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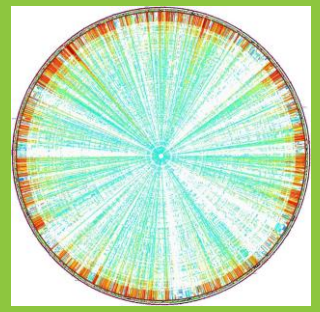
MAPPING YOUR GENOME

UK TRADE & INVESTMENT

Technology Strategy Board
Driving Innovation

Mapping Your Genome

("App"-ing the Me-nome)



Stratified Medicine

innovate uk

BUSINESS DESIGN CENTRE | 11-13 MARCH 2013

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Mapping Your Genome

- Prof. Mark Caulfield: CSO Genomics England
- Alastair Kent OBE: Director Genetic Alliance UK
- Jon Ward: VP Strategic Alliance 23andme
- Mark Bartlett: Managing Director Geneix

MAPPING YOUR GENOME
THE 100,000 WHOLE GENOME SEQUENCING PROJECT

Mark Caulfield

Chief Scientist, Genomics England

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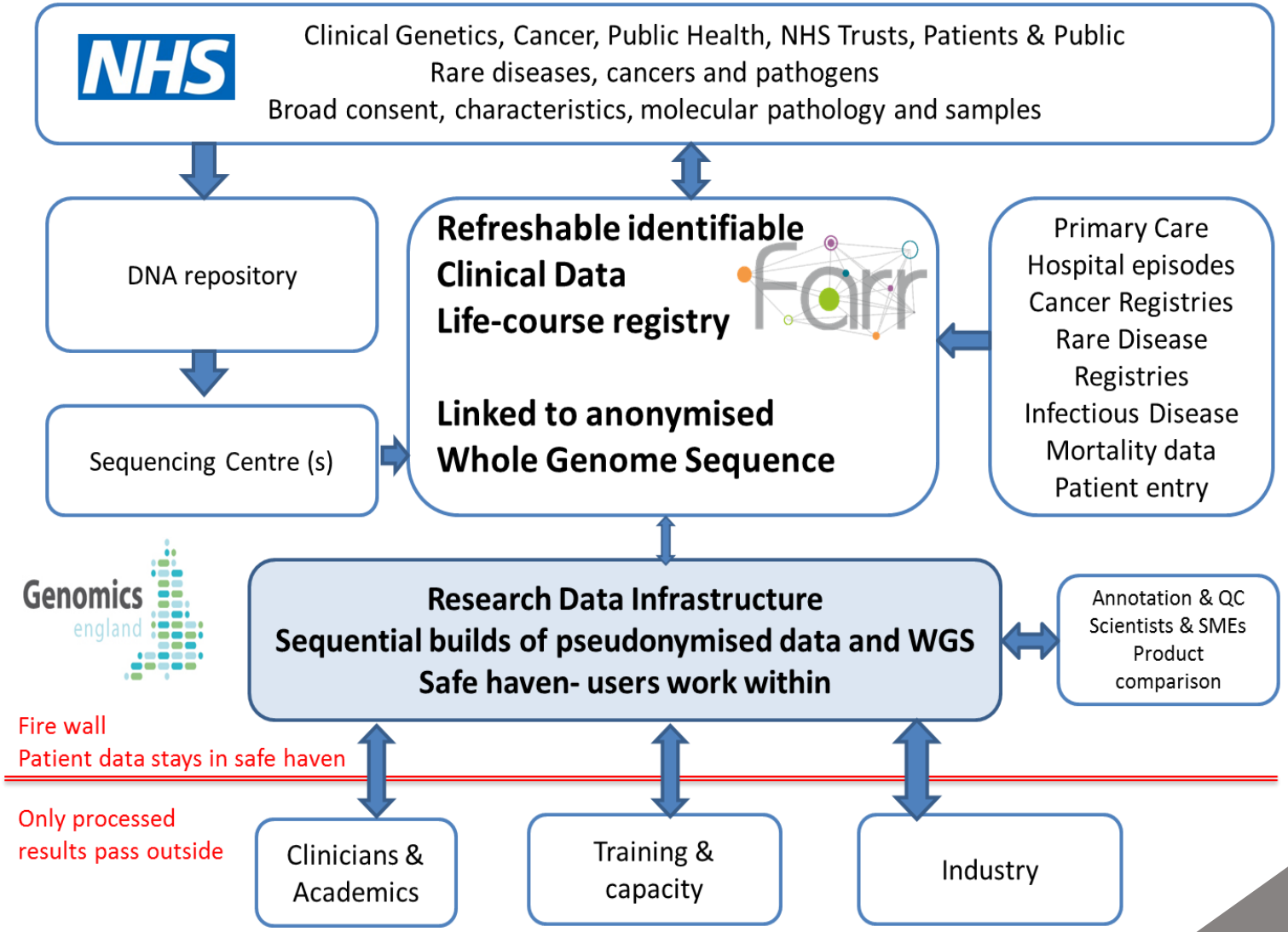
GENOMICS ENGLAND- MISSION

- 100,000 whole genome sequences in NHS patients with rare inherited disease, cancers and pathogens from the NHS in England
- Whole Genome Sequencing
- Generate health and wealth
- Legacy of infrastructure, human capacity and capability
- World-leaders in Genomic Medicine

100,000 GENOMES PROJECT - DISEASE FOCUS

- **Rare Disease** - <5% of the population
- 3 million people in the UK, 7000 rare disorders 50% do not get a genomic diagnosis
- Parent offspring trios
- **Cancer** - disease of disordered genomes
- Breast, lung, prostate, colon, ovary and CLL
- Sequence tumour and germline
- **Infection** - sequence bacteria and viruses
- New antimicrobials, resistance, severe response to infection

GENOMICS ENGLAND – THE MAIN PROGRAMME



THE GENOMIC MEDICINE LEGACY

- Illumina Partnership
- NHS Genomic Medicine Sequencing Centre – £27m from Wellcome
- MRC -£24m to establish the UK Data Centre for Genomic Medicine
- Innovate UK stimulant to Genomic Analytics
- NHS Genomic Medicine Centres
- Health Education England programme- 700 person years of training

PARTNERSHIP

Clinical Interpretation Partnership

- Academics, NHS, Trainees possibly industry precompetitive consortia
- Drive up fidelity of the data for patient feedback

Industrial partnerships

- Various models under exploration
- Geared to stimulate inward investment into the UK

GENOMICS ENGLAND

- 100,000 WGS on NHS patients and pathogens
- Aware of the challenges
- Working with NHS, academics and industry to drive Genomic Medicine into the NHS
- Support that with education
- Leave a legacy of NGS Centres, sample pipeline and biorepository, large-scale data store that makes this usable by the NHS
- New diagnostics and therapies and opportunities for patients
- By end of 2017

NHS England | Public Health England | NHS National Institute for Health Research | CANCER RESEARCH UK

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