

***The London-Oxford-Cambridge (Southeast) Golden
Research Triangle: hype or reality?
-- A bio-innovation complex to overtake US***

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Presentation at CIMR workshop, June 29 2016

Focus of the presentation

(i) the incentives for leading UK entrepreneurial universities to work together in this project and the inherent facilitators and inhibitors,

- organizational factors facilitating or hindering endeavours where inter-organisational collaboration is required

(ii) the value-added from being where they are and the extent of accrued local cluster assets that they bring to the venture

- the existing landscape of translational research and the extent to which local factors facilitate the process

(iii) how the hierarchies of policies (local, national) shape the environment for collective action,

- how can such actions be evaluated?

The talk structure

1. UK context
2. Barriers and potential of "golden triangle"
3. MedCity in theory and practice
4. Reflections on prospects

Research questions

- What are the factors which will influence whether or not the MedCity initiative will be sustainable?
- What is different now compared to earlier efforts to build a biomedical science cluster in London?
 - E.g. 2006 – plan for Global Medical Excellence Cluster

Context

- UK Industrial Strategy for Life Science (2011) proposes that the UK is made into “a world-leading place for life sciences investment and a global hub for life sciences” (page 4).

UK Context

- Pharmaceuticals, medical biotechnology and medical technology sectors together comprise around 4,500 firms, employing 165,000 staff, with an R&D spend of nearly £5billion and an annual turnover of over £50 billion.
- Of the top 50 global pharmaceutical companies, 37 have sites in the UK
- Largest biopharmaceutical pipeline in the EU – 20%
- Life sciences map of companies – 3 largest centres are in Golden triangle

Important initiatives in life sciences research and translation

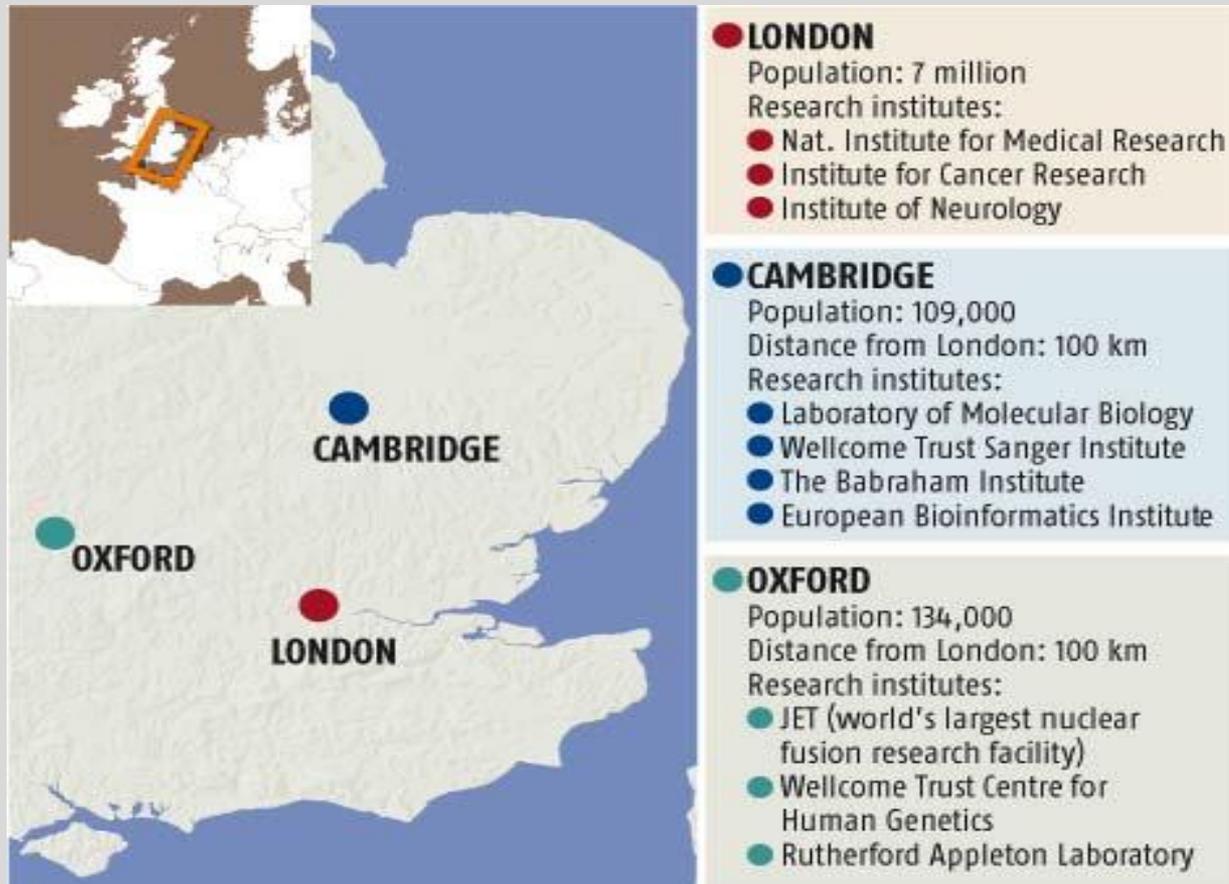
- **Francis Crick Institute (opening 2016)**
 - The Crick aspires to be one of the world's leading medical research institutes.
- **Biomedical Catalyst fund.**
- **National Institute of Health Research (NIHR)**
 - 11 Biomedical Research Centres and Units and the establishment of two NIHR translational research partnerships (TRPs)
- **Academic Health Science Centres (AHSCs)**
 - Location-based partnership between one or more universities and healthcare providers
- **Academic Health Science Networks**
 - Focused on how NHS identifies, develops and adopts new technologies
- **Charities e.g. Wellcome Trust**
 - £5bn spend 2016-21 on improving human health

Top universities 2015/6

1. MIT
2. Harvard
3. Cambridge
4. Stanford
5. Caltech
6. Oxford
7. UCL
8. Imperial

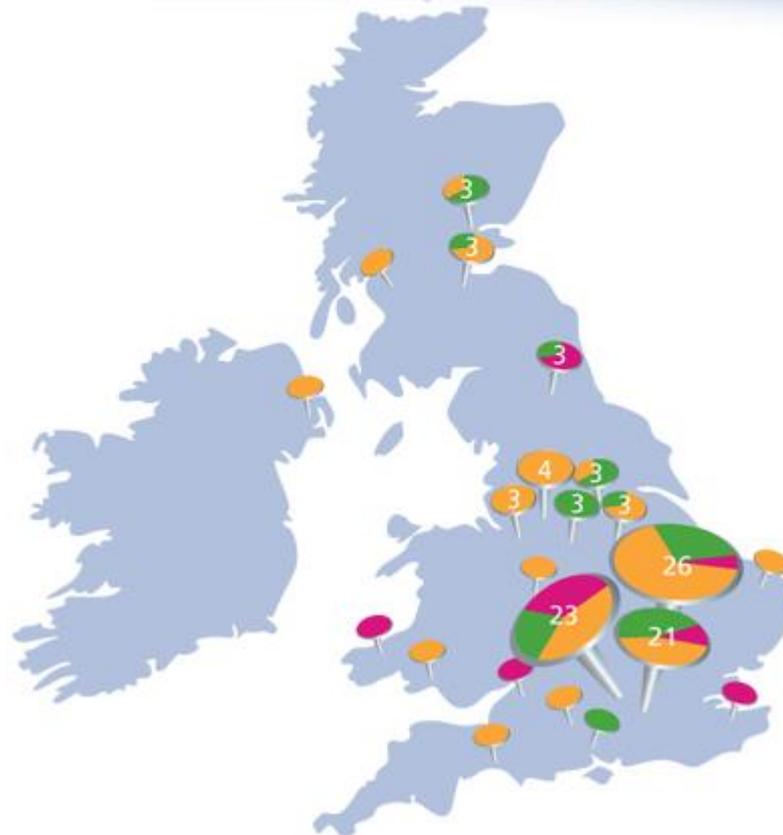
19. Kings College, London

The Golden Triangle



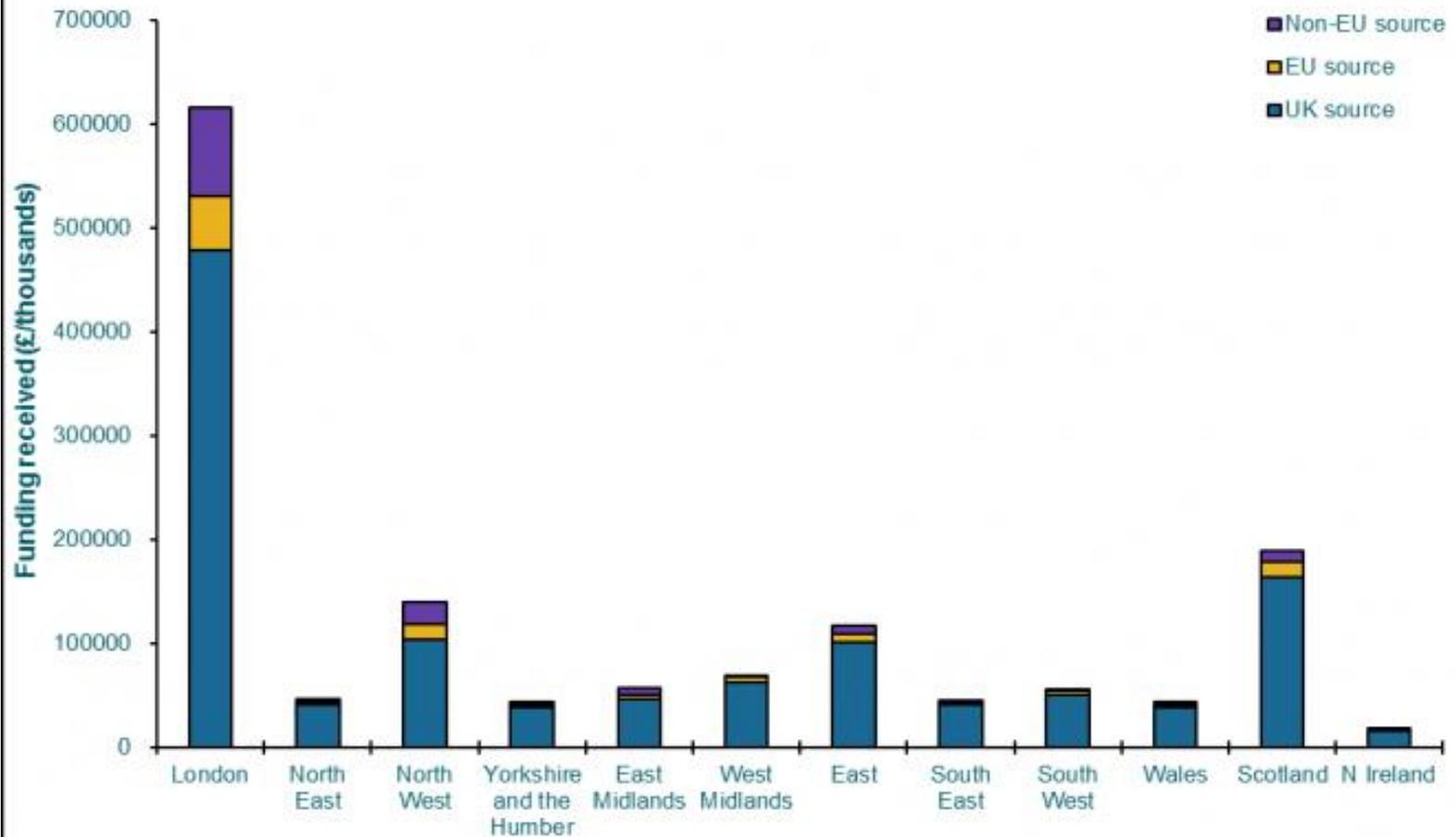
Source: New Scientist

Location of business-led awards



<http://blog.bioindustry.org/category/finance-and-tax/page/3/>

HEI Research Funding for Clinical Medicine 2012/13

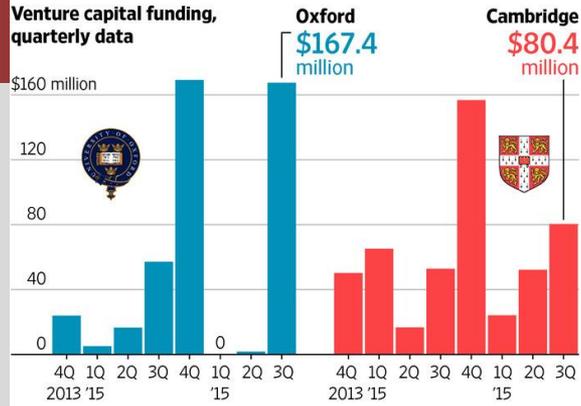


The boat race

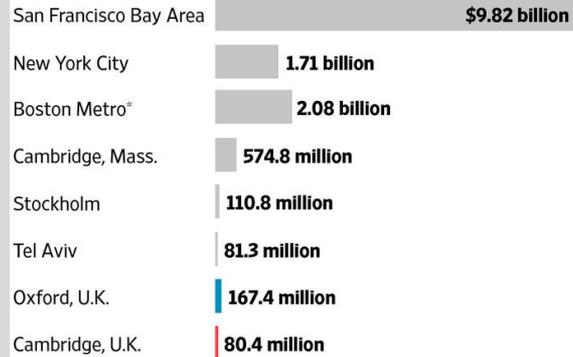


Ancient Rivals

Oxford and Cambridge have competed against each other for centuries. Now that rivalry is spilling into tech startups.



Venture capital funding, by city, 3Q 2015



The competition extends well beyond technology

26	British prime ministers	14
9	Nobel prize winners	18
48	Tech company spin outs 2005-'14	30
79	Men's boat race wins	81

*Includes Cambridge, Mass.

Sources: Nobel Committee (Nobel numbers); Universities (other numbers); Dow Jones VentureSource (funding)

THE WALL STREET JOURNAL.

Oxford University - Isis Innovation

Isis is the highest university patent filer in the UK and is ranked 1st in the UK for university spin-outs,

- created over 110 new companies in 25 years and having concluded over 3000 commercial deals since the year 2000.

Made in Oxford



Cambridge Enterprise

“Cambridge Enterprise was formed by the University of Cambridge to help students and staff commercialise their expertise and ideas. What we do is central to the mission of the University, which for more than 800 years has contributed to society through the pursuit of education, learning and research at the highest levels of international excellence.”

- criticised in the past for lack of effectiveness in supporting life science spin-off companies (Breznitz 2011).

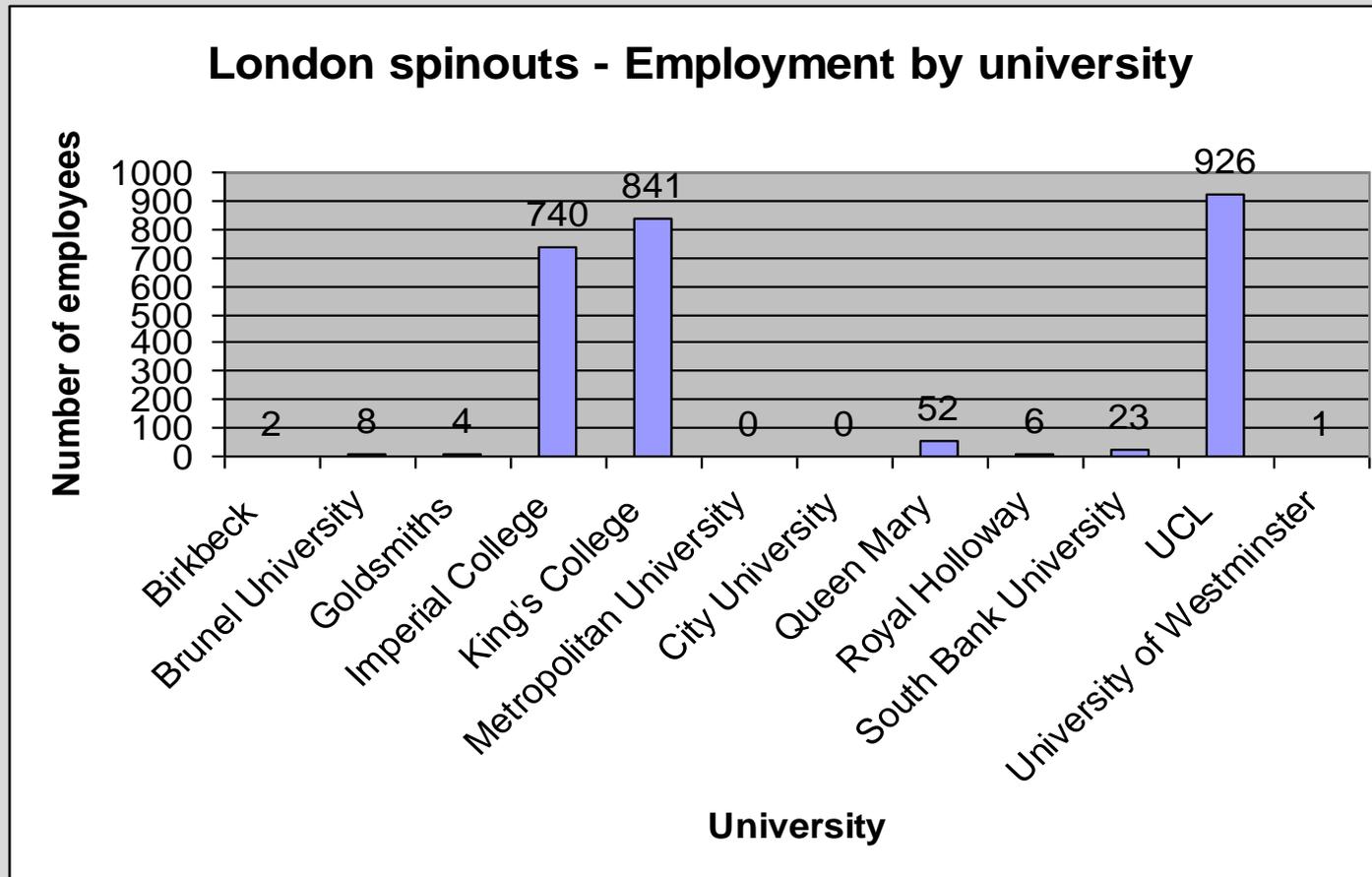
Imperial Innovations

Imperial Innovations

We are focused on commercialising the best in UK academic research, drawn from academic centres within the 'golden triangle' formed by Cambridge, Oxford and London. We have end-to-end capability, taking research at the earliest stage and working with it right through to commercialisation.

Consortium of world-leading UK universities and global pharmaceutical companies launch £40 million fund to drive therapeutic innovation – Imperial, UCL and Cambridge

Spin-outs in London - 2005



The UK's biotech drain: This is why London's most successful startups are heading to New York

There's a mass migration taking place across the Atlantic right now. Each year, many of the UK's best biotech firms are choosing to leave and head to New York, where they can benefit from wealthy investors throwing their money at Nasdaq.

<http://www.cityam.com/219333/uks-biotech-drain-why-londons-most-successful-startups-are-heading-new-york>

Other aspects

1. Strength of Bioscience networks in Oxbridge
 - Oxford – OBN – 370+ members
 - Cambridge – One Nucleus – 470+ members
 - London – One Nucleus and OBN
2. Cambridge ahead on attracting big-pharma & building science infrastructure
 - London – spends no money & developments hidebound by “blackmail” by planning authorities
3. Stevenage – located between Cambridge and London
 - Stevenage Bioscience Catalyst – innovation campus
 - Cluster established out of a Wellcome Trust and GSK initiative

MedCity

A UK life sciences “Golden triangle” with leading universities in London, Oxford, and Cambridge

(Announced April 2014, Mayor of London, Boris Johnson)

Rationale

- MedCity will “span everything from research, to clinical trials, to manufacturing, across biotech, med tech and health tech” to help it in its mission “to cement London and the greater south east of England as a lead destination for life sciences research, development, manufacturing, and commercialisation.”
- “London underperforms compared to its global peers in translating this research excellence into economic outcomes” (MedCity Business Plan 2014-15) – therefore, MedCity will leverage the strength of all three areas of excellence.

Rationale	Needs
(i) universities and research collaboration	
Expansion of research capacity to become a global centre of life sciences research	Complementary knowledge & expertise, ability to build consortia and networks
Improve research capabilities	Identifying how joint research could improve overall research capacity
Leverage further funding	Building reputational effects through demonstrating high quality research
Realisation of institutional complementarities	Commitment by senior people to making this happen and to enabling access to facilities, instrumentation and research topics Relational capacity of organisations (Powell 1998), Collaboration as a new logic of organising Powell 1998, 231)
Enhance visibility for scientists and companies in the field	Developing a dissemination strategy that sends a worldwide message to potential funders
Improve translational research & and change the landscape of translational research	Building on existing resources to strengthen capacity for translational research Alignment of interests between public sector actors Alignment of interests between public sector and private sector actors – public private partnerships Dedicated governance structures Political commitment

(ii) clusters	
Attracting inward investment	Improving the local ecosystem of research, skill upgrading and mobility of employees through the presence of ‘anchor firms’
Building on local professional/sector networks	Increasing flow of ideas and recognition of market potential of innovations through interaction at the local effects.
Developing infrastructure	Commitment by institutions to invest in incubators and science parks
Promoting the region, developing an entrepreneurial environment and explain the market	Coordination between academic research, industry, investors and the London Authority to meet these objectives.
(iii) National policy	
Leverage national investment in life sciences	Coordinated approach between institutions
Improve patient care	Improve alignment between hospitals and other actors in translational research process

Funding

- £2.92m from the Higher Education Funding Council for England (HEFCE) which funds universities (teaching, research, and outreach).
- An additional £1.2m from the Mayor of London's Office

MedCity and Organisational Collaboration

MedCity Advisory Board

- senior professors from Oxford and Cambridge universities, from industry, medical charities and venture capitalists.
- investors, businesses, politics and entrepreneurs.

MedCity clients

- academics, entrepreneurs, scientists and other workers in the pharma, biotech, medtech and digital health industry, investors, funders

(Medcity Business Plan 2014-15).

Funding targets

- Year 3 2016/17 - a modest £50k
- Year 5 2018/19 is £485k) and may include subscription membership.
- Target for seed capital is £260k in year 2, rising to £760k in years 3 and 5.

MedCity Risk Assessment

Risk	Mitigating actions
Key stakeholders not committed at operational level to MedCity – academic and clinical staff not encouraged to collaborate across institutions, in-institutional competition	Early actions
Oxford & Cambridge AHSCs and GSE institutions do not join in	Senior engagement deployed to attract them in the first 3 months
Insufficient staff of suitable calibre appointed as embedded teams	Senior agreement to role descriptions
Market confusions: MedCity role unclear	Clearly articulated proposition and careful branding, close engagement..
Insufficient funding to deliver required outcomes fast enough	External fundraising from public and charity sources and from partners

Prospects for MedCity...?

- Will the top down strategy work?
 - Bottom-up? Organic growth?
 - London AHSCs have now agreed to partner with MedCity and join up their London Life Sciences strategy – providing the essential bottom up push.
- Will Oxford and Cambridge play ball?
- Financial commitment - inability or unwillingness to commit sufficient resources

Prospects for MedCity?

- **Political sustainability is in doubt.**
 - Boris Johnson ceased to be Mayor in May 2016
 - Position of Sadiq Khan on backing the project in order to leverage funds?
- **What about the education impact**
 - What is MedCity doing about training students to collaborate across disciplines as in California?