



Health technology research and development and its integration in the UK

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EPSRC

Pioneering research
and skills

The RCUK Cross Council themes - Responding to Global Challenges

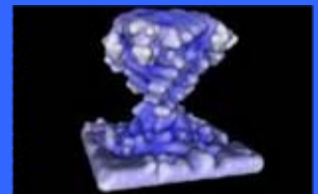


RESEARCH
COUNCILS UK

NANOSCIENCE THROUGH ENGINEERING TO APPLICATION

EPSRC lead

- BBSRC
- ESRC
- NERC
- STFC
- MRC



LIVING WITH ENVIRONMENTAL CHANGE

EPSRC
BBSRC
NERC lead

- ESRC
- STFC
- MRC
- AHRC



AGEING: LIFE LONG HEALTH & WELLBEING

- EPSRC
- BBSRC
- ESRC
- NERC
- STFC
- MRC lead*
- AHRC



GLOBAL UNCERTAINTIES: security for all in a changing world

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- BBSRC
- ESRC lead*

- NERC
- STFC
- MRC

AHRC



ENERGY *EPSRC lead*

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- ESRC
- NERC
- STFC

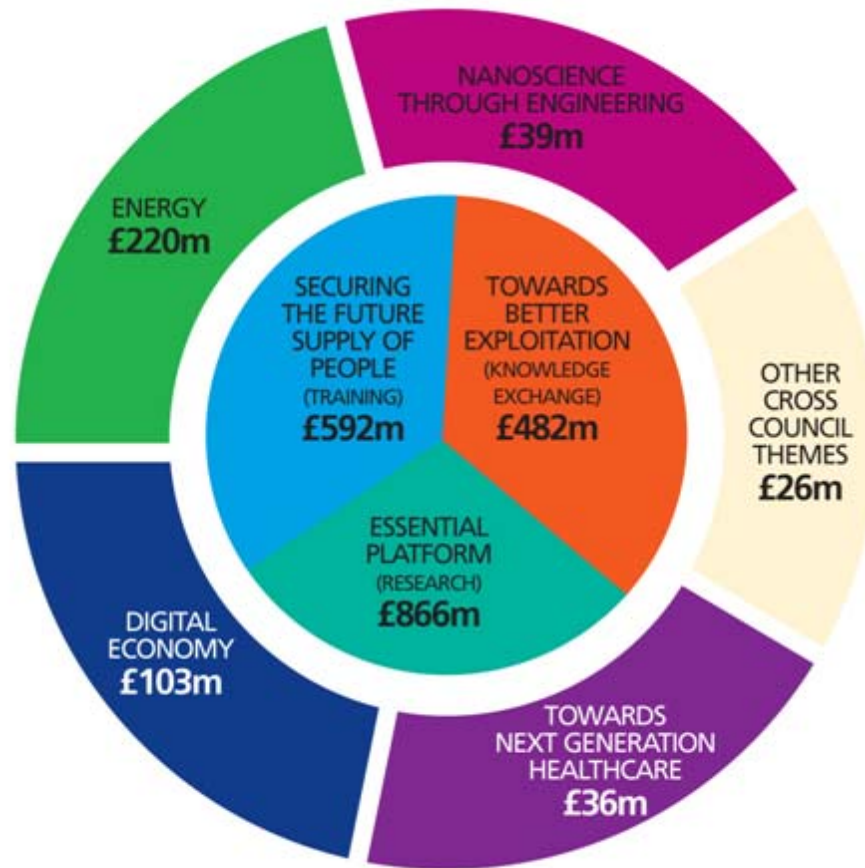


DIGITAL ECONOMY *EPSRC lead*

- AHRC
- ESRC
- MRC



The Whole EPSRC Picture



- Living with environmental change (£9M)
- Global Uncertainties: security for all in a changing world (£6M)
- Ageing: life-long health and wellbeing (£11M)

Partnership between five Research Councils and all four UK Health Departments

EPSRC Engineering and Physical Sciences Research Council



Arts & Humanities Research Council



Research for Healthy Ageing



Lifelong Health and Well being

Challenge

In 40 years time one in four people in the UK will be over 65

Need effective strategies to meet demands of changing demographics



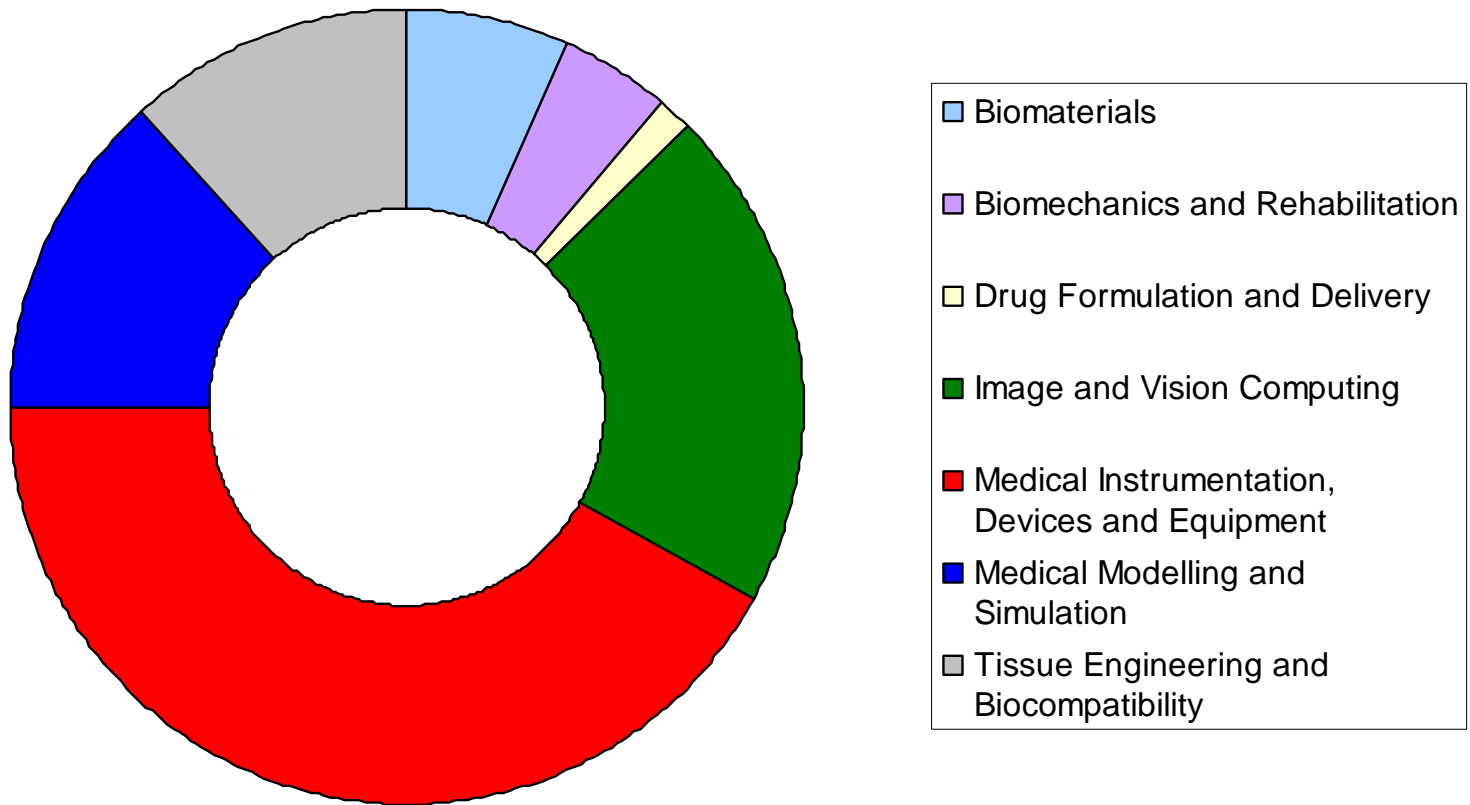
Aim

To support multi-disciplinary research addressing determinants throughout life that influence health and wellbeing in older age

- Develop of interventions
- Inform policy and practice
- Increase research capacity and capability

The diversity of the EPSRC Medical Engineering Portfolio

2004/2005 to 2007/2008 :
231 grants led by Engineering with a total value of over £73M





The EPSRC “Towards Next Generation Healthcare” programme

TOWARDS
NEXT GENERATION
HEALTHCARE
£36m

We are working to support strategically important healthcare and ageing research for the benefit of UK citizens. *The programme focuses on working in partnership with business, government and charities to:*

- Ensure a seamless transition from basic research through proof of concept to initial trials;
- Accelerate the transition from basic research to clinical products and practices;
- Engage and build links to clinical researchers on EPSRC research grants.

Working in Partnership

<p>Large Partnerships</p>   <p>Healthcare Partnerships</p>	<p>Cross Council Programmes</p> <p>Lifelong Health and Wellbeing led by MRC</p> <p>New Dynamics of Ageing led by ESRC</p> <p>Digital Economy led by EPSRC</p>	<p>Alignment and co-funding with other funders of research</p> <p>NHS National Institute for Health research (NIHR)</p> <ul style="list-style-type: none"> ■ i4i ■ HTC
<p>Research Base People support</p> <p>Fellowships</p> <p>DTCs, IDC</p>	<p>Technology Strategy Board/DoH</p> <p>Assisted Living Innovation Platform</p>	<p>Future Strategy</p> <p>Theme days – strategic planning EPSRC healthcare research.</p>

Cancer Research-UK/EPSRC £45m Strategic Partnership: The application of imaging science to cancer research

Aim: To support preclinical and/or clinical centres & programmes to facilitate the improved detection, diagnosis and treatment of cancer.

- EPS expertise (e.g. medical imaging) linked to clinical need, with pull-through of technology to clinical practice.
- 4 centres: Imperial, Institute of Cancer Research, Joint centre between Kings and UCL, and Oxford.
- 5 cancer imaging research programmes: CCLG at Birmingham, Royal Surrey County Hospital, St Andrews, Newcastle, Sheffield.

Wellcome Trust Partnership

£41 million partnership, to support biomedical engineering centres.

- Aim: to deliver novel, innovative technologies addressing unmet medical needs.

Centres of Excellence in Medical Engineering:

- Imperial College London (osteoarthritis)
- King's College London (medical imaging)
- Leeds University (ageing population – “50 more years after 50”)
- University of Oxford (personalised healthcare)

Healthcare Partnerships

A new initiative to establish a joint funding stream for high quality engineering and physical science research that has a potential route to exploitation within the UK health arena.

- New mechanism for EPSRC/Academia to engage with SMEs and/or small charities on basic research programmes
- Broaden the EPSRC portfolio of collaborative research to address a wider range of healthcare issues
- Wider portfolio of research with greater potential for translation into healthcare products and services
- Broaden the EPSRC portfolio of basic research that is more closely linked to clinical need

Integrated Knowledge Centres (IKCs)

- Centres of excellence aimed at accelerating and promoting business exploitation of an emerging research and technology field.
- IKC in Regenerative Therapies and Devices at the University of Leeds
 - addressing the creation of new technologies in regenerative therapies and devices and their accelerated adoption within a complex global market with increasing cost constraints
 - will build upon and develop substantial clinical, academic and industry partnerships
 - EPSRC - £5.1m, TSB - £2.5m, 5 years (2009 – 2014)
 - Linked to the Wellcome Trust Centre of Excellence in Medical Engineering

Innovative Manufacturing Research Centres

■ Multidisciplinary Assessment of Technology Centre for Healthcare, Brunel (MATCH) (£8.6m, 2008 – 2013)

- developing methods for assessing medical devices, looking at economic evaluation, industrial process and user needs.
- 38 project partners: NHS, Smith & Nephew, Bayer plc +++

■ Health and Care Infrastructure Research and Innovation Centre, Imperial, Loughborough, Reading and Salford (HaCIRIC) (£7.2m, 2006 – 2011)

- focus is on the underlying built and technical infrastructure for health and social care, and the interaction between this infrastructure and change and innovation in care services.
- purpose is to deliver research findings which will be instrumental in ensuring this investment achieves its full potential by improving the way infrastructure is planned, delivered and managed.

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Centre for Innovative Manufacturing in Regenerative Medicine, Loughborough

- £5.3m, 2010-2015
- covers a wide range of therapies designed to enable damaged, diseased or defective skin, bone and other tissue to work normally again.
- encouraging the take-up of RM therapies in the UK healthcare sector, to be achieved by undertaking authoritative studies designed to influence healthcare policy. Other studies will identify ways of eliminating bottlenecks that now hamper the translation of promising ideas for RM treatments into final products suited to clinical use.
- working with the University of Nottingham, Keele University and 28 partners from industry and the public sector. But relationships will be built right across UK academia and industry, with SMEs prominent as well as major corporations. This is a genuinely UK-wide initiative – but with a truly global outlook.

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Centres for Doctoral Training (CDTs)

- We fund 14 CDTs at the life sciences interface that offer a multidisciplinary approach to PhD study in medicine and biology.
- For example:
 - Bionanotechnology, medical imaging and bioinformatics, University of Oxford (£4.5m, 2008 – 2017)
 - Medical devices and related materials, University of Strathclyde (£7.3m, 2004 – 2017)
 - Regenerative Medicine, Universities of Loughborough, Nottingham and Keele (£6.1m, 2008 – 2017)
 - Targeted therapeutics, University of Nottingham (in partnership with AstraZeneca) (£1.3m, 2005 -2014)
 - Tissue Engineering and Regenerative Medicine, Universities of Leeds, Sheffield and York (£5.9m, 2008 – 2017)

Summary

- A very large and diverse portfolio: > 600 grants; >£500m commitment
- Substantial Training commitment
- Partnership is a major feature of the programmes, and user involvement also a major feature of the individual grants
- “Healthcare” will be a continuing major Cross Council programme
- EPSRC looking at the breadth and coherence of this portfolio as part of the build up to the next Spending Review

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