

GREATER MANCHESTER & EASTERN CHESHIRE

# RESEARCH AND INNOVATION SHOWCASE 2018

# Housekeeping



- No alarm tests are scheduled. In case you hear an alarm please proceed to an Exit
- Please remember to switch your phones on to the silent mode
- Wi-Fi connection: Alderley Park CC
- #GMResearchShowcase
- Feedback is important

# Aims



- ERDF NHS Business Support SME Engagement
- Foster NHS/Industry/Academic Collaborations
- Showcase GM & CE Assets

# Next Business Support Events



## Cheshire & Warrington



### European Union

European Regional  
Development Fund

2018	2018	2018	2018	2019	2019
September	October	November	December	January	February
NHS Procurement Business Breakfast 20 <sup>th</sup> Sept @ Northwich Memorial Court	Adoption and Spread of Innovation in the NHS 2 <sup>nd</sup> October @ Alderley Park	Patient Safety and Patient and Public Involvement (Date TBC) @ Alderley Park		Ask the NHS Buyer (TBC)	Greater Manchester Research and Innovation Assets (TBC)

[LINK](#)

[LINK](#)

# Agenda (1)



13:00 - 13:05	Welcome – Aims and objectives of the event. Daniel Zamora, Commercial Programme Manager, Health Innovation Manchester
13:05 - 13:20	Health Innovation Manchester's role in fostering collaborations between the NHS, Academia, Industry and other sectors. Dr. Lloyd Gregory, Director of Strategy and Academic Partnerships, Health innovation Manchester
13:20 - 13:25	Alderley Park Site Regeneration Project Dr. Chris Doherty, Managing Director, Alderley Park

# Agenda (2)

## Showcasing Academic Assets

Chaired by Lloyd Gregory, Director of Strategy and Academic Partnerships, Health Innovation Manchester.

13:25 - 13:35	<b>Our Key Research &amp; Innovation Assets: Manchester Metropolitan University</b> Professor Rebecca Lawthorn, Professor of Community Psychology, Manchester Metropolitan University.
13:35 - 13:45	<b>Our Key Research &amp; Innovation Assets: University of Manchester</b> Professor Prof Paul A Townsend, Associate Dean of Business Engagement, co-Director of Manchester Centre for Cellular Metabolism, Theme lead for Personalised Therapy and Professor of Molecular Cell Biology, University of Manchester
13:45 - 13:55	<b>Our Key Research &amp; Innovation Assets: University of Salford</b> Professor Ben Light, Professor of Digital Society, University of Salford.

# Agenda (3)



## Showcasing Academic Assets

Chaired by Lloyd Gregory, Director of Strategy and Academic Partnerships, Health Innovation Manchester.

13:55- 14:05	<b>Industry Engagement Services: University of Manchester.</b> Saqab Rasul, SME & KE Manager
14:05 - 14:15	<b>Industry Engagement Services: Manchester Metropolitan University</b> Jane Jones, Enterprise Fellow, Manchester Metropolitan University
14:15 - 14:30	<b>Panel Questions &amp; Answers Session</b> Chaired by Dr. Lloyd Gregory,

# Agenda (4)

## NHS and Industry Engagement

Chaired by Dr. Richard Deed, Associate Director for Industry, Health Innovation Manchester.

14:40 - 14:50	<b>Research and Innovation at Manchester University NHS Foundation Trust</b> Alison Robinson, Divisional Research Manager, Manchester University NHS Foundation Trust
14:50 - 15:00	<b>Research and Innovation at Northern Care Alliance NHS Group</b> Natalie Garratt, R&D Lead, Northern Care Alliance NHS Group
15:00 - 15:10	<b>Research and Innovation at Greater Manchester Mental Health NHS Foundation Trust</b> Sarah Leo, Head of Research & Innovation Office, Greater Manchester Mental Health NHS Foundation Trust

# Agenda (5)

## NHS and Industry Engagement

Chaired by Dr. Richard Deed, Associate Director for Industry, Health Innovation Manchester.

15:10 - 15:20	<b>Research and Innovation at The Christie NHS Foundation Trust</b> Elaine Blowers, Lead Cancer Research Nurse/Operational Director, the National Institute for Health Research Manchester Clinical Research Facility at The Christie NHS Foundation Trust
15:20 - 15:30	<b>Opportunities for Collaboration, Medicines Discovery Catapult</b> Nicola Heron, Head of Collaborative R&D, Medicines Discovery Catapult
15:30 - 15:40	<b>SME Perspective on NHS/Industry/Academia collaborations</b> Dr. Richard Deed, Associate Director for Industry, Health Innovation Manchester and Technology Director from TRUSTECH – NHS Innovation Service
15:40 - 15:55	<b>Panel Questions &amp; Answers Session</b> Chaired by Dr. Richard Deed

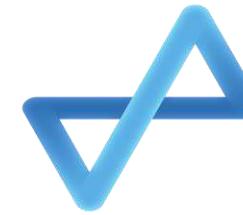
# Agenda (6)



15:55 - 16:00	<b>Closing remarks</b> Daniel Zamora
16:00 - 16:30	<b>Networking in the Marketplace</b>
16:30	<b>Close</b>

# Health Innovation Manchester's role in fostering collaborations between the NHS, Academia, Industry and other sectors.

Dr. Lloyd Gregory  
Director of Strategy and Academic Partnerships  
Health innovation Manchester



Health  
Innovation  
**Manchester**

Health Innovation Manchester  
Lloyd Gregory PhD



Discovering



Developing



Delivering



# Our Academic Health Science and Innovation System

Rich Picture Animation



Discovering

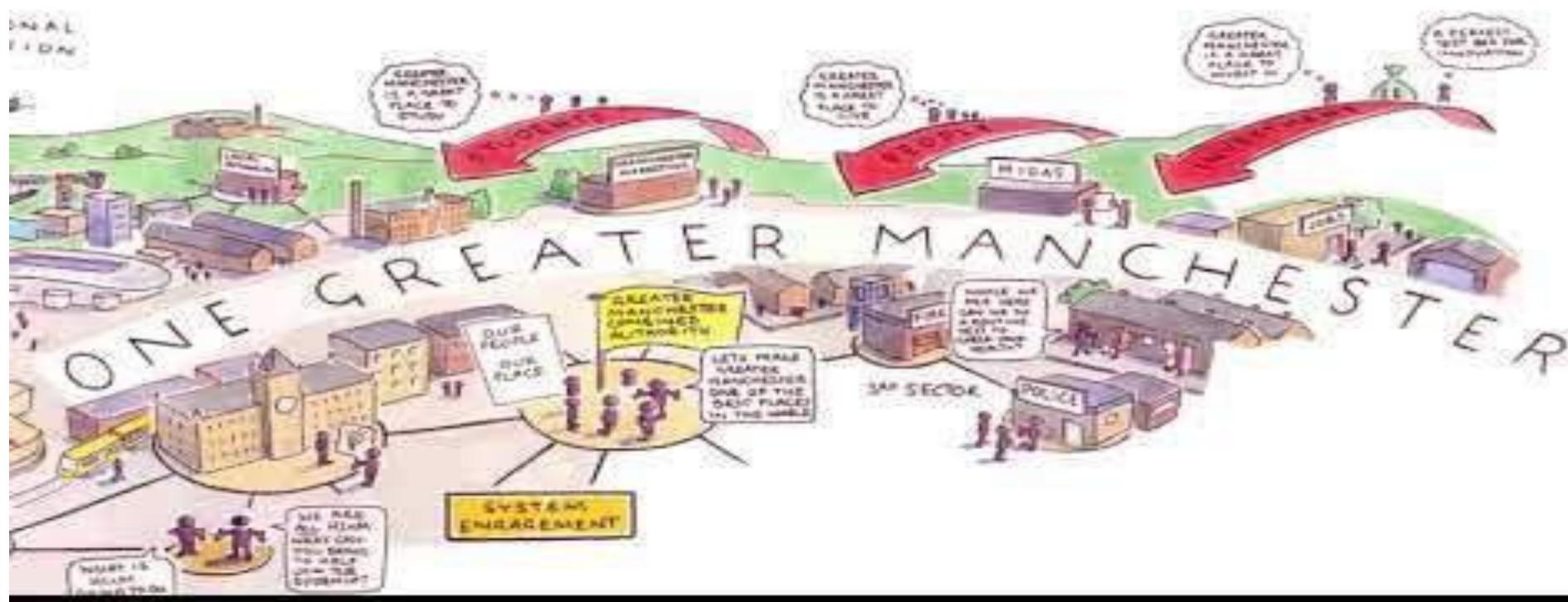


Developing

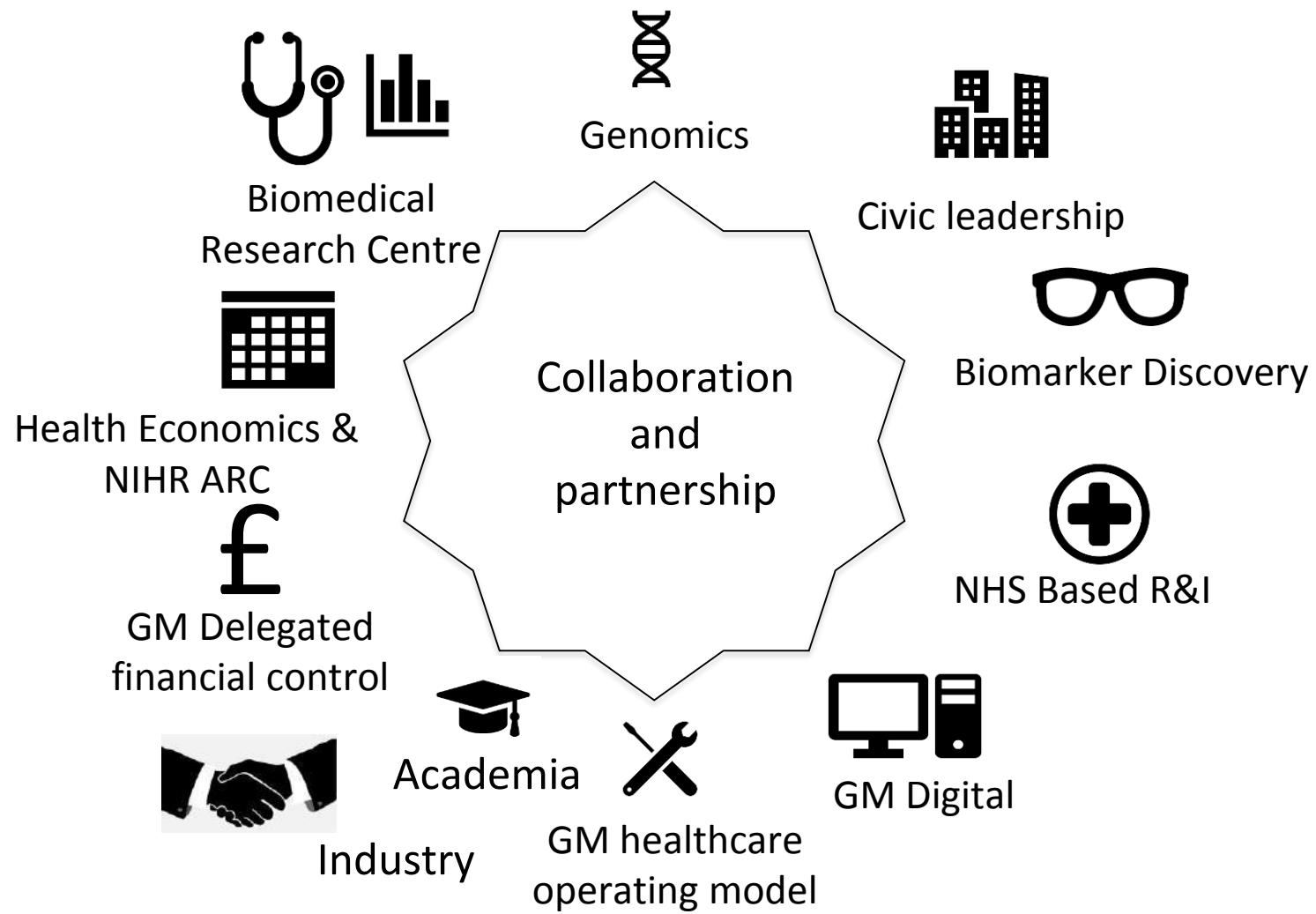


Delivering

# Health Innovation Manchester Rich Picture



# GM R&I Assets





# Alderley Park Site Regeneration Project

Dr. Chris Doherty  
Managing Director  
Alderley Park

A

**ALDERLEY PARK**

*53° 16' 46" N 002° 14' 12" W*



An MSP campus  
**MSP** MANCHESTER SCIENCE PARTNERSHIPS

MERESIDE  
CAMPUS

**ALDERLEY PARK**

53° 16' 46" N 002° 14' 12" W

# *Thriving ecosystem*

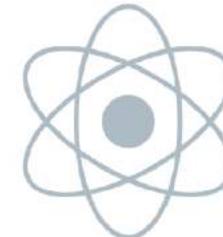
*National  
Institutions*

**2**  
*venture  
funds*

*Approx  
**2000**  
staff*



**1M**  
*sq ft*  
*of state-of-the-art  
labs*



*Unique  
science  
services*

*Business  
Incubator*

*International  
collaboration*

*Networks*

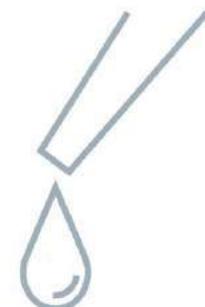
**200**  
*companies*



# *A Range of Science Services*

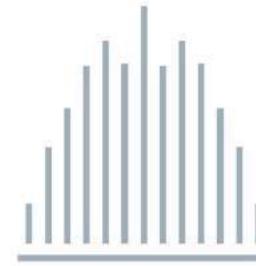
**WALK UP  
MASS SPEC**

**BIOBANKING**  
*Facility*



**HIGH FIELD  
NMR**

- 700/500 MHz



**OPEN  
ACCESS  
LAB**

**IMAGING &  
ONCOLOGY  
SERVICE**



**LAB SERVICES**

*Fume hoods, tissue hoods, pure and ultrapure water,  
critical process monitoring, waste management,  
cold storage, logistics, sterilisations services*

**8 PERSON**  
*dedicated  
free-access  
team*

*Funding*  
**STRATEGY**  
*advice*

*10 week*  
**DEVELOP**  
*programme*

**2 DAY**  
*boot camps*  
*for*  
*start ups*

*Business*  
*plan*  
**SUPPORT**

**SCALING**  
*programme*

**MENTOR**  
*matching*

*Business*  
**WORKSHOPS**

*6 month*  
**GROWTH**  
*reviews*

*On site*  
**VENTURE**  
*Funds*

*CEO*  
**NETWORKING**

A photograph of a dirt path in a park, framed by lush green trees on both sides. The path leads towards a wooden fence and a grassy area. The scene is bathed in bright sunlight, creating strong shadows on the grass.

**THANK YOU**

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# Showcasing Academic Assets

Chaired by Dr. Lloyd Gregory

# Our Key Research & Innovation Assets: Manchester Metropolitan University

Professor Rebecca Lawthorn  
Professor of Community Psychology  
Manchester Metropolitan University



Manchester Metropolitan University  
**Supporting your business**  
**With research and innovation in Healthcare**



# Manchester Metropolitan University

We offer world-leading expertise, research and innovation

Preparing our workforce for today, future proofing for tomorrow  
You can **access** our research and work with us through:

- Knowledge Transfer Partnerships
- Contract and collaborative research
- Consultancy



## Academic Excellence

- No. 1 '**modern' university** for the power research in Allied Health (source: REF2014 data)
- **85% of the impact** of our research is rated world-leading and internationally excellent (source: REF2014 data)
- 2<sup>nd</sup> in the UK for the volume of **KTP Associates** (source: Innovate UK)
- 18<sup>th</sup> for Education research (source: 2018 Complete University Guide)
- One of the **best young global** Universities (Times Higher World University Rankings 2017)



# Collaborate, innovate, develop

We deliver **Research with impact**

From the highly skilled clinicians and practitioners who will carry our **health and social care system** forward to the country's brightest sporting stars, we are training the workforces making the **difference** to our world.

Apply the expertise of our newly developed **University Centres for Research and Knowledge Exchange** to your business

Much of our work is aligned with **UK's Industrial Strategy**, particularly around healthy ageing



# Shaping our world

- Our current focus lies in **three** main areas
  - Bioscience
  - Health, Psychology and Communities
  - Musculoskeletal Science and Sports Medicine





# Bioscience

Addressing three of the **greatest** burdens on UK health

Researchers in this discipline are tackling:

- Stroke and age-related decline
- Infectious disease
- Cardiovascular disease



[mmu.ac.uk/bioscience](http://mmu.ac.uk/bioscience)



# Health, Psychology and Communities

Our academics are producing **cutting-edge research** on :

- Applied Psychology and Behaviour Change
- Communication Disability
- Musculoskeletal Rehabilitation
- Developing Thriving Communities
- Ageing and Long-Term Conditions
- Substance Use and Addictive Behaviours





# Quantitative Data Analysis

We provide **expertise** in quantitative data analysis, specifically:

- Psychometric assessment and evaluation
- Quantitative data analysis

We can **support you** as an SME to:

- Review the design of studies and experiments
- Recommend the use of statistics
- Provide advice on data visualisation and presentations
- Identify best practices for data management prior to the start of data collection
- Draw reliable and evidence based conclusions from data



# Healthy Ageing and Sustainable Communities

- Our approach to promoting health behaviours focuses on **individualisation**
- Helping smokers to quit for good by **using facial ageing software**
- We are the **academic partner** for the Care England **Teaching Care Homes** project
- End of life care for people with **substance use** issues and addictions



# Musculoskeletal Science and Sports Medicine

Academics are producing **world-leading research** to understand important mechanisms that control **human movement**.

Our researchers have specialisms in:

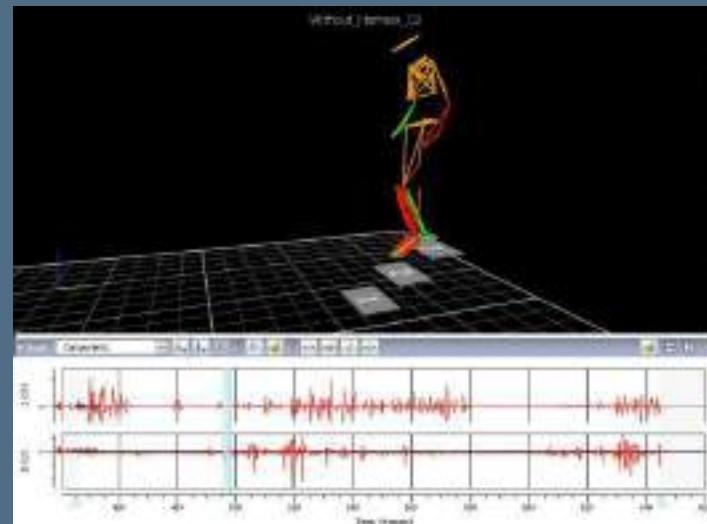
- Movement impairment
- Musculoskeletal function in health and ageing
- Sports medicine and elite performance





# Movement Impairment

- Human Movement Analysis
  - Gait analysis in clinical populations
  - Ageing / Frailty
  - Diabetes / dystonia / osteoarthritis
  - Parkinsons / Stroke / Cerebral Palsy





# Musculoskeletal Function in Health & Ageing

- Diabetes research
  - Unsteadiness & falls
  - Foot mechanics & pathology
  - Multi-disciplinary approach
  - Computer vision algorithms,
  - Supervised deep learning

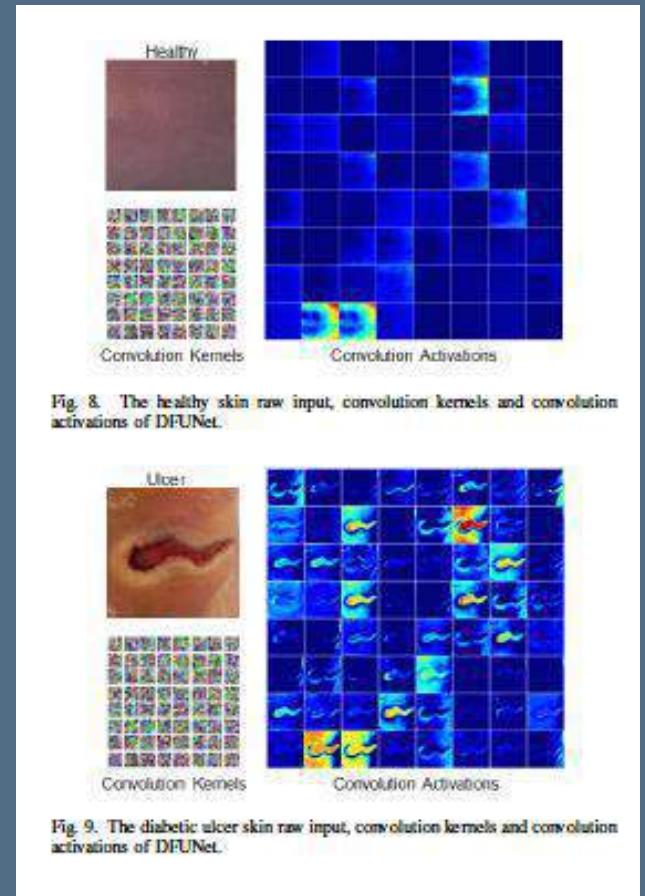
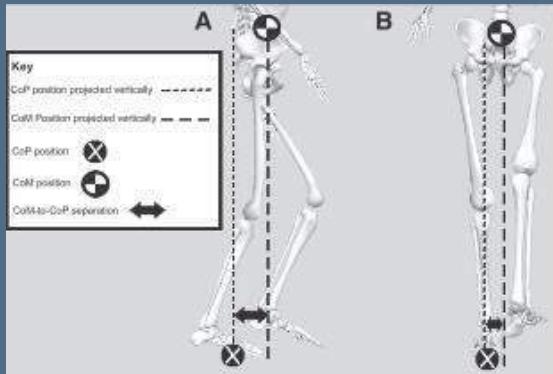


Fig. 8. The healthy skin raw input, convolution kernels and convolution activations of DFUNet.

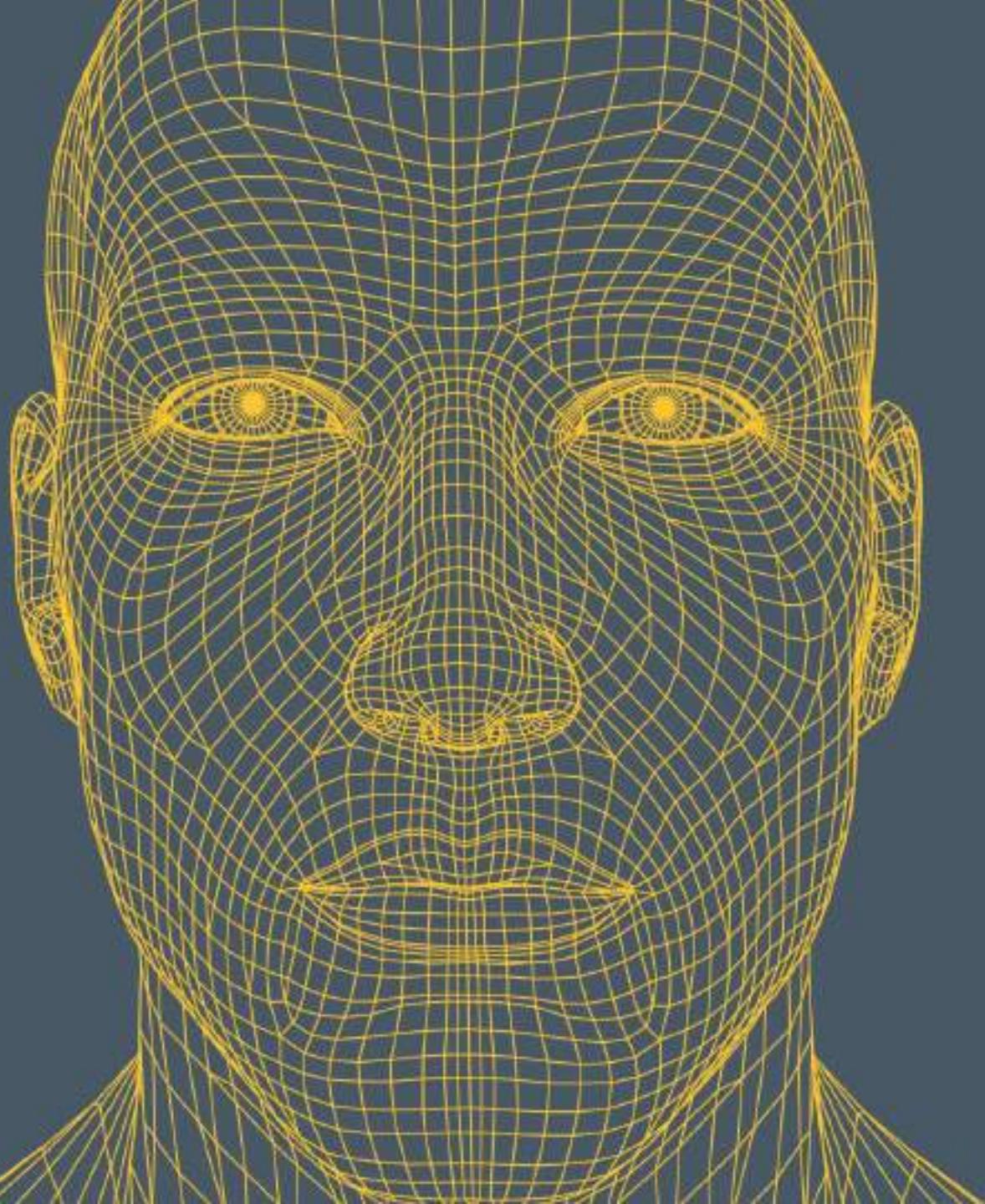
Fig. 9. The diabetic ulcer skin raw input, convolution kernels and convolution activations of DFUNet.



# Sports Medicine and Elite Performance

- Musculoskeletal Imaging
- Appatella
- Diagnosing patellofemoral knee pain
- Preventing and predicting injury
- Myositis





# PrintCity

3D · Innovate · Educate · Collaborate

# PrintCity Medical Work

Using technology to save lives

Surgical planning – Maxillofacial surgical planning aids.



# PrintCity Medical Work

## Infant Prostheses

Growing reputation for creating unique prosthetic healthcare solutions

Printing components for children born without limbs to enable a more active and independent life.



# PrintCity Medical Work

We also create bespoke devices and solutions to other clinical and lifestyle issues

Bespoke 3D printed shoes, orthotics

Specialist spinal beds, supporting after surgery and enabling rehabilitation

3D printed trachea and anatomical models





**Professor Rebecca Lawthom** | Professor of Community Psychology & Head of Health, Psychology and Communities Research Centre

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# Our Key Research & Innovation Assets: University of Manchester

Professor Paul A Townsend  
Associate Dean for Business Engagement  
Research and Innovation  
University of Manchester

# The University of Manchester

## Faculty of Biology, Medicine and Health

*Professor Paul A. Townsend*

*Associate Dean for Business Engagement, Research and Innovation*

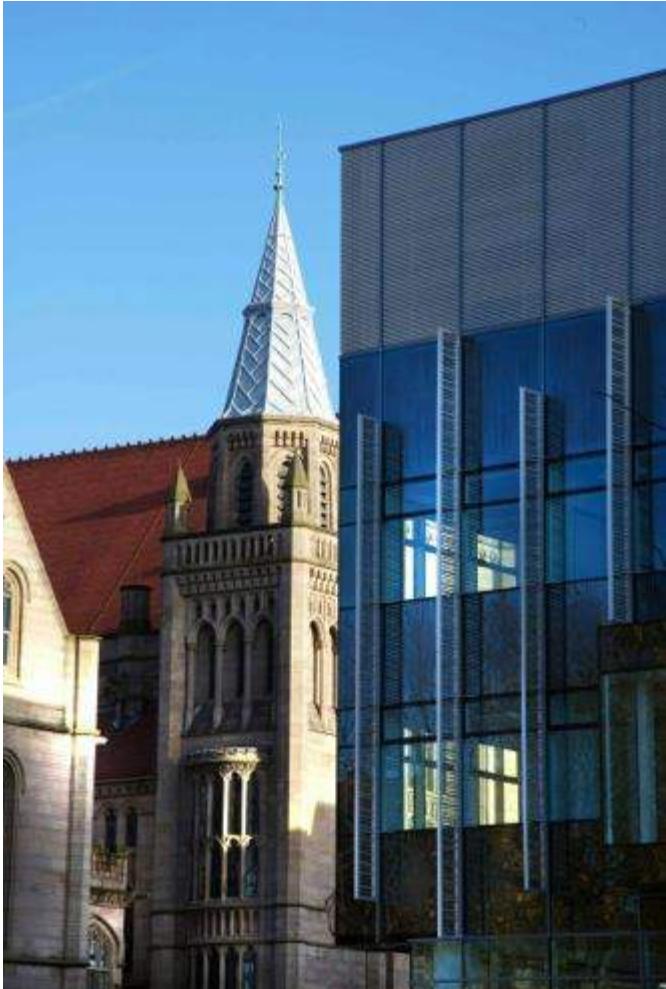


# The University of Manchester

- Over 38,000 students, 12,000 international students
- Research and teaching in all major subjects
- Over 250,000 alumni world-wide
- >£845m income
- >£1bn campus investment
- Each year we welcome more international students than any other UK university
- Year on year elevation in global academic & esteem rankings



# The University of Manchester



- Almost 6,000 research and academic staff in three Faculties:
  - Faculty of Biology, Medicine and Health
  - Faculty of Humanities
  - Faculty of Science and Engineering
  
- 5 research beacons: pioneering discoveries, interdisciplinary collaboration and cross-sector partnerships to address some of the global challenges:
  - Addressing global inequalities
  - Advanced Materials
  - Cancer
  - Energy
  - Industrial biotechnology

# Faculty of Biology, Medicine and Health

- Created on 1 August 2016
- Merger of the Faculty of Life Sciences and the Faculty of Medical and Human Sciences
- More integrated structure
- Greater focus in key areas of research, teaching and learning
- Interdisciplinary working enabling us to learn from each other and share best practice
- Translational approach - from discovery science to clinical application and patient care

**three schools**  
• School of Biological Sciences  
• School of Medical Sciences  
• School of Health Sciences

**8 strategic  
research  
domains**

**>£300m**  
annual budget

**£122m**  
*annual research income*

**3,200 staff**

**11,000  
students**

**34** undergraduate  
taught  
programmes

# QS World University Rankings

University of Manchester 29<sup>th</sup>

Life Sciences & Medicine 35<sup>th</sup>



Subject	World ranking 2018	UK ranking 2018
Nursing	3	1
Dentistry	22	4
Anatomy & physiology	15	4
Pharmacy & pharmacology	16	6
Biological sciences	50	7
Medicine	41	9
Psychology	47	10

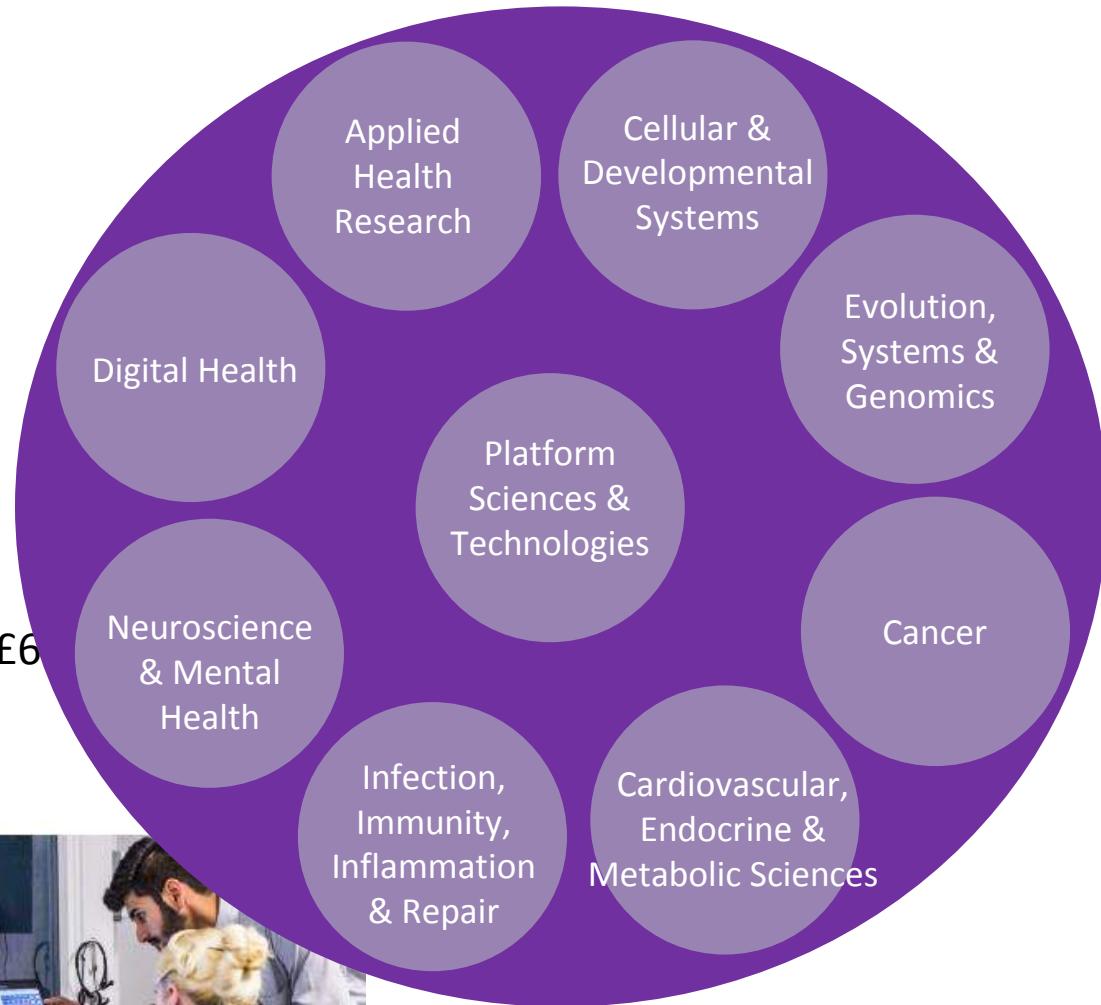
# Our research vision

undertake world-class discovery science,  
develop effective clinical translation,  
facilitate implementation of advances in healthcare  
for the benefit of society in Manchester, the UK and across the globe



# Our strategic research domains

- Drive large-scale interdisciplinary research projects and collaborative working
- Support staff to deliver innovative, world-leading research
- Aligned closely to the strategic priorities of our partners
- Exploit opportunities presented by £6 billion devolved health and social care budget (DevoManc)



# Cellular & Developmental Systems

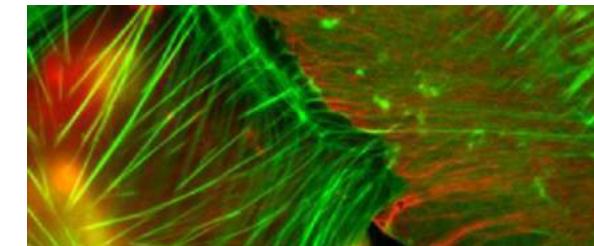
## Wellcome Centre for Cell-Matrix Research

- Immuno matrix
- Mechano matrix
- Chrono matrix

- Biological timing
- Development & disease
- Gene expression, chromatin & signalling
- Cell dynamics
- Regenerative medicine

### ***Opportunity***

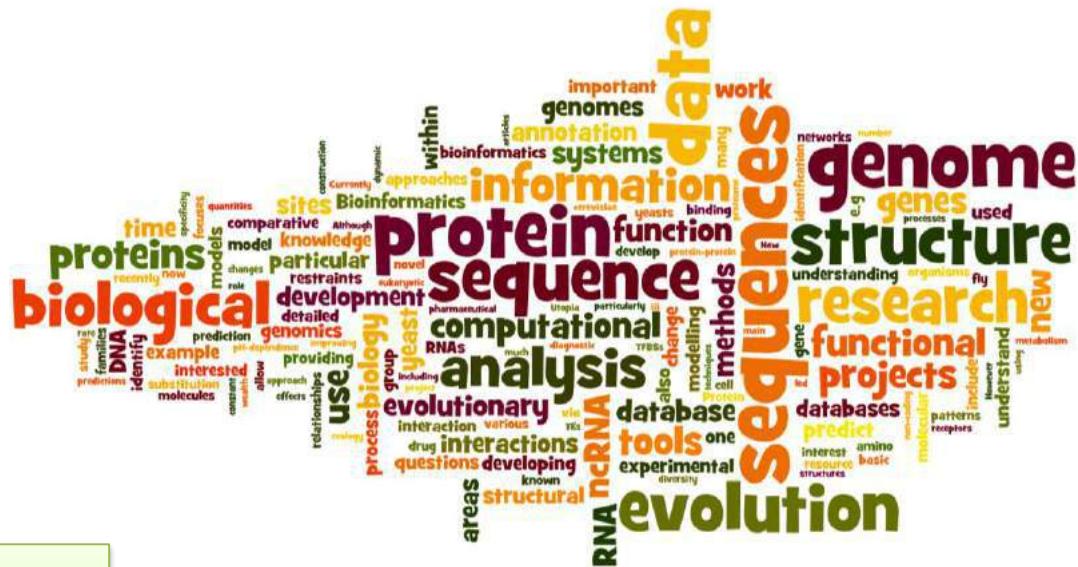
- Quantitative & dynamic biology



# Evolution, Systems & Genomics

Manchester Centre for Genomic Medicine – 100,000 genomes project

- Antimicrobial resistance
- Bioinformatics
- Evolutionary biology
- Metagenomes
- Modelling
- Molecular epidemiology
- Organismal behaviour
- Protein structure evolution



# Opportunities

- Computational biology
- Genomics

# Cancer

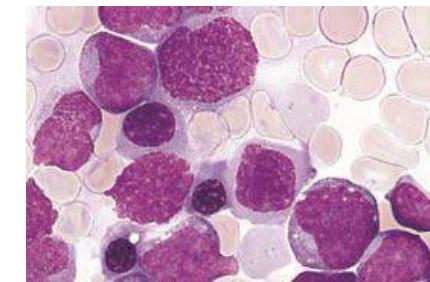
- Cancer Research UK (CRUK) Major Centre
- Christie Hospital
- Manchester Cancer Research Centre (MCRC)
- CRUK Lung Cancer Centre of Excellence
- Movember Centre of Excellence in Prostate Cancer



## Biomedical Research Centre

- Cancer prevention & early detection
- Advanced radiotherapy (incl. proton beam therapy)
- Cancer precision medicine

- Lung
- Melanoma
- Prostate
- Ovarian
- Breast
- Haematological



## Opportunities

- Cancer immunology
- Neuro-oncology
- AI/ML
- PED
-

# Cardiovascular, Endocrine & Metabolic Sciences

## Cardiovascular medicine and science

- Hypertension
- Cardiac physiology
- Human genetics of cardiovascular disease

## Endocrinology and metabolism

- Metabolic and endocrine disease
- Gut-brain interactions
- Genetic circuits involved in development

***Opportunity***  
- Biological clocks



# Infection, Immunity, Inflammation & Repair

- Manchester Collaborative Centre for Inflammation Research (MCCIR)
- Manchester Fungal Infection Group: global leaders on aspergillosis
- Arthritis Research UK centres: Genetics & Genomics, Epidemiology

## Biomedical Research Centre

- Dermatology
- Musculoskeletal
- Respiratory medicine



- Chronic inflammatory diseases: musculoskeletal, dermatology, respiratory
- Explorative immunology across the life course
- Regenerative medicine, incl. matrix biology
- Infection: mycology, bacteriology & parasite immunology

## Opportunities

- Precision medicine for immune-mediated inflammatory diseases
- Cancer immunology
- Chronic wounds

# Neuroscience & Mental Health

## ESRC International Centre for Language and Communication Development

### Biomedical Research Centre

- Hearing health
- Cognitive neuroscience
- Language
- Communication & hearing
- Mental health
- Neurodegeneration
- Stroke
- Systems & computational neuroscience
- Vision research

### ***Opportunities***

- Neuro oncology
- Neurovascular diseases



# Digital health

- MRC Health e-Research Centre (HeRC)
- DoH Connected Health Cities

- risk prediction
- endophenotype discovery
- primary care databases
- remote monitoring
- text mining
- image analysis
- advanced analytics
- learning health systems

**Opportunity**  
- Early detection



Health  
e-Research  
Centre



# Applied Health Research

- NIHR Patient Safety Centre
- NIHR Clinical Research Facility
- Clinical Trials Unit
- NIHR Collaboration for Leadership in Applied Health Research (CLARHC)

## ***Opportunity***

- Minimising health inequalities

- Evidence synthesis
- Clinical trials
- Biostatistics
- Health economics
- Epidemiology
- Qualitative research
- Patient & public involvement & engagement (PPIE)

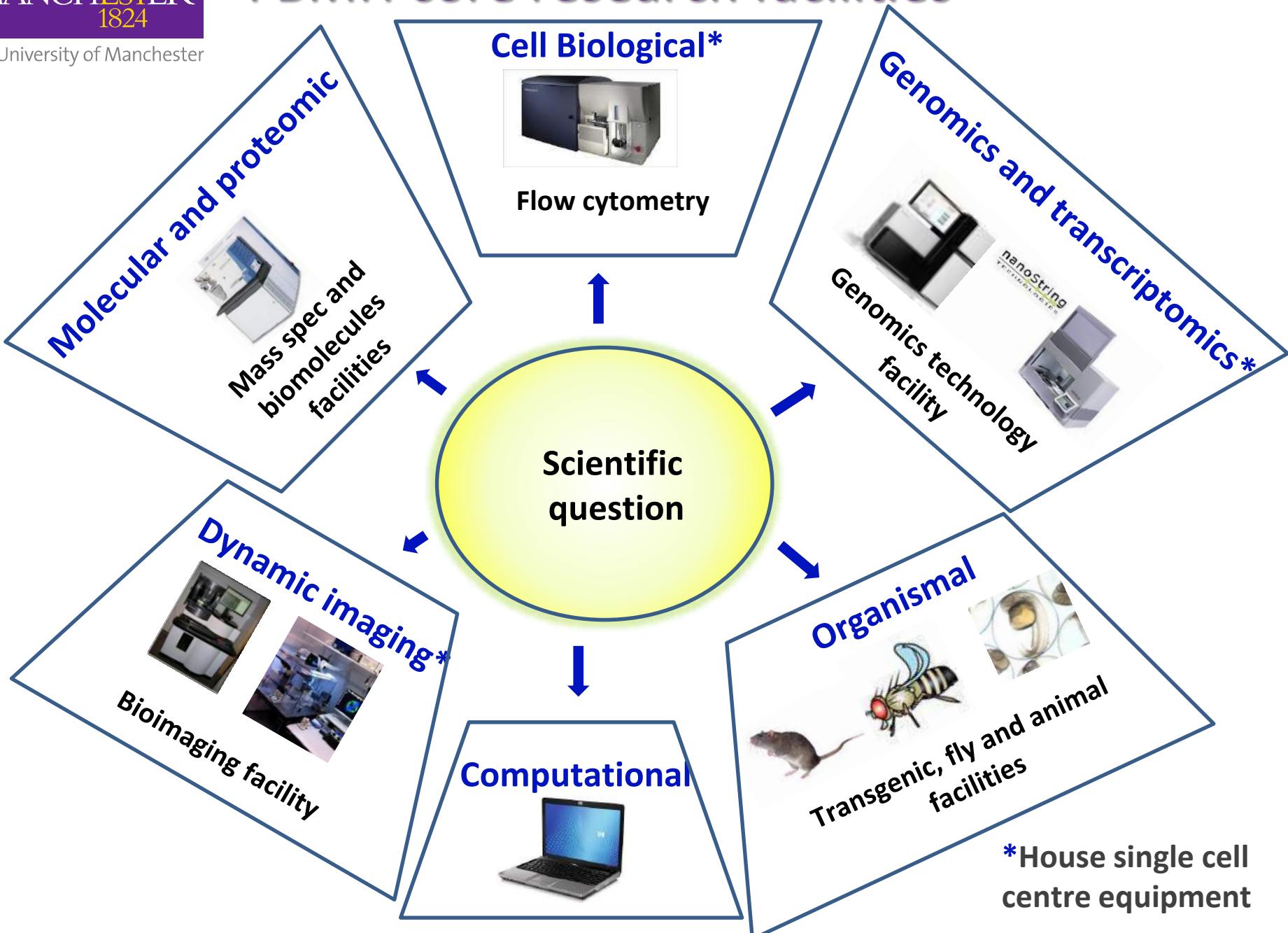


# Platform Sciences & Technology - cross-cutting approaches

- **Advanced materials** – use of advanced materials (incl. graphene) and engineering for biomarkers, targeted delivery, medical devices, sensors, diagnostics, nanomedicines
  - National Graphene Institute
  - Graphene Engineering Innovation Centre
  - Sir Henry Royce Institute for Advanced Materials
- **Imaging technologies** – creating a link between bioimaging & medical imaging, imaging analysis linking with big data, imaging software development
- **Precision medicine** – integration of e-health- & bio-informatics data, systems medicine, biostatistics - translate clinical genomic & proteomic data into platforms for personalised medicine



# FBMH core research facilities



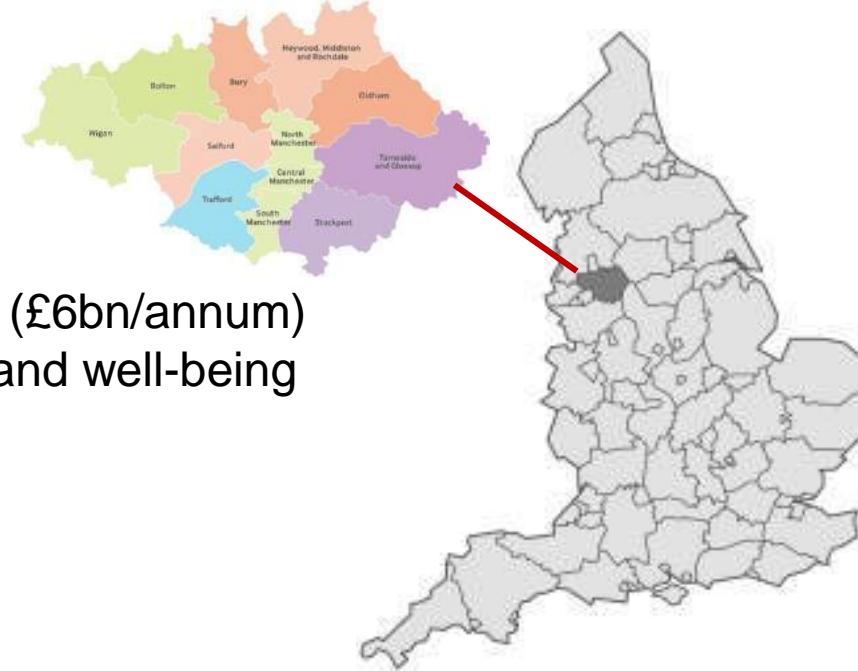
# Greater Manchester innovation ecosystem for translational medicine



# Greater Manchester

## A Devolved Health and Social Care System

- 2nd largest UK conurbation
  - 3m ethnically diverse population
  - High levels of social deprivation
  - Poor health outcomes
- Integrated Health and Social Care budget (£6bn/annum)
  - Deliver rapid improvements in health and well-being
- Trust / University Partnership
  - Federated with four other NHS Trusts
- Access to a defined population
  - Governance arrangements in place
- Drive innovations into healthcare at pace and scale
  - Exemplar for wider NHS
- An agile system
  - Influence NHS procurement



# Thank you



# Our Key Research & Innovation Assets: University of Salford

Professor Ben Light  
Professor of Digital Society  
University of Salford

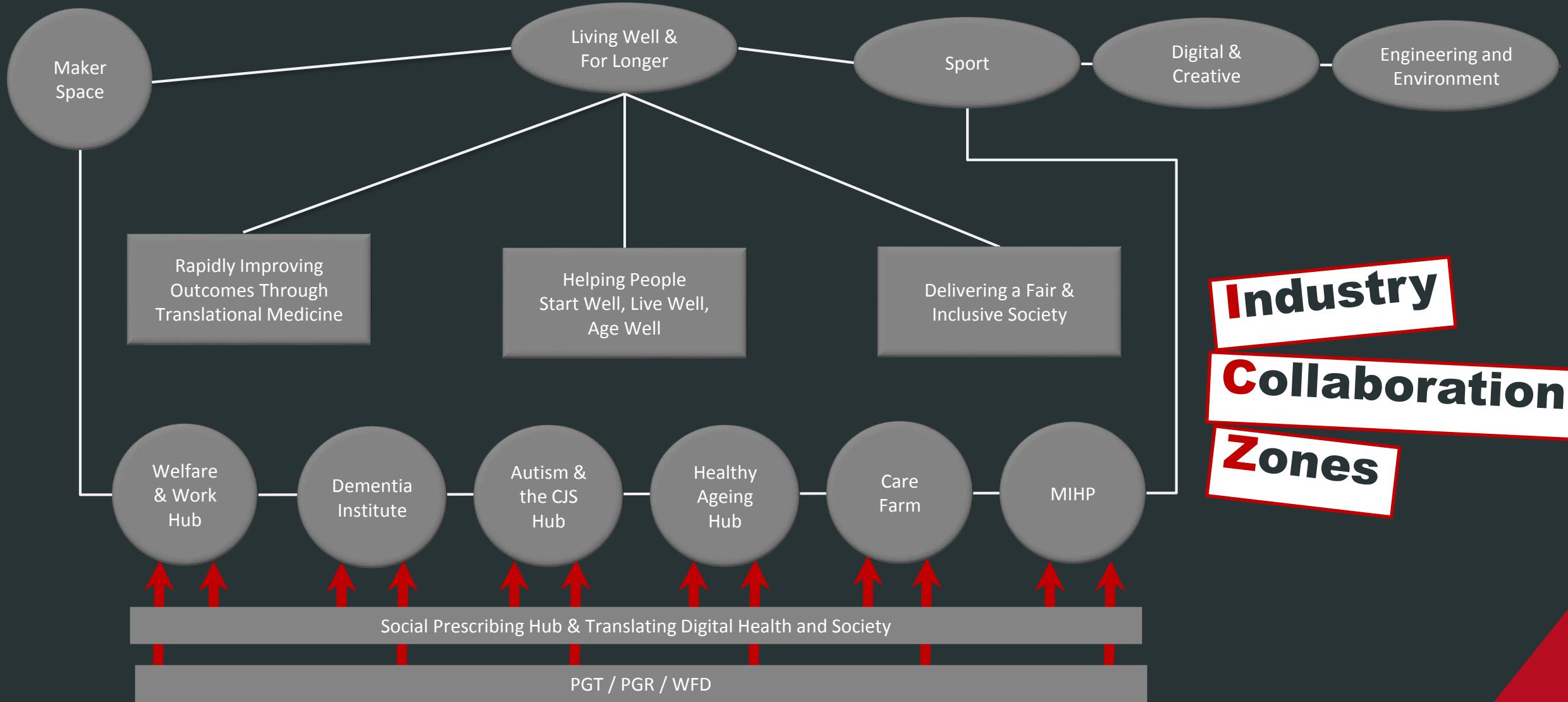


University of  
**Salford**  
MANCHESTER

**Professor Ben Light  
Associate Dean – Research**

**School of Health and Society  
@doggyb / b.light@salford.ac.uk**





UG & PGT Provision / PGR & Research / Public Engagement / Enterprise

# Translational Digital Health and Society



AI and Robotics /  
Wearables and IoT /  
Apps and Mobiles /  
Big Data / Digital Public  
Health / Digital Literacies



University of  
**Salford**  
MANCHESTER

Big Data, Digital Methods and Social Media Analytics Services  
Clinical Gait Analysis Service  
Counselling and Psychotherapy Suites  
Digital Imaging Suite  
Energy House  
Exercise Physiology Testing Service  
Human Performance Lab and Strength and Conditioning Suite  
Immersion Simulation Room  
Podiatry Clinic  
Prosthetics and Orthotics Laboratory  
Psychology Laboratories  
Rehabilitation Flat  
Running Performance Clinic  
Simulation Suites with Sim Mannequins  
Smart Flat  
Sports Injury Clinic  
Wellness Works



University of  
**Salford**  
MANCHESTER



University of  
**Salford**  
MANCHESTER

**Professor Ben Light  
Associate Dean – Research**

**School of Health and Society  
@doggyb / b.light@salford.ac.uk**



# Industry Engagement Services: University of Manchester

Saqab Rasul  
SME & KE Manager  
University of Manchester

MAN

MANCHESTER  
1824

The Univers

The University of Manchester



# Working with Industry

## Projects

- Contract research
- Collaborative/ interdisciplinary research
- Knowledge Exchange/ Jointly leveraged external funding
- PhD Sponsorship
- Post Doc

## Facilities

- Service Provision
- Sharing of specialised kit & facilities
- Interactions with centres & institutes
- Innovation hubs & centres

## Consultancy

- Specialist opinion
- Technical/ professional advice
- Expert witness services
- Scientific advisory boards

## Training

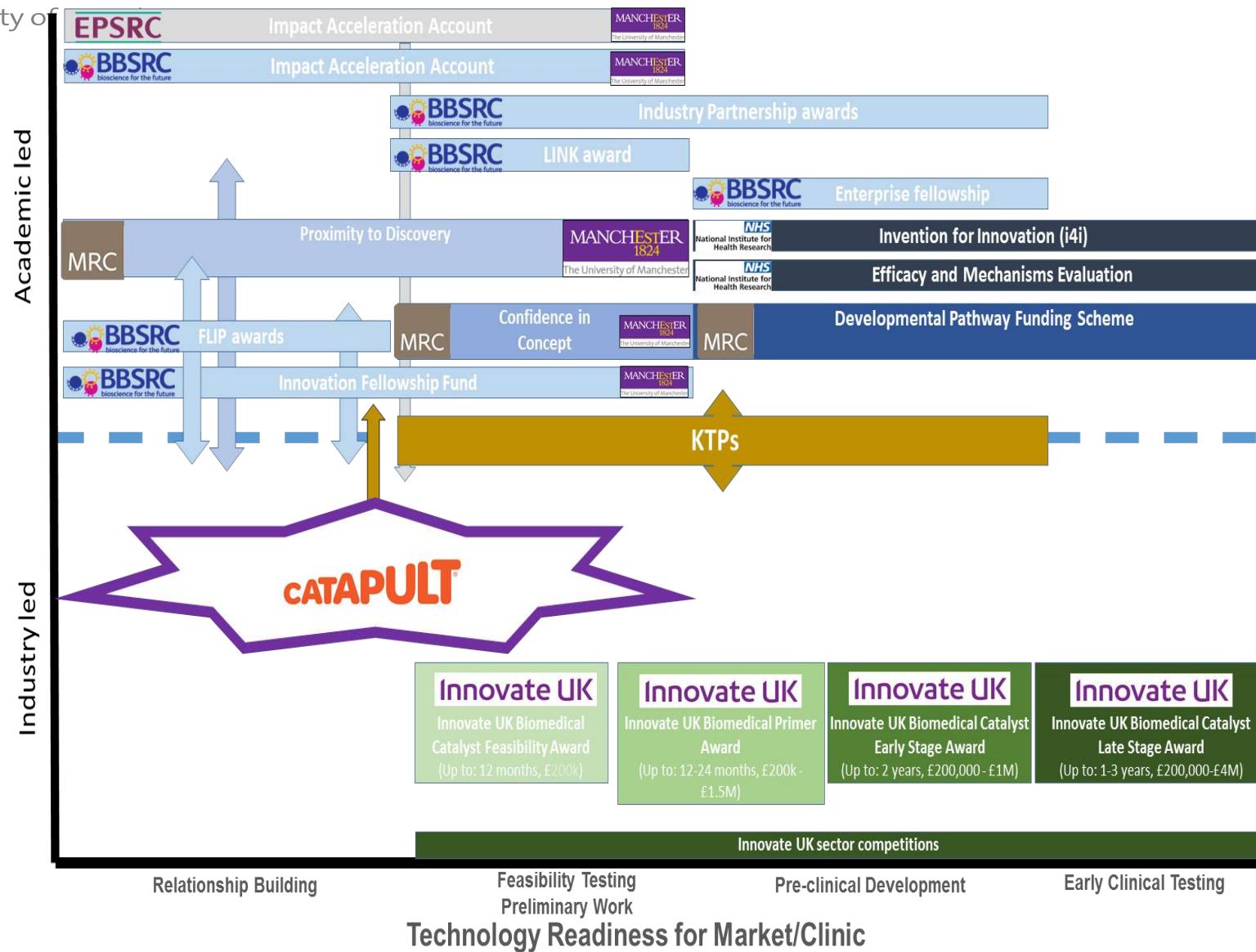
- Masters courses
- CPD
- Executive training
- Doctoral Training
- Tailored bespoke training courses

## People

- Recruitment/ Student placements/ Internships
- Staff exchanges/ Secondments/ Industrial fellowships
- Joint appointments
- Sponsored appointments/ endowments
- Industrial input into teaching

## Commercialisation & Incubation- UMI<sup>3</sup>

- IP sharing/ development
- Licensing
- Co-managed funds
- Spin outs
- Incubators



## Succinctly.....

KTP is an opportunity for Businesses to access innovation from expertise in the UK Universities (the knowledge base) and to embed it in their business for long term benefit.

It is all about **transforming** businesses through the application of **knowledge**

KTP is Europe's leading programme helping businesses to improve their **competitiveness, productivity and performance** through the better use of knowledge, technology and skills that are available within the UK knowledge base.

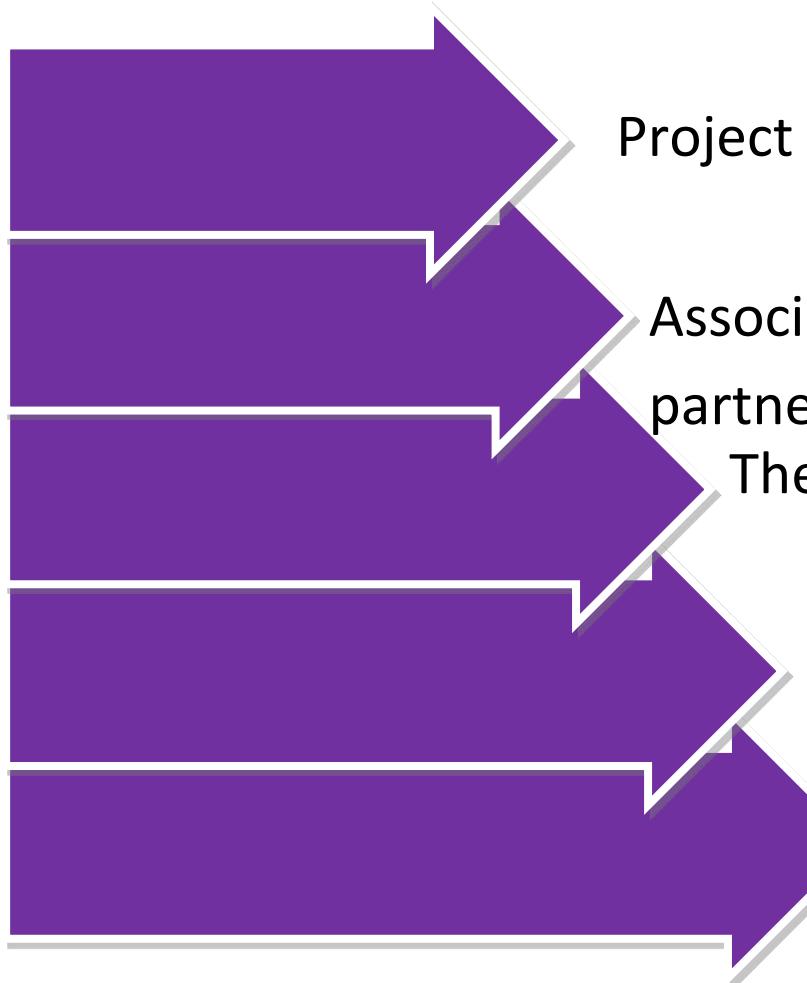
We are looking to fund **step changes in performance and capability** for companies with **vision**.

# Step change...?



- Average business benefits per associate project
  - An increase of more than £1M in annual profits before tax
  - 3 new jobs created, in addition to associate
  - 31 additional staff trained
  - £265K invested in R&D
  - Increase in annual exports of £967k
- 67% grant funding for SME and 50% for large company – average costs £25k / year SMEs and £35k+ for large companies

## Features of KTP – PARTNERSHIP



Project length of between 12 months and 3 years

Associates recruited by KB and Business  
partners

The Associate is employed by the KB partner

Project located at business premises  
with business supervisor

Academic Supervisor spends approx. half a  
day per week at the business premises

# Partnership Benefits

**University**  
Enhanced knowledge  
Publications/research  
Teaching material  
REF – Impact!



**Associate**  
Career development  
Personal Development /Training  
Enhanced employability

**Business**  
New Knowledge/capability  
Enhanced performance  
and profitability

## Example Projects

- Medical Devices – Silver technology to promote wound healing
- Nuclear Waste – Copper electroplating optimisation to meet high level specification
- Product Development – Use advanced engineering principles to improve understanding and improve product performance
- Allergy Testing – Develop, embed and exploit the next generation of soy allergen detection immunoassays
- Materials Capability – To create a capability for product development for wavy/frizzy hair

## Ask questions today or contact us

Saq Rasul

SME & Knowledge Exchange Manager

[Saqab.rasul@manchester.ac.uk](mailto:Saqab.rasul@manchester.ac.uk)

Dr Catherine Headley

Business Engagement Manager

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[www.manchester.ac.uk/business/ke](http://www.manchester.ac.uk/business/ke)

<https://www.bmh.manchester.ac.uk/connect/business/>

# Industry Engagement Services: Manchester Metropolitan University

Jane Jones  
Enterprise Fellow Manchester  
Metropolitan University



Greater Manchester and Eastern Cheshire Research  
and Innovation Showcase

**Industry Engagement Services**  
**Jane Jones – Manchester**  
**Metropolitan University**



## What do you need?

- We want to grow our business but don't know how to start.
- We know our business needs to improve but we require the expertise to make it happen.
- We need to recruit excellent graduates to who are work ready.
- We want to upskill our talent with recognised qualifications.



## We want to grow our business but don't know where to start

Fully funded business support in generic areas such as business growth and innovation.

Specialist support such as fuel cell innovation and cyber-security.

Combination of leading academics and people with industry experience.

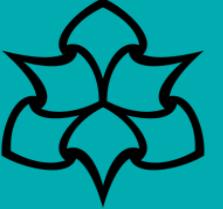


**We know our business needs to improve but we require the expertise to make it happen**

Practical application of theory - Knowledge Transfer Partnerships

Cutting-edge research - Sponsored PhD

Expert support in business critical areas – Consultancy and Contract Research

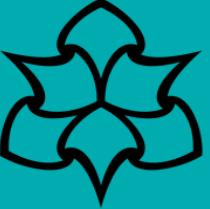


**We need to recruit excellent graduates who are work ready**

Grow your own talent – Degree Apprenticeships

Ensuring you know what you want before you recruit – Industry Placements

Help us help you – Mentoring, Presenting, Demonstrations etc



## We want to upskill our talent with recognised qualifications

Part-time undergraduate and graduate programmes.

Online MBA (as well as full or part time).

Bespoke programmes using modular degree routes.

Embedded professional qualifications.



# Panel Questions & Answers Session

# BREAK

# NHS and Industry Engagement

Chaired by Dr. Richard Deed

# Research and Innovation at Manchester University NHS Foundation Trust

Alison Robinson  
Divisional Research Manager  
Manchester University NHS Foundation Trust



# A pioneer in clinical research and innovation

**Alison Robinson**  
**Divisional Research Manager**

## Our vision

**To improve the health and quality of life of our diverse population by building an organisation that:**

- Excels in quality, safety, patient experience, research, innovation and teaching
- Attracts, develops and retains great people
- Is recognised internationally as a leading healthcare provider



## Our Research and Innovation Division

**Our goal is to improve lives by giving people the opportunity to shape and take part in clinical studies and evaluations.**

**We provide clinical expertise at every stage of healthcare technology development.**

### **One of the largest comprehensive healthcare campuses in Europe**

UK's largest provider of healthcare\*:

- Serving a population of 3 million patients
- The largest provider of specialist services in the UK
- >1.6bn Turnover



On 1 October 2017, Central Manchester University Hospitals NHS Foundation Trust (CMFT) and University Hospital of South Manchester NHS Foundation Trust are joined together under a new name, Manchester University NHS Foundation Trust

## The University of Manchester

- Single largest-site university in the UK
- 35th globally and 5th in UK in worldwide academic ranking
- 29th in QS world rankings
- 5th in UK for research power
- Highest ranked university outside the South East
- Excellence in Materials Science
- Excellence in Cancer, Inflammatory disease, and Proteomics
- Faculty of Biology, Medicine & Health, largest of its kind in the UK covering all areas of biomedical and healthcare research
- Major role in UK health informatics and data science
- International leader in real world evidence trials
- 1st in the UK for total biomedical research income
- BBSRC/Innovate UK funding higher than any other centre

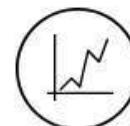
- Our main research partner
- Many staff hold joint contracts with the university



# 10 R&I principles

Our 10 principles govern how the Trust senior leadership set about shaping and empowering research and innovation (R&I).

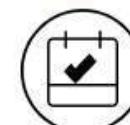
## The Trust:



Expects to be identifiable by national metrics as a leading healthcare provider that is driven by R&I with the goal of consistently **improving our rankings**.



Will encourage and facilitate R&I, and its growth **across the whole Trust**, mindful that activities in some specialties are more mature than others, both locally and nationally.



Must operate within national **frameworks of governance** while making every effort to streamline processes to be as **efficient as possible**.



Recognises the need for R&I infrastructure that facilitates **internationally** competitive activity (as measured by UK Research Council, Government and charity grant panels and by research output metrics).

The Trust will work proactively to deliver this, for instance in data systems, informatics and their governance that are 'research enabling'.



Wants to encourage **career development** of the next generation, especially on fully funded external fellowships, by close partnership with The University of Manchester.

This philosophy extends to other higher education bodies for relevant specialties (e.g. nursing, midwifery and allied health professionals) and to other Trusts where partnership working would be beneficial.



Wants to encourage wider, interdisciplinary working across Manchester and beyond that encourages research interactions with **the best not just the closest**.



Expects to have **responsibility** for all phases of clinical trials involving patients on its campus, while not necessarily acting as sponsor.



Will encourage **protected time** for research-active staff assessed by grant income and output metrics (scholarly or other). The Trust expects that commercial income and fully costed grant recovery are used as a major source to fund this research time.

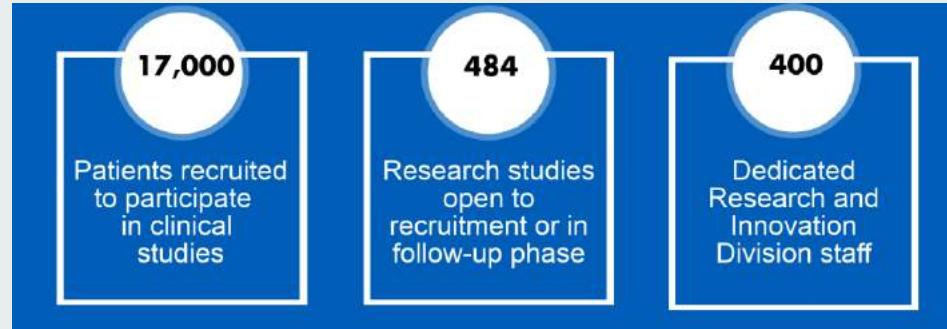


Must be included in the **affiliation** address line for all outputs from Trust staff (substantive or honorary) for Trust support over research time and other awards.



Expects and welcomes its staff taking up positions of **national and international influence** in R&I, within the boundaries of being able to deliver appropriate clinical care.

## Impressive scale of operations



### Initiation of studies



94%

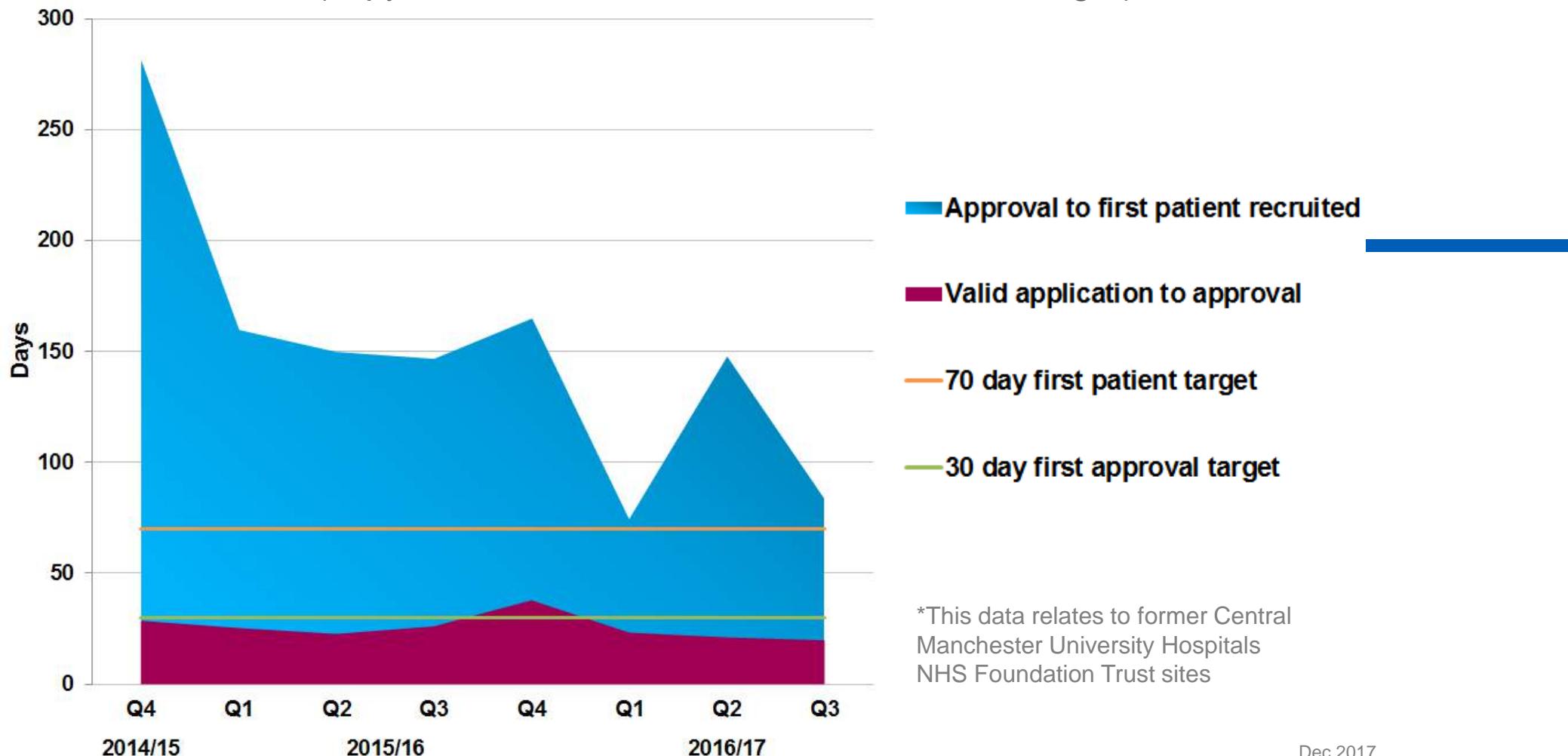
Q4 2017/18

94% of our studies are consistently achieving the NHS benchmark of 70 days from a valid application to first patient recruited.

\*Greater Manchester, including East Cheshire and East Lancashire  
NIHR data 2017/18

## Our commitment to you

Our study delivery\* is efficient and we aim to return feasibility requests within 24 hours (copy in the relevant Divisional Research Manager)



## Our hospitals

Manchester Royal  
Infirmary

Wythenshawe Hospital

Royal Manchester  
Children's Hospital

Manchester Royal Eye  
Hospital

Saint Mary's Hospital

University Dental  
Hospital of Manchester

Withington  
Community Hospital

Trafford General  
Hospital

Altrincham Hospital

## Diverse research interests

- We undertake research across most clinical specialities, from hospital to the home
- Greater Manchester is home to a stable and ethnically diverse patient population.



# Our research is world leading

Specialities where Manchester is ranked within top 5 organisations for HCPs<sup>1</sup>

NHS partner	The University of Manchester
<ul style="list-style-type: none"><li>• Allergy</li><li>• Andrology</li><li>• Dentistry/oral surgery and medicine</li><li>• Dermatology*</li><li>• Oncology**</li><li>• Ophthalmology</li><li>• Otorhinolaryngology</li><li>• Paediatrics</li><li>• Reproductive biology</li><li>• Respiratory system</li></ul>	<ul style="list-style-type: none"><li>• Dentistry and oral surgery and medicine</li><li>• Dermatology</li><li>• Emergency medicine</li><li>• Geriatrics and gerontology</li><li>• Gerontology</li><li>• Materials science, biomaterials</li><li>• Nursing</li><li>• Ophthalmology</li><li>• Otorhinolaryngology</li><li>• Physiology</li><li>• Primary healthcare</li><li>• Psychiatry</li><li>• Psychology (clinical)</li><li>• Psychology (multidisciplinary)</li><li>• Psychology (psychoanalysis)</li><li>• Rehabilitation</li><li>• Respiratory system</li><li>• Rheumatology</li><li>• Social work</li></ul>

\*Salford Royal NHS Foundation Trust; \*\*The Christie NHS Foundation Trust

1. Bibliometric analysis of highly cited publications of biomedical and health research in England, 2004–2013  
([https://www.rand.org/pubs/research\\_reports/RR1363.html](https://www.rand.org/pubs/research_reports/RR1363.html)); accessed 15 Nov 2017)

# Open for business with industry

- We provide clinical expertise at every stage of healthcare technology development, inc. a robust test bed
- We understand how to adapt our approach to suit the full spectrum of industry partners from large internationals to SMEs



Opportunities to invest and collaborate in the development of innovative solutions with NHS Clinical Experts



Access to clinical trials expertise and facilities



Accommodation and support (Citylabs)

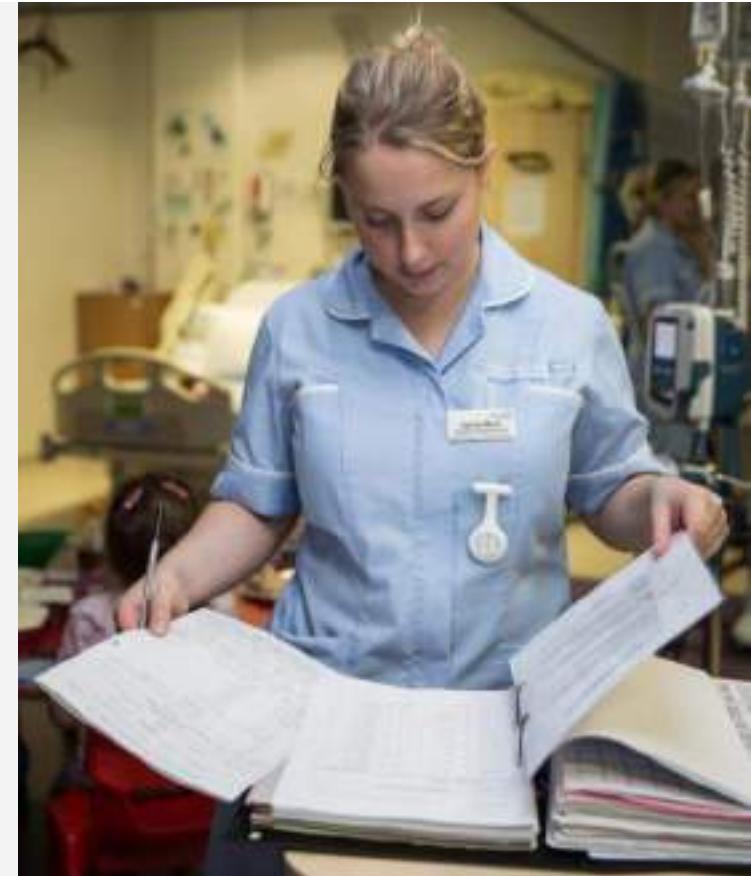


Test bed to accelerate the integration of new technologies into the NHS

## From bench to bedside

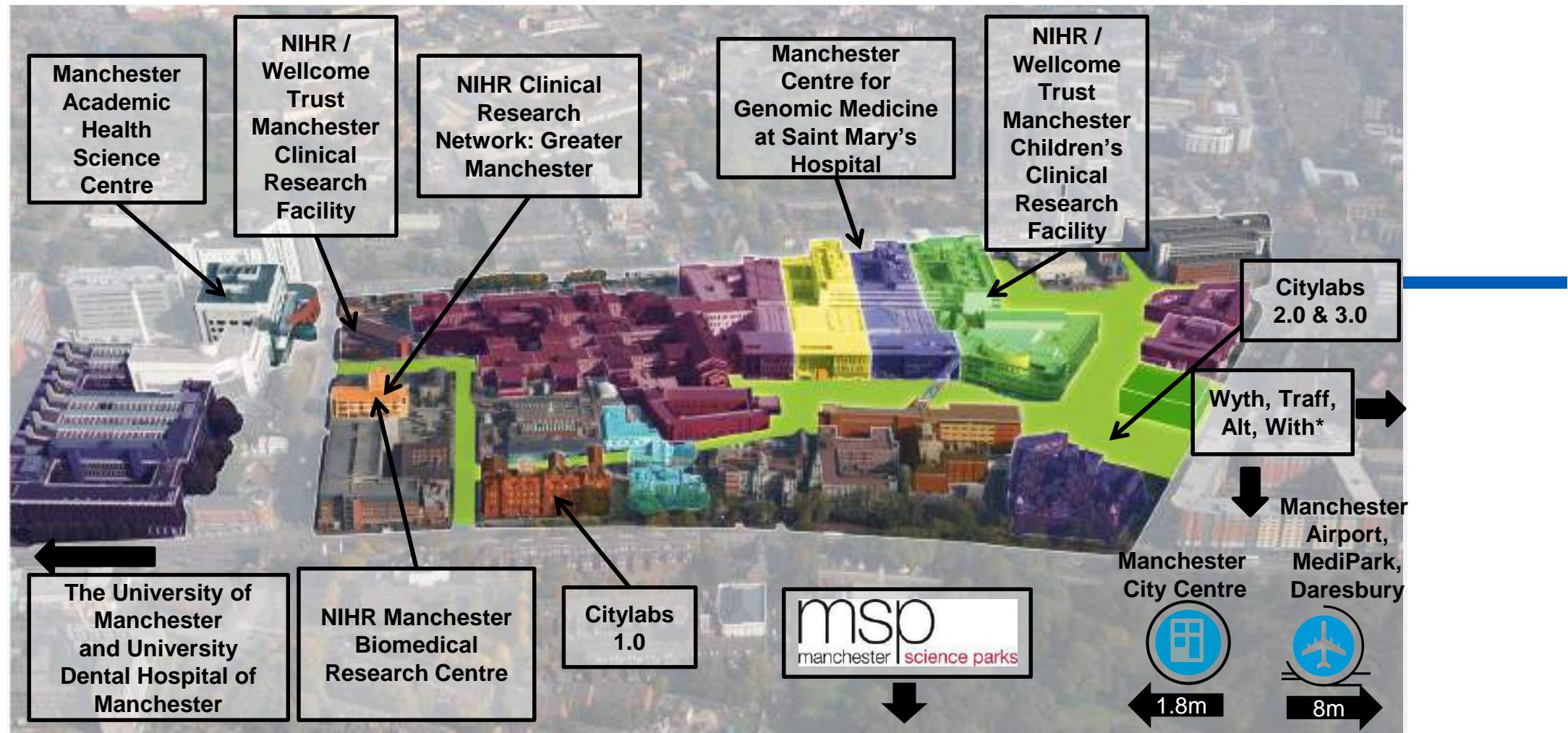
Manchester is an ideal environment for the research and development of new products

- Stable, engaged population of approx. 3 million for clinical evaluation
- Robust test bed
- Devolved health budget allowing accelerated access of new technologies into our local NHS Trusts
- Manchester offers unparalleled opportunities for industry partners



## Our location

At the heart of the largest clinical-academic campus in Europe

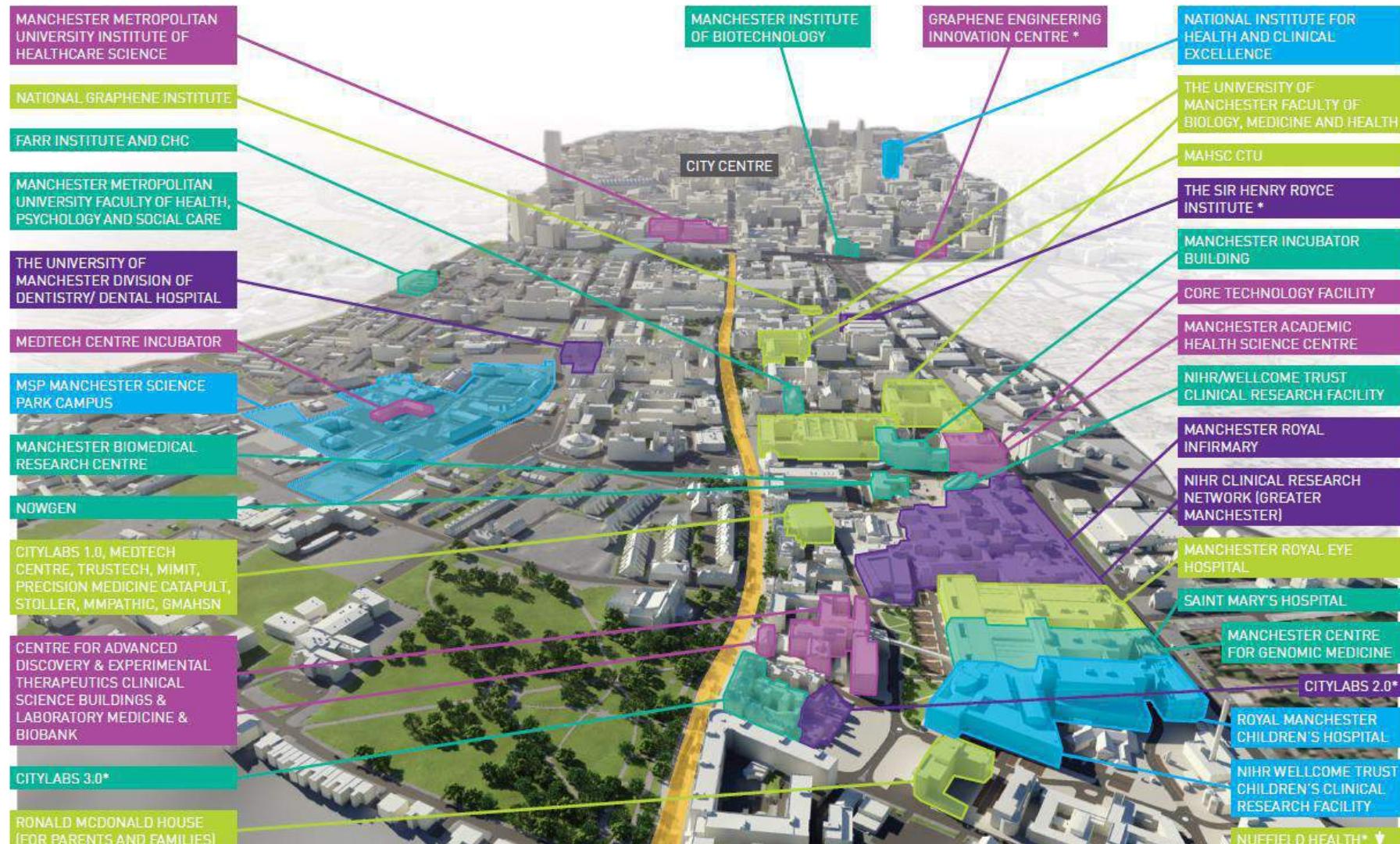


\*Wythenshawe Hospital, Trafford Hospital, Altringham Hospital and Withington Community Hospital

# Health is our business: on The Corridor

NHS

Manchester University  
NHS Foundation Trust



# 33,000 m<sup>2</sup> innovation space

**NHS**  
iversity  
lation Trust



 **Citylabs**

A development by

**bruntwood** ●

For

 MSP

MANCHESTER  
SCIENCE  
PARTNERSHIPS

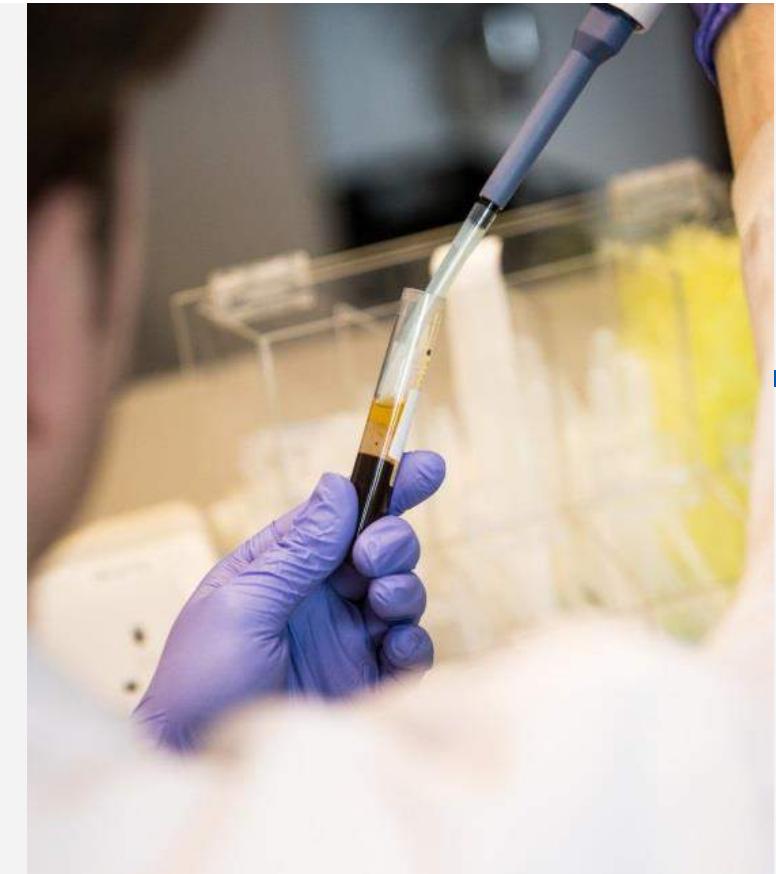
 **Manchester University**  
NHS Foundation Trust



Sept 2018

## Reasons to work with us

- We offer expertise at every stage of healthcare technology development
- We understand how to work with larger pharma and SMEs, inc. medtech
- We have a large, diverse and stable population, coupled with world-leading research capability and infrastructure
- Our expertise covers a diverse range of clinical specialties, with impressive performance and quality standards
- Part of the largest clinical academic campus in Europe



## APPENDICES

## Our research

- Cataract and refractive surgery
- Cornea
- Diabetes
- Electrophysiology
- Glaucoma
- Low vision/optometry
- Neuro-ophthalmology
- Ocularplastics
- Paediatrics
- Retinal research



Manchester Royal Infirmary

# Our research



Royal Manchester Children's Hospital

- Allergy, Vaccines and Immunology
- Bone marrow transplantation
- Burns
- Child and adolescent mental health services (CAMHS)
- Cancer
- Cleft Lip and Palate
- Critical Care
- Endocrinology
- Ear Nose and Throat Surgery (ENT)
- Gastroenterology
- General Paediatrics
- General Surgery
- Haemophilia
- Nephrology
- Neurology
- Neurosurgery
- Respiratory Medicine
- Rheumatology
- Urology
- Metabolic disease

# Our research



Wythenshawe Hospitals

- Cancer
- Cardiovascular
- Gastroenterology
- Medicines Management
- Medical Education
- Respiratory and Allergy
- Allergy
- Wound Healing and Tissue Repair
- Burns and Plastics

## Our research

- Cataract and refractive surgery
- Cornea
- Diabetes
- Electrophysiology
- Glaucoma
- Low vision/optometry
- Neuro-ophthalmology
- Ocularplastics
- Paediatrics
- Retinal research



Manchester Royal Eye Hospital



## Our research

- Andrology
- Genetics
- Gynaecology and IVF
- Maternal & fetal health
- Newborn intensive care



Saint Mary's Hospital

## Our research

- Caries and diagnostic
- Clinical craniofacial and craniofacial genetics (cleft-lip and palate)
- Oral & maxillofacial surgery and control of pain
- Oral implant
- Radiology and imaging



University Dental Hospital of Manchester

# Our research

- Diabetes
- Oncology/haematology
- Orthopaedics
- Rheumatology
- Surgery



Trafford Hospitals

## Our research

- Health and learning disabilities
- Rehabilitation



Community Services

# Research and Innovation at Northern Care Alliance NHS Group

Natalie Garratt  
R&D Lead  
Northern Care Alliance NHS Group

# Northern Care Alliance NHS Group



A pioneering NHS group with 5 hospital sites and community services, serving a population of over 1 million people.



# Wide range of NHS Care

- Population of 1.4 million
- Five hospitals and a range of community services
- Major trauma centre and neurosciences
- Highly specialist national services
- District general services
- Paediatrics
- Integrated community services

# Trust: Rank Commercial Studies Recruiting

## FY 2017/18

Trust	Studies recruiting	Recruitment
Oxford University Hospitals NHS Foundation Trust	113	1733
<b>Northern Care Alliance</b>	<b>71</b>	<b>1659</b>
Leeds Teaching Hospitals NHS Trust	103	1484
Heart of England NHS Foundation Trust	46	1429
Ipswich Hospital NHS Trust	18	1227
Ashford and St Peter's Hospitals NHS Foundation Trust	13	1179
Barts Health NHS Trust	159	1163
St George's University Hospitals NHS Foundation Trust	44	1021
Nottingham University Hospitals NHS Trust	87	837
University College London Hospitals NHS Foundation Trust	103	786

# Researchers and Support Staff

- Joint research office, single point of access
- Over 400 Principal Investigators
- Large team of research nurses and other research staff
- Support for research management, governance, sponsorship, business development, statistics and IT.



# Clinical Research Facilities



## Salford Royal

- Phase I-IV trials
- On-site physician
- Seven private bays, including infusion room
- Experience in a variety of specialties

## Fairfield (Bury)

- Phase II-IV trials
- On-site physician
- Capacity for 12 beds

## Royal Oldham

- Dedicated paediatric facility and separate adult facility
- Phase II-IV trials

# Research Infrastructure



## State of the art lab facilities and large sample collections

- Manchester Brain Bank
- Sample preparation and storage
- Histology and cell function
- Molecular and genetic analysis



## Dedicated pharmacy, imaging and pathology support

- Specialist clinical trials pharmacists and technicians; aseptic pharmacy.
- Access to a wide range of imaging modalities, both on site and at University of Manchester facilities
- Wide ranging pathology support for all studies



## Medical Physics

- Expert medical physics and clinical engineering team
- Design, construct, repair and adapt devices for clinical research
- Provide expert advise on regulations

# Digital

- Electronic patient record – established over 15 years ago.
- Global Digital Exemplar Status
- Digital and telemedicine research



# In summary

- Pioneering NHS group supporting population of 1.4 million people
- Wide range of NHS services provided across community, acute and specialist services
- Large research infrastructure and dedicated team of research staff with single point of access
- Digital pioneer
- Committed to increasing our partnerships with SMEs and industry



# Contact

## Website

- [www.ncaresearch.org.uk](http://www.ncaresearch.org.uk)

## Twitter

- [@ncaresearch](https://twitter.com/ncaresearch)

## Email

- [Natalie.garratt@srftr.nhs.uk](mailto:Natalie.garratt@srftr.nhs.uk)

# Research and Innovation at Greater Manchester Mental Health NHS Foundation Trust

Sarah Leo  
Head of Research & Innovation Office  
Greater Manchester Mental Health NHS  
Foundation Trust



Greater Manchester  
Mental Health  
NHS Foundation Trust

# Research & Innovation at Greater Manchester Mental Health NHS Foundation Trust

Sarah Leo  
Head of Research & Innovation Office



Improving Lives

# Our Trust

## Greater Manchester Mental Health NHS Foundation Trust (GMMH)

provides inpatient and community-based mental health care for people in:

- **Bolton**
- **Manchester**
- **Salford**
- **Trafford**

As well as a wide range of specialist mental health and substance misuse services across Greater Manchester, the North West and beyond.

The Trust employs over 4,750 staff, who deliver services from more than 130 locations seeing around 53,000 service users annually.

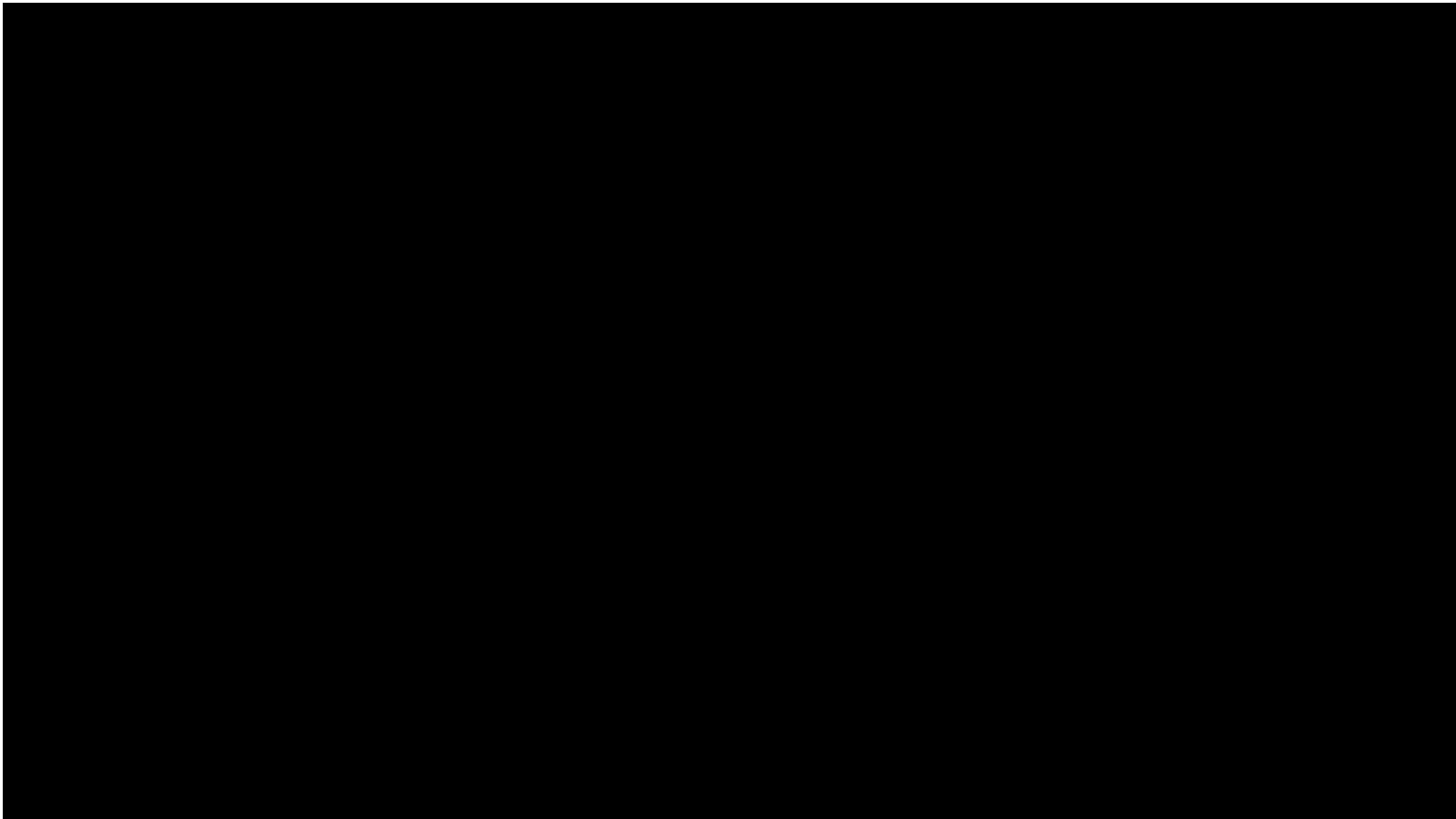
The Trust is committed to providing the best possible service for our patients, friends, relatives and carers. By seeking their opinions, we can better understand their needs and tailor our services specifically to them.

We aim to involve our service users in **all** aspects of the Trust's operation and development from the Trust Board to individual teams and projects including all areas of research and innovation.



**Improving Lives**

# Our Values



Improving Lives

# R&I Strategic Aims



**P**articipation in research so that the GMMH community gain the benefits from new developments

**R**elevant to service user & carer needs, and supporting Trust and NHS priorities

**O**ppORTunities for clinical services to engage in ground breaking research for service improvement

**M**aximising value for money by utilising the breadth and scope of financial income

**O**utstanding world-leading contributions to research through innovation & collaboration

**T**rusted outcomes of research so that GMMH is recognised as a place of quality

**E**mphasis on prevention as well as treatment for mental health conditions.



# Research Units

The Trust has recently made a number of internal funding awards to support our strategic priorities. This has led to the creation of 5 Research alongside the existing **Psychosis Research Unit**.

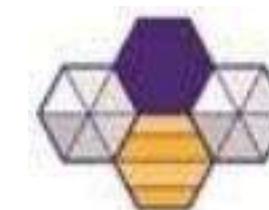


Each Unit is monitored against 3 key areas:

- Income generation (NIHR grants and commercial income)
- Alignment with Clinical Services
- Service User involvement

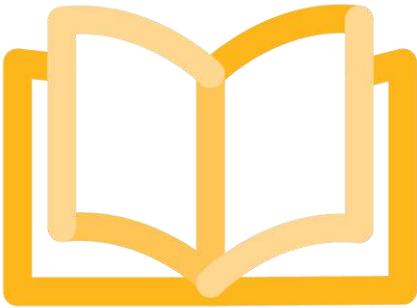
The new Units are:

Youth Mental Health Research Unit



Improving Lives

# Infrastructure and Partnership working



## Our infrastructure:

- **R&I Office** (feasibility and grants support, capacity and capability assessments, sponsorship and monitoring, archiving, events)
- **Research Delivery team** (research nurses, clinical studies officers supporting identification and recruitment of participants and delivery of clinical interventions)
- **Service user reference groups and service user researchers** (aligned with our 6 Research Units support the research pathway from idea to clinical impact)
- **Digital Strategy Committee** (identifying digital/IM&T opportunities, promoting and encouraging innovation across GMMH)

- **Clinical Trials Pharmacy** (dedicated facility based at Park House)
- **Clinical infrastructure** (includes a detoxification inpatient unit, National Centre for Mental Health and Deafness, young persons inpatient facilities, adult autism support teams, Health and Justice Services and many more....)

## Our Partners:

- Health Innovation Manchester
- Manchester Clinical Research Facility
- Greater Manchester Clinical Research Network
- TRUSTECH
- Primary Care Networks

# Current Activity

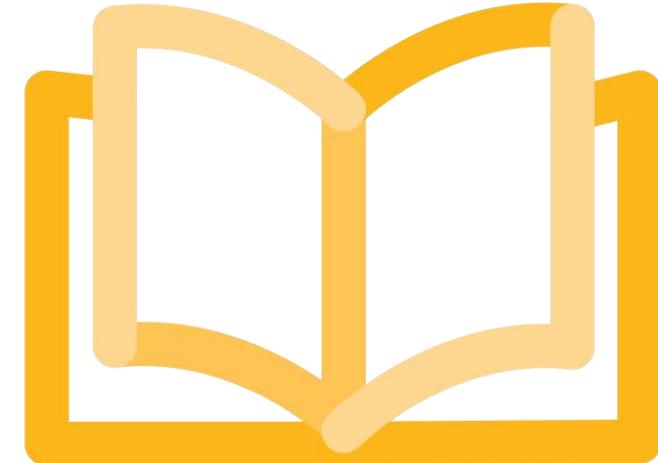
Since the creation of the GMMH R&I Office in January 2017 following the merger of 2 former Mental Health Trusts, our research activity has gone from strength to strength.

We currently have around **100** active studies ranging from student projects to large scale multi-centre trials across both mental health and dementia.

Our research portfolio includes qualitative research studies, trials of therapeutic interventions, clinical trials of investigational medicinal products and more.

In 2017/18 we recruited over **2200** participants across mental health and dementia studies and we are on target to recruit a similar number in 18/19.

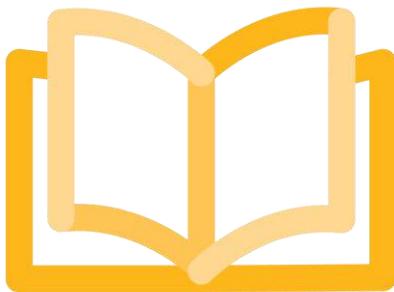
We attracted over **£2.5million** in NIHR grant funding and commercial income during the same period (2017/18).



**Improving Lives**



## Examples of our current and upcoming research



### STRATA2

Study looking at the biological effects of antipsychotic treatment using the innovative approach of active symptom monitoring (ASM) via a smartphone application 'ClinTouch', developed and validated at the University of Manchester.

### Actissist 2.0

Digital intervention for co-producing care in psychosis. This study uses a cognitive theory informed smartphone app (Actissist 2.0) to evaluate the benefits of this over routine symptom monitoring.

### Generations1 (Novartis)

An RCT to investigate efficacy of 2 drug therapies for cognitively unimpaired individuals at genetic risk of Alzheimers Disease (prevention focus).

### Talking with voices

A feasibility and acceptability study of the

Talking With Voices intervention (a new therapy involving a therapist 'talking' to the voice by asking it questions) amongst adults with psychosis.

### Oxford Virtual Reality for Mental Health

Delivery of state of the art psychological therapy via VR with a virtual coach taking the participant through troubling simulations and practising techniques to overcome difficulties.

### WORSHIP III

A pragmatic trial comparing the effects of Psychodynamic Interpersonal Therapy versus usual treatment on incidents of self-harm in women in prison.

### P-TRD

Trial to evaluate the safety and efficacy of Psilocybin (the active component of magic mushrooms) in participants with treatment-resistant depression.

**Improving Lives**

# Thank you

Please contact me with any questions:

Tel: 0161 271 0076

Mob: 07342 068 227

[Sarah.Leo@gmmh.nhs.uk](mailto:Sarah.Leo@gmmh.nhs.uk)

[www.gmmh.nhs.uk](http://www.gmmh.nhs.uk)



 [/GMMentalHealth](https://www.facebook.com/GMMentalHealth)

 [www.gmmh.nhs.uk](http://www.gmmh.nhs.uk)



 [@GMMH\\_NHS](https://twitter.com/GMMH_NHS)

# Research and Innovation at The Christie NHS Foundation Trust

Elaine Blowers

Lead Cancer Research Nurse/Operational Director

The National Institute for Health Research

Manchester Clinical Research Facility

The Christie NHS Foundation Trust



# The Christie Research

Pioneering Research. Transforming lives.

Elaine Blowers

**Lead Cancer Research Nurse/  
Operational Director**

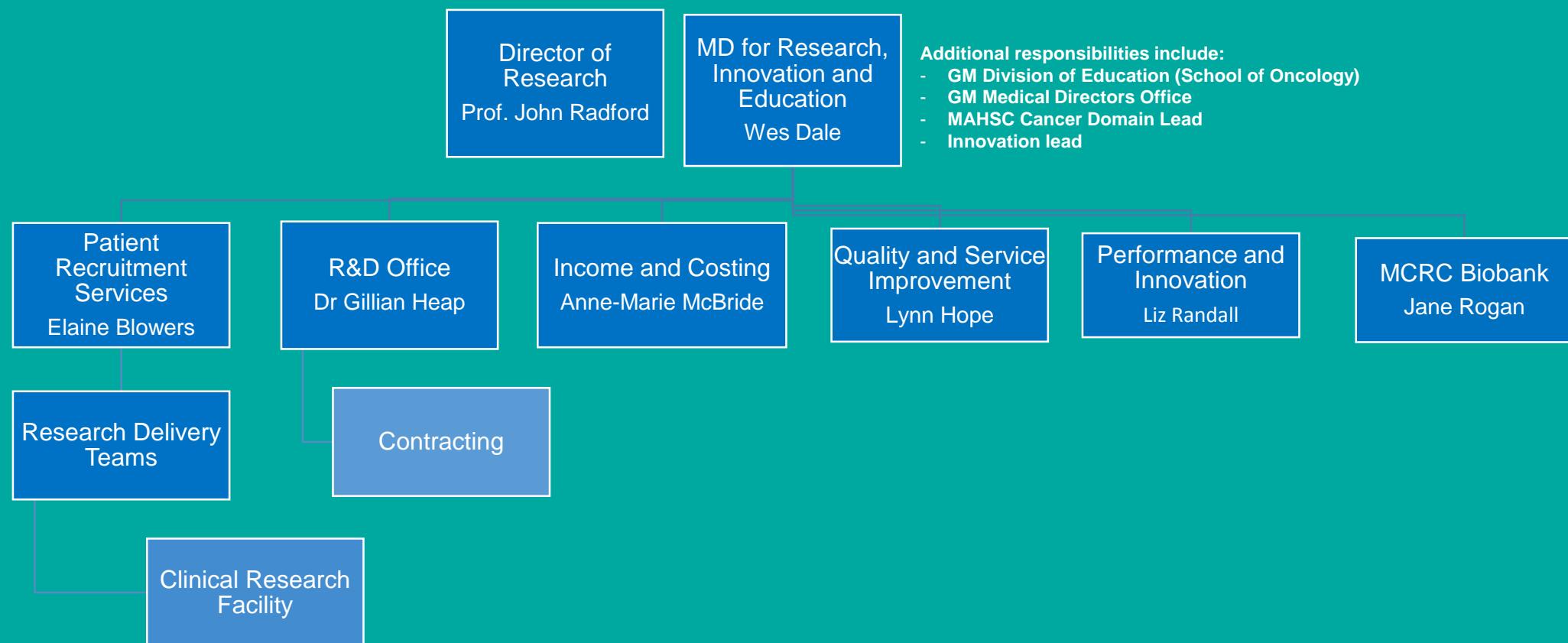
**The National Institute for Health Research Manchester Clinical Research Facility  
At The Christie NHS Foundation Trust**

# Christie Research strategic ambition...

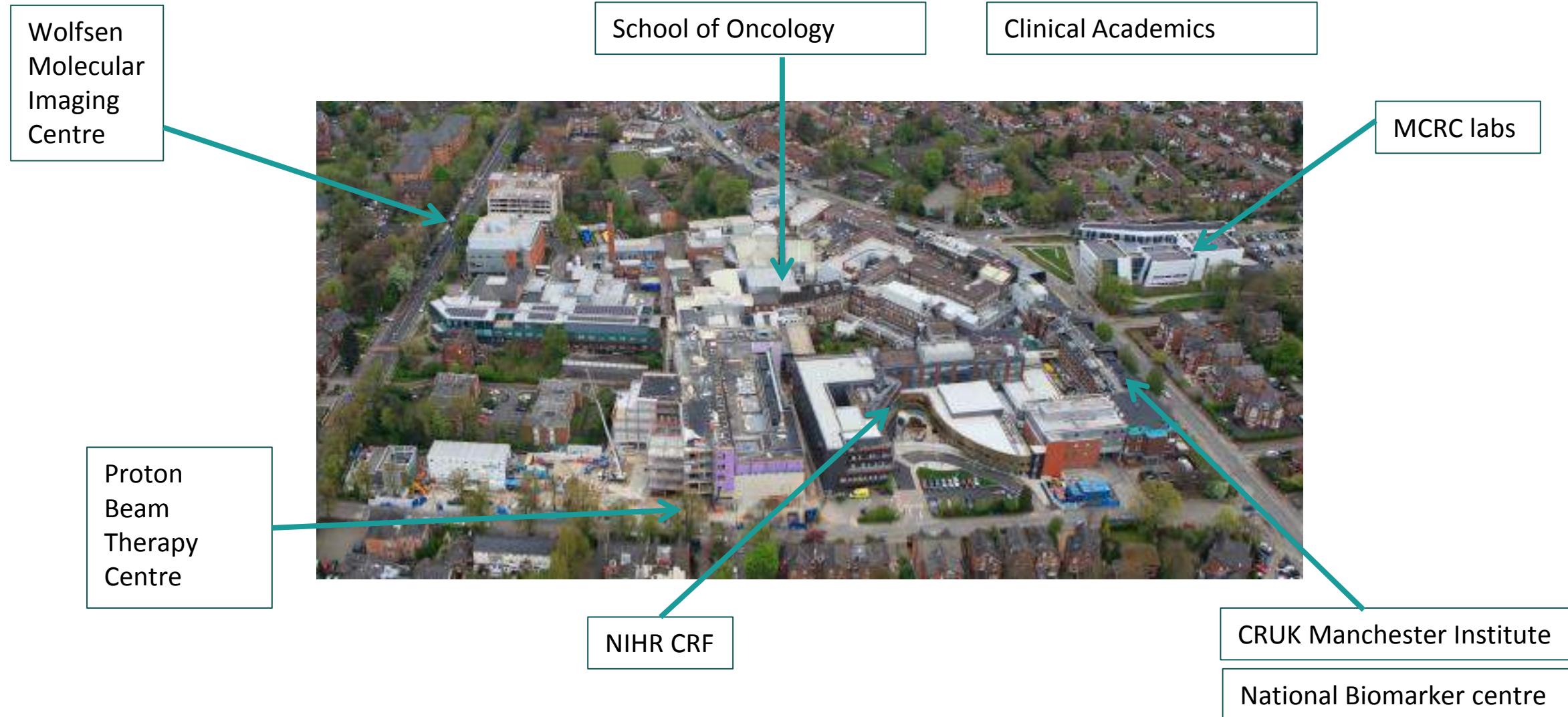
*To work with academic and industry partners to develop a comprehensive research programme and infrastructure to enable it to be considered as one of the world's leading comprehensive cancer centres*

# Infrastructure at The Christie

- Christie Research:



# Largest Single-Site Cancer Centre in Europe



# Christie achievements

The Christie's five-year strategic plan (2014-19), sets out the ambition to work with partners to become one of the world's leading comprehensive cancer centres. Objectives include becoming:



NIHR Biomedical  
Research Centre (BRC)  
for Cancer Research



Cancer Research UK  
'major-centre'



One of the largest  
commercial trials units  
in the UK



One of the largest single  
site early phase trials  
units in Europe



**Centres of Excellence**  
• CRUK Lung Cancer  
• CRUK/EPSRC Cancer Imaging Centre  
• Manchester Breast Centre  
• Prostate Cancer UK Movember  
• European Neuroendocrine Tumor Society  
(ENETS)



One of six high  
performing Academic  
Health Science Centres  
in the country

# Academic leadership

Combined investment commitment  
of £35 million



Prof Silke Gillessen



Prof Rob Bristow



Prof Marcel van Herck



Dr Natalie  
Cook



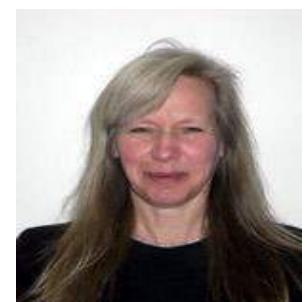
Dr Matt Krebs



Prof Peter  
Hoskin



Prof Neil  
Burnet



Prof Karen  
Kirkby



Whole spectrum of research carried out at MCRC.

Unique partnership between The Christie and the University of Manchester and Cancer Research UK.

The Christie  
Research



CANCER  
RESEARCH  
UK

MANCHESTER  
1824

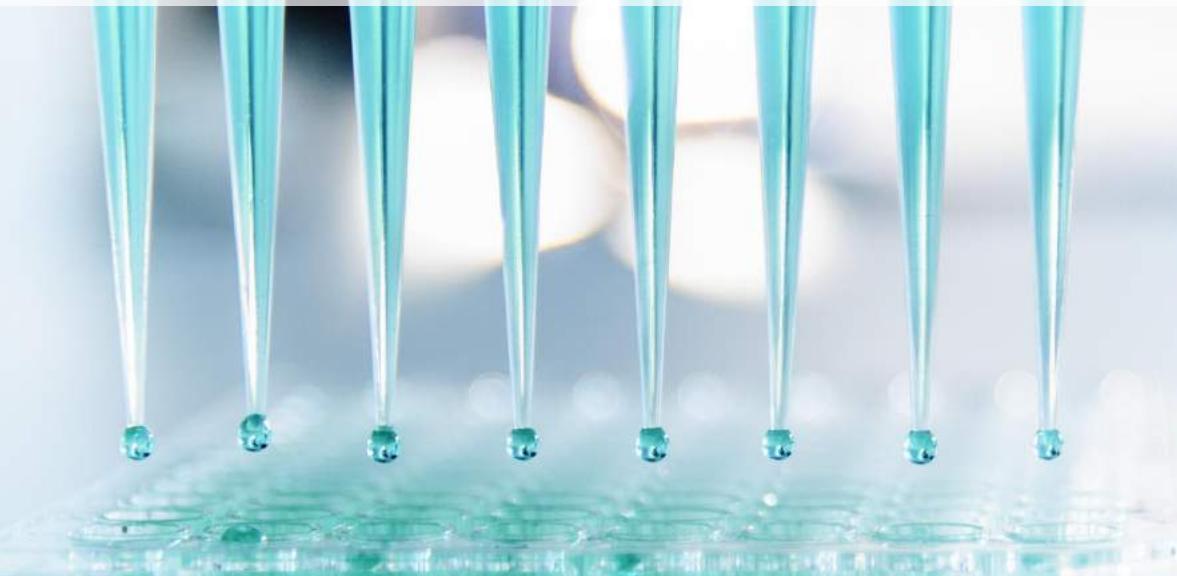
The University of Manchester

# Partnerships and collaborations

Manchester Cancer Research delivers through key partnerships and a collaborations



# Highlights of translational research



We perform strongly across our major research themes, delivering ground-breaking research to improve patient lives

**TARGET study:** (CI Krebs) The first step in enabling The Christie to establish a profiling capability and stratification to appropriate trials of targeted therapy where patients have been matched to relevant trials/treatments.

# Patient and public involvement

The commitment to patient and public involvement (PPI) in our research work is firmly embedded within the culture/ethos of The Christie and MCRC.

- We hold monthly research café events in the MCRC. (The most recent raised the profile of genomic medicine.)
- Patient involvement study days in conjunction with scientists.
- As part of the National ECMC working group for PPI, Christie research nurses and our Manchester patient representative work on a national training programme for patients



# Opportunities for Collaboration Medicines Discovery Catapult

Nicola Heron  
Head of Collaborative R&D  
Medicines Discovery Catapult

## Medicines Discovery Catapult

- Accelerating innovative drug discovery
- Connecting the UK drug discovery community
- Transforming ideas into better medicines for patients, faster
- Open for collaboration

Nicola Heron

Head of Collaborative R&D  
19<sup>th</sup> Sep 2018



# Medicines Discovery Catapult

National facility connecting the UK community to accelerate innovative drug discovery

- Independent not-for-profit
- Part of the UK's Catapult network
- Helping to deliver the UK's Industrial Strategy
- Funded by Innovate UK, part of UK Research and Innovation, reporting to the Department for Business, Energy & Industrial Strategy



Department for  
Business, Energy  
& Industrial Strategy

UK Research  
and Innovation

Innovate UK



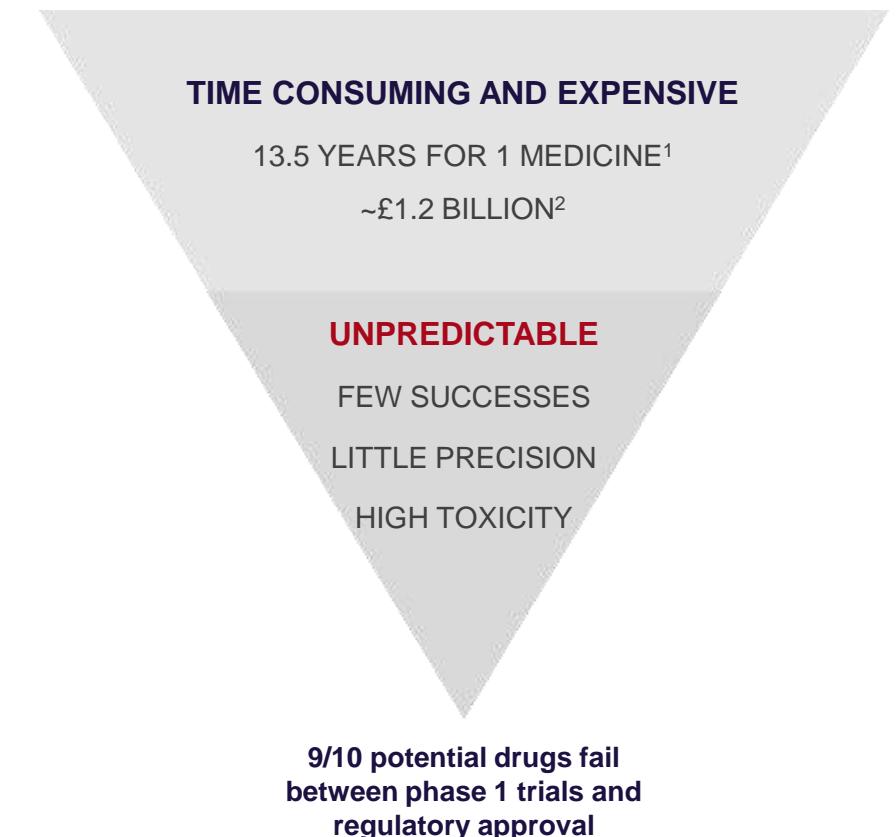
CATAPULT®

We work with  
Innovate UK

## Traditional drug discovery is no longer fit for purpose

Drug discovery **must be** faster and cheaper without compromising patient safety

The industry **needs** new scientific approaches to influence and enable better decision making



1. Paul, S.M. et al. (2010) How to improve R&D productivity: The pharmaceutical industry's grand challenge. *Nature Reviews Drug Discovery*. 9(3), 203-214.

2. Deloitte (2017) A new future for R&D? Measuring the return from pharmaceutical innovation 2017.

## The industry is increasingly reliant on SMEs to innovate

**Pharma is facing unprecedented commercial pressure that force them to reduce risk in their R&D pipelines<sup>1</sup>**

SMEs are the agile risk-taking testers of new ideas, for innovation, discovery and validation of new drugs and technologies

### In the UK:

SMEs account for more than 90% of our life sciences community<sup>2</sup>

But 42% of biotech SMEs have less than 5 employees<sup>3</sup> and struggle to access:

*Funding*

*Expertise*

*Technology*

1. Deloitte (2017) A new future for R&D? Measuring the return from pharmaceutical innovation 2017.

2. HMG (2016) Strength and opportunity 2016: The landscape of the medical and biopharmaceutical sectors in the UK.

3. BIS (2015) Strength and opportunity 2015: The landscape of the medical technology and biopharmaceutical sectors in the UK.

## Our aims

Address the challenges facing drug discovery and UK SMEs

Develop, validate and industrialise new ways of discovering medicines to change the shape of R&D

Promote key talent and expertise across sectors to connect a fragmented community

Support the UK life sciences industry, SMEs and innovators to deliver growth for the UK economy

Maintain the UK's heritage position as a global leader in drug discovery



## Our vision

The medicines that we help to industrialise will feed the medicines pipeline and deliver new targeted high value medicines to patients, faster

## We are focussed on enabling UK drug discovery

Providing unique  
scientific capabilities

Acting as a gateway to UK  
resources & expertise

By providing access to technologies and expertise not readily accessible we will support UK SMEs to drive the development and widespread use of new approaches for the discovery of new medicines

WHO – WHY – HOW – **WHAT** – WHERE – WORK WITH US

## Our unique capabilities

Designed to address the needs of our UK drug discovery community and change the shape of R&D:



DISCOVERY SCIENCE  
& TECHNOLOGY



INFORMATICS



SAMPLES & DATA



VIRTUAL R&D



DISCOVERY  
SYNDICATES

BETTER DATA FASTER

ACCESS TO UK RESOURCES & EXPERTISE

Providing UK SMEs with access to technologies and expertise not readily accessible to them

We work with  
**Innovate UK**



**It is vital that SMEs developing new drug candidates access:**

- Robust, well-characterised, sophisticated human models for pre-clinical testing
- Complex bioanalytical technologies to appropriately interrogate and advance only the promising candidates faster

## **Discovery Science & Technology**

**Establishing patient-relevant testing models and new technologies to advance drug discovery**

Our strategy is built around four interconnected focus areas, supported by innovative technology





Drug discovery generates a huge quantity of complex biological, chemical, clinical and safety information

To make the best decisions on which assets to further optimise or progress, and to create the best data assets, secure sharing and associated data analytics are critical

## Informatics

**Using data science to discover new diagnostics, biomarkers and drugs**

Using our informatics skills, extensive proprietary databases and algorithms we can help validate and drive adoption of new data-driven approaches

***In silico* TARGET VALIDATION  
USING REAL WORLD DATA**

**DRUG REPURPOSING**

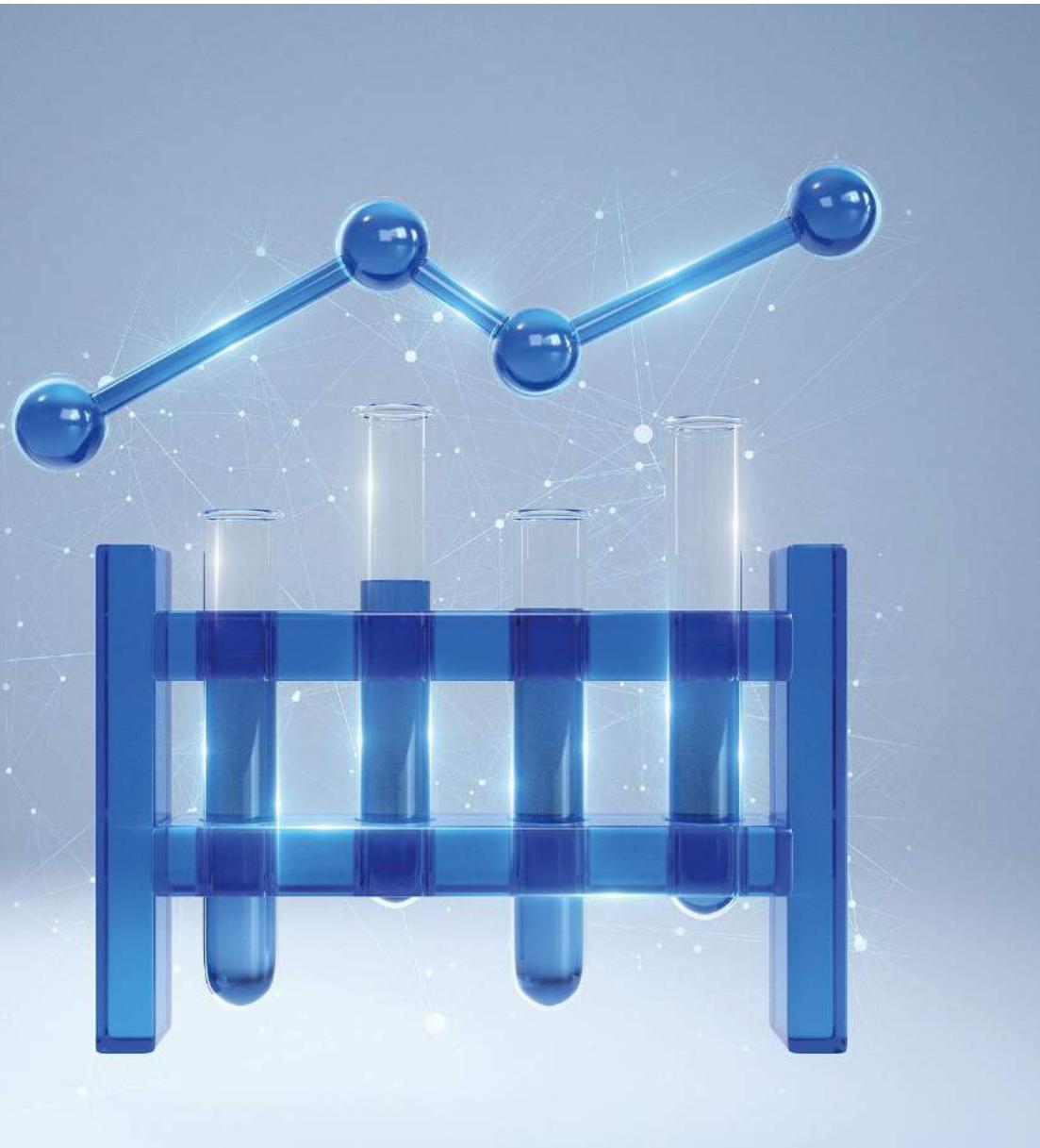
**DRUGGABILITY**

**NOVEL DRUG COMBINATIONS**

**EFFICACY AND SAFETY ANALYSIS**

**UNDERSTANDING  
CHEMICAL SPACE**

We have deep expertise in scientific data analysis, information extraction, natural language processing and machine learning



**The UK has millions of samples and billions of data points collected from patients who have agreed their samples and data can be used for research**

However, small UK medical research companies struggle to access them

“Over 90% of SMEs said that access to high quality clinical samples was important, however 80% found accessing samples unexpectedly difficult<sup>1</sup>.”

## Samples & Data

**Brokering easier access to consented patient data and samples**

We are working with key organisations to support the access of consented tissues & data:

**DIRECTORIES**

**RESEARCH SERVICES**



**PROCUREMENT SERVICES**



1. State of the Discovery Nation 2018.



**The ecosystem surrounding medicines discovery is highly fragmented and complex**

42% of biotech SMEs have less than 5 employees<sup>1</sup> and are unable to efficiently access the UK's rich resources in translational research

## Virtual R&D

**Leveraging the UK's renowned leadership in drug discovery – a modern approach to R&D**

Our VR&D platform uses a unique national network of up-to-date industry-skilled consultants and service providers to deliver three essential elements

**‘Pop-up’ Advisory teams**

**UK capability map**

**Virtual programme management**

VR&D will deliver value to finance, biotech, academia and charities

1. BIS (2015) Strength and opportunity 2015: The landscape of the medical technology and biopharmaceutical sectors in the UK.



**As only patients know what it's like to live with a disease, it's crucial they play a more central role in medical research**

Talking to patients is often a better way to find out what medical products need to be developed, yet it doesn't always happen

## Discovery Syndicates

**Spearheading patient involvement in early drug discovery – a collective approach to R&D**

Discovery Syndicates are a new, shared resource model

Disease focussed and anchored by the leading medical research charity

Putting the patient at the heart of drug discovery and ensuring the portfolio aligns with patients' needs and priorities

**Coordinate, plan and deliver collaborative research**

**De-risk new promising assets**

**Identify key barriers to translation for a disease**

**Accelerate translation of research to the clinic**

WHO – WHY – HOW – WHAT – **WHERE** – WORK WITH US

## National facility and laboratory

Our office and laboratories are based at Alderley Park in Cheshire

Providing UK SMEs with access to the UK's second largest life sciences cluster and unrivalled opportunities



## Opportunities for Collaboration

### Signposting and connecting

We can help you find the right partner, collaborator, advisor or supplier who can deliver what you need

### Joint grant applications for collaborative R&D funding

We also have a strong network of venture capital companies looking for new opportunities that we have helped to de-risk

### Shared risk and reward

We work in risk-share collaborations with partners who gain from our unique help and where we share in the value of the outcome

### Contracted fee-for-service projects

Where you need managed access to our skills and assets - and cannot get them commercially elsewhere - we can adopt a fee-for-access model

WHO – WHY – HOW – WHAT – WHERE – **WORK WITH US**



## Get in touch now

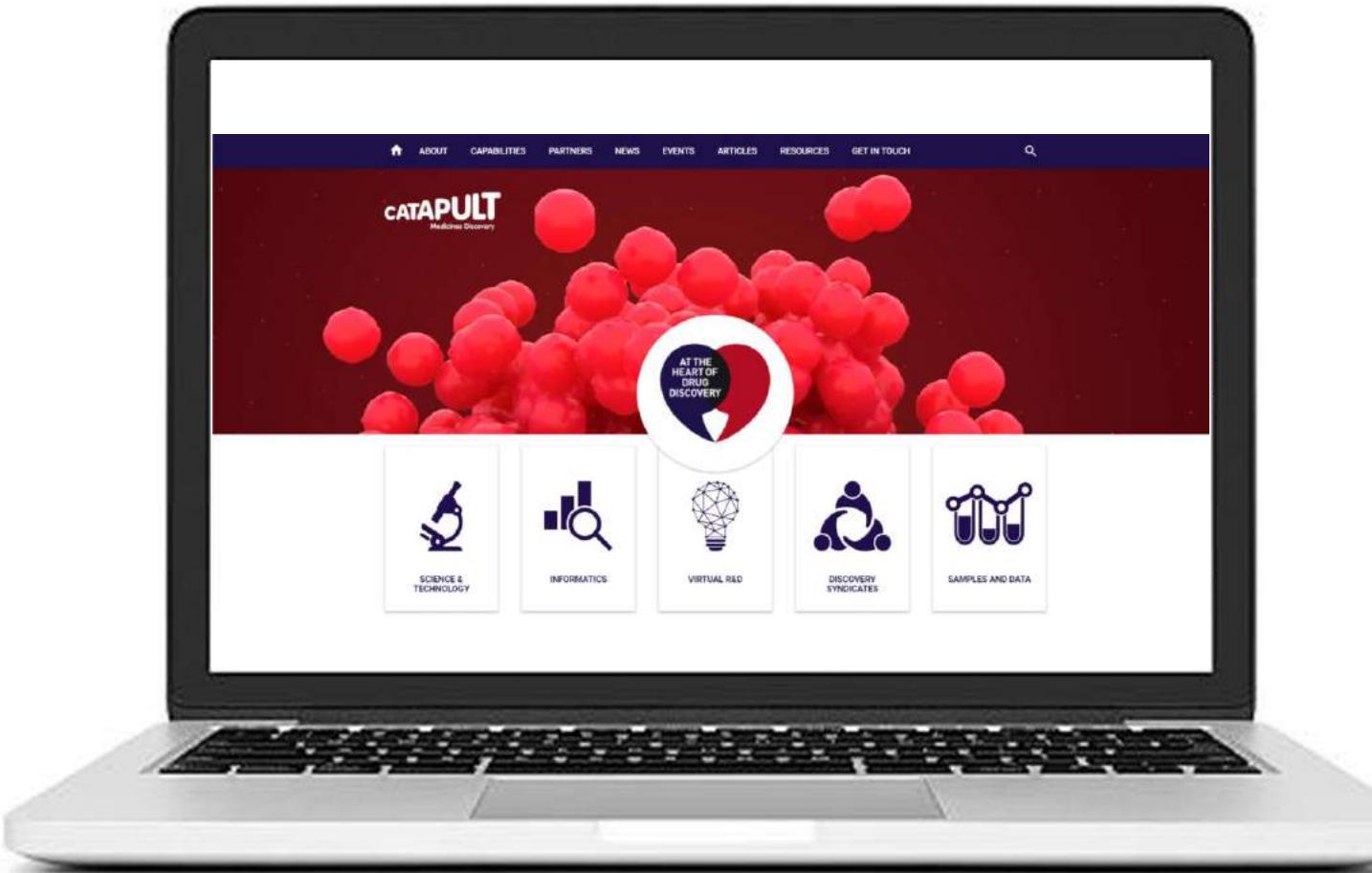
Visit our website for our latest partnerships and funding opportunities.

Get in touch for more information, expert guidance, strategic consultancy and access to our technology.

Or to discuss a potential project or service.

[info@md.catapult.org.uk](mailto:info@md.catapult.org.uk)

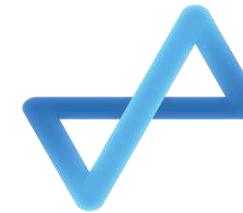
[partner@md.catapult.org.uk](mailto:partner@md.catapult.org.uk)



We work with  
**Innovate UK**

# SME Perspective on NHS/Industry/Academia collaborations

Dr. Richard Deed  
Associate Director for Industry  
Health Innovation Manchester  
Technology Director for TRUSTECH  
NHS Innovation Service



Health  
Innovation  
**Manchester**

## SME Perspective on NHS/Industry/Academia Collaborations

Richard Deed  
Associate Director Industry  
Health Innovation Manchester  
Technology Director  
TRUSTECH - NHS Innovation Service



Discovering



Developing

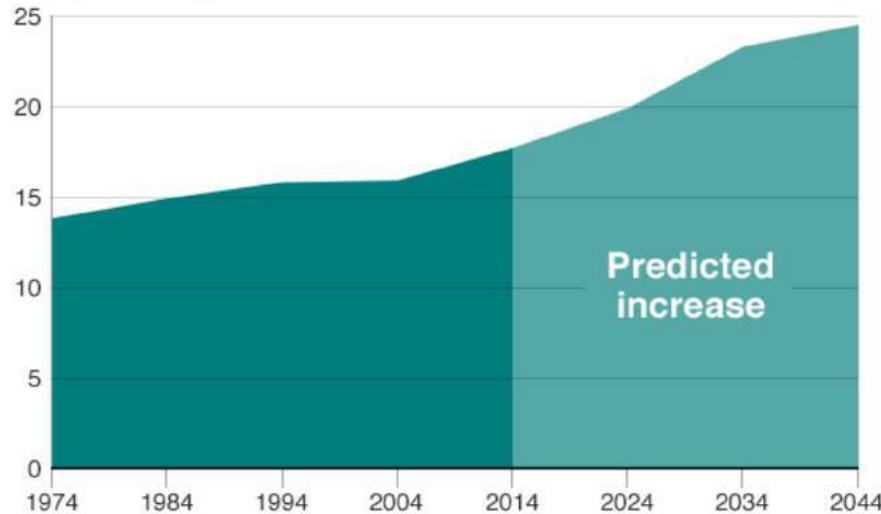


Delivering

# Understand the situation in the NHS

The UK's ageing population

% population aged 65 and over

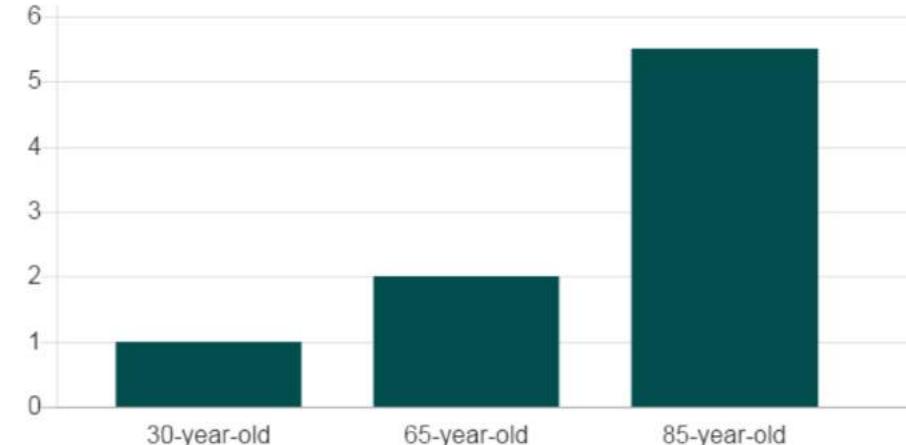


Source: ONS

Comparing NHS spending on people by age

Spending for patients increases as they get older

Relative cost in £



BBC

Source: IFS

BBC

Scarce resources = difficult decisions

# Value Proposition?



A clear and credible set of claims capable of being evidenced that provides value to users/partners.

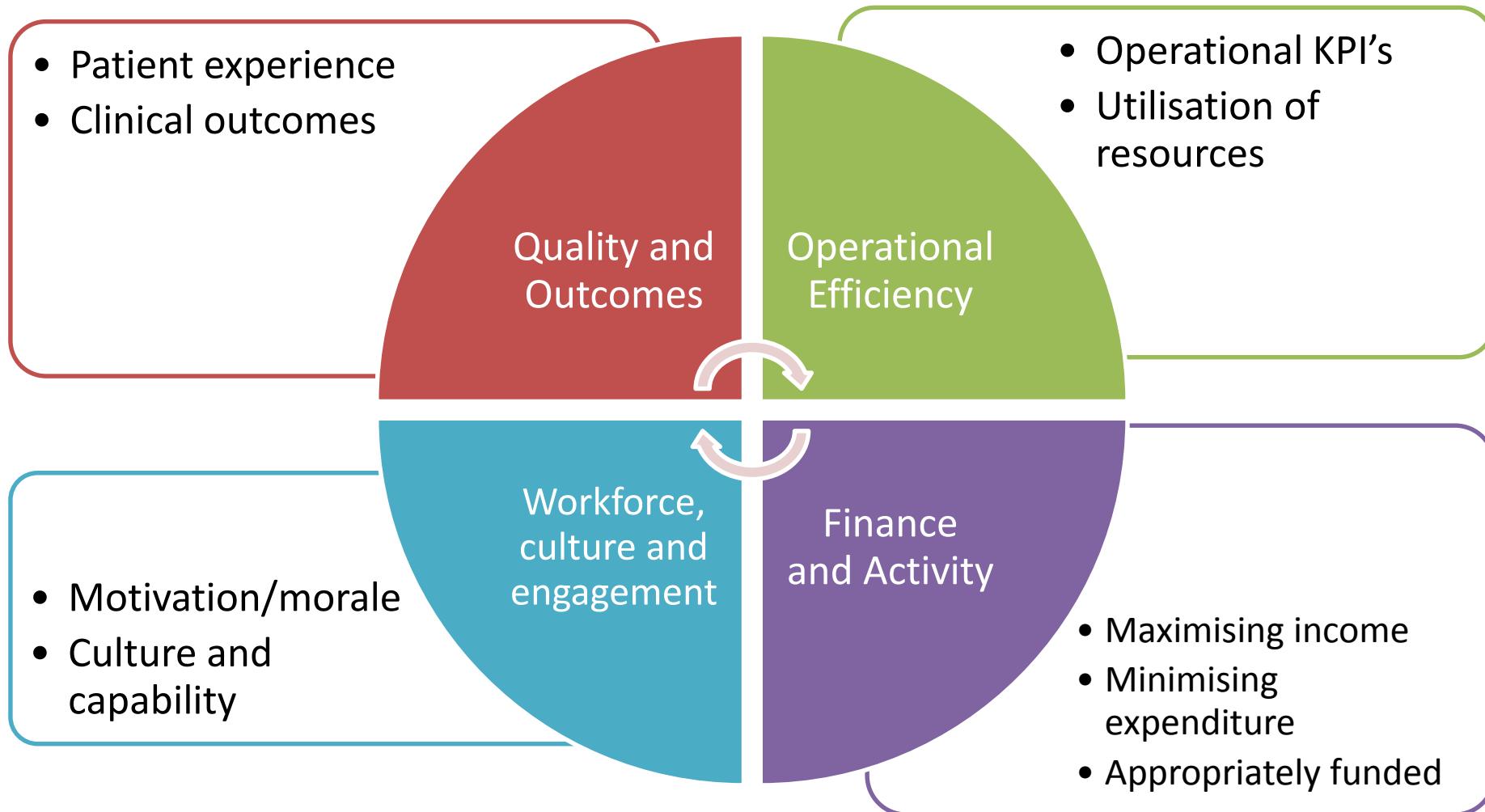
# What makes a good value proposition?

- Think about who you approach
- What do you want to do, what do you need?
- How does it address what NHS/Academia want?
- Is your VP actually helping them does it represent value to them - many competing interests
- A value proposition aimed at academics clinicians and commissioners will differ from that used for potential investors

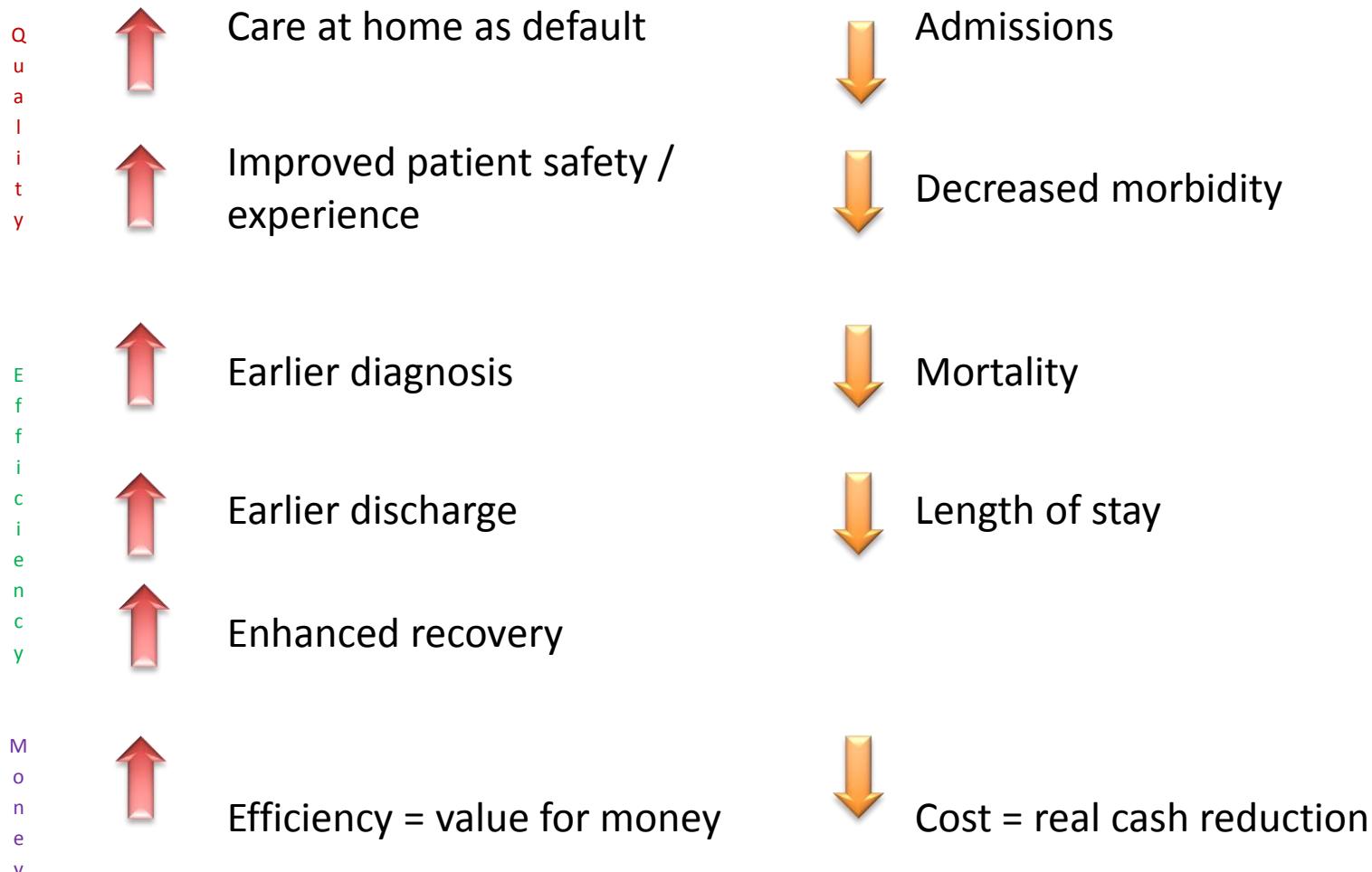
# Key elements of value proposition development

1. Describe the issue being faced [in the NHS] in relation to this indication and current clinical practice.
2. Explain how the proposed product/service can provide a solution to this problem.
3. Detail the clinical benefits for patients delivered by the product over and above current clinical practice.
4. Detail the resource use and cost savings for the healthcare system delivered by the product over and above current clinical practice.
5. Remember the need for evidence to substantiate the claims.

# Key Areas of Focus for NHS Provider



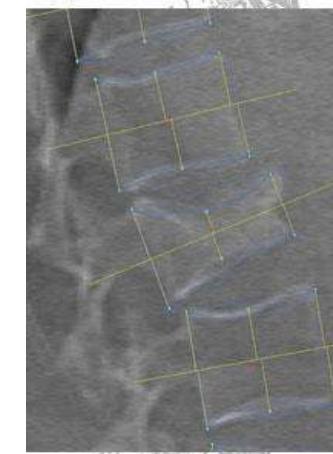
# Powerful Drivers for Change



# Case study - Optasia Medical



- Automated analysis of images for spinal fractures to diagnose Osteoporosis and reduce fracture rates
- Through funded support of HInM - retrospective analysis trial at GM based NHS Trust
- Results indicated that a typical trust could save up to £250k p.a.



- Identified a backlog of patients that required follow up/support = extra cost
- Successfully applied to local CCG innovation fund to implement the technology in original trust

# Case study - Udrain

- Waste disposal device to reduce reliance on catheter bags for CAP Dialysis patients
- HInM funded evaluation in Salford via renal unit
- 100% patient satisfaction/reduced carbon footprint
- Additional cost to existing procurement framework
- Working to unbundle tariff framework but increasing sales via other routes and other applications

# Case study - Corporation Pop - Xploro



- Digital tool to familiarise children with hospital
- Identified key clinical champion - saw need/benefit
- HInM/MFT co-funded £20k early stage scoping work
- £0.5mn leveraged for development and academic research evaluation
- Niche market in UK but global market significant

# Case study -Humedics - Limax

- German SME with novel bed side breath test for colorectal surgery screening
- Need/benefit - to avoid scans, rapid 15 minute test
- SME were assisted to identify clinical champion
- HInM/MFT co-funding £100k evaluation with SME
- Event tonight in GM to promote it the evaluation and consider use for to other conditions

# Top Tips

**Time** - when to approach, realistic in expectations - competing interests - teaching, clinics - very little scope for much else

**Network** - Use facilitators as they may have knowledge who is interested/track record

**Funding** - All engagement apart from initial meetings need to be paid for/backfilled

**Opportunities** - lots support SMEs e.g. local schemes, national funds- i4i, Innovate UK, SBRI, all act as catalysts to larger funds and VCs

**Themes** - Look out for e.g. cross sectoral work - now digital and Ai

**Project management** - very important, tendency to drift

## Top Tips

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**Benefits** - need to be realisable and relatively short term

**National and local incentives** - can assist

**Understand procurement** - frameworks/local plans

**Be prepared to partner** - existing provider/distributor or bundle offerings

**Implementation issues** are key - e.g. staff/patient acceptance

# Summary



## **Clinical Case**

Clinical effectiveness

Champion to lead/reference

## **Financial Case**

Cost effectiveness

## **Implementation Case**

Plan for use/disinvest

Consider safety

# Wise Words



“When everything seems to be going against you

remember that

the airplane takes off against the wind not with it.”

Henry Ford

# Closing Remarks

Daniel Zamora  
Commercial Programme Manager  
Health Innovation Manchester



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