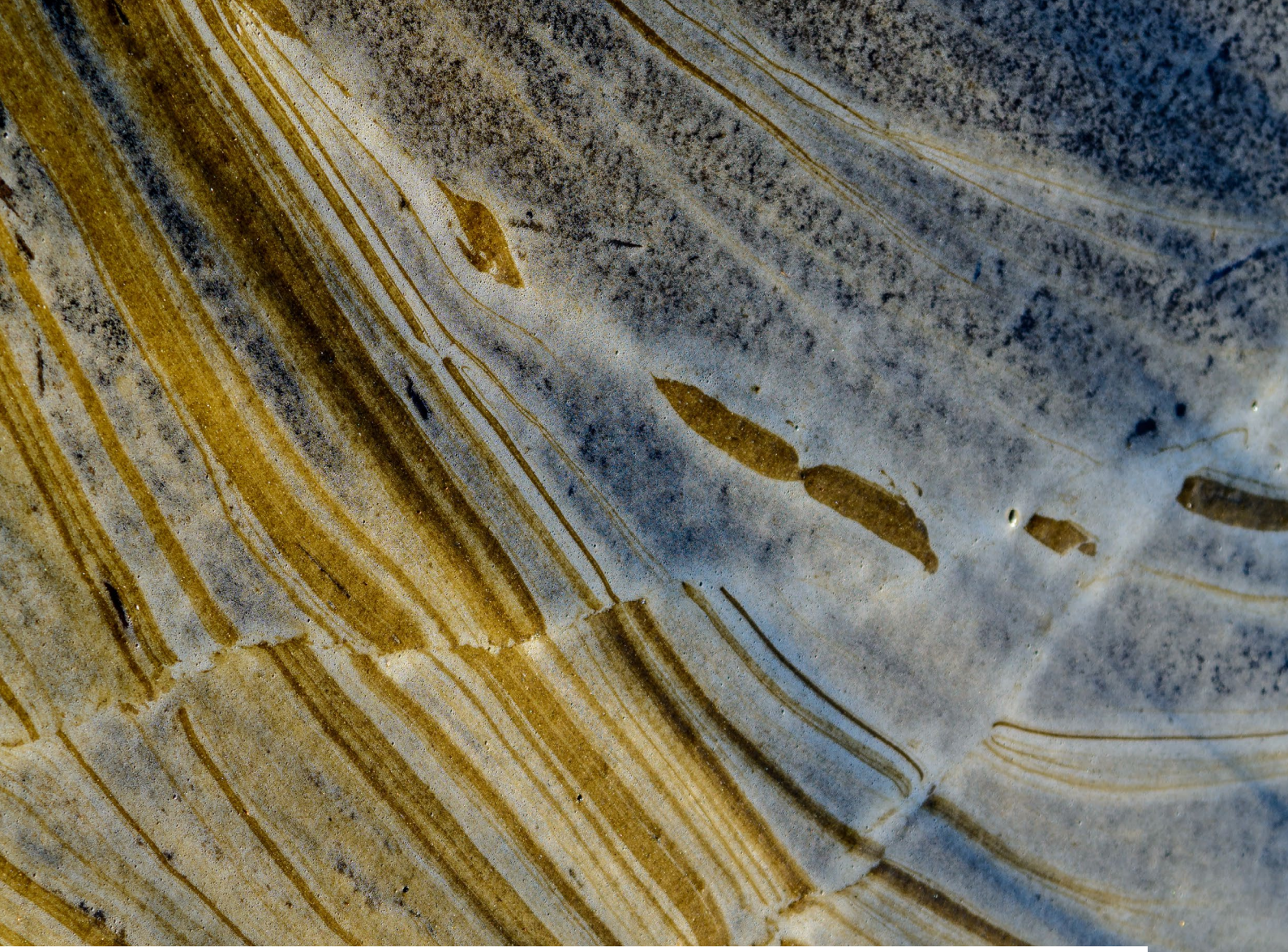
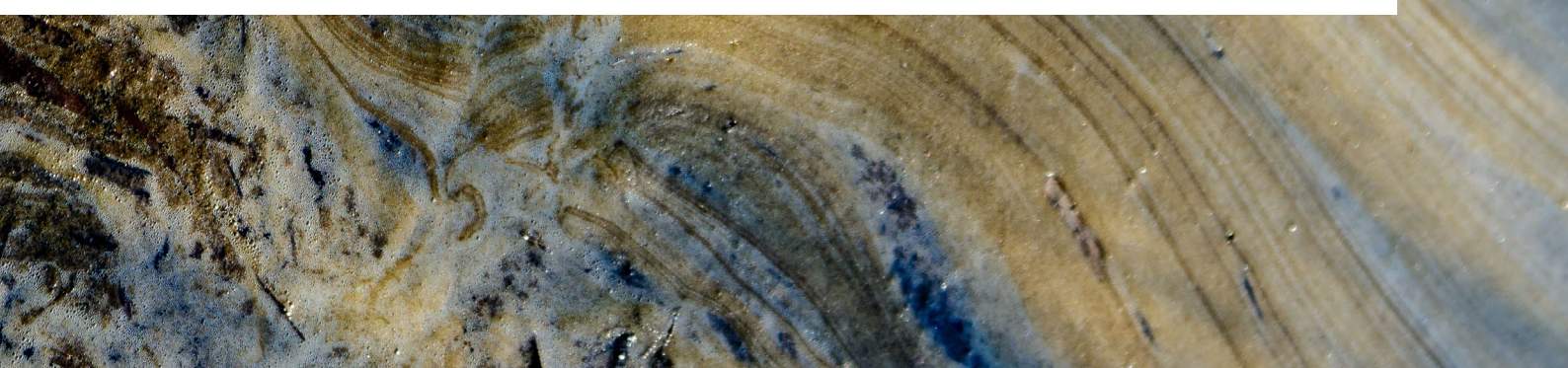


BIOFILM ALLIANCE
Regulatory Science Network

Biofilm Alliance Conference

ABSTRACT BROCHURE

UKRI Innovate UK
National Biofilms Innovation Centre
Manchester Metropolitan University
Swansea University Prifysgol Abertawe
IMSL industrial microbiological services limited



Biofilm Alliance Conference

Tuesday 21 October 2025, Conference Aston, Birmingham, UK

The Biofilm Alliance is a UK-based network, funded by Innovate UK, dedicated to addressing the impact of biofilms on health, the environment, and industry, which results in an estimated annual economic cost of US$5 trillion. Currently, limited collaboration between researchers, industry, and regulators, alongside the absence of standardised methodologies, hinders effective biofilm control and management.

The Biofilm Alliance is a partnership between the National Biofilms Innovation Centre, Manchester Metropolitan University, Swansea University and Industrial Microbiological Services Limited. Our mission is to advance regulatory science and improve policy-shaping decision-making through enhancing stakeholder collaboration, supporting the development of evidence-based tools and providing biofilm-specific training.

This conference brings together leading voices from academia, industry, and regulatory bodies to explore the evolving interface between cutting-edge biofilm research and regulatory science. Significant advances in both academic research and industry-led R&D are driving the development of next-generation anti-biofilm technologies with transformative applications across sectors. This conference provides a unique platform to discuss how science, innovation, and regulation can evolve together.

Our speakers bring a vast array of knowledge across all areas of biofilm research, regulation, standards and methodologies. These international experts will share their experience on the current regulatory landscape of biofilm management, the current challenges in regulating biofilm-related products and how these may be overcome.

EVENT PROGRAMME

Time	Event
8:30 - 9:00	Registration and networking
9:00 - 9:15	Welcome and Scene Setting Jo Slater-Jefferies and Paulina Rakowska, National Biofilms Innovation Centre (NBIC)
Session 1 – Biofilms affecting industry	
9:15 - 9:35	*Advancing Standards for Laundry Hygiene: Bioindicators, Spores, and Biofilms* Katie Laird, De Montford University
9:35 – 9:55	*Understanding the impact and managing biofilms within swimming pools and spa systems (Wet Leisure Industry).* James Lee, Hydro Finesse
9:55 – 10:15	*Collaborating for Solutions: Innovations for Tackling Biofilms in the Food Sector* Matthew Gilmour, Quadram Institute
10:15 – 10:30	Poster Flash Presentations 1) *Listeria Training – The Kersia 5-point control plan*- David Childs, Kersia 2) *The Development of Sustainable Surface Technologies to Reduce Biofilm Formation*- Dannielle Cox-Pridmore, UEA/Quadram 3) Aptamer-Guided Fluorescence Triage with eDNA Confirmation for Robust Biofilm Detection-PraveenKumar Kaveri, CEXAL LTD 4) *Live / Dead Fluorescence Staining of Fungal Biofilms to Determine Curative Efficacy of Biocides in Metal Working Fluids*- Gillian Iredale, IMSL 5) *Effect of Strain Selection, Inoculum Density, Crystal Violet Concentration and Solubilization Duration in the Crystal Violet (CV) Assay for Standardising Biofilm Quantification*- Geertje van Keulen, Swansea University
10.30 - 10:45	**Break**
Session 2 – Tackling Biofilm Challenges	
10:45 - 11:05	*Importance of biofilm monitoring in civil and industrial applications* Giovanni Pavanello, ALVIM Srl - Biofilm Monitoring Technologies
11:05 – 11:25	*BEWISe about Trickling Filter Process Emissions' – A Collaborative Demonstration Trial to Assess N2O Emissions from Trickling Filters* Paul Lavender, Water Utilities (UK) at Royal HaskoningDHV
11:25 – 11:45	*From Molecule to Market: Regulatory Gaps in Anti-Biofilm Innovation* Richard Hammond, Remora
11:45 – 12:05	*Biofilm mitigation in industrial water treatment* Markus Busch, Lanxess Deutschland GmbH
12:05 - 13:00	**Lunch and poster session**

Session 3 – Solutions and Initiatives	
13:00 - 13:20	*Tackling biofilms in poultry water systems: Reducing Mortality and AMR Risks* Adam Shay, Residual Barrier Technology
13:20 – 13:40	*Determining the Activity of Biocides in Industrial Processes and Manufactured Materials* Peter Askew, Industrial Microbiological Services Ltd
13:40 – 14:00	*Biofilm management within the scope of European Regulation and the role of standards in complying with such regulation* David Ashworth, Klarus Consulting Ltd/British Chemical Association
14:00 – 14:20	*Navigating the interconnected path of model design, standard test method validation, and regulatory decision making.* Darla Goeres, Center for Biofilm Engineering, Montana, USA
14:20 - 14:35	**Break**
Session 4 – Regulatory / Funding	
14:35 - 14:55	*Giving Regulatory Context to Anti-Biofilm Biocidal Products.* Michael Davies, Health and Safety Executive
14:55 – 15:15	*Overview of Regulatory Processes in the UK: The Biofilm Regulatory Landscape* Leanne Cleaver, Medicines and Healthcare products Regulatory Agency
15:15 – 15:35	*Evidence-Based Regulatory Reform: Unlocking Pro-Innovation Regulation through Regulatory Science* Nick Spickernell, Innovate UK
15:35 - 15:50	**Break**
15:50 - 16:50	*Creating a Unified Framework - Cross-Sector Collaboration for Smarter Biofilm Regulation and Innovation* Panel Discussion / Roundtable
16:50 – 17:00	Concluding remarks
17:00 – 17:30	Networking and depart

SPEAKERS

Katie Laird, De Montfort University

Advancing Standards for Laundry Hygiene: Bioindicators, Spores, and Biofilms

Abstract

Traditional measures of laundry disinfection are insufficient for evaluating emerging low-temperature and alternative chemical processes. This research introduces adaptable bioindicators that accurately capture microbial survival during laundering and finishing. Through comparative testing of disinfectants, spores, and biofilm colonisation, we demonstrate the critical need for updated validation standards. These tools will support industry and regulatory bodies in ensuring safe, effective, and sustainable textile processing.

James Lee, Hydro Finesse Limited

Understanding the impact and managing biofilms within swimming pools and spa systems (Wet Leisure Industry).

Abstract

The wet leisure marketplace is a key global industry currently valued at over $6 billion, which is expected to rise to over $9 billion by 2033. It offers many benefits to everyone, from leisure and relaxation to physical activities and rehabilitation. The industry acknowledges the impact biofilms pose. Hydro Finesse is at the forefront of research into the impact biofilms have and is delighted to deliver our presentation on the impact biofilms have in the wet leisure industry. Identifying the challenges biofilms present to owners and operators, and a proactive solution for the management of biofilms.

Matthew Gilmour, Quadram Institute

Collaborating for Solutions: Innovations for Tackling Biofilms in the Food Sector

Abstract

Food safety risks in agrifood systems are shaped by the persistence of microbial communities in these environments. Biofilms are especially problematic in industrial settings, acting as reservoirs that resist conventional hygiene programmes. This presentation will share insights from recent work with the Food Safety Research Network and NBIC, highlighting how food safety culture can refine management strategies. Using quality-by-design principles - preventing entry, eliminating harbourage, limiting spread, and ensuring effective removal - we can better anticipate and disrupt contamination pathways. By combining tools such as metagenomics and multi-species biofilm models with existing hygiene frameworks, biofilm science can deliver predictive, practical problem-solving tools through cross-sector collaboration.

Darla Goeres

Navigating the interconnected path of model design, standard test method validation, and regulatory decision making

Abstract

Regulatory science focuses on developing tools and a decision-making matrix that enables products to enter the market. Multiple factors are considered during the process, the most important being does the product protect and/or improve human health and the environment. The regulatory body will base decisions on data collected using validated in vitro standard test methods, animal models, clinical trials or field studies. The pipeline is often linear, with data from the in vitro evaluation providing justification to move forward with a more expensive study. This presentation will explore key parameters to consider when navigating the regulatory pipeline.

Paul Lavender, Royal HaskoningDHV

BEWISe about Trickling Filter Process Emissions' - A Collaborative Demonstration Trial to Assess N2O Emissions from Trickling Filters

Abstract

The UK water industry has set an ambitious goal to reduce its GHG in line with its Net Zero 2030 Route map. Wastewater treatment processes are known to emit the powerful GHG gases nitrous oxide (N2O) and methane (CH4), where biological processes occur under aerobic and anaerobic conditions, respectively. The impact of these emissions means that the carbon impact of the water industry globally is equivalent to that of the aviation industry. There is still very little information on the emissions from trickling filters, which is a biofilm-based treatment process, due to practical challenges in quantifying emissions. The National Biofilms Innovation Centre, along with a number of UK water utilities, has funded this collaborative trial at the BEWISe Wastewater Pilot Research Facility, to investigate this at scale under controlled conditions. This presentation will discuss the technical challenges, experimental scope, initial findings and the potential impact of this work on GHG reduction for the industry.

Richard Hammond, Remora

From Molecule to Market: Regulatory Gaps in Anti-Biofilm Innovation

Abstract

Remora is commercialising a single, synthetically optimised molecule, originally identified within Unilever R&D, that inhibits multispecies biofilms by disrupting quorum sensing. The technology addresses a persistent unmet need across both regulated and unregulated sectors where biofilm formation remains poorly controlled. However, existing standards frameworks and regulatory pathways remain misaligned with biofilm-specific modes of action. This presentation will examine the scientific and commercial challenges encountered in bringing this class of technology to market, and outline priority areas for reform to enable more effective translation of biofilm science into practical, approvable solutions.

Markus Busch, LANXESS

Biofilm mitigation in industrial water treatment

Abstract

The broad industry sector applications, in which biofilms are relevant, are first introduced. Biofilm formation and control in the industrial water sector involves cooling, membrane, paper, oil and gas as well as plant hygiene applications. A deeper look into cooling and membrane applications considers biofilm nature and potential consequences of poor control, as well as key mitigation strategies. Biofilms play a key role in microbial-induced corrosion and Legionnaire's Disease outbreaks in cooling systems and can be controlled by oxidative and non-oxidative, preventive and curative strategies. In membrane processes, biofilms can result in operation problems, cleanings, membrane damage and even production outages, which can be prevented by specialised fast-acting and membrane-compatible non-oxidative biocides.

Adam Shay, Residual Barrier Technology

Tackling biofilms in poultry water systems: Reducing Mortality and AMR Risks

Abstract

Clean water is vital for poultry health, welfare, and productivity, supporting digestion, growth, metabolism, and efficient feed conversion. Contaminated water, often carrying pathogens such as E. coli and Salmonella, increases disease risks, reduces vaccine and medication efficacy, and is further complicated by biofilm formation in water systems such as drinking lines. Our field trial conducted on a broiler farm in South Africa demonstrated that applying our flagship biocidal product at 20 ppm significantly reduced mortality, improved efficiency scores, and enabled an additional production cycle annually. Despite these promising results and demonstrated safety, restrictive regulatory frameworks hinder innovation in biofilm control, leading to continued reliance on antibiotics and contributing to AMR. Effective, non-toxic biofilm management strategies in poultry water systems would improve productivity, reduce antibiotic use, and mitigate AMR development.

Peter Askew, IMSL

Determining the Activity of Biocides in Industrial Processes and Manufactured Materials

Abstract

The impact of biofilms on industrial processes and some manufactured materials in service is well documented. In many cases, these impacts are mitigated by the use of biocides, either preventing their growth in systems (and remediating their presence) or preventing their growth on manufactured materials in service. Biocides are highly regulated materials and part of the regulatory process is a requirement that the biocidal claims made for them can be demonstrated. This demands methods that can be used under laboratory conditions to produce such evidence in a robust and statistically valid manner. To this end, the International Biodeterioration Research Group (IBRG) have been developing methods that can be used to grow biofilms either on surfaces immersed in industrial fluids (either with or without the presence of a biocide) or on materials such as surface coatings and building products. This presentation will describe the approaches and the methods that have been developed (and that are in use as part of the active substance and biocidal product registration processes in the UK and the EU), and the objectives for the future and the issues faced in developing them further.

Nick Spickernell, Innovate UK

Evidence-Based Regulatory Reform: Unlocking Pro-Innovation Regulation through Regulatory Science

Abstract

My talk will focus on how regulatory science can transform regulation from a barrier to a catalyst for innovation. It will introduce Innovate UK's UK RSIN Programme and how this first-of-its-kind initiative can serve as a blueprint for delivering pro-innovation regulatory policy changes supported by robust, real-world evidence. Just as in other high-potential sectors, I will discuss how this approach will be crucial for addressing regulatory challenges in areas like biofilms, where regulatory frameworks need to be agile, to keep pace with new technologies and scientific understanding, ensuring that policy choices are both rigorous and responsive.

David Ashworth, Klarus Consulting/BCA

Biofilm management within the scope of European Regulation and the role of standards in complying with such regulation

Abstract

Biocidal Products, including those used in many applications for the control of biofilms, are regulated both in Europe and the UK by the Biocidal Products Regulation EC 528/2012 (BPR) and, post Brexit, its UK equivalent - The UK Biocidal Products Regulation (UK BPR). As of October 2025, the two regulations, whilst now operating on different timeframes are still essentially similar. The regulations legislate the placing and making available on the market both Biocidal Products and the Active Substances found within them. It is important to note that the scope of effect is wide – it is not just about killing micro-organisms but also controlling them – and this interpretation is important when considering biofilms as it can cover their origination, development and removal phases. One key aspect of the regulation is that it is necessary to provide evidence that the product being made available is actually effective and can achieve what is claimed for it. The claim is not an 'open book' and guidance exists as to what evidence should be provided to support a claim. In many cases the guidance cites the methodologies that are required and the performances expected in such methodologies. This presentation will look at the interaction between the substance, the product, the claimed effect, the scope of regulation and the role of the methods chosen to support efficacy.

Giovanni Pavanello, Alvim

Importance of biofilm monitoring in civil and industrial applications

Abstract

Wherever there is a liquid, biofilm can grow - causing a number of different issues. Monitoring its development, on line and in real time, makes it possible to apply any physical or chemical treatment as soon as the biological layer starts to form. This allows to get the best results, preventing at the same time biofilm-related issues. The relevance of biofilm monitoring and a state-of-the-art approach, applied worldwide in many different fields, will be discussed, including some examples of real applications.

Michael Davies, HSE

Giving Regulatory Context to Anti-Biofilm Biocidal Products

Abstract

This talk will offer an introduction to the regulation of biocidal products under the GB Biocidal Products Regulation and how anti-biofilm products fit in. The background to product evaluation will be covered, including active substance evaluation, the importance of product types, scope and then a closer look at the efficacy evaluation specific to anti-biofilm products. Context will then be given to anti-biofilm products and how claims fit (or don't fit) into the regulation, the current availability of standard test methods, challenges to regulating anti-biofilm products and how these may be overcome.

Leanne Cleaver, MHRA

Overview of Regulatory Processes in the UK: The Biofilm Regulatory Landscape

Abstract

The Medicines and Healthcare products Regulatory Agency (MHRA) provides a comprehensive regulatory framework to support the development, evaluation, and post‑market surveillance of human medicines and medical devices, including biofilm‑targeted interventions. Leveraging its scientific, regulatory, and data‑driven capabilities, the MHRA addresses key challenges of the biofilm community, such as regulatory uncertainty. The GAMRIF-funded MHRA antimicrobial resistance innovation support team drives international harmonisation initiatives and facilitates co-ordination across One Health (human and animal health, agriculture and the environment). This presentation provides information for innovators on how and when to access different levels of support at the various stages of development of products with anti-biofilm claims.

POSTER FLASH PRESENTATIONS

David Childs, Kersia

Listeria Training – The Kersia 5-point control plan

Dannielle Cox-Pridmore, UEA/Quadram

The Development of Sustainable Surface Technologies to Reduce Biofilm Formation

PraveenKumar Kaveri, Cexal Ltd

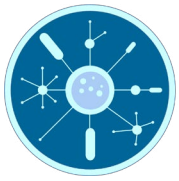
Aptamer-Guided Fluorescence Triage with eDNA Confirmation for Robust Biofilm Detection

Gillian Iredale, IMSL

Live/Dead Fluorescence Staining of Fungal Biofilms to Determine Curative Efficacy of Biocides in Metal Working Fluids

Geertje van Keulen, Swansea University

Effect of Strain Selection, Inoculum Density, Crystal Violet Concentration and Solubilization Duration in the Crystal Violet (CV) Assay for Standardizing Biofilm Quantification



BIOFILM ALLIANCE
Regulatory Science Network

BIOFILM-ALLIANCE.ORG

CONTACT@BIOFILM-ALLIANCE.ORG