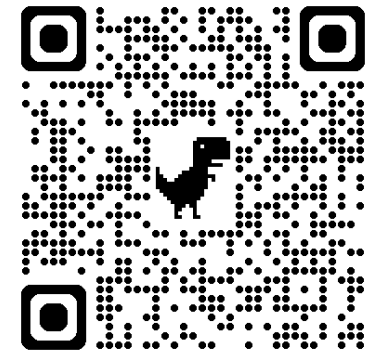


Human Biomonitoring as a Public Health Instrument: from Science to Policy Decisions

Human Biomonitoring for Ireland



Dr Alison Connolly
Assistant Professor



School of Public Health, Physiotherapy and Sports Science, in the UCD Centre for Safety and Health at Work.

Background

- Population of >5.2 Million
- Industries: Agriculture, construction, technology, pharmaceutical and medical device.
- EPA Ireland - State of the Environment Report 2024 strongly advocates for HBM.



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Characterising Occupational Exposure to Glyphosate among Amenity Horticulturists



A thesis submitted by

Alison Connolly





Addressing policy questions

- Need for measured data
- Evaluate environmental and occupational settings
- Ensure safe chemical use



"One Substance, One Assessment" (OSOA)

- Streamline chemical evaluation
- Harmonising processes
- Early warning systems
- EU-wide human biomonitoring



One Substance, One Assessment (OSOA) package

Towards more coordinated and efficient chemical
safety assessments across Europe

<https://share.google/mS1v0V23MNqEB1Jdh>

Feasibility Study

1

Evaluate state-of-the-art national HBM campaigns

2

Create opportunities for two-way knowledge transfers

3

Identify the challenges and opportunities

4

Provide a framework for future programmes



HBM Review



Key inclusion criteria:

National representativeness,
Standardised protocols for sampling and
analysis,
Continuous/ongoing programmes.



Reviewed:

Commencement of the programme,
Coordinating agencies,
Sampling frequency & target population,
Chemicals analysed & QA/QC
Collection protocol and biobanks.

Stakeholder Forum - Engaging policy makers



STAKEHOLDER FORUM ON HUMAN BIOMONITORING IN IRELAND



 **Date:** October 11th, 2024

 **Time:** 9:15 AM – 4:30 PM

 **Location:** University College Dublin

This invite-only event, part of the HBM4IRE Project funded by the EPA Ireland, will explore the feasibility and potential of a national human biomonitoring program in Ireland. Your participation is highly valued.

We will be joined by leading HBM researchers, offering a unique opportunity to gain insights from top experts.



Dr. Marike Kolossa-Gehring
Head, Toxicology, Health-related Environmental Monitoring, German Environment Agency (UBA)

Dr. Lisbeth E. Knudsen
Professor, Department of Public Health, University of Copenhagen, Denmark

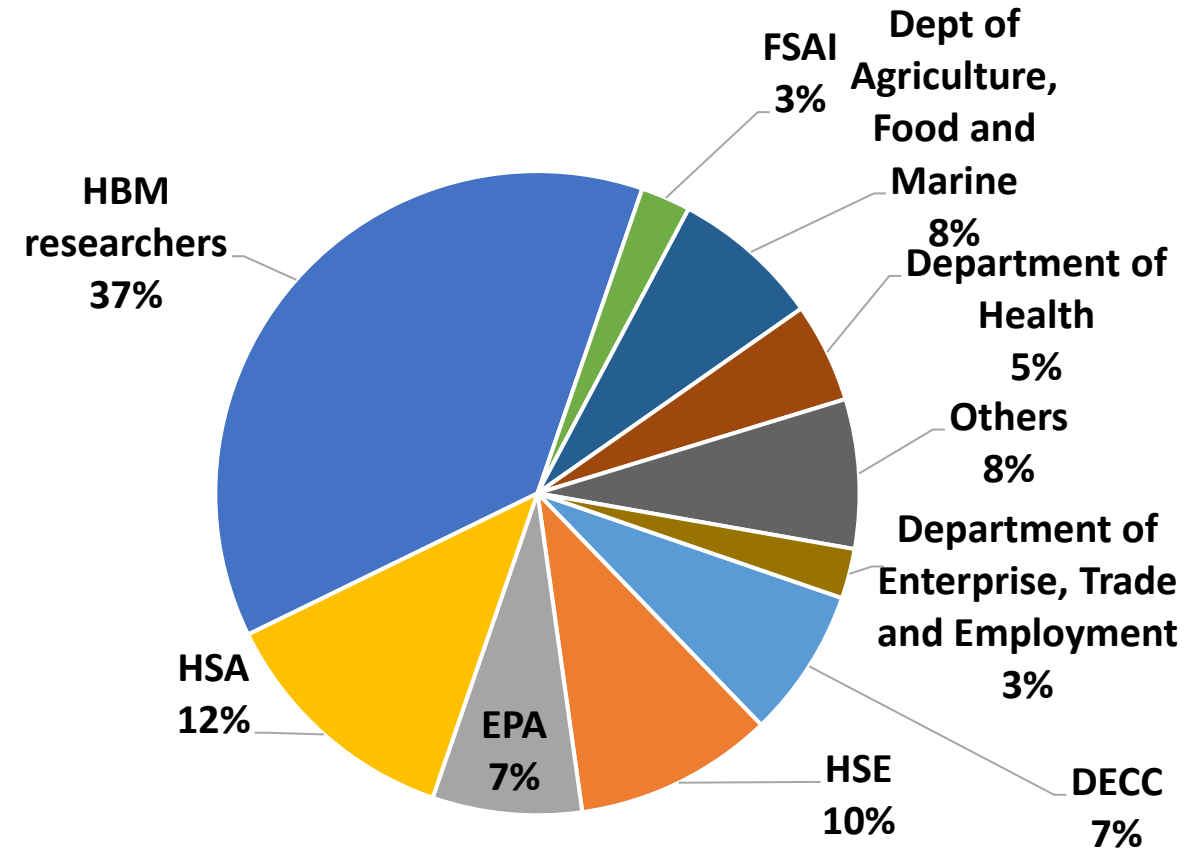
Dr. Holger Koch
Division Head of HBM Centre, Institute of the Ruhr University Bochum (IPA), Germany

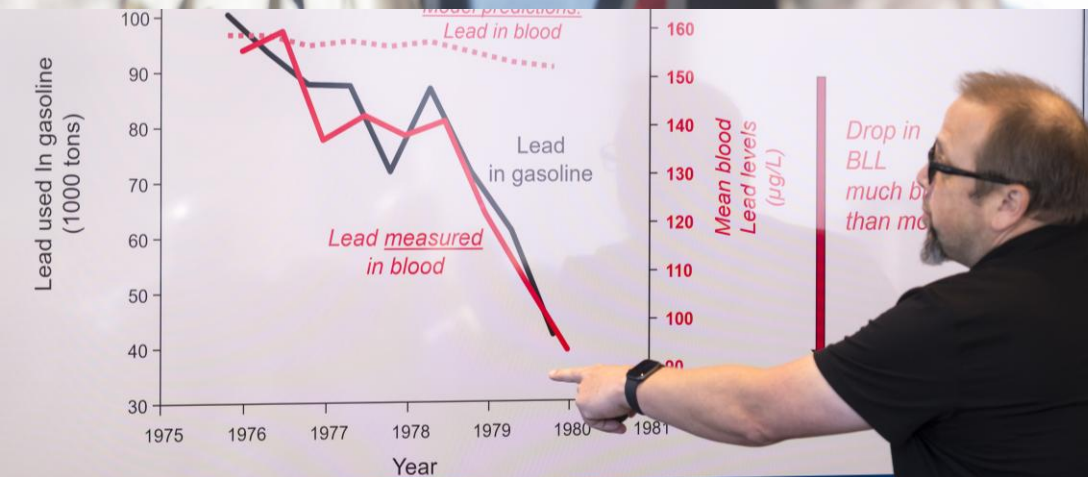
Dr. Ovnair Sepai
Principal Toxicologist UK Health Security Agency (UKHSA)

For more details contact: richa.singh@ucd.ie, alison.connolly@ucd.ie



National agencies, Departments & Researchers





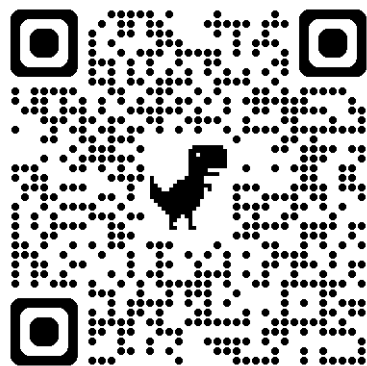
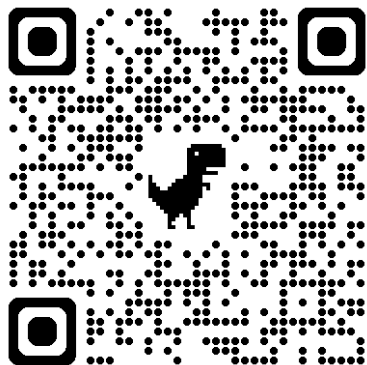
kind permission from ISEA/ISES Wesolowski Award Presentation:
ing: An Integral Part of Exposure Analysis
edham, Ph.D., National Center for Environmental Health, Centers for Disease Control and Prevention





World Café on HBM4IRE

This will help understand the stakeholder perspective and policy needs, which can be used for HBM studies and the HBM programme.







POLICY

- Targeted Cohorts: hotspots/at-risk occupations/at-risk.
- Mapping HBM to answer **Irish & EU policy** questions.
- HBM to monitor and control chemical exposures.



CHEMICAL PRIORITISATION

- Evaluating **priority** chemicals.
- Tailor chemical prioritisation based on sources from the **national context**.
- The need to evaluate **emerging (and substitute) chemicals**.



SYNERGIES

- **Collaborative** governance structure with multi- and interdisciplinary approach
- National biobank and database
- Ethical considerations and transparency
- **Leverage existing resources** and expertise for national HBM



FUNDING

- **Collaborative, sustainable funding** between agencies & government departments
- Leveraging EU and international funding
- leveraging Irish research funding mechanisms
- leveraging industry for dedicated funding as part of ESR.



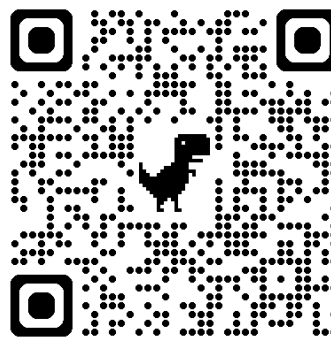
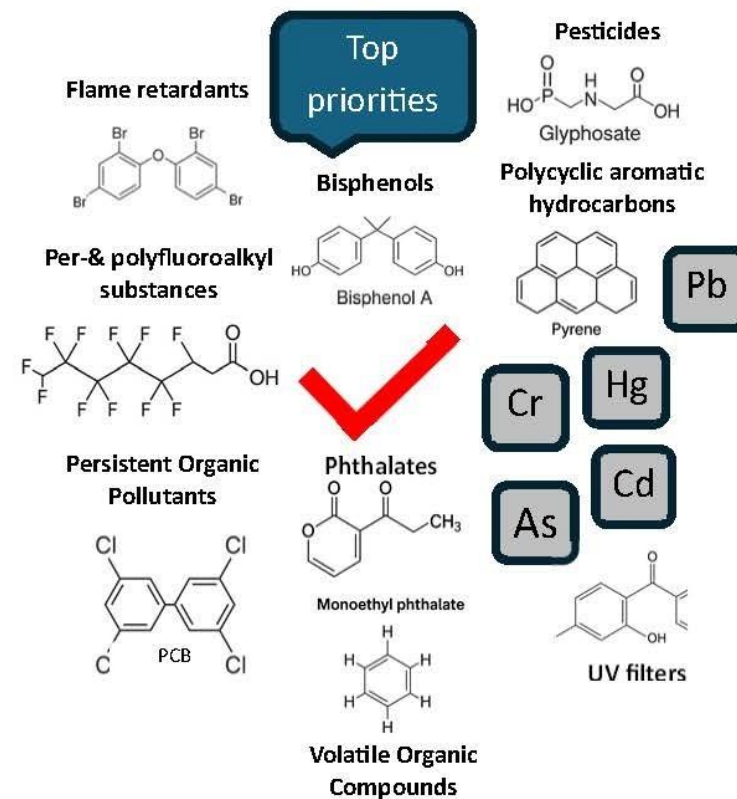
PUBLIC ENGAGEMENT

- **Tailored HBM communication; public awareness on HBM, transparency and trust;**
- Public consultation on perceptions and priorities
- Use of Irish educational resources; stakeholder-focused research communication.

**Reviewing
HBM4EU, PARC &
Global HBM
programmes**

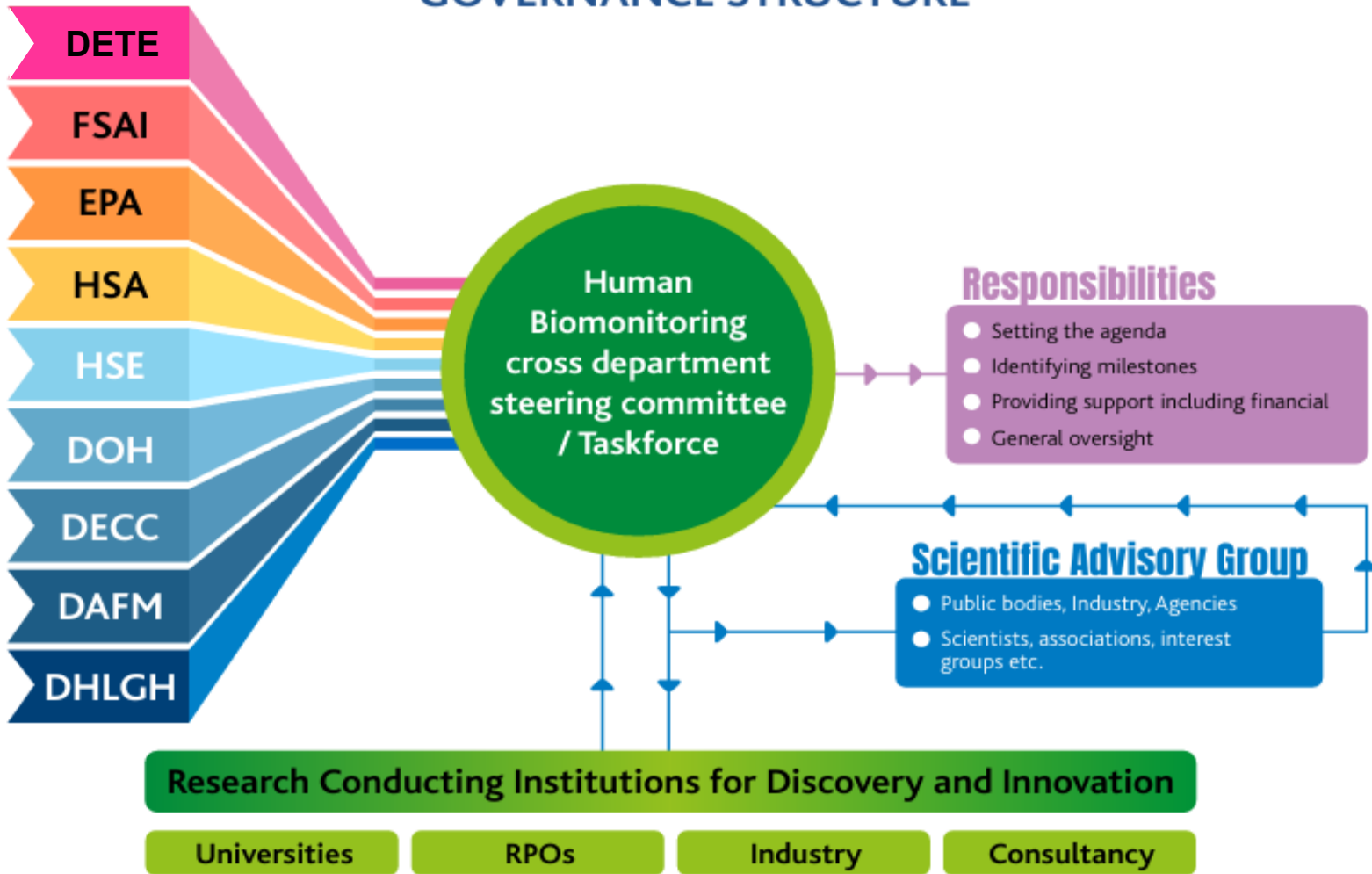


National Survey



<https://doi.org/10.3390/toxics13040281>

GOVERNANCE STRUCTURE



Ethos



Key Elements



Establishing governance and securing funding



Defining Scope/objective and methodological approaches



Data Management, Ethics and Dissemination



Integrating HBM with Public Health Policy & Communication



Discovery and Innovation



RECOMMENDATIONS

1



Develop a governance framework that works across silos and creates linkages at local, national and EU level.

2



Strengthen the use of human biomonitoring data to inform policy.

3



Utilise international expertise, data and knowledge to advance the national agenda.

4



Support education, training, development and data/knowledge sharing nationally and internationally.

5



Integrate the requirements for discovery and innovation through research and development for human biomonitoring.

Human Biomonitoring for Ireland – The HBM4IRE Study

Authors: Alison Connolly, Richa Singh, Holger Koch, Marike Kolossa-Gehring and André Conrad
Lead organisation: University College Dublin

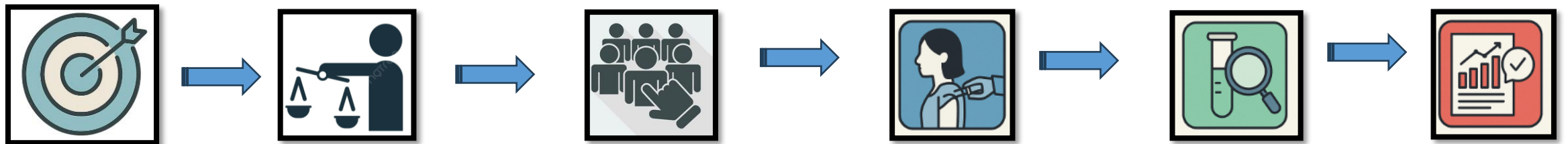
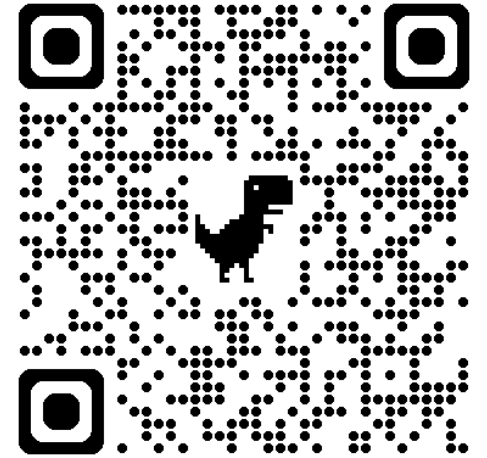


<https://www.epa.ie/publications/research/environment-health/>



HBM4IE

- HBM4IE - 2025 – 2029
 - Zero Pollution Action Plan
- Funded :  **epa**Research
- 162 Irish Adults; sampling completed
 - Urine, Blood, Serum





Partnership for the
Assessment of Risks from
Chemicals



Develop next-generation
chemical risk assessment to
protect human health and the
environment



7-year partnership under
Horizon Europe



€400 million funding



29 Countries



200 institutions



Human Biomonitoring WHO/EHP



Key Messages



Opportune time to establish an Irish national HBM programme, aligning with significant progress in Europe and with future requirements of One Substance One Assessment.



Ireland's collaborations with the PARC initiative and the WHO EHP Human Biomonitoring strengthen its capacity for successful implementation.



A well-structured multi-stakeholder **Governance Framework** has been proposed to connect local, national, and EU levels, ensuring HBM data effectively informs policy.



A national HBM programme must prioritise **capacity building, education, training, knowledge-sharing**, and **research** to drive discovery, innovation, and long-term **sustainability**.



Framework for establishing an HBM programme has been created, inspired by state-of-the-art practices worldwide.



Thank you

 **epa**Research

