

University of Birmingham Business Club
Breakfast Briefing

U

‘Health and Life Sciences’

Tuesday 13th September 2016

B



UNIVERSITY OF
BIRMINGHAM

Benefits of being a member...

- Access to BizzInn space
- Regular Breakfast Briefings
- Opportunity to pitch business or research
- Intelligence regarding funding calls
- Networking
- Invite-only events e.g. Distinguished Lecture series
- Much more besides....



BioHub tours



- Tours available of our fully serviced biomedical research laboratory
- Speak to Ewa Truchanowicz for details

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Birmingham

University of Birmingham Business Club
Breakfast Briefing

David Wraith,
Professor of Immunology,
Institute of Immunology
and Immunotherapy





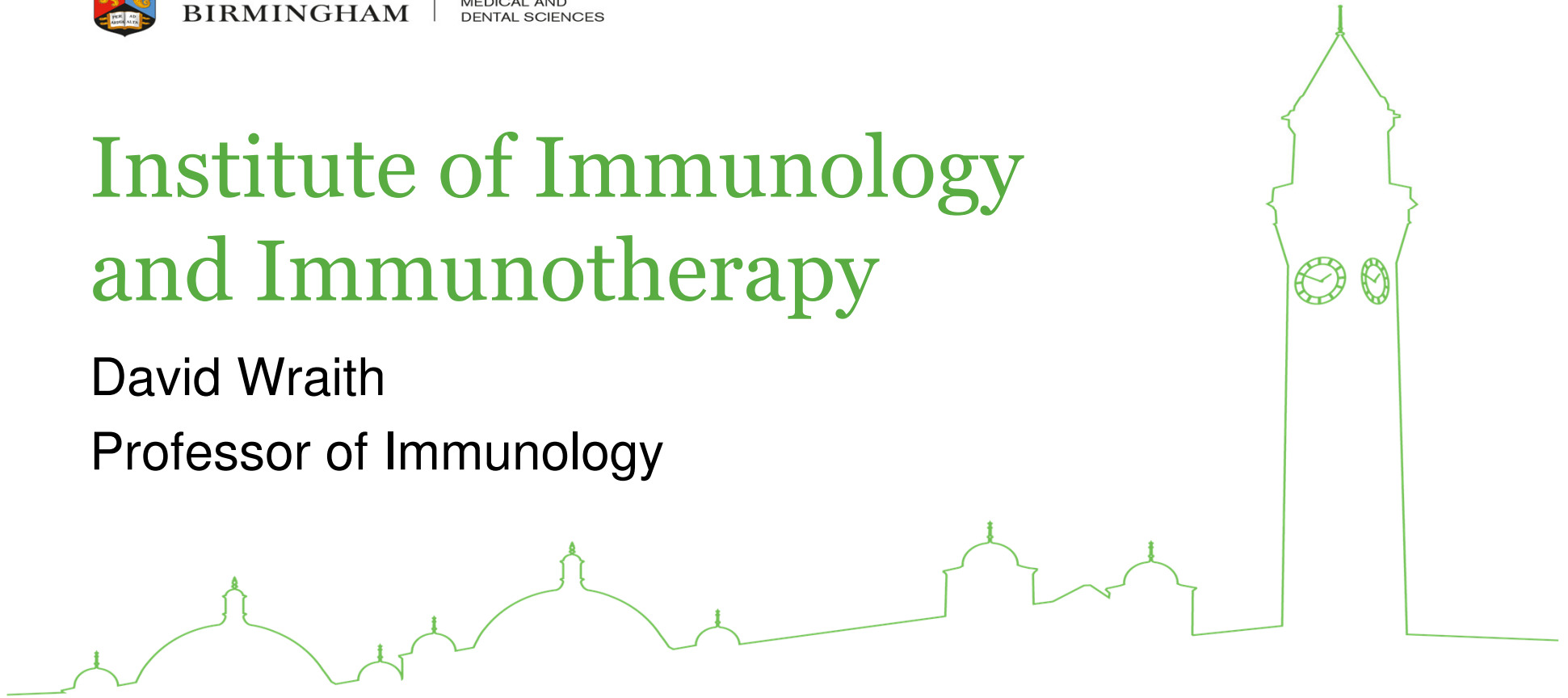
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COLLEGE OF
MEDICAL AND
DENTAL SCIENCES

Institute of Immunology and Immunotherapy

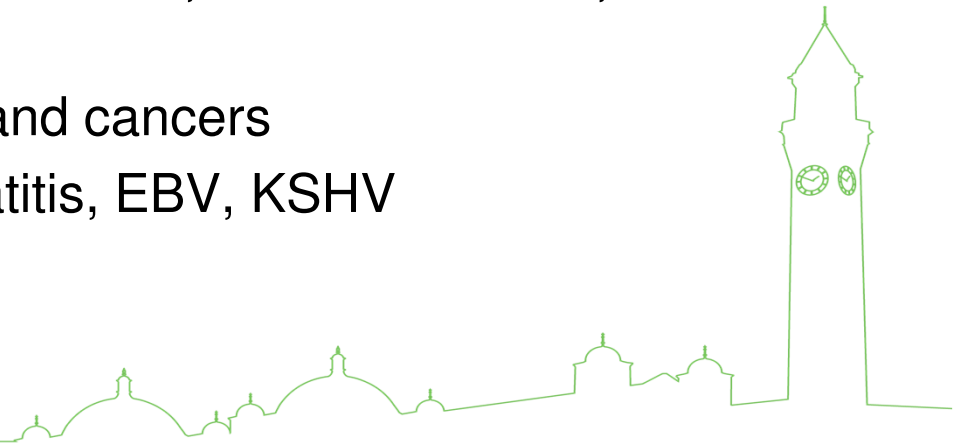
David Wraith

Professor of Immunology



Examples of Institute Research

- ❑ Cancer Immunotherapy for cancers of
 - Gut, liver, lung, pancreas
- ❑ Immunotherapy of autoimmune diseases
 - Multiple sclerosis, rheumatoid arthritis, Graves' disease, uveitis
- ❑ Vaccines for infectious diseases and cancers
 - Bacterial, mycobacterial, hepatitis, EBV, KSHV
- ❑ Liver inflammation



Research translation

- ❑ Fundamental science
- ❑ Protection of discoveries
- ❑ Early phase clinical trials
- ❑ Partnerships with pharma
- ❑ Spinout companies



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Apitope NV

- WO2014111841 (A2) – PEPTIDE: Wraith, D., Streeter, H., Ordonez, L. 2014
- WO2014111840 (A2) – PEPTIDE: Wraith, D., Streeter, H. 2014
- WO2014072958 (A1) – PEPTIDES: Wraith, D., Streeter, H. 2014
- WO2013150284 (A1) - TOLERISATION-INDUCING COMPOSITION: Wraith, D., Hill, E. 2013
- WO2009071886 (A1) - FVIII PEPTIDES AND THEIR USE IN TOLERISING HAEMOPHILIACS: Wraith, D. 2009
- WO2009056833 (A2) – COMPOSITION: Wraith, D., Streeter, H.B. 2009
- WO2008129296 (A2) – DISEASE MARKERS: Wraith, D., Streeter, H. 2008
- WO03064464 (A1) - TOLEROGENIC PEPTIDES FROM MYELIN BASIC PROTEIN: Ponsford, F.M., Mazza, G., Wraith, D.C., Streeter, H.B. 2003
- WO0216410 (A3) – PEPTIDE SELECTION METHOD: Wraith, D.C., Anderton, S.M., Mazza, G., Ponsford, M., Streeter, H.B. 2002



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Funding for R&D

START-UP

- ❑ £1.1M from private investor
- ❑ £0.3M from Sulis Seedcorn Fund
- ❑ £0.35M from Baxter SA
- ❑ £0.91M UTA from Wellcome Trust for MS Phase I in SPMS



Funding for R&D

SERIES A

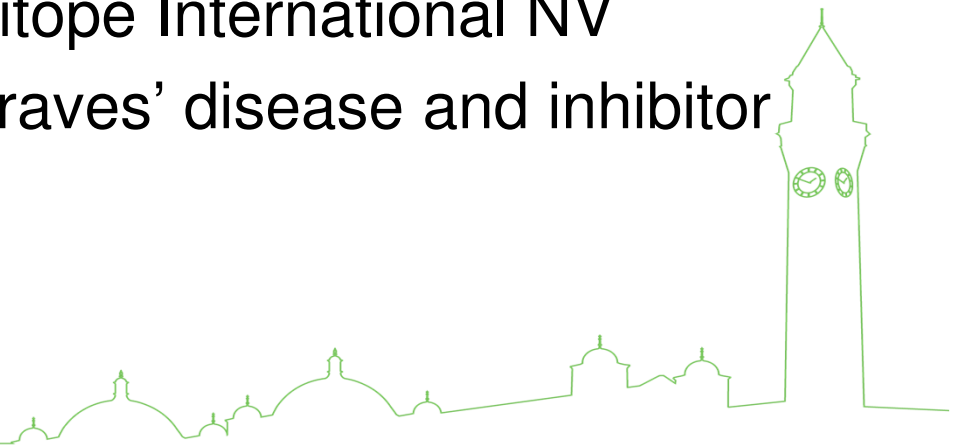
- Euro12M from Benilux VC consortium to Apitope International NV
- \$1M from Fast Forward, National MS Society US
- License with Merck-Serono for MS Phase I in RRMS, milestone payments up to Euro154M

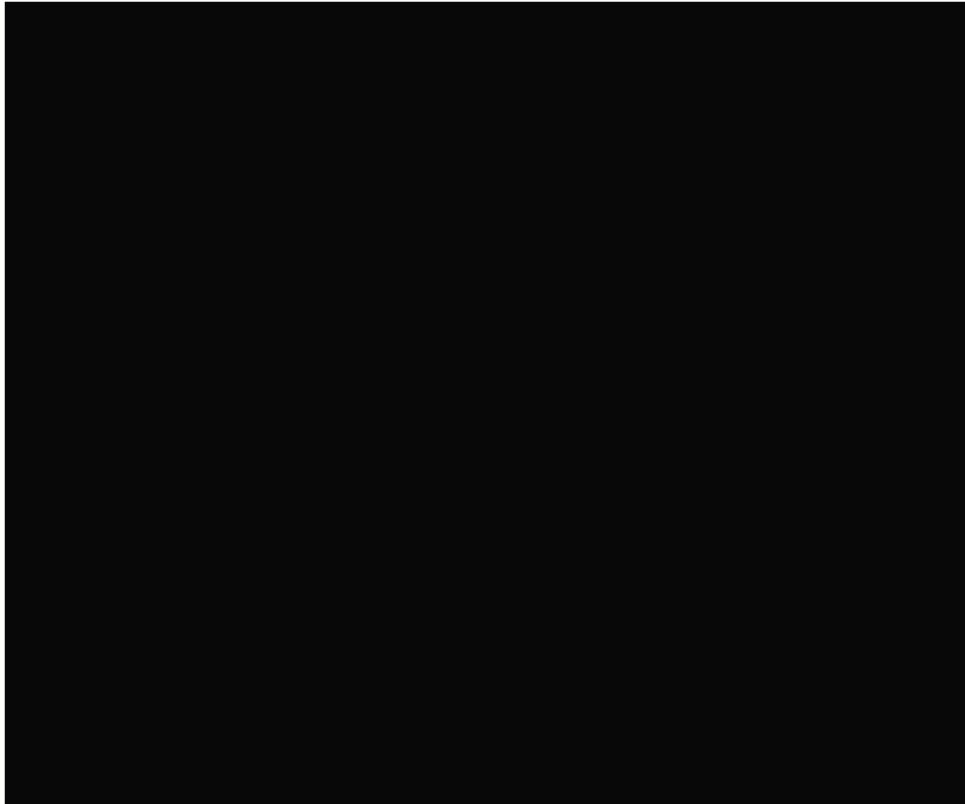


Funding for R&D

SERIES B

- Euro12M follow on funding from Benilux VC consortium & Arthurian Life Sciences to Apitope International NV
- Funding for clinical trials in Graves' disease and inhibitor formation in haemophilia A





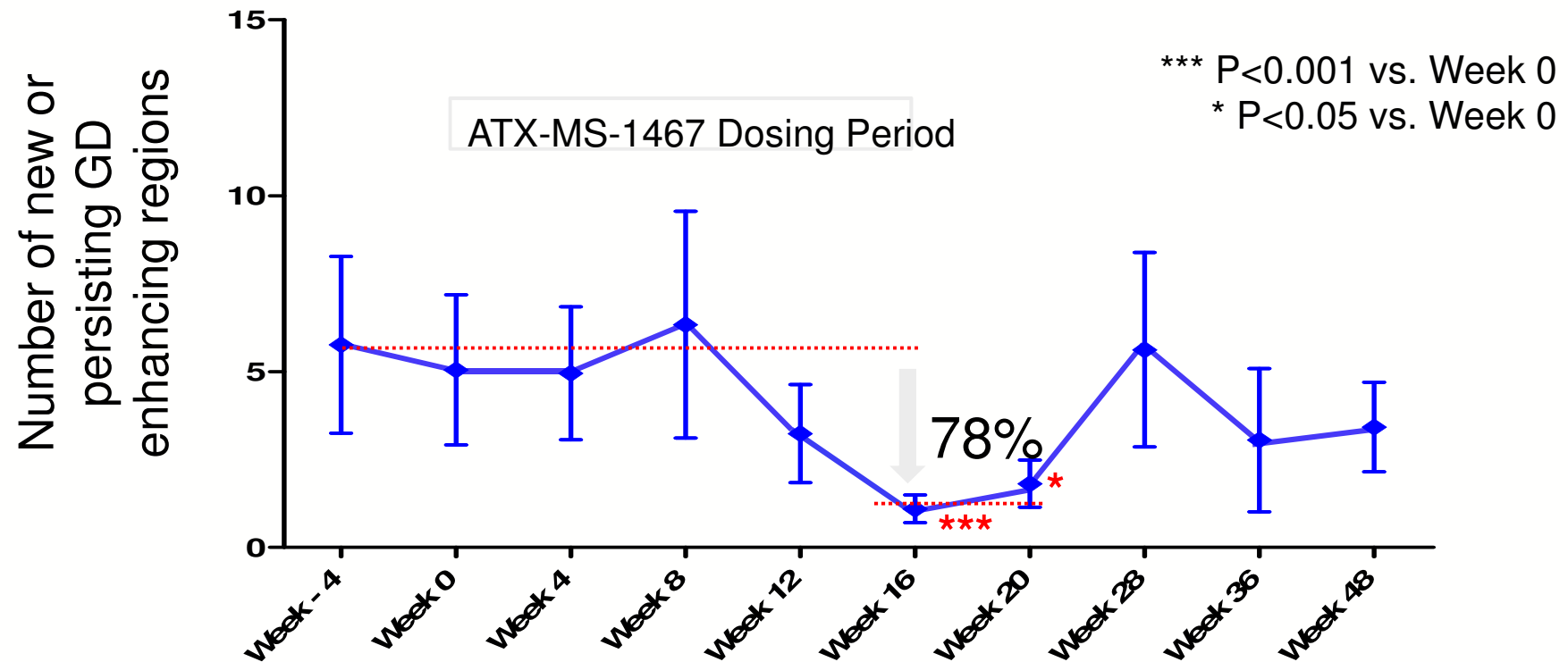
Axial T1-weighted scans
after intravenous injection of
the enhancing agent
Gadolinium (GD)

Monthly GD-enhanced MRI
images reveal dynamic
nature of inflammation in
relapsing MS

YELLOW ARROWS MARK
GD-ENHANCING LESIONS

Waglione (2008)

New Gd lesions significantly reduced by ATX-MS-1467 treatment



Research translation

- Fundamental science
- Protection of discoveries
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- Spinout companies



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Peter Dirken,
Strategic Partnerships – Exports and
Inward Investment,
Innovate UK



Health & Life Sciences Sector

Dr Peter Dirken

Strategic Partnership Manager- Exports & Inward Investment

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<https://www.gov.uk/government/organisations/innovate-uk>

September 2016

Innovate UK

Health & Life Science



£117m 2016-17 Spend

Priority areas:

- Advanced Therapies (Cell, Gene and other therapies)
- Precision Medicine
- Preclinical Technologies
- Improving Agricultural Productivity
- Enhancing Food Quality
- Biosciences (including genome editing, SynBio and Analytics)

Catapult network



developing next generation
technologies for medicines discovery



developing & validating more
complex, next-generation
therapeutics



Catapult network

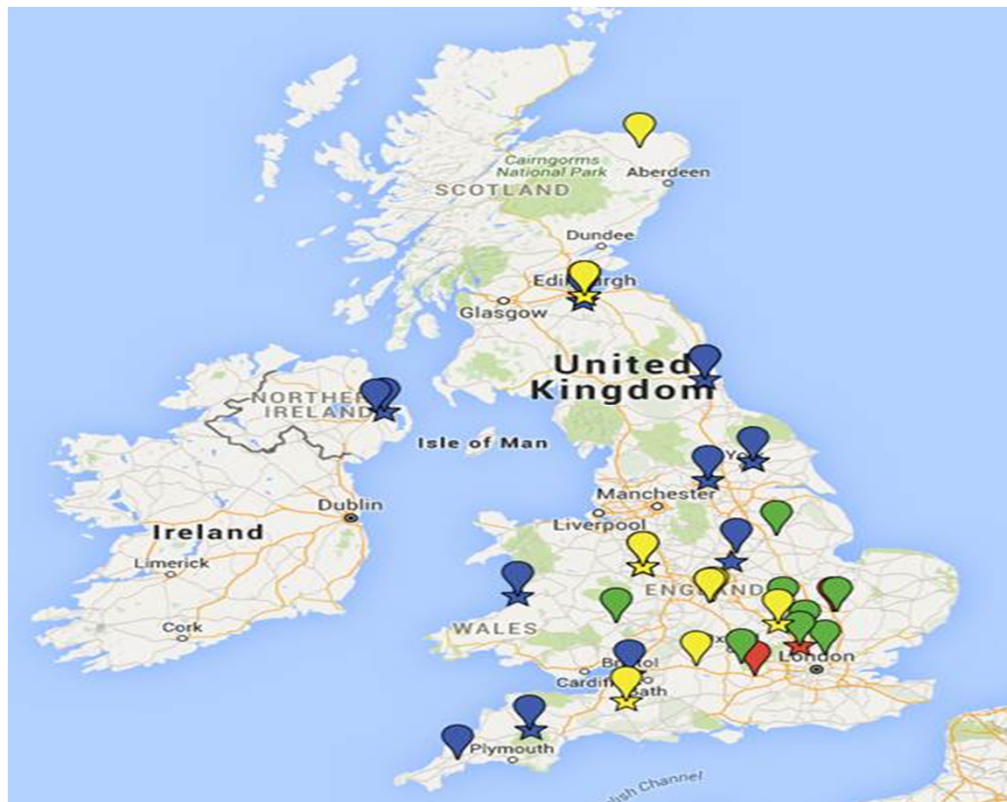


Clinical studies of therapeutics
already developed and tested in
animals



National Biologics Manufacturing
Centre – Part of the Centre for
Process Innovation at the High Value
Manufacturing Catapult

Centres for Agricultural Innovation



Agrimetrics: Centre for
Agricultural Data and Metrics
for Sustainability

Centre for Crop Health
and Protection

Centre for Engineering and
Precision Innovation
in Agriculture

Centre for Innovation
Excellence in Livestock

For the full interactive version: <http://tinyurl.com/jl224lx>

Catalysts

Agri-Tech Catalyst Round 6

£4m to work with developing country partners on agri-tech innovations

Different steams in feasibility, industrial, late stage research

Biomedical Catalyst

£10m to develop innovative ideas to solve healthcare challenges

Steams in feasibility and early stage research

Closes 14th Sept 2016



Health & Life Sciences Competition

Aim: To stimulate and broaden business innovation in health and life sciences, leading to increase in productivity

- £15m to address technical or commercial challenges
- Opens September 2016
- Single Stage Competition
- Supporting total project cost of £50k - £2m
 - Projects under £100k led by a single SME
 - Projects over £100k awarded to business led consortium featuring at least one SME
- Projects 6 month – 3 years in duration



Cell Manufacturing Competition



New £55m state-of-the-art Cell Therapy manufacturing centre in Stevenage, UK, opening 2017.

Manufacture of late phase clinical trial and commercial supply of cell and gene therapies.

Aligned Innovate UK competition Q4 2016 to support development of new technologies for manufacturing or embedding products to be manufactured in the Centre.

CATAPULT
Cell and Gene Therapy

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Mariochiara Barzotto,
Marie Skłodowska-Curie Research Fellow,
Birmingham Business School





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Phone: 01214146708

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Birmingham*



Study: This is a research project, funded by the European Commission (Marie Skłodowska-Curie Actions H2020-MSCA-IF-2014-660022).

Team:



Dr. Mariachiara Barzotto
Post-Doctoral Fellow



Prof. Lisa De Propriis
Regional Economic Development



What SkillUP Does

Manufacturing has experienced significant transformation as a result of:

- globalisation
- technological change

SkillUP is a research project looking at the mismatch between demand and supply of skills in European advanced manufacturing industries.



SkillUP delivers evidence based policy recommendations in the form of a toolkit to:

- understand what mix of skills manufacturing firms need to be innovative and competitive;
- enhance employability (jobs created and jobs filled),
- explore education and training to ensure that workforce skill development matches industry demand,
- bridge industries and education system,
- promote a smart and inclusive economic growth of Europe.

What SkillUP Needs

SkillUP is seeking **manufacturers'** view by **interviews** firms operating in:

- engineering, new materials, biotech, apparel, textiles, and furniture
- with HQ in the UK, Germany, Italy, Spain, and Sweden.

Short interview (1 hour) with your **European HR lead** and **whoever takes responsibility for your operations processes and/or value chain management.**

What Offers

In recognition of participation, all contributors will be sent a copy of the published final report and invited to the final event along with policy institutions.

The resulting overall research will inform policy makers in the areas of skills development in Industry4.0 in Europe.

THANK YOU FOR YOUR ATTENTION



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www.birmingham.ac.uk/skillup



@skillupEU



SkillUp EU



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George Constantinou,
Business Adviser,
Enterprise Europe Network



Enterprise Europe Network

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The i2s programme and IUK funding opportunities

What we do

Part of the Innovate UK family we help SME's in the Midlands region take advantage of business opportunities in the EU and beyond.

What we offer

The Innovate 2 Succeed (i2s) programme – supporting you to develop an ongoing innovation management process for your business

Suitable clients

Midlands-based companies who want to further develop a culture and process of innovation.

Who recognise there are unexploited opportunities for growth or challenges in their business that will benefit from having a robust innovation management process.

Funding opportunities

You can apply for funding to test the feasibility of your idea, research and develop it and demonstrate it in a prototype.

The i2s innovation management programme

Email: innovation@cad.coventry.ac.uk

or call 02476 236236

innovate²
succeed

Innovate UK Funding Competitions

<https://www.gov.uk/government/collections/innovation-grants-for-business-apply-for-funding>



Innovate UK



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Margaret O'Hara,
Daphne Jackson Trust Fellow,
Physics and Astronomy



Breath testing for Clinical Applications

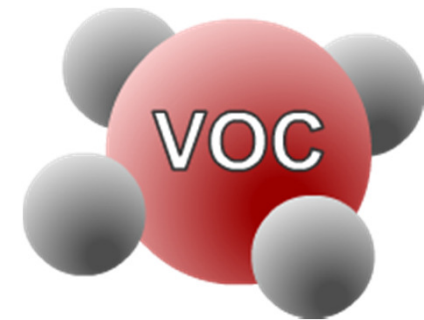
MARGARET O'HARA

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What we do

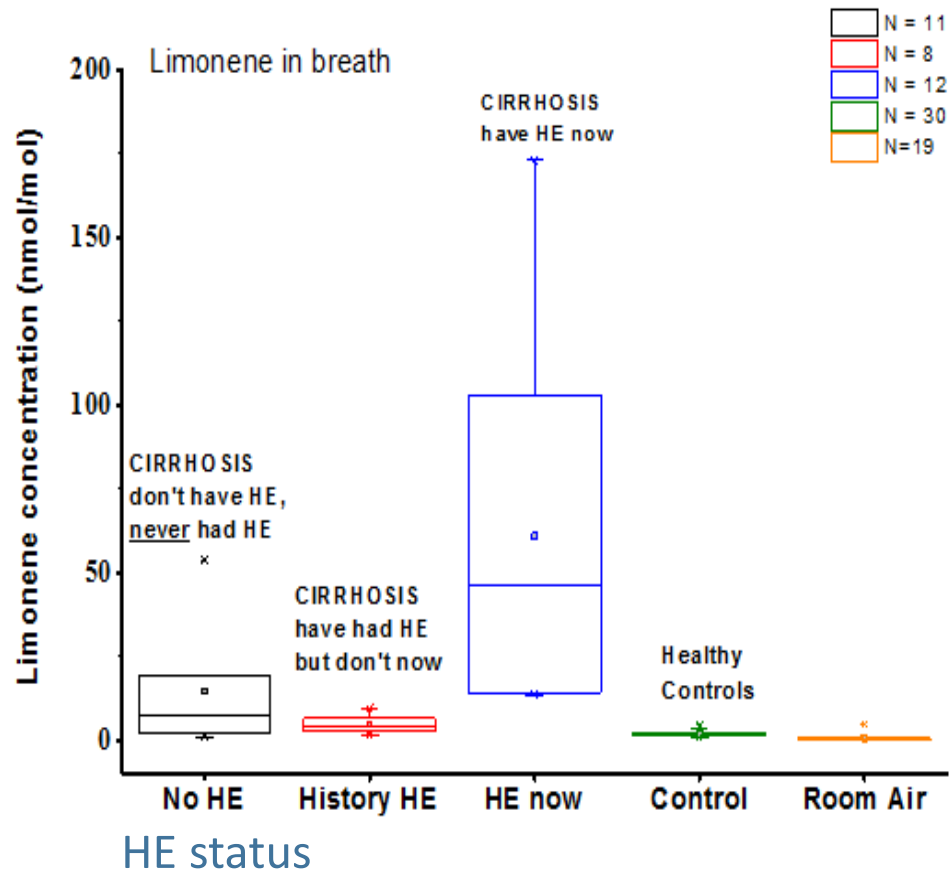
- Analyse Volatile Organic Compounds in Breath
 - Mass Spec
 - Sensitive - ppbv
- Conduct clinical studies mainly in liver disease

What we offer

- Expertise in Breath Analysis
- Expertise in trace gas analysis using ion molecule reactions
- Clinical collaborations with QEH
- Long standing European networks

USP

- Medical Physicist – Physical scientist with clinical training and experience
- In-depth knowledge of VOC breath analysis
- Largest liver unit in Europe
- Experience of running clinical studies



Hepatic Encephalopathy (HE)

- cognitive impairment - side effect of liver cirrhosis
- Huge burden for carers
- Costs as inpatient admissions are needed
- DVLA need a biomarker to assess who can drive
- Assessment is subjective and needs doctor
- Biomarker desperately needed

What we need

- Partner to develop sensor device for limonene (at ppbv) for near-patient testing
- Partner who knows the medical market

Breath testing for Clinical Applications

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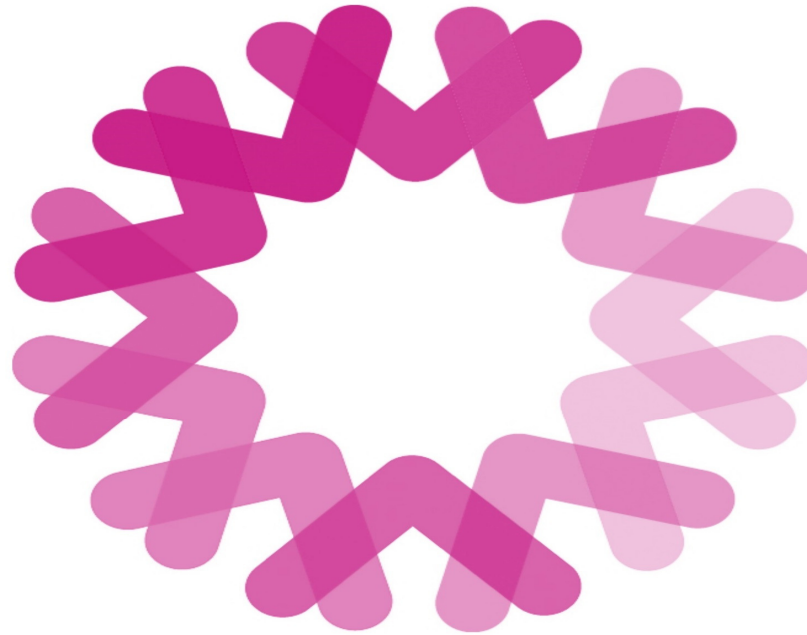


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Tony Davis,
Commercial Director,
West Midlands Academic Health
Science Network





Meridian

WMAHSN

Tony Davis
Commercial Director WMAHSN

Powered by  **Qmarkets**

Context

“We are in the midst of an unprecedented time of change and upheaval. It is therefore, a time of fantastic opportunity for those who act decisively and bravely, and a graveyard for those who do not”

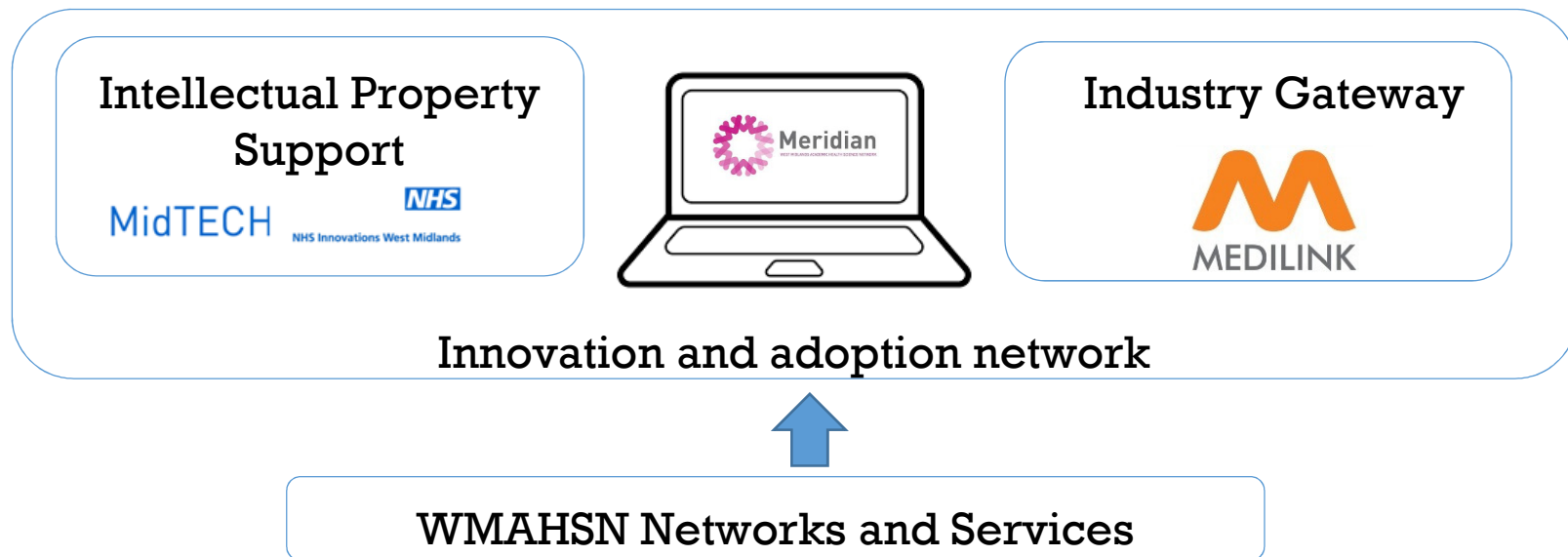


K.Chandler McDonald, Innovation

What is Meridian?

It is the WMAHSN innovation and adoption service. It's been designed to support the adoption of good practice and share lessons learned.

Innovation & Adoption Service



Meridian Online Platform

Meridian online platform is one part of the service that provides virtual access, it can...

1. Define **challenges** and facilitate **decisions**
2. Define **challenges** to identify affective **solutions**
3. Act as a **screening tool** for organisations
4. Identifies and builds **collaborations**
5. **Promotes** readily available innovations for adoption
6. **Sharing** of ideas and innovations and knowledge
7. Provides access to **tools and information**
8. Brings **expertise** together to solve common challenges
9. Creates an online environment the **encourages** innovation and change
10. Manages the WMAHSN **opportunities process**
11. Way to **promote** what **NHS trusts** have been doing

Value of Meridian

Feedback

- Help to shape – repurpose and funding
- How to overcome challenges and adopt in the WM
- Register interests to take forward and adopt

Warm up the market and get people interested in your innovations

Awareness of developments across the region

Ability to scan existing innovations before embarking on development activities

Easy identification of collaboration and risk sharing activities

Features

Campaigns

Ability to develop your own tailored campaigns own to your organisation only.

News

News articles and funding information

Tools

Access to the WMAHSN Innovation and Adoption roadmap

Priorities

Search for innovations by WMAHSN priority or by using the search function on the top right

Comment and Share

Comment on innovations and share experiences and best practice

The screenshot shows the Meridian Health Innovation Exchange website. The header includes the Meridian logo, navigation links (Home, Campaigns, My Activities, News & Tools, Help), a user profile (Malcolm Holmes), and a 'SUBMIT YOUR INNOVATION' button. The main content area is titled 'Active Campaigns' and features four campaign cards: 'Identification, prevention and management of...' (by Lucy Chatwin), 'Community Resource Allocation' (by Tammy Holmes), 'SME Innovation fund' (by Lucy Chatwin), and 'Have an innovation that does not fit any campaign?' (with a 'Submit Innovation' button). Below these are 'Priorities' (Long term conditions, Advanced diagnostics, Mental Health, Wellness) and 'Recent Activities' (Amplitude pro enterprise, Solihull MBC Adult & Child Care Record Management, Real-time Adaptive Indicator of Deterioration). The 'Innovation Warehouse' section prompts users to 'Share Story' and lists 'Last Stories Shared' including 'ESCAPE-pain: a rehabilitation programme for knee/hip osteoarthritis', 'Improving the dignity of patients undergoing imaging', and 'RAID (Rapid Assessment, Interface and Discharge) liaison psychiatry services'.

Registration

Simple registration process

Active Campaigns

Clearly developed campaigns/challenges that require ready made innovations or information to develop collaborations, open to all Meridian users

Other innovations

Submit relevant innovations not relevant to current campaigns

Innovation Warehouse

Upload case studies to share with the community on innovations and the lessons you learnt

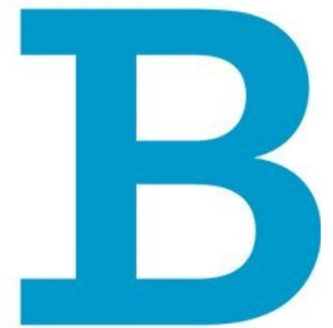
Tony Davis
Commercial Director WMAHSN

tony.davis@wmahsn.org

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Iain Styles,
Lecturer,
Computer Science



Business with
Birmingham



EPSRC
Engineering and Physical Sciences
Research Council



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Physical Science for Healthcare

Iain Styles

Co-Director, EPSRC Centre for Doctoral Training

I.B.Styles@bham.ac.uk

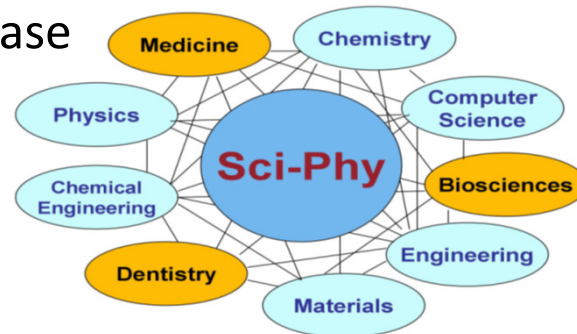
0121 414 8559



Sci-Phy-4-Health

New Physical Science for Healthcare

- Aging
- Trauma
- Cardiovascular Disease



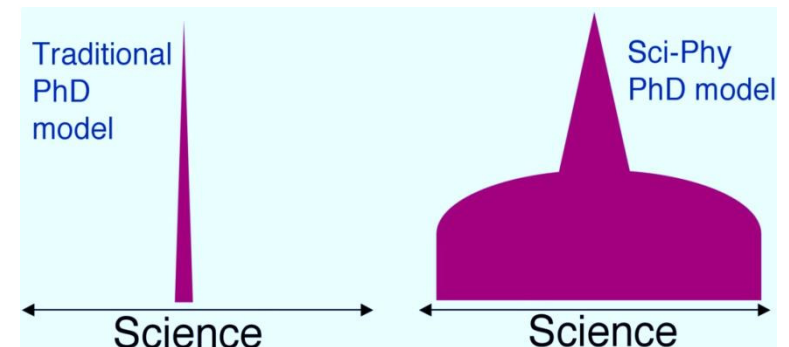
What we offer

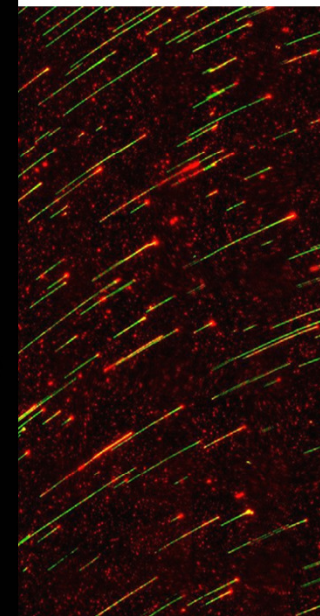
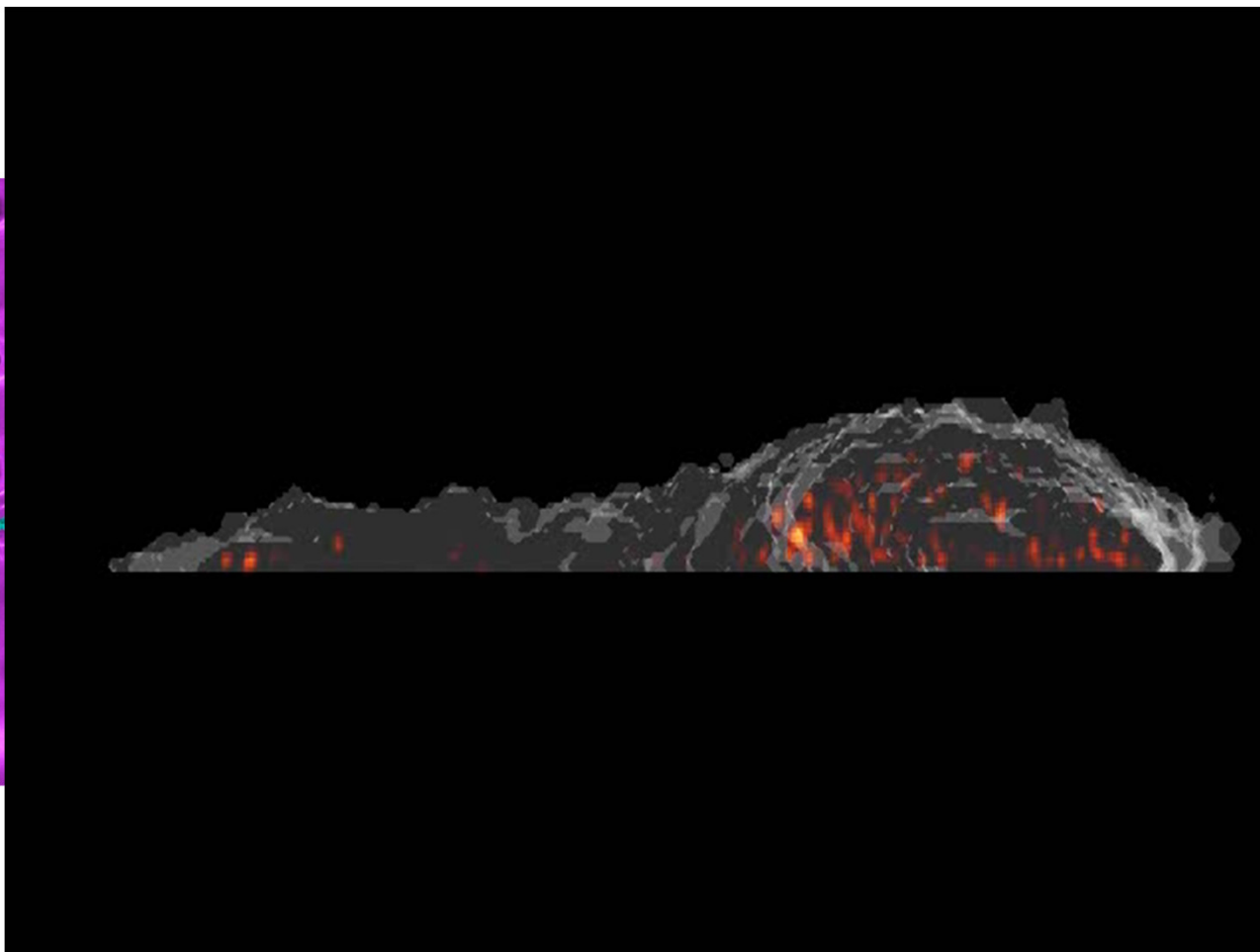
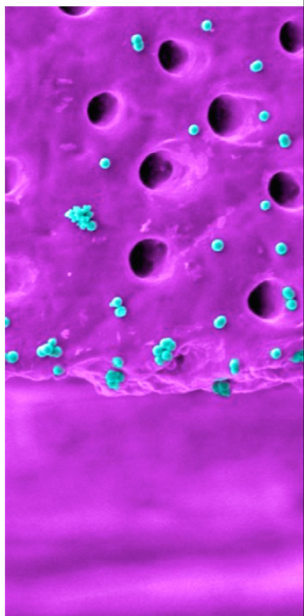
- Hub for interdisciplinary research
- Ten new PhD students every year
- Joint projects
- CASE-type co-funding
- Access to expertise and facilities

What we need

Interesting biomedical problems in our challenge areas that need a physical science solution

Our USP





Other Events

- Business with Birmingham conference, 6 October 2016
- Family Business workshop, 11th October 2016
- Distinguished Lecture Series, Prof Margaret Boden, 26th October 2016

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Thank you to our
speakers and for
your attention

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