



NORTH CAROLINA  
AGRICULTURAL AND TECHNICAL  
STATE UNIVERSITY



# Legislative Mandate: 2018 Appropriations Act (S99; SL 2018-5)

## **Section 13.1.(g) – Water sampling scope**

- ALL public water supply surface water intakes (n=190)
- One well selected by each municipal water supply system operating groundwater wells for public water supply (n=158)
- Additional regional or county water supplies identified by DEQ (n=57)

***TOTAL SAMPLE UNIVERSE n=405***

# Legislative Mandate: 2018 Appropriations Act (S99; SL 2018-5)

## **Section 13.1.(h) – Reporting requirements**

Quarterly progress reports to NCGA Environmental Review Commission and regulatory agencies (NCDEQ, NCDHHS, EPA)

*first report: Oct. 1, 2018 > > > > final report: Oct. 15, 2020*

## **Section 13.1.(i) – Appropriation**

**\$5,013,000**

*(FY 2018-19; non-recurring; non-reverting)*



Policy  
Collaboratory

# NC PFAS Testing Network

## Executive Advisory Committee

Ferguson (Duke) *Co-chair*  
Knappe (NCSU) *Co-chair*  
DeWitt (ECU)  
MacDonald-Gibson (UNC-CH)  
Mead (UNC-W)  
Sun (UNC-C)

## Program Director

Surratt (UNC-CH)

## Scientific Program Analyst

Bodnar (UNC-CH)

## Program Assistant

Khan (UNC-CH)

## Research Teams & Leads

### Team 1 PFAS Sampling & Analysis

Ferguson (Duke)  
Knappe (NCSU)

### Team 2 Private Well Risk Modeling

Genereux (NCSU)  
MacDonald-Gibson (UNC-CH)

### Team 3 PFAS Removal Performance Testing

Coronell (UNC-CH)  
Sun (UNC-C)

### Team 4 Air Emissions & Atmospheric Deposition

Mead (UNC-W)  
Turpin (UNC-CH)

### Team 5 Applied Research Opportunities

DeWitt (ECU)  
Fry (UNC-CH)

### Team 6 Communications

Gray (UNC-CH)  
Hoppin (NCSU)  
Weintraub (Duke)

### Team 7 Data Management

Lenhardt (UNC-CH)  
Mitasova (NCSU)

### Synthetic Organic Chemistry

Zhang (UNC-CH)

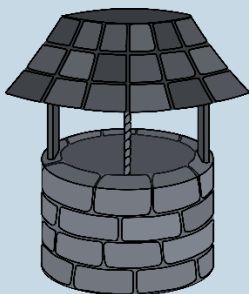
## Support Teams & Leads

# Network Teams Overview



Knappe/NCSU, Ferguson/Duke, Sun/UNC-C

**Statewide Water Testing  
Municipal Intakes and Wells**



MacDonald Gibson/UNC; Genereux/NCSU

**Private Well Risk Modeling**



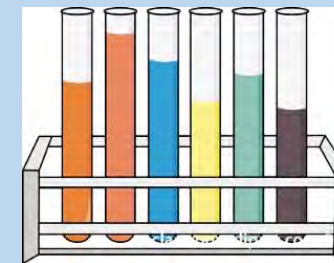
Coronell/UNC, Sun/UNC-C, Leibfarth/UNC,  
Knappe/NCSU, Stapleton/Duke

**PFAS Removal and Performance  
Testing**



Turpin/UNC; Mead/UNC-W

**Air Emissions and Atmospheric  
Deposition**



See Below

**Applied PFAS Research**

A. Novel PFAS Inputs into the  
Environment (Barlaz/NCSU)

B. Bioaccumulation of PFAS Into  
Aquatic Environments  
(Belcher/NCSU)

C. Health Effects Following Exposure  
Mice Study (DeWitt/ECU)

D. Bioaccumulation of PFAS in Crop  
Plants (Duckworth/NCSU)

E. Health Effects Following Exposure  
in Pregnant Women (Fry and  
Manuck/UNC)



Gray/UNC; Hoppin/NCSU; Weintraub/Duke

**Risk Communications**



Lenhardt/UNC; Mitasova/NCSU, Rajasekar/UNC

**Data Science and Management**

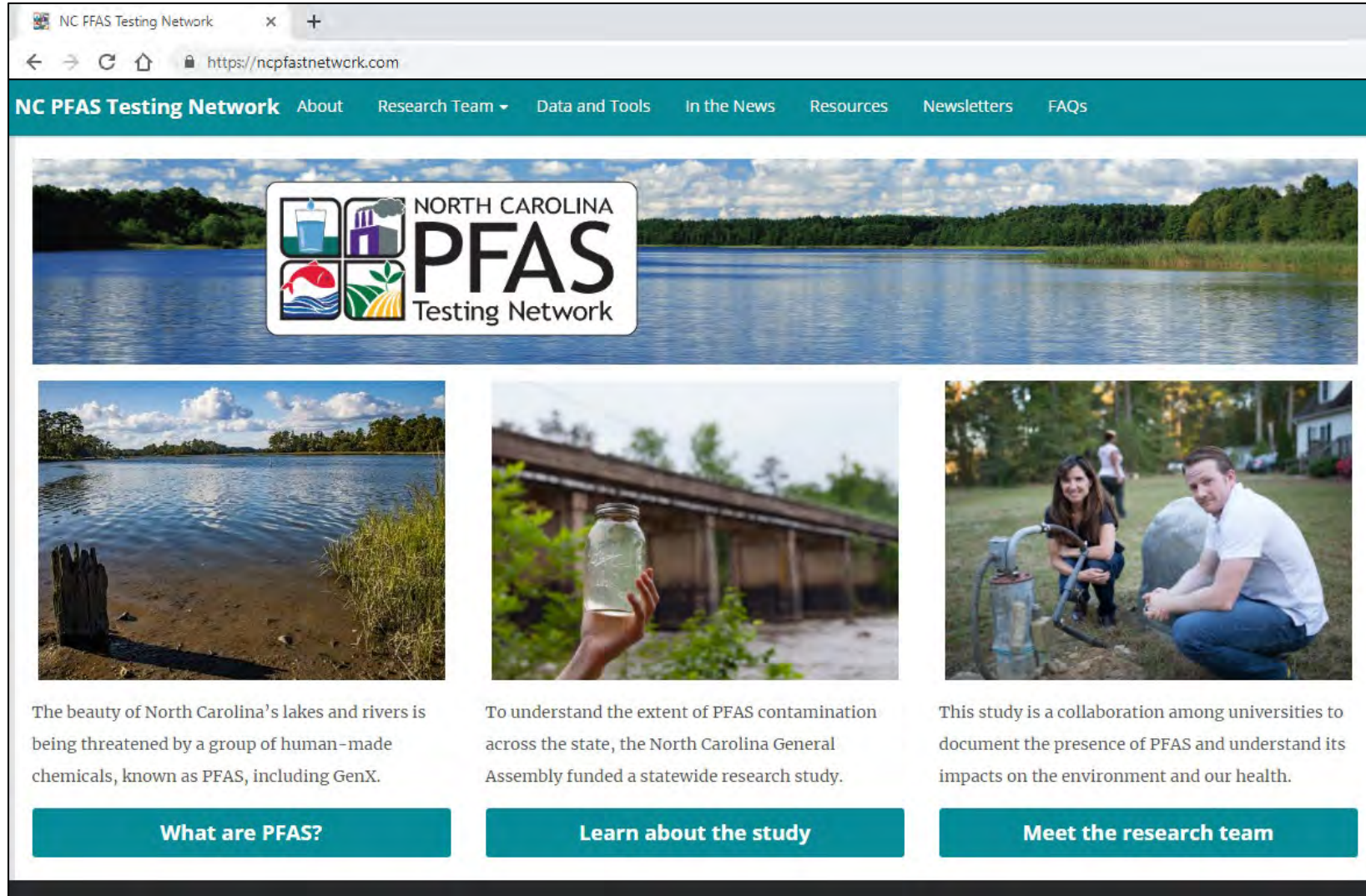


Surratt, Bodnar, Khan, Zhang/UNC

**Project Management and  
Synthetic Chemistry**



NC PFAST Network Website: <https://ncpfastnetwork.com/>



The screenshot shows the homepage of the NC PFAST Network website. The browser's address bar displays the URL <https://ncpfastnetwork.com/>. The website has a teal header with the navigation menu: NC PFAST Testing Network, About, Research Team, Data and Tools, In the News, Resources, Newsletters, and FAQs. The main banner features a scenic lake with the North Carolina PFAS Testing Network logo overlaid. The logo consists of four icons in a 2x2 grid: a water drop, a factory, a fish, and a plant, with the text 'NORTH CAROLINA PFAS Testing Network' to the right. Below the banner are three columns of content. The first column shows a lake with a log and the text 'The beauty of North Carolina's lakes and rivers is being threatened by a group of human-made chemicals, known as PFAS, including GenX.' with a 'What are PFAS?' button. The second column shows a hand holding a jar of water with the text 'To understand the extent of PFAS contamination across the state, the North Carolina General Assembly funded a statewide research study.' with a 'Learn about the study' button. The third column shows two people crouching next to a water sampling device with the text 'This study is a collaboration among universities to document the presence of PFAS and understand its impacts on the environment and our health.' with a 'Meet the research team' button.

NC PFAST Testing Network About Research Team Data and Tools In the News Resources Newsletters FAQs

**NORTH CAROLINA PFAS Testing Network**

The beauty of North Carolina's lakes and rivers is being threatened by a group of human-made chemicals, known as PFAS, including GenX.

**What are PFAS?**

To understand the extent of PFAS contamination across the state, the North Carolina General Assembly funded a statewide research study.

**Learn about the study**

This study is a collaboration among universities to document the presence of PFAS and understand its impacts on the environment and our health.

**Meet the research team**

e-mail: [NCPFASTNetwork@unc.edu](mailto:NCPFASTNetwork@unc.edu)



# Acknowledgements



Detlef Knappe, PhD  
NCSU



P. Lee Ferguson, PhD  
Duke



David Genereux, PhD  
NCSU



Jacqueline MacDonald  
Gibson, PhD  
UNC-CH



Orlando Coronell, PhD  
UNC-CH



Mei Sun, PhD  
UNC-C



Heather Stapleton, PhD  
Duke



Frank Leibfarth, PhD  
UNC-CH



Barbara Turpin, PhD  
UNC-CH



Karsten Baumann, PhD  
UNC-CH



Ralph Mead, PhD  
UNC-W



G. Brooks Avery, PhD  
UNC-W



Robert Kieber, PhD  
UNC-W



Stephen Skrabal, PhD  
UNC-W



Jamie DeWitt, PhD  
ECU



Rebecca Fry, PhD  
UNC-CH



Tracy Manuck, MD, MS  
UNC-CH



Matt Lockett, PhD  
UNC-CH



Morton Barlaz, PhD  
NCSU



James Levis, PhD  
NCSU



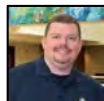
Scott Belcher, PhD  
NCSU



Owen Duckworth, PhD  
NCSU



Steve Broome, PhD  
NCSU



Nick Luke, PhD  
NC A&T



Kathleen Gray, PhD  
UNC-CH



Jane Hoppin, ScD  
NCSU



Jory Weintraub, PhD  
Duke



Helena Mitsova, PhD  
NCSU



Chris Lenhardt  
UNC-CH



Jason Surratt, PhD  
UNC-CH



Wanda Bodnar, PhD  
UNC-CH



Manal Khan, MPA  
UNC-CH



Zhenfa Zhang, PhD  
UNC-CH



Jeff Warren, PhD  
NC Policy Collaboratory



Steve Wall, JD  
NC Policy Collaboratory

*Research Associates  
Postdoctoral Fellows  
Graduate Students  
Undergraduate Students  
Technicians  
Contractors  
Collaborators*