The Problem of PFAS Contamination: How Can We Make Rapid Progress to Address it?

One day Workshop at Brower Center in Berkeley CA on December 13, 2019
Sponsored by the Superfund Research Program (SRP) at UC Berkeley
Program Chair: Martyn Smith, SRP Director

Background and Objectives for the Meeting:
• There are over 4,000 perfluoroalkyl and polyfluoroalkyl substances (PFAS) in use and many more possible breakdown products and metabolites.
• The carbon-fluorine bond is extremely strong and hence many PFAS are extremely persistent, while often being highly mobile in environmental media allowing them to contaminate water systems and supplies.
• Regulators wish to classify these chemicals into groups with regard to their toxicity (T), persistence (P), mobility (M) and potential for bioaccumulation (B).
• This meeting will discuss whether such grouping is possible and if so what approaches could be taken to generate the data required to make decisions.
• We will discuss what should be done in the short-term (1-2 years) and long-term (5-10 years) for each of the subject areas.

9.00 Opening Remarks: Where We Are and What We Want to Achieve Today
• Welcome and purpose of this meeting: Martyn Smith, Andres Cardenas (UCB)
• California perspective: Joaquin Esquivel (CA SWRCB)
• The Chemistry of PFAS – A Primer: Kathleen Durkin (UCB)

9:30 Introduction to Grouping and Read-Across – Gina Solomon (UCSF) on Grouping and David Reif (NCSU) on Read-Across

10.00 Characterizing Toxicity – Human Studies. Chair: Andres Cardenas (UCB)
• What do we know so far about health effects in humans? – Andres
• CDC studies – Scott Bartell (UCI)
• Recent findings – Barbara Cohn (UCB)

10.40 Break

11.00 Characterizing Toxicity – Animal Studies and HT Screening. Chair: Melanie Marty (OEHHA)
• Summary of classical toxicology studies to date – Christopher Banks (OEHHA)
• Recent animal studies – Chris Lau (U.S. EPA)
• In Vitro Studies – Michael De Vito (U.S. EPA) by Videoconference


12.00 to 1.00 Lunch

1.00 Characterizing Toxicity – Using Computational Toxicology. Chair: David Reif (NCSU)
• David Reif (NCSU)
- Carla Ng (U. Pittsburgh)
- E. Azhagiya Singam (UCB)

1.30 Collective discussion on characterizing and grouping PFAS on basis of computational toxicology. Chairs: Kathleen Durkin (UCB) and Lauren Zeise (OEHHA).

2.00 Characterizing Exposure and the Potential for Bioaccumulation? Chair: Rachel Morello-Frosch (UCB)
- Chair’s Summary – Rachel
- Biomonitoring data and results from drinking water monitoring – June-Soo Park (DTSC)
- Accumulation in Ecosystems – Rebecca Sutton (SFEI)
- Bioaccumulation of PFAS – Rainer Lohmann (URI)

Collective discussion on bioaccumulation.

2.50 Break

3.10 Characterizing the persistence and mobility of PFAS in the environment? Chair: Rula Deeb (GeoSyntec)
- Chair’s summary – Rula.
- Assessing persistence and environmental mobility – Andre Algazi (DTSC)
- Quantifying persistence – Tom Webster (Boston U.)
- Removing persistent PFAS – David Sedlak (UCB)

Collective discussion on persistence and mobility

4.00 Collective discussion of how we group PFAS on the basis of persistence, mobility and potential for bioaccumulation. Can we rank/group them on basis of persistence, mobility and potential for bioaccumulation to control them better.
Chairs: Tom Bruton (Green Science Policy Institute) and Rainer Lohmann (URI).
Afternoon participants.

4.30 What have we learned about grouping PFAS and what should be the next steps? Can we incorporate multiple traits, including but not limited to potential health impacts, in characterizing these chemicals?
Discussion led by Vincent Cogliano and Amy Kyle

5.00 Closing remarks followed by Wine and Cheese reception

Abbreviations: DTSC, Department of Toxic Substances Control; NCSU, North Carolina State University; NTP, National Toxicology Program; OEHHA, Office of Environmental Health Hazard Assessment; SFEI, San Francisco Estuary Institute; UCB, UC Berkeley; UCI, UC Irvine; UCSF, UC San Francisco; URI, University of Rhode Island STEEP Program.