

Members of the Hazardous

Substances Advisory Committee

Date: March 2022

# Professor Iseult Lynch (Chair from March 2022)

## (Appointed April 2021)

Professor Iseult Lynchis Chair in Environmental Nanosciences at the University of

Birmingham, and leads the Institute of Global Innovations theme on Environmental Pollution Solutions bringing together environmental scientists, engineers, economists, behavioural scientists and human geographers to develop and deliver innovative solution-focused research addressing the UN’s Sustainable Development Goals. She has a very broad overview of all aspects of nanomaterials safety assessment, with a research focus on the nanomaterial’s interactions with biomolecules (proteins, metabolites, natural organic matter, pollutants etc.) and the implications of these interactions for nanomaterials fate and effects and on the biotic and abiotic responses induced in organisms.

Among her recent areas of interest are applications of nanomaterials for agriculture to increase nitrogen use efficiency and thus reduce pesticide overuse, the lived experiences of children and their interactions with nanomaterials and plastics (collaboration with children’s geography colleagues at UoB), and the role of data management in supporting the acceleration of nanosafety research.

The interdisciplinarity and impact of her research are evidenced by her recognition as a Clarivate Highly Cited cross-field Researcher in 2018. She is a Fellow of the Royal Society of Chemistry, and an Associate Editor for the journal Environmental Science: Nano. She was awarded the Royal Society of Chemistry John Jeyes award for Environmental chemistry in 2020 for her work on elucidating the role of environmental interactions of nanomaterials and microplastics on their ecotoxicity. She coordinates the EU H2020 NanoSafety research e-infrastructure for nanosafety (NanoCommons) and is deputy coordinator of H2020 nanoinformatics projects NanoSolveIT and CompSafeNano.

# Professor John Colborne, FRSB

## (Appointed April 2021)

John Colbourne is Professor and Chair of Environmental Genomics at the University of

Birmingham. He is also co-founder of Michabo Health Science Ltd., the Environment Care

Consortium, and the Solve Pollution Network. Previously, he was Director at the Centre for Genomics and Bioinformatics at Indiana University. He leads a global research initiative that establishes causation between chemicals and their adverse health effects to populations and the environment.

He was awarded the Royal Society Wolfson Research Merit Award in 2012 for his work at establishing new model species for ecological and evolutionary studies. His current work at applying new technologies and new sentinels for environmental health protection is advancing the developments of New Approach Methodologies (NAMs) that improve knowledge of chemical safety while replacing the use of vertebrates in toxicity testing.

His international projects involve collaborations across multiple disciplines including genomics, metabolomics, analytical chemistry, evolutionary theory, quantitative genetics, data science, toxicology, and law.

# Dr Stewart Owen

## (Appointed April 2021)

Dr Stewart Owen is the Principal Environmental Scientist at AstraZeneca with core expertise in comparative animal physiology, focusing on environmental toxicology. His wide remit includes the global lead to instigate and direct innovative science to secure the sustainable environmental stewardship of life changing medicines.

His ambition is to better predict the risks of chemicals to wildlife and people, and better understand risks to a sustainable chemical future where we already know climate change will exacerbate environmental safety (eco-toxicology). Driving the experimental test paradigm away from laboratory vertebrates, he champions the development of a suite of innovative alternatives for better protecting the environment. For example, new approach methodologies initiating work with *in vitro* 3D organoids (microscopic organs re-assembled from different cell types that recapitulate the living animal within cell culture); and promoting invertebrate and embryonic zebrafish techniques including genetically modified reporters to signal chemical responses that help us better understand pollution.

More recently he promoted *in silico* exploration of machine learning approaches including successfully creating bioaccumulation models for fish and invertebrates (significant for our field as they are indeed different). With 25 years postdoctoral expertise as an internationally recognised scientist, he has published extensively on new approach methodologies not limited to just pharmaceuticals. Working within extensive collaborations, he represents a bridge between industry and academic partners across Europe and was privileged to be awarded Honorary Associate Professor, College of Life and Environmental Sciences, University of Exeter.

# Professor Kevin Jones, Distinguished Professor

## (Appointed March 2022)

Kevin Jones is Distinguished Professor of Environmental Chemistry at Lancaster University. His research focusses on the sources, fate, behaviour and effects of organic pollutants in the environment, including food chain transfers and the links to biological systems. He is also interested in the whole system ‘life cycle’ of chemicals. He has been based at Lancaster for over thirty years, where he has been Director of the multi-disciplinary Lancaster Environment Centre (LEC).

LEC brings together natural and social scientists, academics, research scientists, private sector and government agency partners, with a focus on environmental research, training, innovation and outreach. Professor Jones and his team combine laboratory, field and modelling approaches, to investigate a wide range of chemical classes across a range of scales (from within cell structures to regional/global fate and mass balances).

Prof Jones received the 2020 American Chemical Society Award for Creative Advances in Environmental Science and Technology, and international awards for his scientific collaborations with China. He has published nearly 700 peer-reviewed articles, with over 70,000 citations to date. He has collaborated with many groups – nationally and internationally - in academia, research organisations, government agencies, SMEs, multi-national companies and public interest groups.

Prof Jones is Senior Visiting International Scientist with the Chinese Academy of Sciences, and with Nanjing University China, and Senior Research Fellow with the UK Centre for Ecology and Hydrology.

# Professor Jason Weeks

## (Appointed March 2022)

Jason is a professor of environmental toxicology and risk, and a Director at IEH Consulting Ltd. A former UK Co-opted member of the European Medicines Agency who sat on the CVMP and chaired the Environmental Risk Assessment Working Party and attended the EU Standing Committee on behalf of the UK. An advisor to FAO, OIE and WHO, Defra, the EU, ECHA and VMD. A current member of the VPC. He is a member of the global joint roster of experts for FAO/WHO on foodborne AMR. Jason also Chairs the VPC (Veterinary Products Committee) working group on companion animal parasiticides highlighting environmental concerns.

Jason is an experienced and passionate environmental toxicologist and risk expert with extensive experience in human and environment health projects, understanding of PBTs, and human and veterinary pharmaceuticals, supply chain risks and international development. He is a global leader in ecological risk assessment and a toxicologist with broad research and project management experience in Europe, Africa, East Asia, Korea, China, Central & Latin America, Middle Asia and the Caribbean.

He’s published over 120 peer-reviewed high impact publications across a broad range of environmental themes linked by a consistent theme centred on environmental risk assessment and understanding of complex systems.

Jason has worked on behalf of organisations such as the ESF, WHO, EFSA, UNEP, NATO, UN, FAO, OIE, IPCC, UNIDO, DFID, the EC and World Bank. Registered expert consultant to UNIDO, EU, SCHEER, EMA, EFSA and the World Bank.

# Professor Susan Chilton

## (Appointed March 2022)

Susan Chilton is an applied welfare economist whose main research interests are centred around the intersection between the economics of safety, health, environment and risk. Other interests include decision making and behavioural change.

She received a PhD in environmental economics (environmental valuation) from Queen’s University Belfast and has held academic positions at the University of York and Newcastle University, where she is currently Professor of Economics in the Business School. She has a particular expertise and international academic reputation in the monetary valuation of risk to life and health, publishing regularly in international Journals, such as the *Journal of Risk and Uncertainty*, the *Journal of Environmental Economics and Management*, *Ecological Economics, Energy Economics*, *Environmental Economics and Policy Studies, Value in Health* and *Public Choice*.

Her research has a strong translational impact, amongst other things providing the basis for the guidance on the valuation of mortality and morbidity risks in central government policy appraisals and evaluations in the UK (HM Treasury “Green Book”; WebTAG TAG Data Book). Public sector commissions include the Department of the Environment, Food and Rural Affairs (DEFRA) and the Environment Agency and she was recently Principal Investigator on a scoping study into the need for and feasibility of new primary research to elicit a UK-based Value of a (Statistical) Life Year for the UK Health and Safety Executive.

She is a member of the Joint Air Quality Unit/DEFRA Delivery Independent Review Panel - which provides expert commentary on UK cities NOX reduction plans to achieve legally binding air quality targets and the DEFRA Economic Advisory Panel - which provides advice across all DEFRA activities, including the Environment Bill and the 25 Year Environment Plan. (forthcoming).

Following a Visiting Research Fellowship at the New Zealand Treasury (2014 to 2015), she presented a Guest lecture to the Treasury (2015) and to the New Zealand Transport Authority (2019) highlighting the major methodological advances in the value of safety in UK policymaking in the area, based on research led by Professor Chilton in Newcastle. She is an Elected Board Member of the Society for Benefit Cost Analysis.

# Professor Stuart Harrad

## (Appointed March 2022)

Stuart is a Professor of Environmental Chemistry at the University of Birmingham.

Over the course of his 35-year career, he has made important contributions to developing understanding of the environmental impacts of trace organic contaminants. This includes leading numerous international collaborative projects researching multiple topics related to the environmental impacts of Persistent Organic Pollutants (POPs) and related chemicals.

His wide-ranging research activities include: (1) assessment of human exposure to chemical contaminants such as flame retardants and perfluoroalkyl substances; (2) establishing the importance of the indoor environment as a source of exposure to consumer chemicals; and (3) understanding and managing the fate of POPs in the waste stream.

He sits on the International Advisory Board of the Annual Symposium of Halogenated Persistent Organic Pollutants and has published over 200 scientific papers in high impact peer-reviewed journals.

# Dr Laura Carter (Early Career Researcher)

## (Appointed March 2022)

Dr Laura Carter is an Associate Professor in Soil and Environmental Chemistry at the University of Leeds. Laura was appointed to the University of Leeds in 2018 as a University Academic Fellow under the ‘250 great minds’ initiative, a five-year development programme for promising early career scientists.

Laura’s research focuses on understanding the risks of emerging contaminants in the natural environment, with particular interests in chemical fate in soil-plant systems, the role of the environment in the development of antimicrobial resistance, and sub-lethal effects of pollutants on soil and plant health.

Laura has recently been awarded a UKRI Future Leaders Fellowship to investigate the risks of pharmaceuticals in agricultural systems, following land application of sludges and wastewater.

Laura has presented her research at a number of international conferences, published her work in peer-reviewed journals and co-authored book chapters on the topic of emerging contaminants. Most recently, Laura has been acknowledged as an Emerging Investigator, by the Royal Society of Chemistry publication, Environmental Science Processes and Impacts.

For her work on pharmaceuticals in the environment, Laura has also been appointed as an Editorial Board Member for the journal *Reviews of Environmental Contamination and Toxicology* and elected to the steering committee of the Society of Environmental Toxicology and Chemistry (SETAC) Pharmaceutical Global Interest Group and the SETAC UK local steering committee.

# Dr Luigi Margiotta-Casaluci (Early Career Researcher)

## (Appointed March 2022)

Dr Luigi Margiotta-Casaluci is a Senior Lecturer in Toxicology at King’s College London, specialised in comparative and environmental toxicology. The main aims of his research are to understand the multi-scale mechanisms underlying chemical-induced toxicity and to develop innovative approaches able to predict with high accuracy the potential adverse effects of chemicals in both wildlife and humans.

Driven by an integrative biology perspective, his research has played a leading role in shaping the implementation of pharmacology and network biology concepts in the environmental risk assessment of pharmaceuticals, paving the way for the modernisation of the field. After gaining extensive experience with both animal testing (*in vivo* fish chronic toxicity testing) and alternative testing (*in silico* and *in vitro*), his current 3Rs-focused work is advancing the development of fish-specific New Approach Methodologies (NAMs) that can reliably support chemical safety assessment while drastically reducing the reliance on *in vivo* fish testing.

Considering the rapidly increasing volume and complexity of toxicological data generated by the scientific community, in recent years he has developed a strong interest in the use of evidence synthesis strategies and data visualisation approaches to support data interpretation and regulatory decision making.

In line with this interest, he has internationally recognised expertise in the application of the Adverse Outcome Pathway (AOP) framework as a tool for evidence synthesis and assessment of biological causality within toxicological pathways. His recent NC3Rs-funded AOP research has been showcased in the latest 5-year NC3Rs Research Review in 2019.

# Dr Mengjiao (Melissa) Wang (Early Career Researcher)

## (Appointed March 2022)

Dr Mengjiao (Melissa) Wang is a Senior Scientist with the Greenpeace Research Laboratories, based at the University of Exeter. Bearing witness of environmental pollution from mega-cities to the far north end of the earth, Melissa has determined and dedicated herself working on the science-policy interface of sound management of chemicals and wastes as well as addressing the global plastic pollution.

She has been granted a unique role as a leading and highly influential sustainability voice up to the UN level, to lead, shape and influence the global vision, trend and principles of key elements of sustainable development. This recognition is achieved mainly through her work providing solid scientific evidence as well as delivering messages from impacted communities who are largely underrepresented at many decision-making venues. A rigorous academic training in ecotoxicology and analytical chemistry as well as a large supporting multi-stakeholder network lays out the foundation of her work.

Melissa therefore has been invited by the United Nations Environment Programmes (UNEP) and other UN agencies to serve on their committees (for example, the Global Steering Committee of the Global Chemicals Outlook II, and the UNEP Scientific Advisory Committee on Marine Plastic Litter), guiding the development of key UN reports to inform global environmental governance decision making.

She is in further exploration of synergies and nexus among different environmental issues, addressing the root cause of environmental challenges, as well as guiding innovation in a truly sustainable way to maximize their benefits while avoiding more late lessons.