

U An Overview of Persistent Organic Pollutants (POPs) B

Research at Birmingham

Stuart Harrad

SCOPE

- ❑ Covers many aspects of the sources, environmental fate and behaviour of POPs, with a particular focus on human exposure assessment
- ❑ Compounds covered include:
 - ❑ PCBs
 - ❑ PBDEs, HBCDs, TBBP-A
 - ❑ NBFRs
 - ❑ OPEs
 - ❑ PFASs
 - ❑ PAH

COLLABORATIONS

- ❑ A-TEAM (exposure assessment for consumer chemicals)
- ❑ INFLAME (FRs indoors)
- ❑ ELUTE (environmental fate/metabolism BFRs)
- ❑ HEXACOMM (indoor contamination with PAH/PM)
- ❑ INTERFLAME (FRs in the environment)
 - Involve many partners from: Australia, Belgium, Canada, China, Germany, Japan, the Netherlands, Norway, & Sweden
- ❑ Non-academic collaborators/sponsors
 - CEFAS, FERA, FSA, Greenpeace, Ricardo-AEA, Tata Steel & ThermoFisher

End-of-life management

Cassie, Alice, Jiangmeng,
Sandra, Yessica, Layla, Yuning,
Temi, Ana, Gopal, Mohamed
(ADAPT, A-TEAM, HEXACOMM,
INFLAME)

Indoor
Environment

City

Region

Terrestrial
Food Web

Fruits,
Vegetables
Animal Products

Aquatic
Food Web

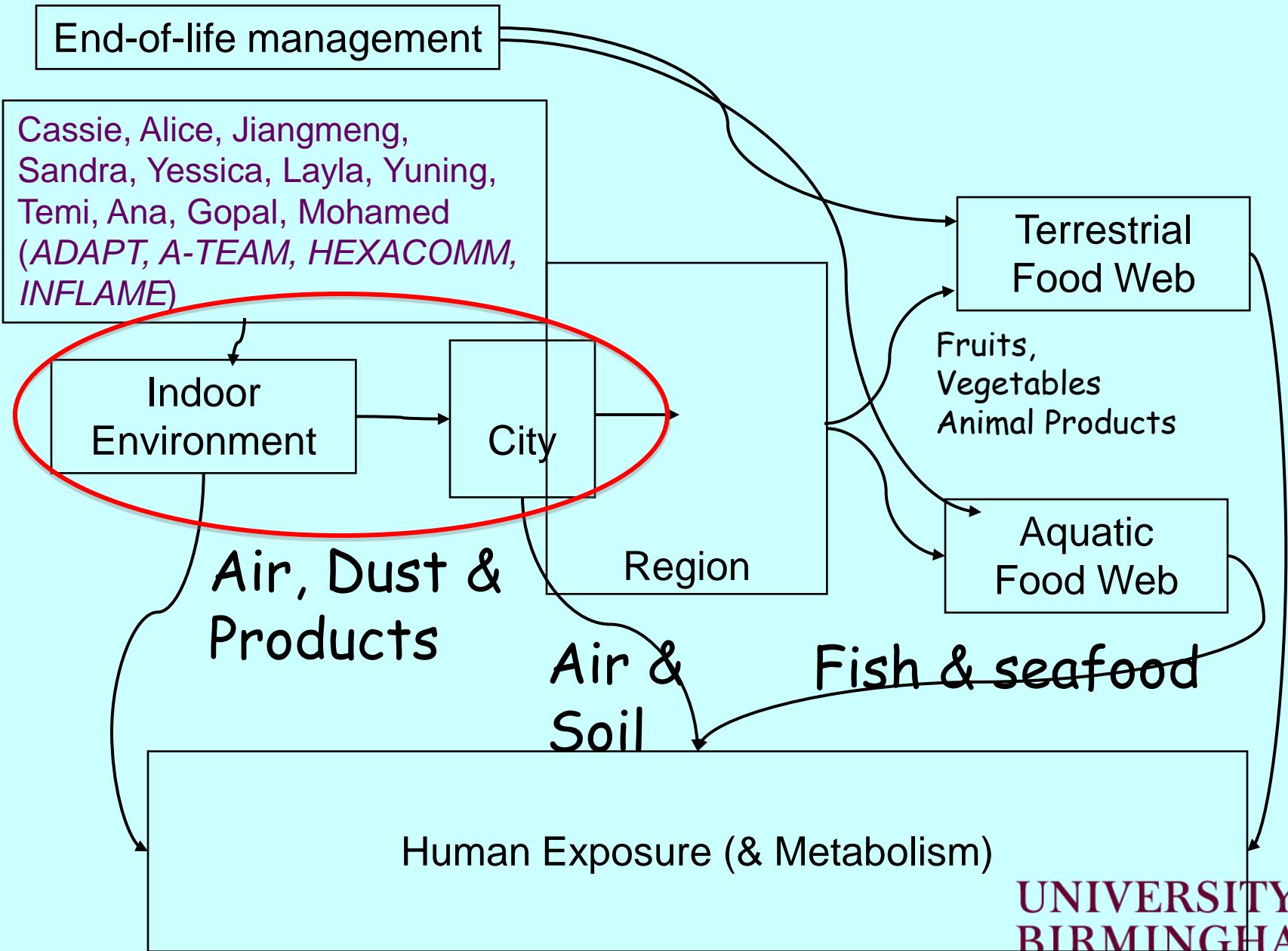
Air, Dust &
Products

Air &
Soil

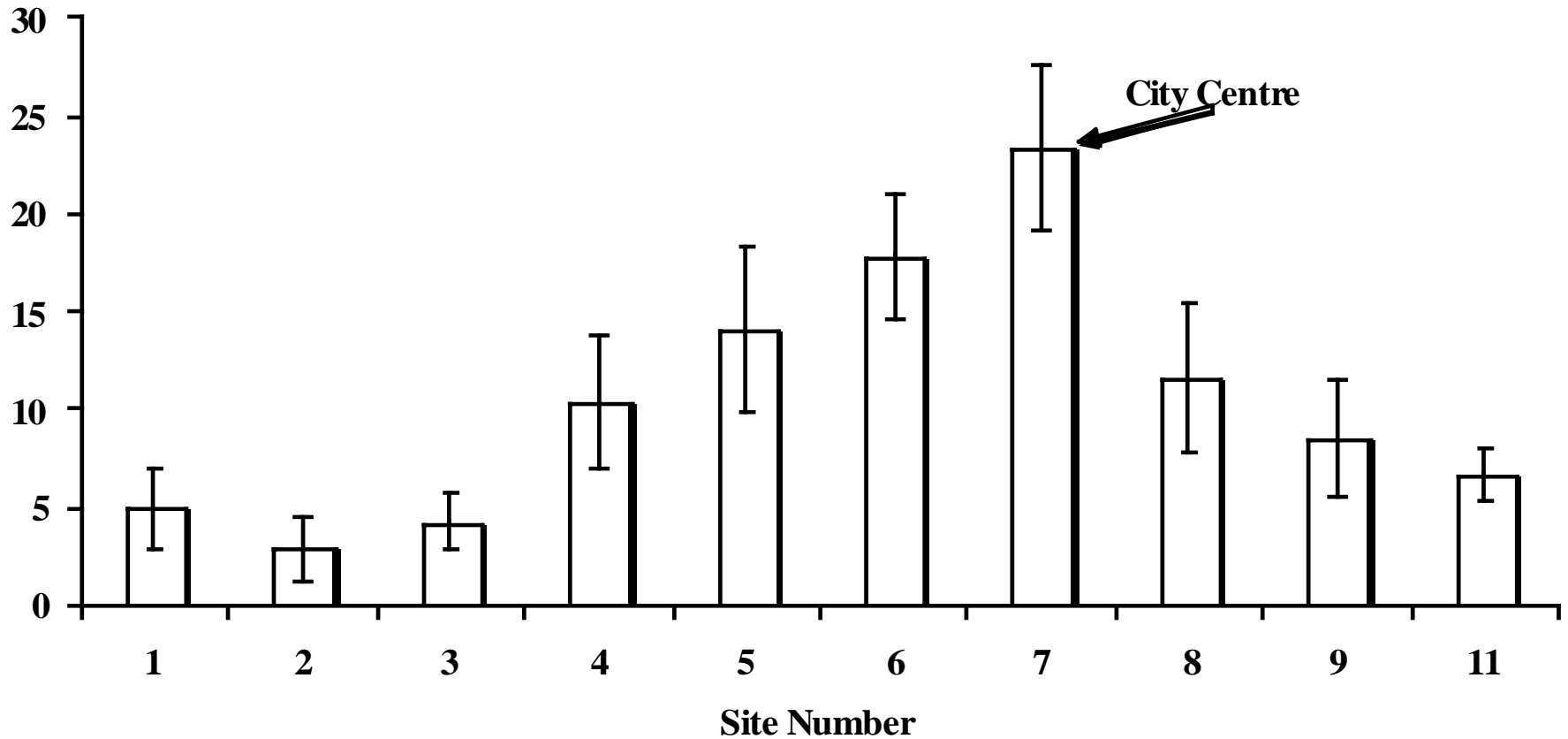
Fish & seafood

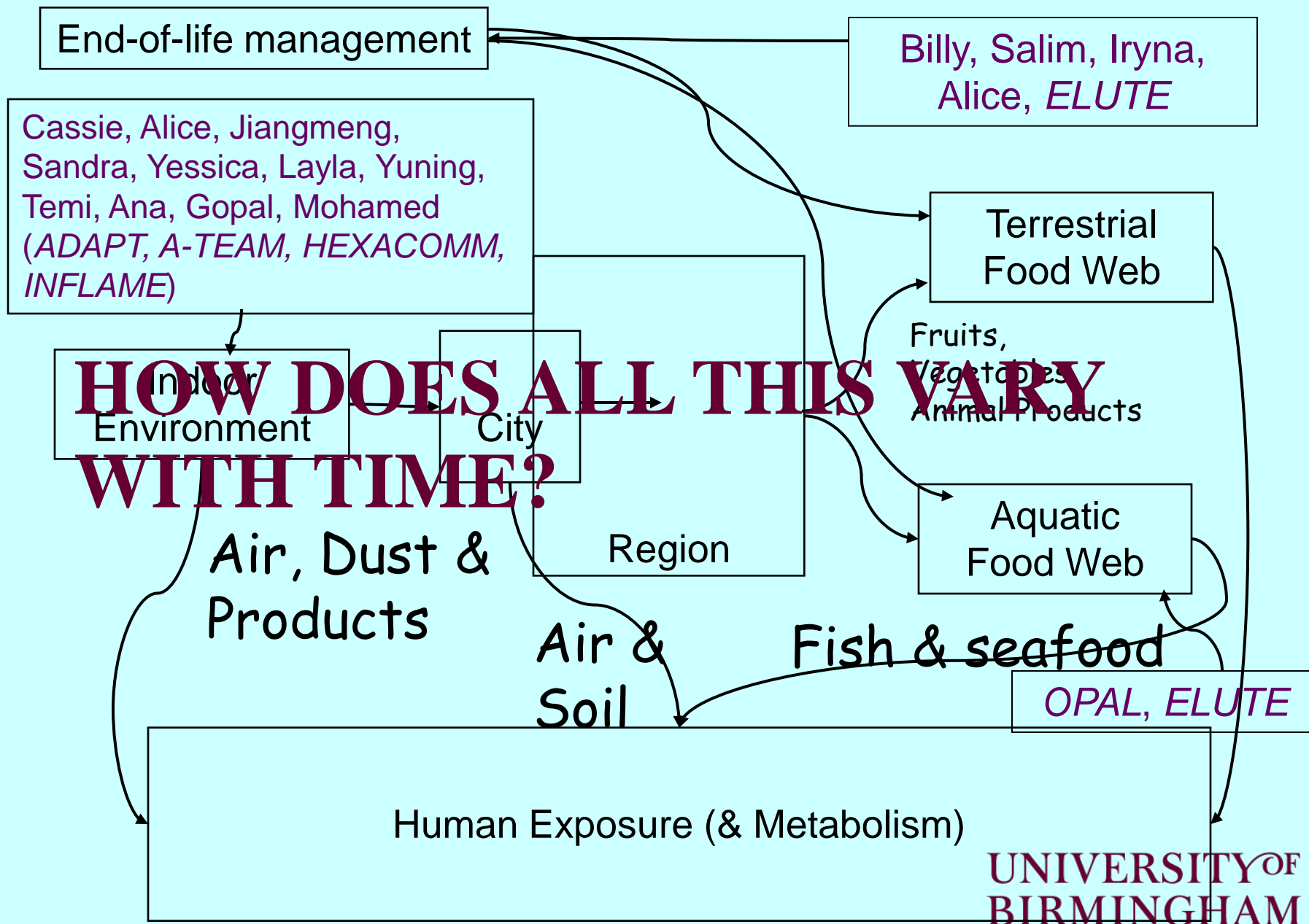
Human Exposure (& Metabolism)

UNIVERSITY OF
BIRMINGHAM

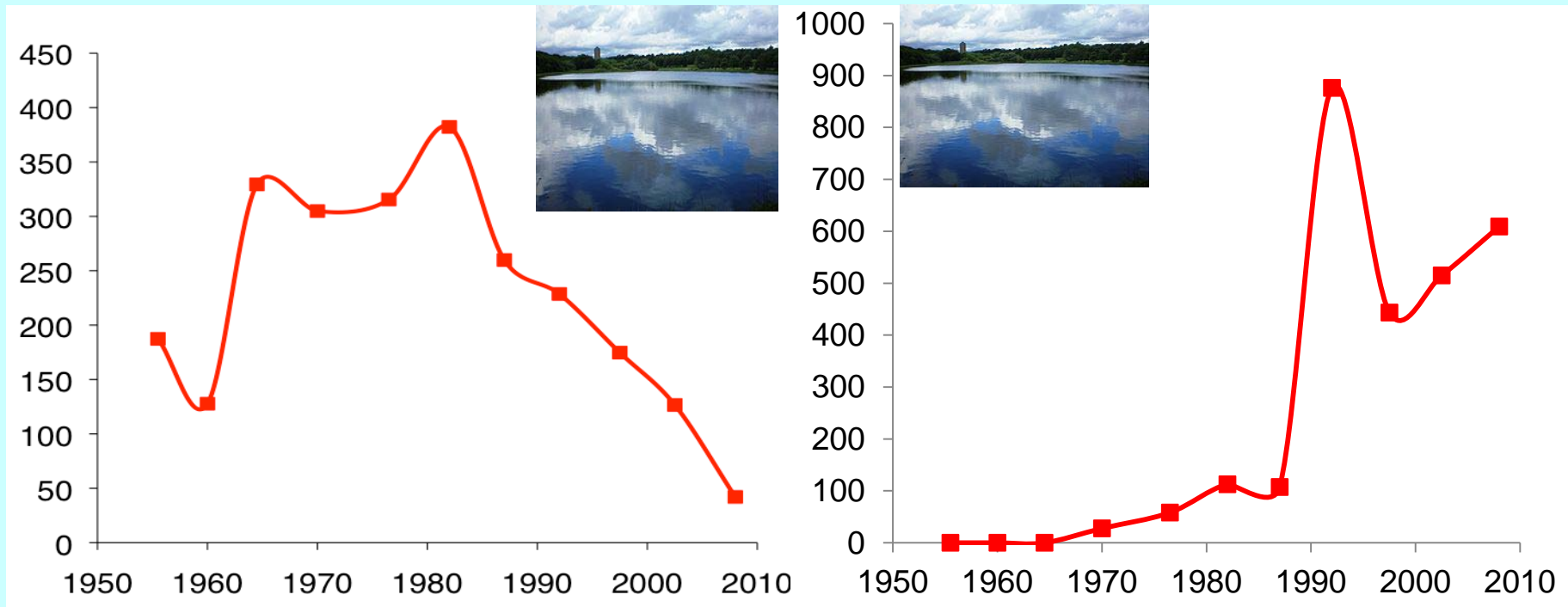


SPATIAL VARIATION IN PBDE CONCENTRATIONS (pg m⁻³) IN OUTDOOR AIR ACROSS BIRMINGHAM





TIME TRENDS IN ENVIRONMENTAL CONTAMINATION WITH POPs



- ⑩ How does environment respond to changes in use?
- ⑩ PCB (L) & TBPH (R) trends in dated sediment cores at Edgbaston Pool
- ⑩ TBPH concentrations exceed those of PCBs at their peak!
- ⑩ In ELUTE, will test hypothesis that use of PBDEs has led to increased contamination with PBDD/Fs

FUTURE CHALLENGES

- ❑ **Keeping track of the fast changing “chemical landscape” – ever more targets to monitor and understand**
- ❑ **Building our understanding of the fate and behaviour of chemicals once in the waste stream**