The National Academies of
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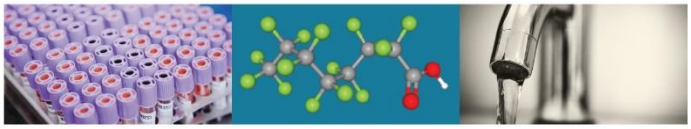
FEDERAL GOVERNMENT HUMAN HEALTH PFAS RESEARCH



A VIRTUAL WORKSHOP ON OCTOBER 26-27, 2020

Day 1: Monday, October 26 (all times EDT)

10:30 AM **Welcome**

David Dorman, planning committee chair

10:40 AM **PFAS 101** *(pre-recorded)*

Jamie DeWitt, East Carolina University

10:50 AM **Session I. Understanding the Context and Priorities for PFAS Human Health Research across Federal Agencies**

Presenters will address (5-10 min ea.):

- What types of activities or decisions made by your agency benefit from human health PFAS research?
- What are the overarching research questions related to PFAS and human health that are currently the highest near-term and longer-term priorities for your agency?
- What specific classes of PFAS are of interest to your agency? Why?

David Dunlap, Office of Research and Development, EPA
Patrick Breysse, NCEH/ATSDR
Rick Woychik, NIEHS
Susan Mayne, Center for Food Safety and Applied Nutrition, FDA
Steve Kappes, USDA
Michael Focazio, USGS
Chris Zevitas, Volpe National Transportation Systems Center, DOT
Benjamin Place, NIST
Marc Tonnacliff, FAA
Jody Wireman, DOD

12:15 PM **Break**

1:00 PM **Session II. State of the science regarding human exposure to PFAS**

Laurel Schaider, Silent Spring Institute, Session chair

This session will discuss pathways of human exposure, integration of this information to estimate relative source contributions, and the status of biomonitoring efforts. Brief (3-4 min) presentations by lead federal agencies will provide overviews for each subtopic on the current state of the science, what is likely to be known in the near future based on ongoing research efforts, and remaining data gaps. These presentations will be followed by discussions with workshop planning committee members and other federal agency experts.

	Subtopics	*Lead Presenters*
1:05 PM	**Biomonitoring**	*Antonia Calafat, CDC/NCEH*
1:20 PM	**Drinking water**	*Susan Glassmeyer, EPA*
1:35 PM	**Diet**	*Paul South, FDA*
1:45 PM	**Occupational exposures**	*Beth Whelan, CDC/NIOSH*
1:55 PM	**Other pathways, including consumer products, indoor environments, outdoor air**	*Elaine Cohen Hubal, EPA*
2:05 PM	**Understanding predominant exposure sources**	*Andy Lindstrom, EPA*
2:20 PM	**General discussion**	

2:45 PM **BREAK**

3:15 PM **Session III. Exploring the role experimental toxicology studies play in identifying human risks from PFAS**

Richard Becker, American Chemistry Council, Session chair

This session will discuss the state of the science of the PFAS toxicology as gleaned from experimental in vivo and in vitro studies. Brief (3-4 min) presentations by a lead federal agencies will provide concise overviews for each subtopic on the current state of the science, what is likely to be known in the near future, and remaining data gaps. These presentations will be followed by discussions with workshop planning committee members and other federal agency experts.

3:20 PM	**In vivo studies**	*Chad Blystone, NIEHS*
3:35 PM	**Pharmacokinetics**	*Mike DeVito, EPA*

3:50 PM **In vitro, high throughput, and mechanistic studies** *Rusty Thomas, EPA*

4:05 PM **Adverse outcome pathways (AOPs) and other frameworks to integrate evidence** *Michelle Angrish, EPA*

4:20 PM **General discussion**

4:45 PM **Day 1 Wrap Up**
David Dorman, planning committee chair

5:00 PM **ADJOURN**

Day 2: Tuesday, October 27, 2020 (all times EDT)

10:30 AM **Welcome and brief recap of Day 1, plans for Day 2**
David Dorman, planning committee chair

10:40 AM **PFAS epidemiological studies—where are we?** *(pre-recorded)*
David Savitz, Brown University

10:50 AM **Session IV: Human health outcomes from PFAS exposure**
Thomas Webster, Boston University, Session chair

This session will discuss human experimental and epidemiologic evidence regarding health outcomes seen in exposed human populations. Lead federal agencies will provide concise overviews for each subtopic on the current state of the science, what is likely to be known in the near future, and remaining data gaps. These presentations will be followed by discussions with workshop planning committee members and other federal agency experts.

10:55 AM **Immunological effects** *Bonnie Joubert, NIEHS*

11:15 AM **Metabolic, hepatic and other noncancer effects** *Marian Pavuk, ATSDR*
Kimberly Gray, NIEHS

11:40 AM **Cancer effects** *Jonathan Hofmann, NCI*

11:50 AM **Reproductive, perinatal and developmental effects** *Frank Bove, ATSDR*

12:05 PM **General discussion**

12:30 PM **BREAK**

1:15 PM **Session V: Putting it all together: Cross cutting issues in PFAS risk assessment**

Elsie Sunderland, Session chair

Humans are exposed to multiple PFAS, raising concerns about complex mixtures, PFAS interactions resulting in additivity, and possible interaction between PFAS compounds. The toxicity of many PFAS chemicals is poorly characterized and additional exposures are likely to be revealed in the future. This session will examine the challenges and strategies in considering mixtures and developing class-based approaches for risk assessment. For the first two subtopics, brief (3-4 min) presentations by lead federal agencies will provide a concise overview of the current state of the science, what is likely to be known in the near future, and remaining data gaps, followed by discussions with workshop planning committee members and other federal agency experts.. In this session, the participants will also discuss research needs to address emerging issues, including approaches and tools to rapidly respond to newly identified and next-generation PFAS, such as new strategies for chemical screening and new in vitro and computational toxicology approaches.

1:20 PM **Handling mixtures** *Moiz Mumtaz, ATSDR*

1:45 PM **Class-based approaches** *Rusty Thomas, EPA*

2:10 PM **Emerging issues**

2:30 PM **General discussion**

2:45 PM **Break**

3:15 PM **Meeting Wrap Up:**

- **Synthesis of Sessions II – V by session chairs**
- **Discussion**
- **Closing comments from David Dorman**

4:15 PM **Adjourn**