Technologies Touching Life

Organ-on-a-Chip Technologies Network

Prof Hazel Screen
Queen Mary University of London
The UK RI Technology Touching Lives (TTL) Initiative

Network activity: 3 years; ~£500k

Pump prime science & stimulate UK research in the network area
The Technology Touching Lives (TTL) Concept

Organ on a Chip Technologies

Advancing organ-on-a-chip & in vitro models, tools & methods through multidisciplinary engagement

Clinicians: to highlight the disease problems and needs
Biologists: to describe organ physiology, disease pathophysiology & cell biology
Engineers & physical scientists: to develop approaches to recapitulate physiology & pathophysiology in in vitro models
Industrialists: to harness & develop ideas & realise potential for integrative new in vitro models
Organ-on-a-Chip Technologies Network  
Founded August 2018

Leadership Team = Multidisciplinary group working in key research fields relevant to the development and implementation of organ-on-a-chip technologies

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
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<tr>
<td>Professor Hazel Screen (Director)</td>
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<td>Professor Martin Knight (Co-Director)</td>
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<td>Professor Anthony Bull</td>
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<td>Professor Alicia El Haj</td>
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<td>Professor Paul Workman</td>
<td>Institute of Cancer Research</td>
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<td>Professor Matt Dalby</td>
<td>University of Glasgow</td>
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Network Aims

Advancing organ-on-a-chip & *in vitro* models, tools & methods through multidisciplinary engagement

- **Develop a vibrant multidisciplinary research community**, bringing focus to the varied Organ-on-a-Chip and *in vitro* model research activity in the UK;

- **Facilitate research collaborations** to develop organ-on-a-chip research solutions;

- **Train, support and inspire the next generation** of outstanding leaders in organ-on-a-chip research.
Activity to Date

• Website: [www.organonachip.org.uk](http://www.organonachip.org.uk)
• Network Manager: Julia Coffey
• Almost 500 members to date (over 100 industrial)
Industrial Members
Activity to Date

Two network events:

• Launch (linked with BioMedEng18)
• Spring Event plus training

Spring event: Industrial presentations & stands

Networking time & discussion groups – members shape the network!
Activity to Date

New outputs from our spring event

• Review articles – State of the Art Opinion Pieces
  • Commercial OOAC technology
  • Emerging OOAC technology
  • *Aiming Towards Lab on a Chip Special Collection*

• Special Interest Groups
  • Neurovascular disease on chip
  • Translation & commercialisation of organs-on-a-chip
  • Label-free real-time monitoring
  • Patient involvement
  • End user engagement
  • Clinical involvement
Activity to Date

New outputs from our spring event

- Communications & Public Engagement Team
  - Funding activity in this area
  - Patient groups
  - Interactive (Science Museum Lates)
  - SLACK

All activities are just establishing:
plenty of time & opportunity to get involved
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**Funding!**

- Sabbatical Projects (pump priming)
- Lab exchange
- Events
- Public Engagement

Teams starting to develop proposals:
- Support for QMUL public engagement team
- Support from network

**Plenty of time to get involved!!**

£200 towards a lab visit
£500 towards running events
Open calls (no deadlines)
Simple application form (on website)
Decisions within one month

Facilitate new interactions and growth of field
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Funding!

- Sabbatical Projects (pump priming)
  - Competitive awards
  - Advancing organ-on-a-chip or *in vitro* model research and development
  - Must be new collaborations & multidisciplinary; involving movement between labs
  - Funding can cover up to:
    - 2-3 month PDRA salary
    - £5k consumables
    - £5k travel & subsistence
Sabbatical Projects Round 1

Next-Generation Material for high-volume production of Sustainable, Biocompatible Organ-On-Chip devices: £10,627
Heriot-Watt University, University of Leeds & University of Rome, plus Microfluidic ChipShop; Micronit Microtechnologies

Microfluidic model of human pulmonary artery: vascular cell positioning under flow: £14,400
Imperial College London & University of Leeds

Development of a microvascularised cerebral organoid-on-a-chip: £22,886
Queen Mary University of London & MRC Laboratory for Molecular Biology

Development of an immune-responsive 3D skin model: £17,008
Barts & The London & University of Hull

Transcriptional development of human primary osteocytes in a 3D bone organ: £20,306
University of Oxford & University of Birmingham
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Funding!

• Details of all projects from round 1 on the website

• Round 2 is open now:
  • £25.5K max per project
  • submission deadline: 16.00hrs, Wednesday 10 July 2019
  • Available only for network members
  • All guidelines on our website
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https://www.organonachip.org.uk/

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