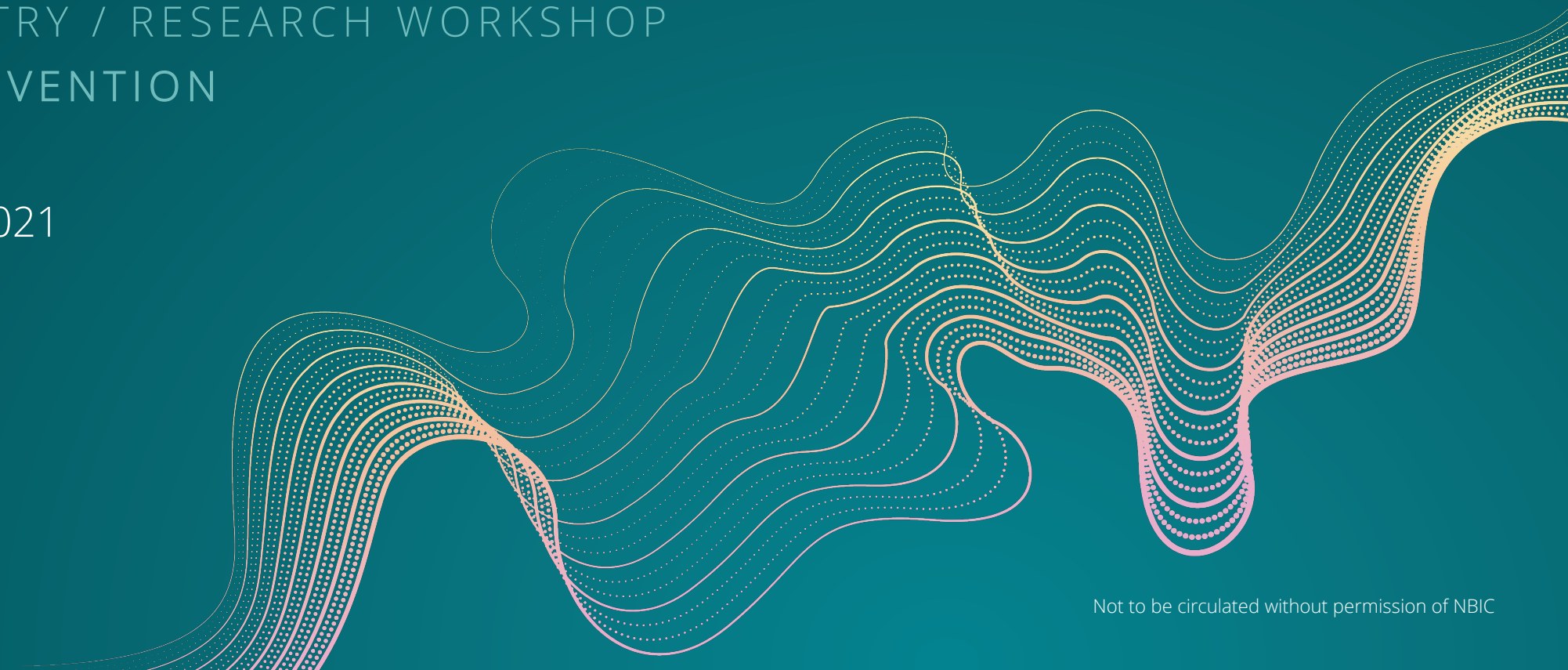
National Biofilms Innovation Centre

WELCOME

NBIC INDUSTRY / RESEARCH WORKSHOP

BIOFILM PREVENTION

24 November 2021



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biofilms.ac.uk

Agenda

10:00 - 10:30 Coffee / Tea, Registration and Networking

10:30 - 11:15

Introduction – Mark Richardson - Agenda, NBIC and Process
Introduce Tom Bailey – our artist for the day
Biofilm Prevention – NBIC Approach. Professor Rasmita Raval (University of Liverpool)
Survey / Prize /FTMA

11:15 - 12:30 Breakout Session Group 1

12:30 - 13:30 Lunch

13:30 - 14:45 Breakout Session Group 2

14:45 - 15:00 Coffee / Tea

15:00 - 15:30 Plenary feedback (1&2), Toms Feedback

15:30 - 15:45 3-minute showcases

15:45 - 16:00 Summary and next steps – Mark Richardson

16:00 Workshop ends and time for further networking

Key Objectives and Outputs

Objectives

- To identify the unmet needs in relation to Biofilm Prevention across a range of sectors - commercial, industrial, clinical
- To understand the problems with current approaches
- Explore possible solutions and the way forward

Outputs

- Report for all attendees and for wider dissemination
- What are the translational priorities? Possible funding calls
- Identify gaps in current research to address industry needs
- Are there solutions available to addressable challenges?
- Are there collaboration opportunities?

Our Vision

The National Biofilms Innovation Centre will create a fusion of world-class interdisciplinary research and industry partnerships to deliver breakthrough science and technologies to control and exploit biofilms.

By combining our talent, we will grow the next generation of research leaders and entrepreneurs delivering growth and wealth creation.

Our Academic Partners

WE ARE BUILDING A NATIONAL AND INTERNATIONAL COMMUNITY OF BIOFILM RESEARCHERS

- 5 accession rounds
- 63 UK Research Institutions
- MOUs and links with leading international centres (e.g. Center for Biofilm Engineering (CBE), USA & Singapore National Biofilm Centre (SCELSE))

WE HAVE A GROWING NETWORK OF COMPANIES WITH NEEDS AND OPPORTUNITIES – AND TODAY WE ARE HERE TO EXPLORE THESE IN THE FIELD OF BIOFILM PREVENTION

NBIC is built on 3 key pillars

RESEARCH, INNOVATION AND TRAINING

RESEARCH	INNOVATION	TRAINING
• Joined up UK research strategy • Interdisciplinary working • Achieving a critical mass and infrastructure capability	• 81 Proof of Concept (POC) projects • Connected innovation space • Industry-Academic partnerships • Faster translation • Flexible response	• Interdisciplinary training • Entrepreneurial awareness • Researcher training via studentships

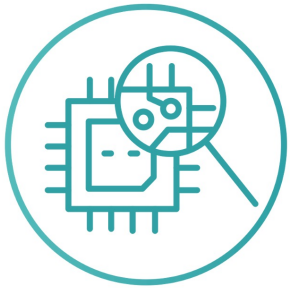
We Facilitate Innovation

- **Build an environment and create the right tools**
  - Explore unmet industry needs
  - Workshops, dialogue, networks, roadmaps
- **Carry out funding calls**
  - Help collaborations and support connections to advance research
- **Exploit emerging breakthroughs**
  - Drive the research agenda
  - Influence key stakeholders (regulators, funders and society)

Interventional themes

Prevent

Knowledge-based design of surfaces and materials. Anti-adhesion surfaces that exploit surface topography, smart delivery of antimicrobials via coatings and surface functionalisation.



Detect

Accurate, quantitative, actionable detection or sensing of biofilms. DETECT WORKSHOP: Rapid real time and in-situ biofilm detection as key unmet need. NIHR £3m lab – Raman imaging technologies for rapid detection.

Manage

Kill, remove or control established biofilms from exploiting their life cycle dynamics. MANAGE WORKSHOP: Improved real-world models which can be standardised to understand biofilm behaviour and control. Clarification of pathways from industry regulators.

Engineer

Control and direct complex microbial community processes in process applications. ENGINEER WORKSHOP: Bespoke biofilm model systems needed for understanding complex microbial consortia. Big data solutions to provide improved engineering platforms.

Exploring unmet needs

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Biofilm Detection

WORKSHOP REPORT

SEPTEMBER 2018 - BIRMINGHAM UK

Rapid, *in-situ*, point-of-use for a range of new and emerging technologies

Biomarkers that are definitive

To detect/characterize when a biofilm transitions from a “healthy” to “unhealthy or pathogenic” state

To detect and confirm the presence of a biofilm in a standardized reproducible manner acceptable to regulatory agencies

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Biofilm Engineering

WORKSHOP REPORT

APRIL 2019 - EDINBURGH UK

To engineer biofilms for benefit in a human or an animal

Creation of a bespoke biofilm community for a defined process outcome or benefit

Improved approaches for investigating, enhancing monitoring or studying biofilms in the engineering setting

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Biofilm Management

WORKSHOP REPORT

FEBRUARY 2020 – NOTTINGHAM UK

Improved models and methods for characterisation, visualisation and detection - relevant, standardised and accessible

Improved cross-disciplinary collaboration (industry/academia, regulators, cross-sectors)

Clarification of pathways from industry regulators. NBIC has a leading role to play here

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