



# MRC Health and Biomedical Informatics Research Strategy

**NHS-HE Forum**

25th May 2016

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Head of Informatics Research

# Medical Research in the 'Big Data' Era

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- Vast amount of biomedical and population data
  - Population and clinical studies
  - High-throughput technologies – '-omics'
  - Imaging
  - Health records
  - Administrative data
  - Other data – loyalty cards, mobile phones, digital apps and fitness sensors, social networks etc
- **Opportunity** – new scientific discoveries from large-scale data on a scope and scale not previously possible
- **Challenge** – to create necessary infrastructure, resources, capacity, legal and regulatory frameworks to realise opportunity



# MRC's vision for informatics

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...to harness the vast sources of complex biological, clinical, population and environmental research and routine data to gain new scientific insights and advance patient and public health

Supporting future **scientific needs**

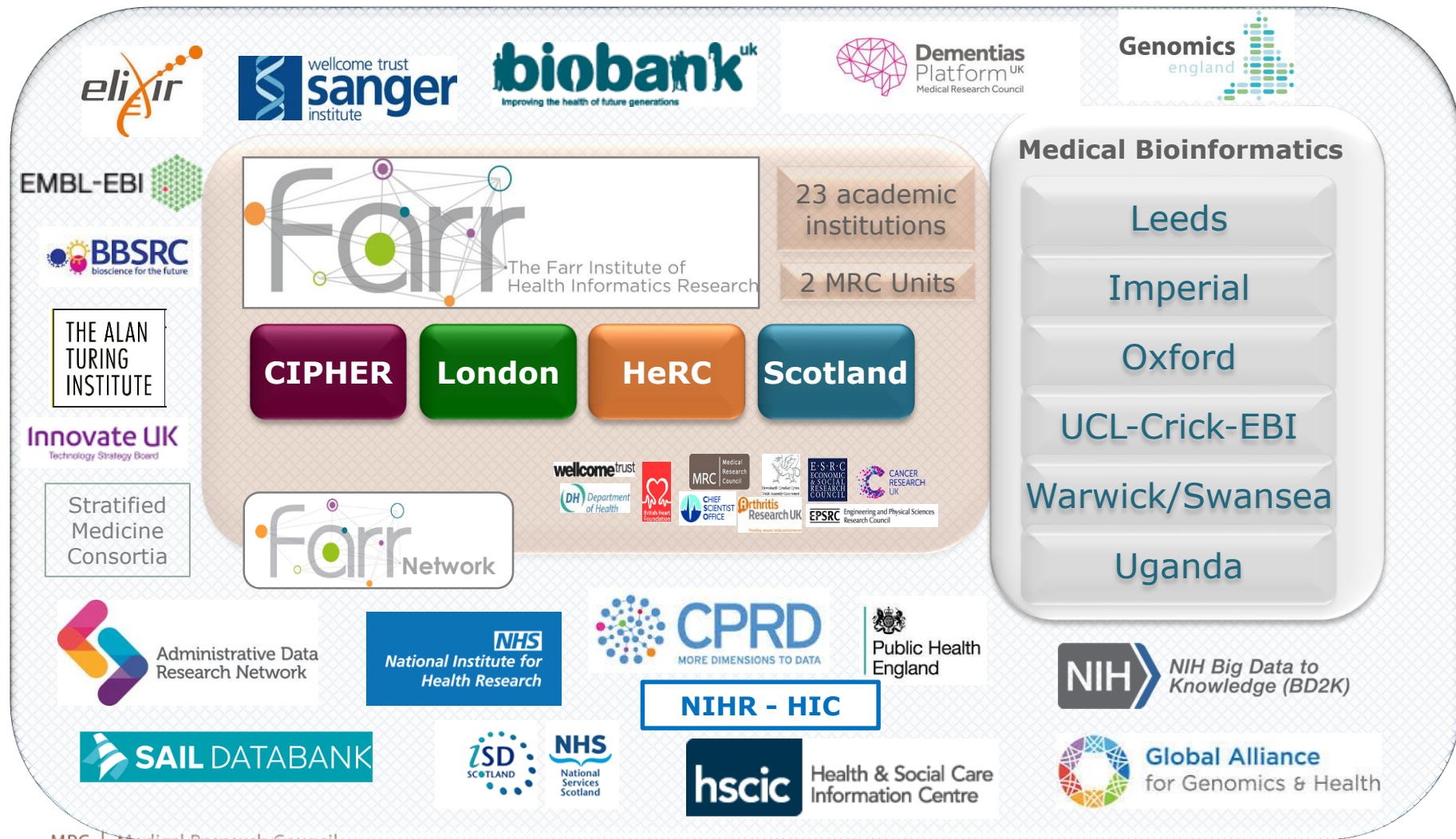
Enabling **technologies, tools** and **infrastructure**

Building **capacity** in strategically important quantitative **skills**

Developing **trusted research environments**

Promoting **policies** that encourage data sharing and access

# Medical Informatics Landscape



# >£100m MRC Investment in Health & Biomedical Informatics Infrastructure



## MRC Medical Bioinformatics

**Leeds**

**Oxford**

**Warwick-Swansea**

- Cardiff
- PHE Wales
- Birmingham

**UCL (eMedLab)**

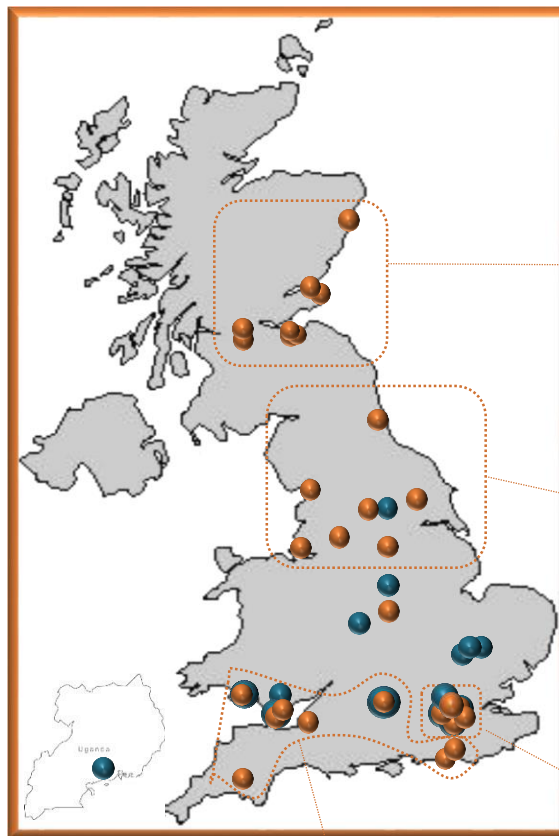
- EMBL-EBI
- Sanger
- KCL
- Crick
- LSHTM
- QMUL

**Imperial**

- EMBL-EBI
- Cambridge
- Nottingham
- Oxford
- Farr@Swansea

**Uganda**

- Sanger
- Cambridge
- Oxford



**Farr@CIPHER**

- **Swansea**
- Cardiff
- Welsh Gov
- Bristol
- Brighton
- Exeter
- Surrey
- Oxford

**Farr@Scotland**

- Aberdeen
- Dundee
- St Andrews
- **Edinburgh**
- Strathclyde
- Glasgow
- Leicester
- NHSS
- PHS

**Farr@HeRC**

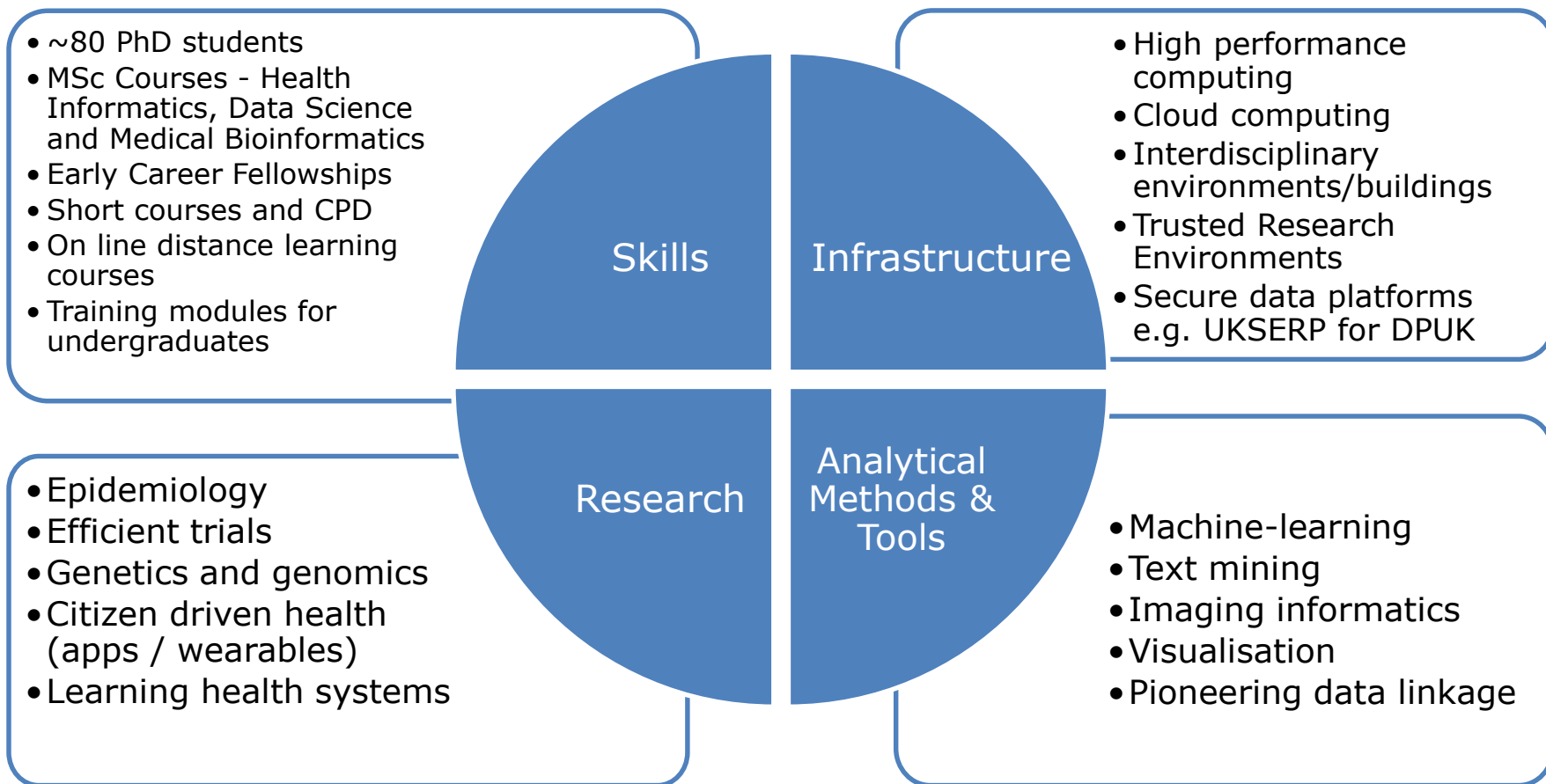
- Newcastle
- Lancaster
- York
- Bradford
- **Manchester**
- Liverpool
- Sheffield

**Farr@London**

- **UCL**
- LSHTM
- QMUL
- HPA
- MRC CTU



# Building on existing infrastructure: Farr Institute & Medical Bioinformatics Awards



# Establishing a national health and biomedical informatics research institute (“Farr 2”)

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# Key Principles

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- **Build on existing investments** – but not an exclusive club
- Institutionally agnostic
- Predicated on interdisciplinary **team science** - valuing technical services
- **Not** a data holder or owner
- Create an informatics **ecosystem**
- **Focus and scope** – quick wins & long term ambitions



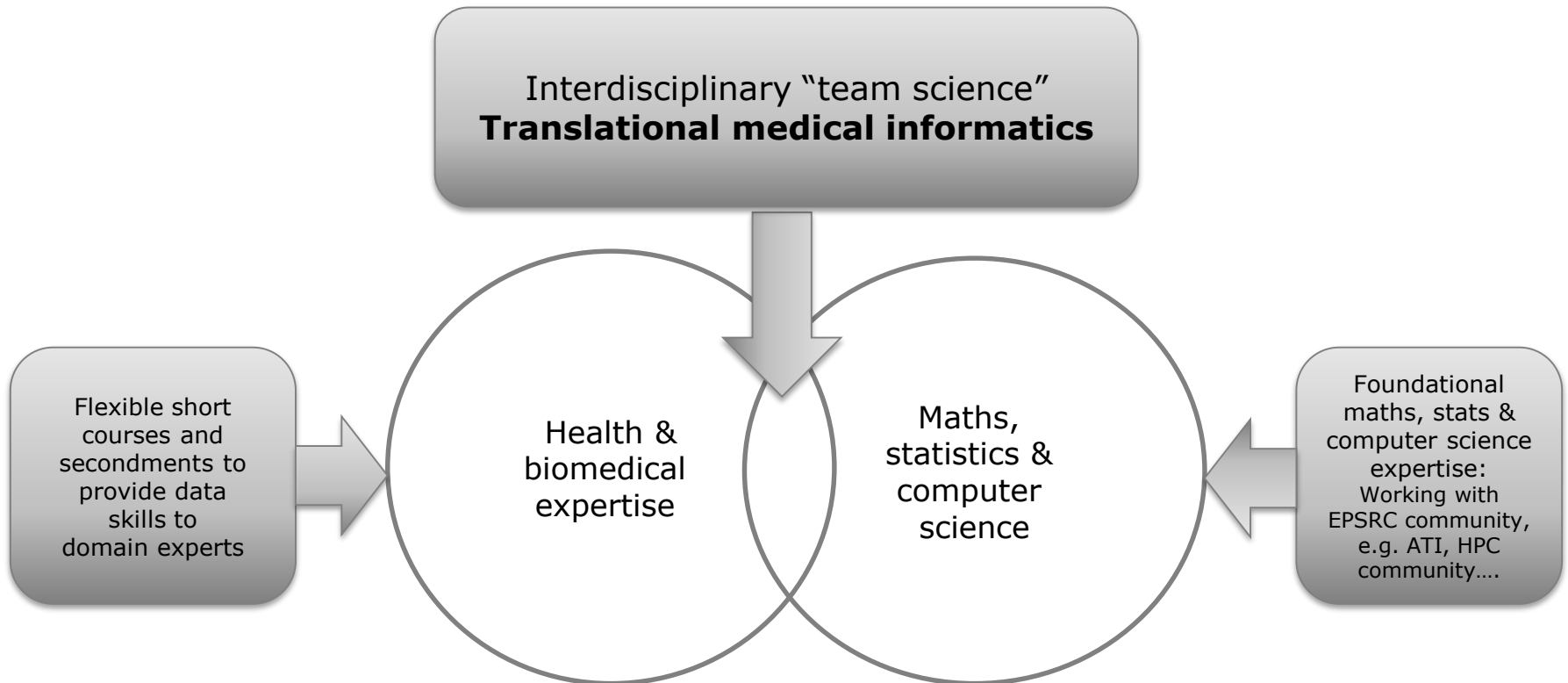
# Core activities

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- **Leadership** – deliver a co-ordinated national programme of research
- **Skills and capacity** - develop capability and expertise in “translational” health and biomedical informatics research
- **Secure data flows** - create secure, trusted and interoperable research environments
- **Analytics, tools and standards** - generate novel analytical tools for rapid translation into use
- **Partnerships** – work with owners and controllers of data, NHS partners, academia and industry
- **Open science** - Establish an open science and open innovation approach
- **Public Trust** – advocate for use of data and public engagement

# Interdisciplinary Capacity Building

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# Operational Model Principles

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- Internationally-renowned, competitively appointed director
- Novel mode of operation
  - Independence, leadership, sustainability
  - Akin to an MRC Unit or Institute
  - Distributed
  - Separate legal entity
- Core (25%) & diverse consortia (75%)
- Supported in partnership with other funders

# Timeline


2016 2017

April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb
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 Farr Funders Meeting

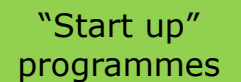
 Informatics alignment dinner

 Second Scientific Leaders Meeting

 MRC Council endorses establishment of Institute

 Competitive Director Search

 Establish legal entity

 "Start up" programmes

 Partnership Development/OSCHR Strategic Coordination

# Public Engagement & Trust

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**#DATA  
SAVES  
LIVES**

