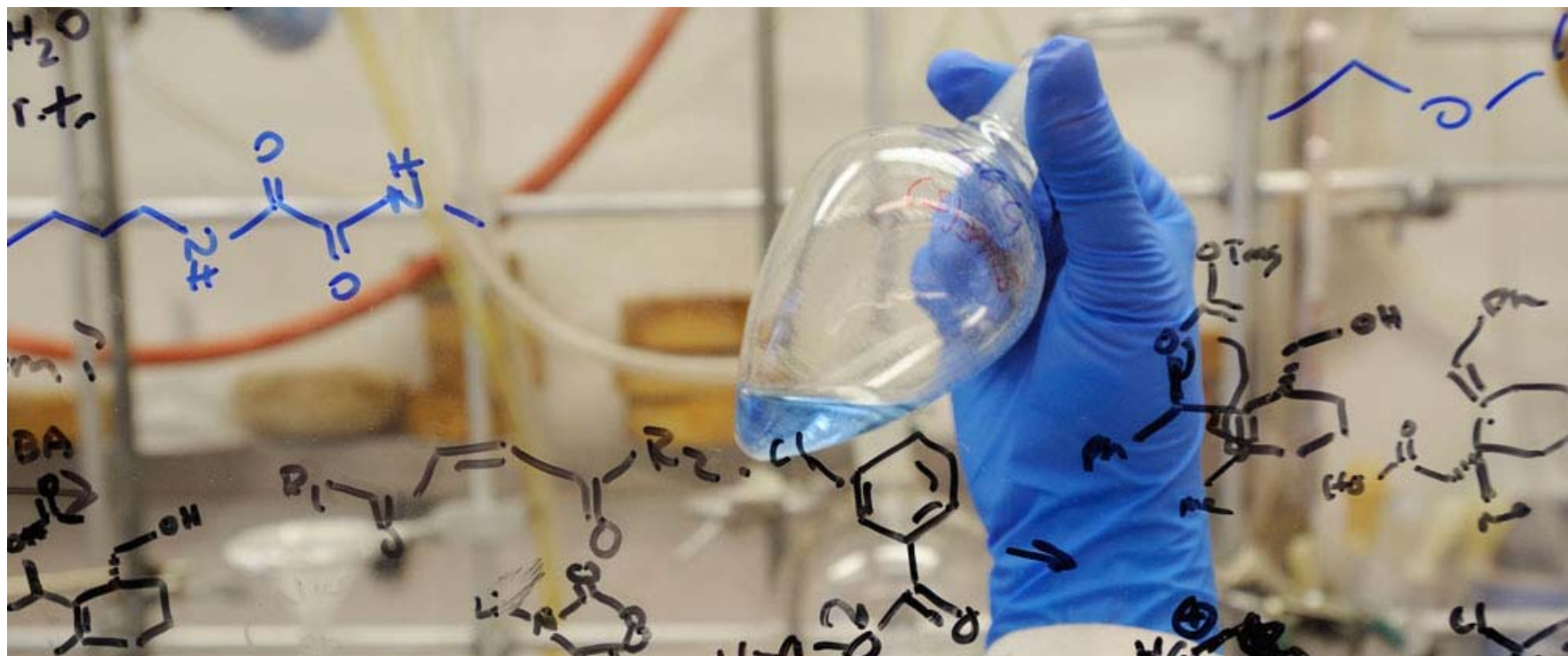

Unlock Your Global Business Potential: The UK Life Science Offer





INTRODUCTION

Government's Commitment to the Life Science Sector

*"In December 2011 I made a firm commitment to re-establish the **UK's global leadership in the life science sector**, announcing the Government's ten-year Strategy for UK Life Sciences."*



David Cameron
Prime Minister

The Strategy **makes the most of the UK's core strengths:**

- Basic science in universities
- Translational and clinical research
- Industry
- The National Health Service (NHS)

The Life Science Investment Organisation

Led by a unit of experienced business professionals and Government officials:

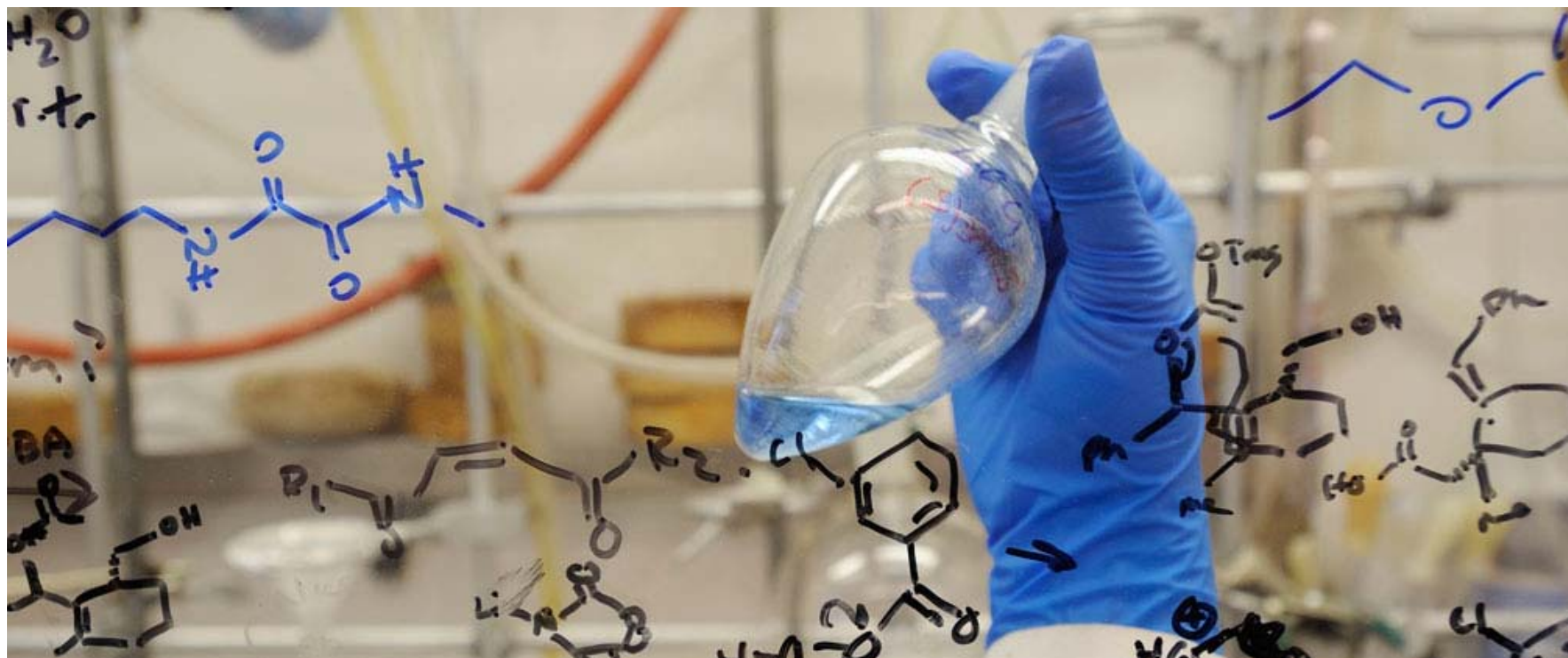
- Established in July 2012 to catalyse and co-ordinate **Life Science inward investment** across the whole of the UK.
- To promote the UK as the **leading European nation** for biomedical innovation and the global location of choice for Life Science companies and investors
- To provide better support for overseas business
- **Four priority themes:**
 - Dementia, Stratified Medicine, Experiential Medicine and Clinical Trials, Medical Technologies
- **Four priority markets:**
 - USA, Japan, Europe, and China.

Our Commitment to Business: An Evolving Sector and a New Strategy

The UK has a strong biomedical heritage, but globally the life science and healthcare landscape is undergoing a period of dramatic change

A sector under pressure:

- **Rising healthcare costs**, an ageing population and chronic disease burden
- **Patent expirations** and revenue erosion
- Increasing **costs of R&D**
- Increasing **technological and data complexity**
- **Regulatory uncertainty** / lack of clear routes to market
- Shift from 'one size fits all' approaches to **personalised patient-centric care**



THE LIFE SCIENCE OFFER

The UK Offer: A Winning Combination

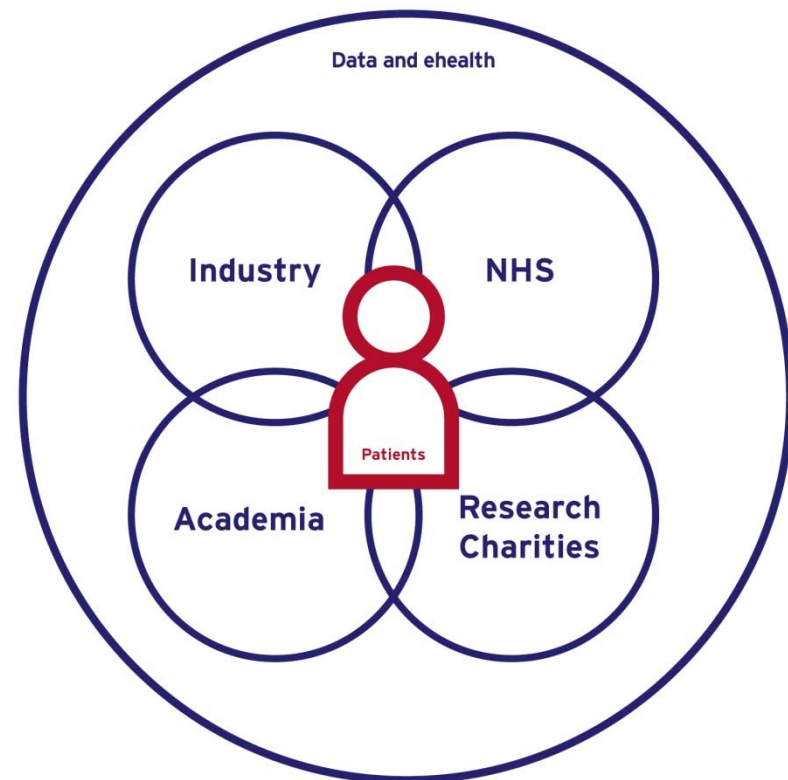
The UK is committed to building an integrated health economy and offers businesses a uniquely powerful combination of:

- **World-class science**, universities, facilities, and principal investigators
- **Established industrial R&D**, manufacturing and supply chain
- **Translational research infrastructure** and clinical networks supported by KOLs
- **Globally renowned research charities**
- **A firm commitment to partner with industry,**
- A **National Health Service** with more than 60 million patients
- Unrivalled, **clinically-coded health data**
- **Quality, efficient R&D and product validation**
- **A supportive business environment and incentives** for R&D and business growth
- **A platform for global growth** with excellent connectivity to the rest of the world

The UK Ecosystem: Connect, Research, Develop, Validate, and Export

The UK's increasingly integrated biomedical ecosystem is underpinned by:

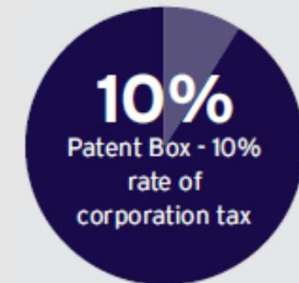
- **A supportive business environment**
- **An open and flexible regulatory framework**
- **Simplified industry access points**
- **Global connectivity and export potential**



A Business Environment that Supports and Rewards Innovation

The UK government has introduced a suite of fiscal measures to stimulate innovation and growth for companies:

- **Patent Box:** 10% reduced tax rate
- **R&D tax credits:** Up to 25p back per £1 spent
- £300 million **UK Research Partnership Investment Fund**
- £180 million **Biomedical Catalyst**
- **Regional funding** such as the £100 million Welsh life sciences fund



- R&D tax credits for SMEs worth approximately 25p on every £1 (7p for large companies.)



£300m

- To stimulate R&D partnerships between universities, businesses & charities



£180m

- Biomedical Catalyst = £180m programme of public funding for growth

The Technology Strategy Board (TSB)

Technology Strategy Board
Driving Innovation

- The Technology Strategy Board is the UK's innovation agency.
- It is a UK public body operating at arm's length from the Government reporting to the Department for Business, Innovation and Skills (BIS).
- Its goal is to accelerate economic growth by stimulating and supporting business-led Innovation.
- **Vision –**
For the UK to be a global leader in innovation and a magnet for innovative businesses which can apply technology rapidly, effectively and sustainably to create wealth and enhance quality of life.
- The TSB has a large number of funding schemes available for industrial partners.



A Wide Range of Funding Schemes...

Collaborative R&D

Smart

SBRI

Launchpad

_connect

Innovation Knowledge
Centres

Innovation
Vouchers

Entrepreneur
Missions

CATAPULT®

Knowledge
Transfer
Partnerships


eurostars™

Knowledge
Transfer
Networks

The Biomedical Catalyst Fund

BIOMEDICAL
CATALYST

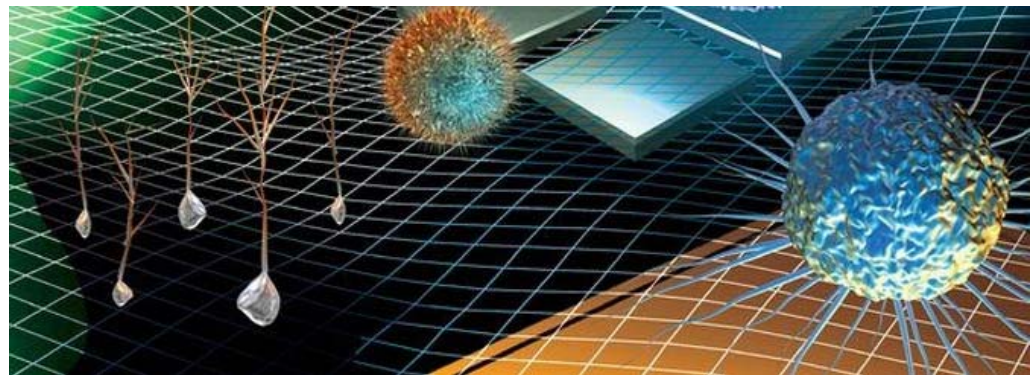
- **£180m** is being invested over the next three years in a joint MRC/TSB Biomedical Catalyst Fund.
- Aims to bridge the '**funding gap**' for small companies to support value creation in early clinical development
- Grants will **match venture capital investments**
- **Rapid turn around** evaluations by Industry dominated committee
- Anticipate 60 investments of £2.5 million over 3 years

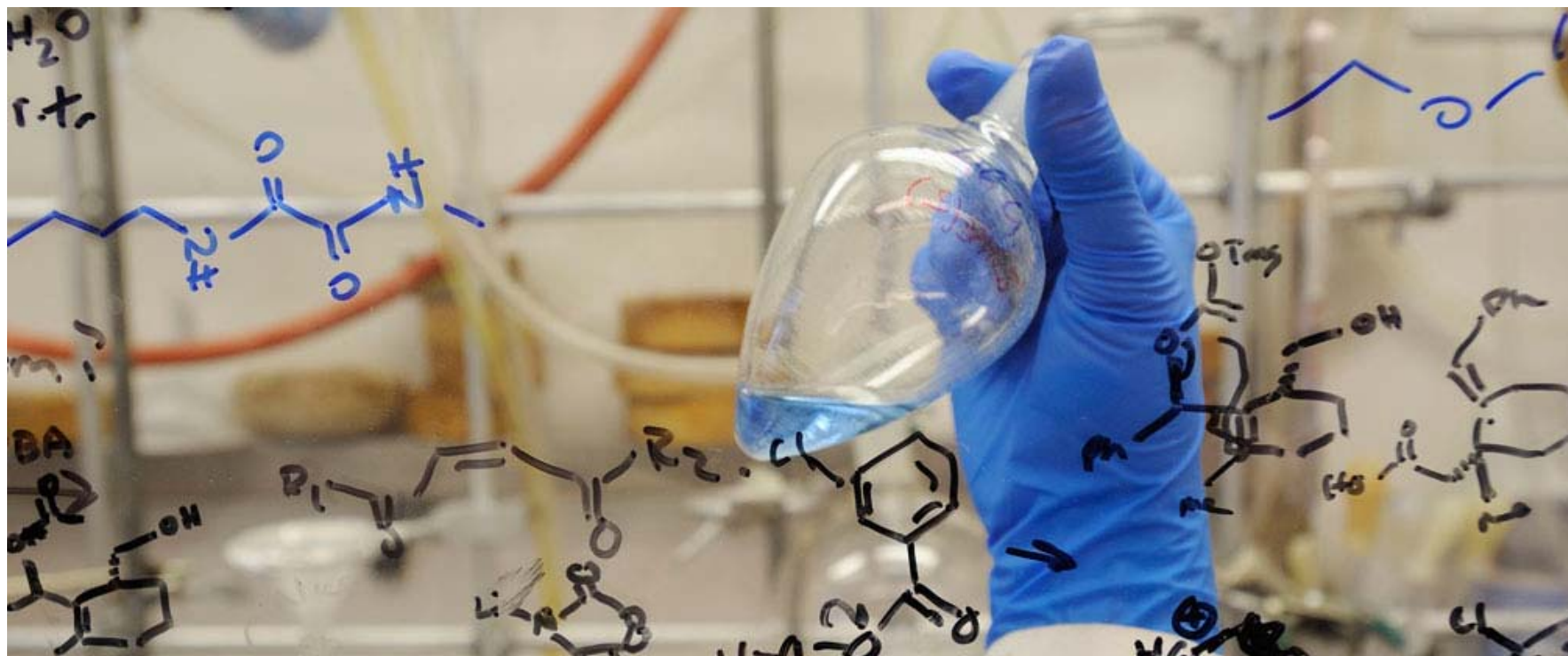


Catapult Centre

CATAPULT
Cell Therapy

- **£10m pa** is being invested in a Cell Therapy Technology and Innovation Centre, based in London, opened in 2012.
- The centre will focus on the **development and commercialisation** of cell therapies and advanced therapeutics.
- It will also look at the **underpinning technologies** for manufacturing, quality control, and address safety and efficacy challenges for these innovative treatments.





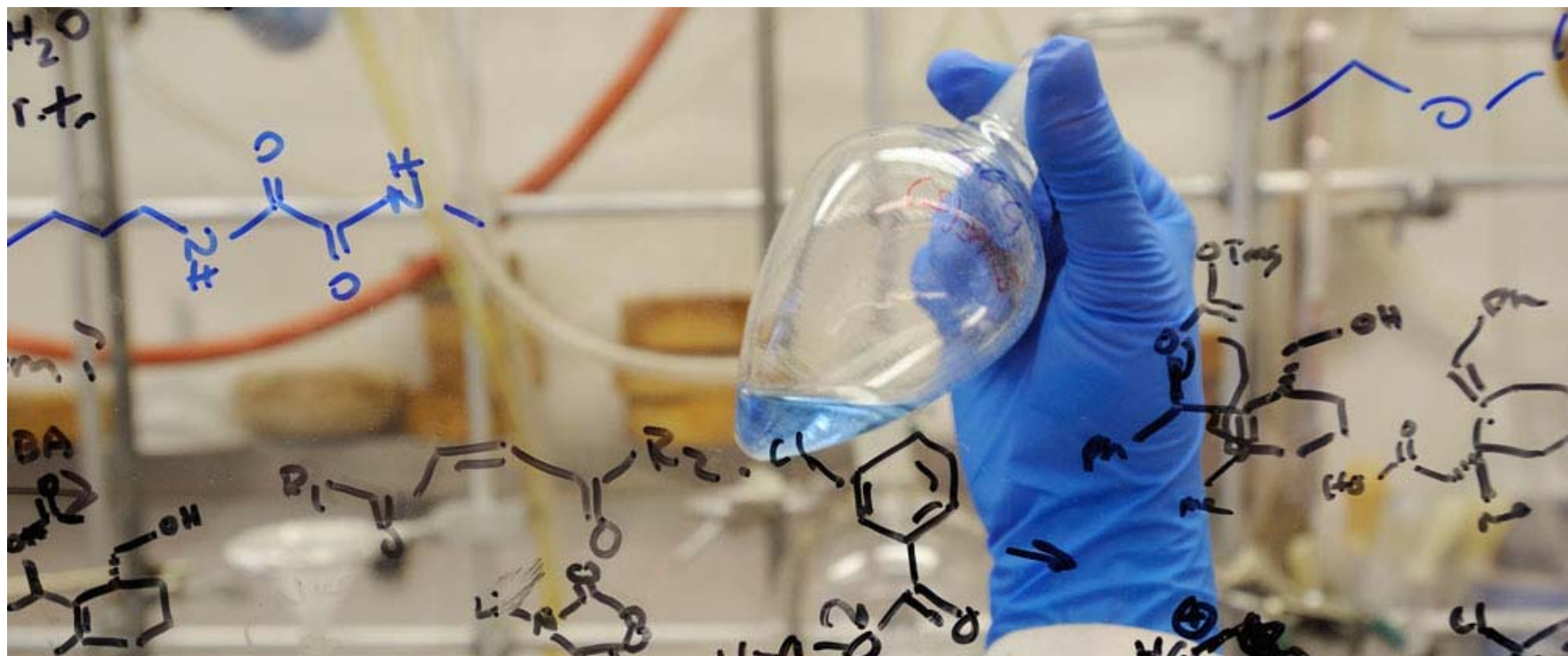
INFRASTRUCTURE DEVELOPMENTS

Francis Crick Institute



- The Francis Crick Institute will be **a world-class centre** for inter-disciplinary medical sciences, research and innovation.
- This project is funded by four of the UK's **leading biomedical research organisations**: MRC, CRUK, the Wellcome Trust & UCL.
- The Institute will use inter-disciplinary and innovative approaches to reveal the **basic biology underlying human health**.
- A **critical mass of 1250 scientists** will work in a highly productive environment with a world-class infrastructure and support.





TECHNOLOGY DEVELOPMENTS

DNA Sequencing Technologies



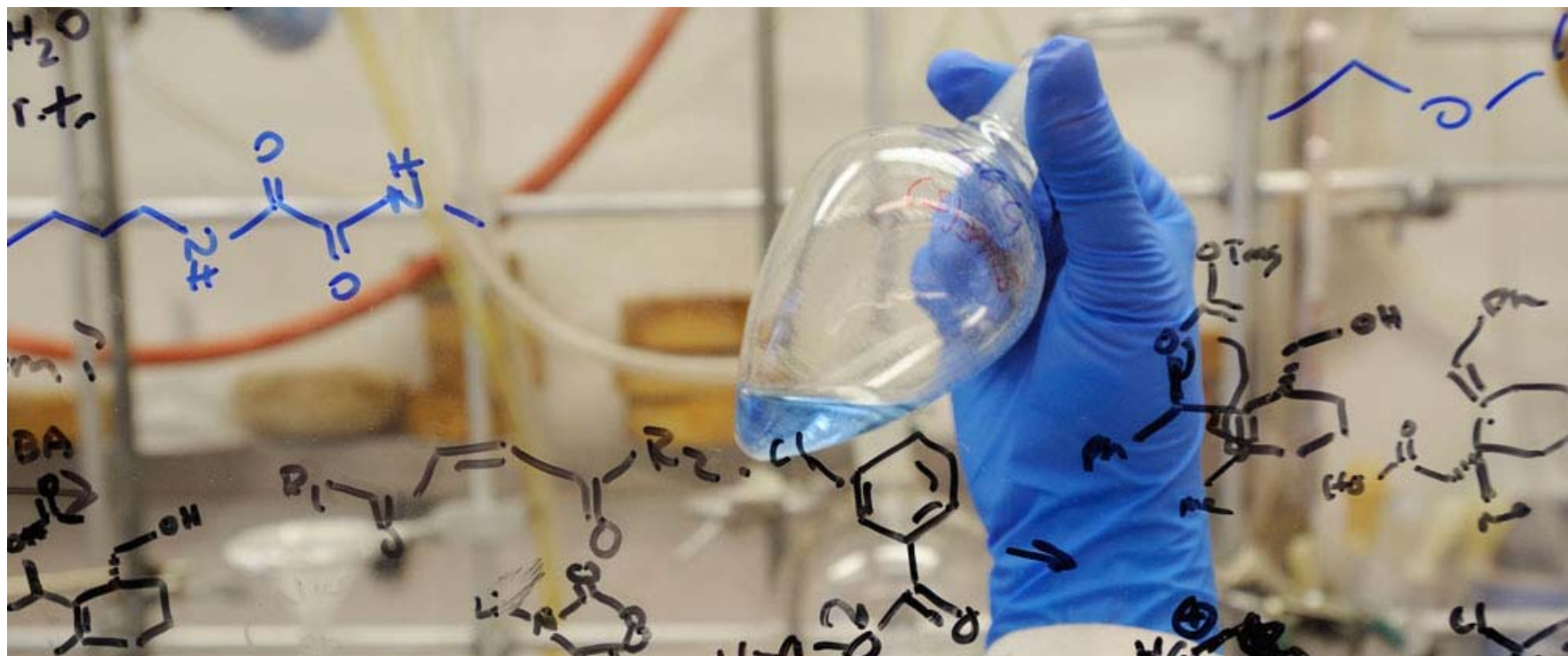
Shankar
Balasubramanian



Hagan Bayley



Chris Toumazou



THE UK CLINICAL ENVIRONMENT

The National Health Service



- **The NHS is the world's largest publicly-funded cradle-to-grave healthcare system, free at the point of access.**
- On average, the NHS serves one million patients every 36 hours, equivalent to eight patients every second.
- In 2010, the Clinical Research Networks supported the delivery of 2,500 clinical studies in the NHS.
- In 2010, the Clinical Research Networks supported the recruitment of more than 400,000 patients into clinical trials.
- There are 300 million primary care consultations, and nearly 100 million hospital attendances.
- The NHS collects data on hundreds of millions of patient treatments per year.



Using the NHS to Drive Healthcare Innovation



Demonstrating Value:

- There is an increasing focus on clinical- and cost-effectiveness world-wide, and a need to demonstrate real value to the patient and to health systems.
- Industry can leverage the UK's expertise to develop an evidence base to support market access, uptake and diffusion in the UK and around the globe

Business can gain access to the largest national healthcare system in the world - the NHS

- Academic Health Science Networks
- NIHR Office For Clinical Research Infrastructure (NOCRI)
- The Scotland, Wales, and Northern Ireland all provide central access points for industry

Building a Collaborative Research Ecosystem: Active Partnership

Industry can leverage the UK as an innovation partner to develop an evidence base, supporting market access, uptake and diffusion in the UK and around the world

▪ **In Northern Ireland:**

Connected Health and Prosperity Action Plan ensures cross-sectorial support for R&D and technology adoption

▪ **In Scotland:**

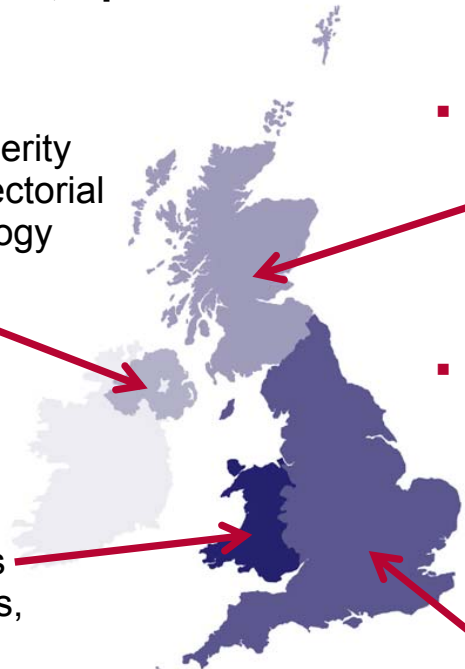
Academic Health Sciences Collaboration facilitates partnerships between universities and health boards

▪ **In Wales:**

Academic Health Science Collaboration maximises links between health boards, trusts, universities and industry

▪ **In England:**

- Academic Health Science Centres open up routes to market
- Biomedical Research Centres and Units link universities and NHS trusts
- Academic Health Science Networks will work with industry and drive adoption across the NHS in England



NIHR Office For Clinical Research Infrastructure (NOCRI)

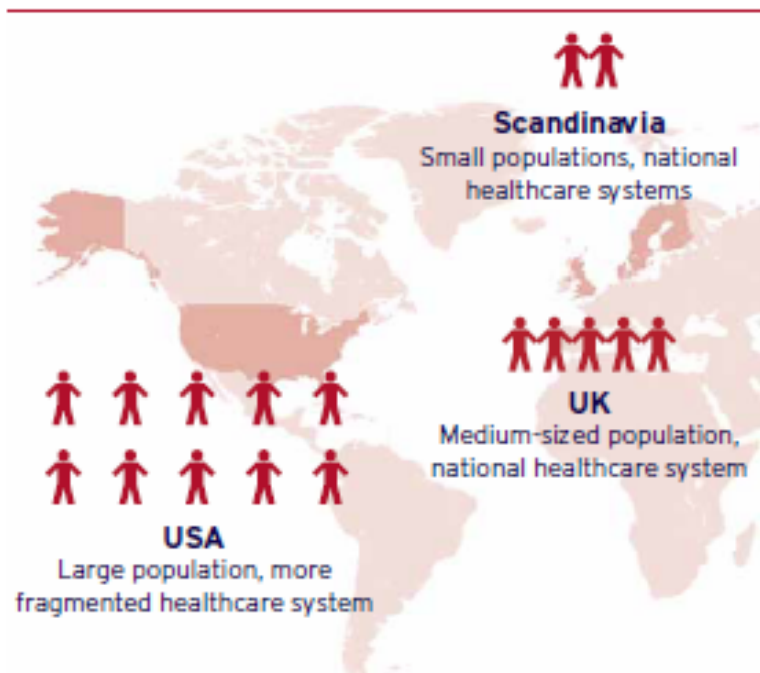
A **single point of contact** that:

- facilitates **industry access** to the UK's clinical research infrastructure, from early-stage collaborative research through to contract clinical trials.
- helps businesses access **world-leading science and clinical expertise**, world-class facilities, and well-characterised and diverse patient cohorts.
- provides a **managed process for collaborative research**, has developed model partnership and contracting agreements for industry
- has set up and administers two **Translational Research Partnerships** in Joint and Respiratory Inflammatory Diseases and a new **Translational Research Collaboration** for Dementia Research.



Unlocking Data to Drive Innovation

In the UK, businesses will have access to unrivalled, clinically-coded health data and bio-repositories, including linked datasets, derived from 60 million patients.



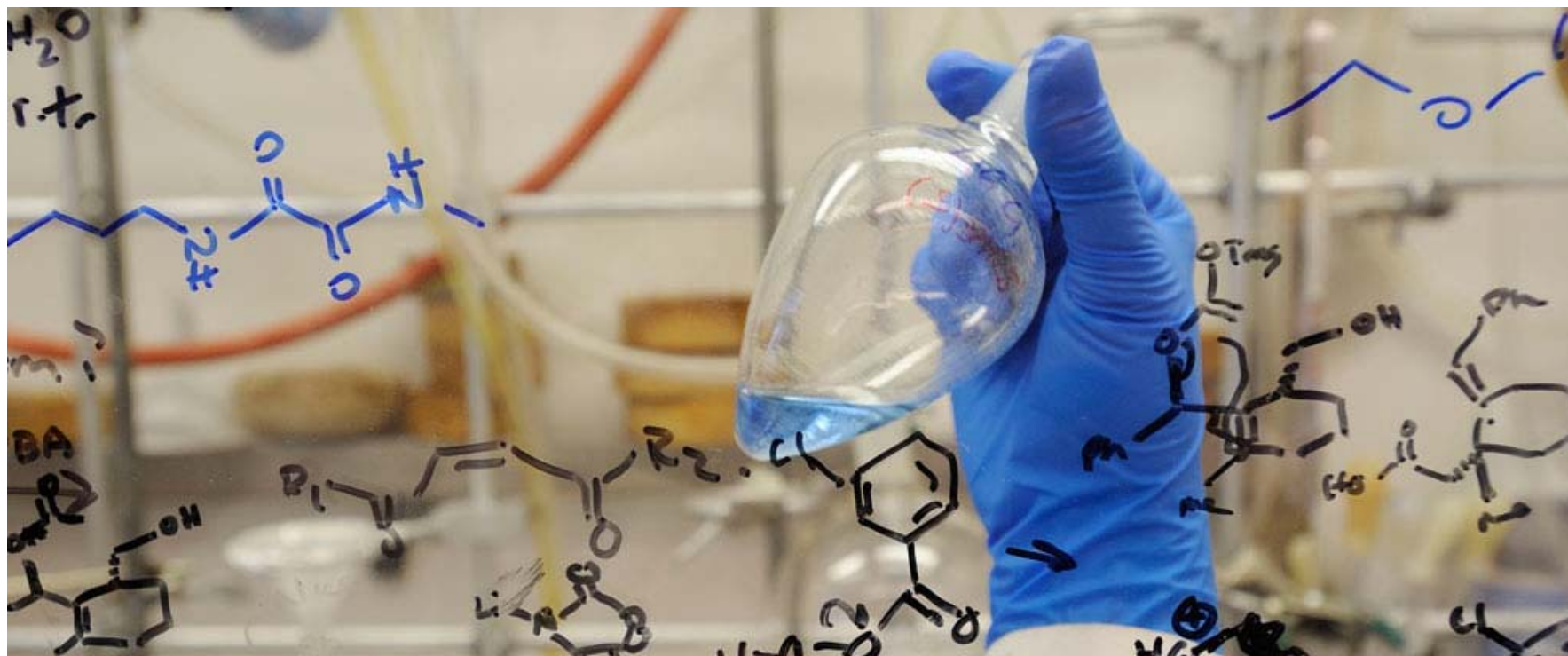
Example data resources:

- **UK Biobank** is a unique resource of data and samples linked to medical histories and health records from 500,000 adult participants
- **Clinical Practice Research Datalink (CPRD)** enables observational studies, clinical trial feasibility and protocol optimisation, and post-market surveillance
- **NIHR BioResource** enables recall to clinical studies by genotype and phenotype and helps stratify and select patients for trials

Creating an Open and Flexible Regulatory Framework

Government commitments:

- A streamlined health research approvals process
- Globally-respected regulators – The UK is home to the MHRA and the EMA
- An Innovation Office to promote early dialogue between the MHRA and companies developing innovative products
- The Health Research Authority provides transparent expert advice to support decisions on access to personal health information
- Earlier Access and Adaptive Licensing are under consideration



SUCCESS STORIES



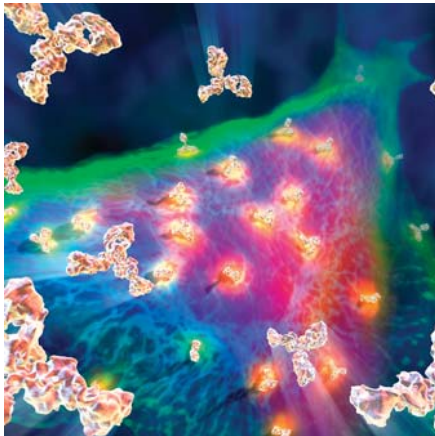
Division of Signal Transduction Therapy in Alliance with Major Pharmaceutical Companies



- In 2012, six leading pharmaceutical companies committed over £14 million in new funding to the **Division of Signal Transduction Therapy** (DSTT) at the University of Dundee, which will secure 50 posts at the University for the next four years
- The DSTT is a **unique collaboration** between scientists in the MRC Protein Phosphorylation Unit, the University of Dundee and six of the world's leading pharmaceutical companies:
 - **AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Janssen Pharmaceutica, Merck-Serono and Pfizer**
- The DSTT has attracted **£50 million in funding** from the pharmaceutical industry to accelerate the development of specific inhibitors of kinases and phosphatases for the treatment of disease.



Innovative Clinical Studies at Cambridge



- ProSavin[®] is a **gene-based treatment for Parkinson's disease**, a chronic degenerative neurological condition.
- Developed by British company Oxford BioMedica, ProSavin[®] contains 3 genes essential for making dopamine.
- The treatment is being tested in an **early stage international study** with the NIHR's Biomedical Research Centre at Cambridge and the Henri Mondor Hospital in Paris
- Early indications suggest that an injection of ProSavin **boosts the ability of nerve cells to make their own dopamine**.
- This may mean that people with Parkinson's could one day reduce their dependence on current drugs that have significant side effects.

Oxford BioMedica Wins Funding from UK Government's Advanced Manufacturing Supply Chain Initiative

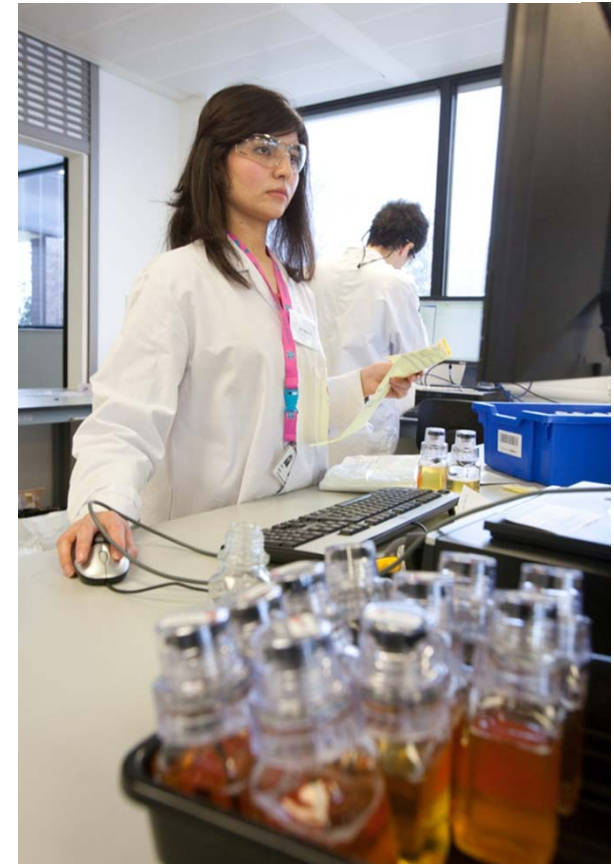
Press Release: 11/09/2013

- UK consortium wins **£7.7 million total funding**, of which £7.1 million awarded to Oxford BioMedica as lead member.
 - Oxford BioMedica selected as winner in recognition of the Company's potential to become a **world-leader in Advanced Therapy Medicinal Product (ATMP) manufacture** and supply chain expertise.
 - Funding will **support the development of a centre of excellence in Oxford** for specialist manufacture of gene-based therapies and to help create world-class excellence in supply chains
 - Oxford BioMedica led the **successful bid with four other UK-based participants**: the Heart of England NHS Foundation, Cranfield University, Cell Therapy Catapult Ltd and Biotec Services International Ltd.
-

2012 Olympics Legacy – The Phenome Centre



- The **Phenome Centre** is a partnership between the MRC, the National Institute for Health Research, King's College London, Imperial College London, and global analytical companies Bruker and Waters
- The Centre will deliver broad access to a world-class capability in **metabolic phenotyping**, that will benefit the whole UK translational medicine community.
- The establishment of the Centre will enable the UK to take advantage of an unprecedented opportunity offered by the **legacy of the 2012 Olympics** - state-of-the-art drug testing / analytical laboratory.
- Will analyse thousands of samples of blood, urine and tissue to discover how our genes interact with our environment to cause and affect the course of disease



Structural Genomics Consortium and University of Oxford Creating Cluster of Biotechs



- The **Structural Genomics Consortium** (SGC) is a public-private partnership that supports the discovery of new medicines through open access research
- Based at Oxford University, it is a consortium involving **Pfizer, Novartis, Eli Lilly, GSK, Abbott, Takeda**, and two other leading global pharmaceutical companies
- Since its inception, the SGC has been engaged in **pre-competitive research** to facilitate the discovery of new medicines.
- SGC has plans to create a cluster of local biotechs on the basis of the consortium's extensive portfolio of innovative scientific and technological outputs

Johnson and Johnson Global Innovation Centre



- Establishing one of its **four regional innovation centres** in London
- The centre will serve as a regional hub focused on identifying **early-stage innovations**,
- The goal of the London centre is to accelerate the best early stage science in the world and advance the development of new healthcare solutions.
- It will **invest in novel collaborations** and speed development of those innovations to solve unmet needs in patients

“The innovation centres will help to deepen our relationships with the communities in key innovation hotspots... Ultimately, they will serve to help us more quickly identify and tap into technological advancements that have the potential to benefit the health of people in the future.”

Patrick Verheyen, Head of the London Innovation Centre

Eisai Continues UK Expansion

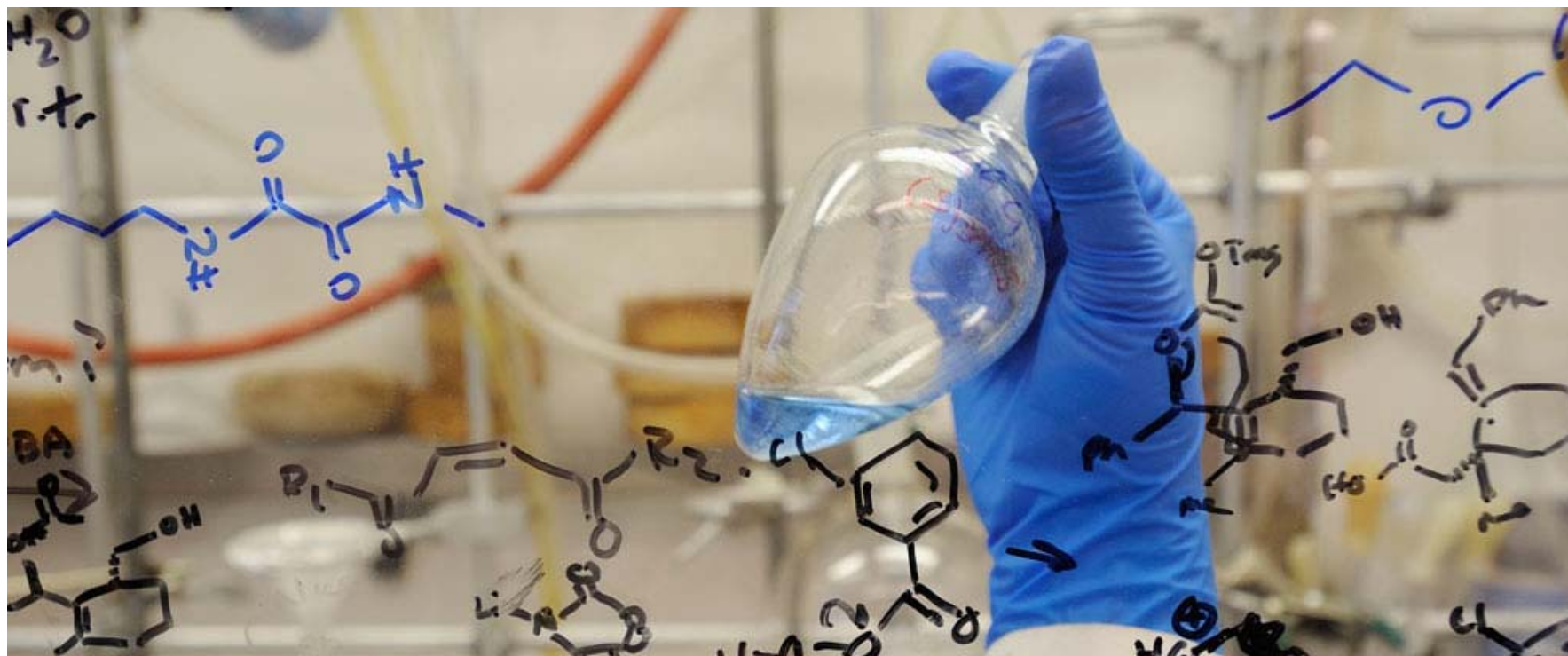


- Eisai's European Knowledge Centre (EKC) in Hatfield represents one of **Eisai's biggest ever single capital projects**
- The Centre integrates production, discovery, clinical research and marketing functions on a single site
- Its role has expanded to **support the company's growing EMEA business** and opened a global manufacturing line for the company's new anti-epileptic agent Fycompa.
- The expansion of the EKC illustrates the critical role the UK plays in Eisai's growth and the importance the company attaches to its investments in the UK

"Eisai are actively pursuing Open Innovation partnership projects with academic and public research bodies as well as other research ...

Eisai are very active in dementia research in the UK and one of our biggest recent announcements was that one of our potential discoveries here in the UK, a disease modifying compound has just entered 'First in Man' trials – so it is a new hope for the disease and a great example of bridging the translational medicine bridge..."

Dr David Jefferys, SVP, Global Regulatory, Government Relations & Public Affairs



CONCLUSIONS

Conclusions

- The UK has a world-class life science industry, geared to international collaboration
- UKTI can assist companies in achieving their R&D goals through collaboration and partnership
- Dedicated resources of Technology Specialists and other UKTI staff
- Provide practical help in UK and overseas to client companies
- Assist with co-ordinated approach to business development

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Thank You

Děkuji.
(Promiňte, nemluvím česky).