

UK universities interacting with industry

Bibliometric study of university-industry research collaboration
and cross-sectoral mobility of UK academic researchers

Robert Tijssen and Alfredo Yegros

CWTS, Leiden University, The Netherlands

Part 1:

Framing our study

General management issues of university executives

- **Are we fulfilling our mission and strategic objectives ?**
- **What are our main areas of expertise and strength ?**
- **Are we sufficiently competitive and innovative ?**
- **Can we improve our performance, visibility and income ?**
- **What is our added value to society and the (local) economy ?**

General management issues of university executives

- Are we fulfilling our mission and strategic objectives ?
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- What is our added value to society and the (local) economy ?
- How to deal with Brexit ?

Universities and the local economy #1: collaboration with R&D-intensive business sectors

Universities and their business sector partners ('industry') are at the heart of the UK science and innovation system

Many university-industry interactions (UIIs) start with, or are supported by, joint research between academic researchers and industry R&D staff employed by research-active business enterprises

Universities and the local economy #2: Staff recruitment and researcher mobility

Close personal relationships between academics and industry R&D staff may also arise from labour mobility of researchers (postdocs, researchers or professors) crossing over from academia to the corporate sector ... or from those with temporary or part time affiliations on either side

University-industry 'crossover' researchers are key contributors or linking pins in university-business research projects and joint R&D networks

Part 2:

Analytical Model and Empirical Data

University-Industry Interactions: collecting UII data

We examined recent UII patterns within UK research universities from two analytical perspectives:

- **university-industry research collaboration of academic researchers**
- **cross-sectoral mobility of academic researchers**

The empirical information was extracted from hundreds of thousands of research articles published in international scholarly and technical journals

University-Industry Co-authored Publication (UICP)

research publication with author affiliate addresses referring to a university and a firm

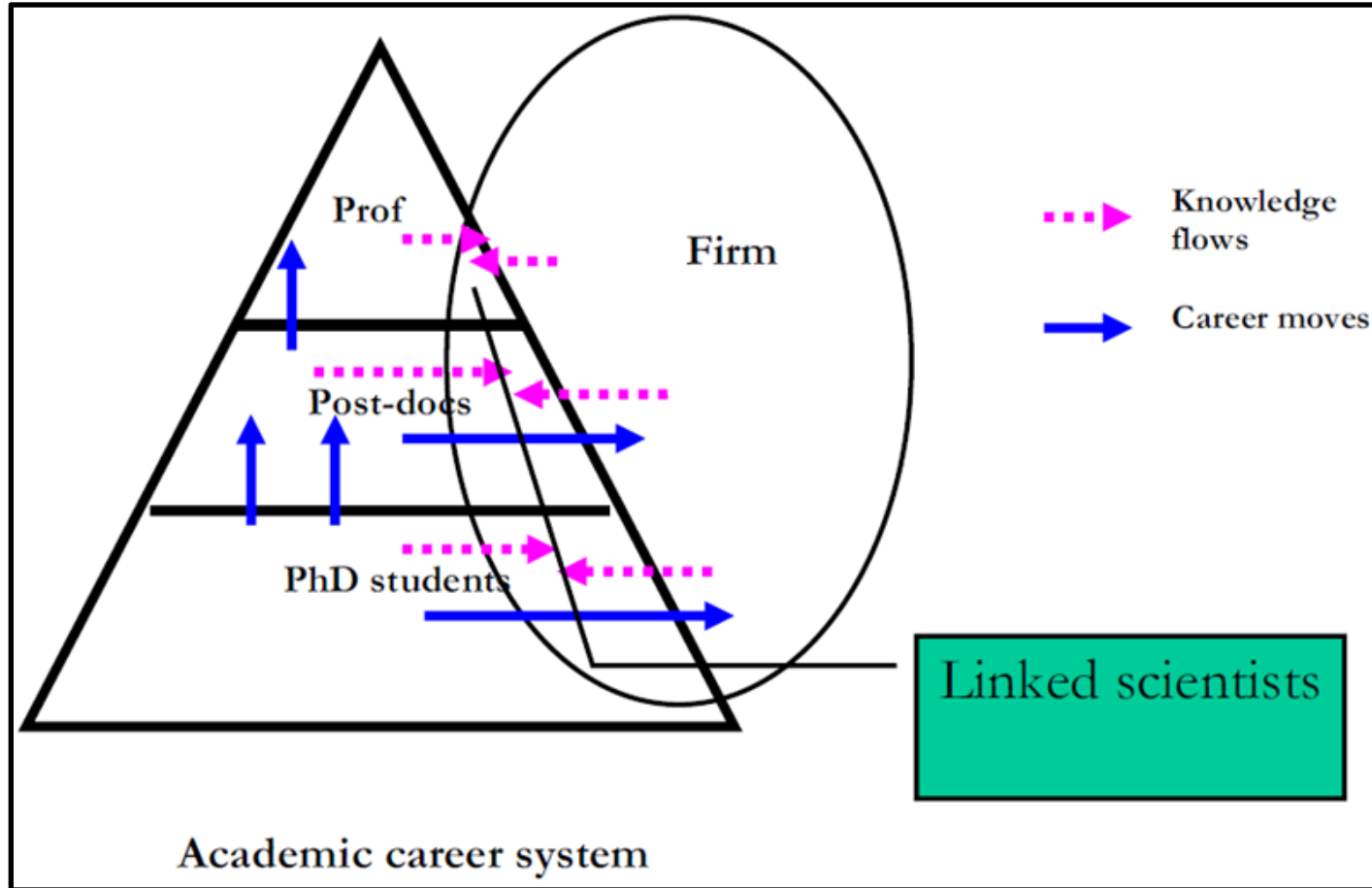
output of productive and successful partnerships with research-active companies

University-Industry Crossover Researcher (UICR)

individual who had/has a UK university affiliation and an affiliation in the business sector

result of labour mobility and recruitment of university researchers

University-Industry Interactions: collaboration, knowledge flows, academic careers and human resource mobility



Source: Adapted from Lam (2007)

Information sources and units of analysis

- **Web of Science database** of research publications (2009-2015)
- **Millions of publications** (co-)authored by UK researchers
- **Firms and industry-affiliated authors** are identified by CWTS search algorithms
- Comparative UICP and UICR statistical data on **47 research-active universities**

UICP profile of each university includes the distribution of industry partners across three geographical zones:

- Local UICPs (within the same UK region)
- Domestic UICPs (located elsewhere in the UK)
- Foreign UICPs (outside the UK)

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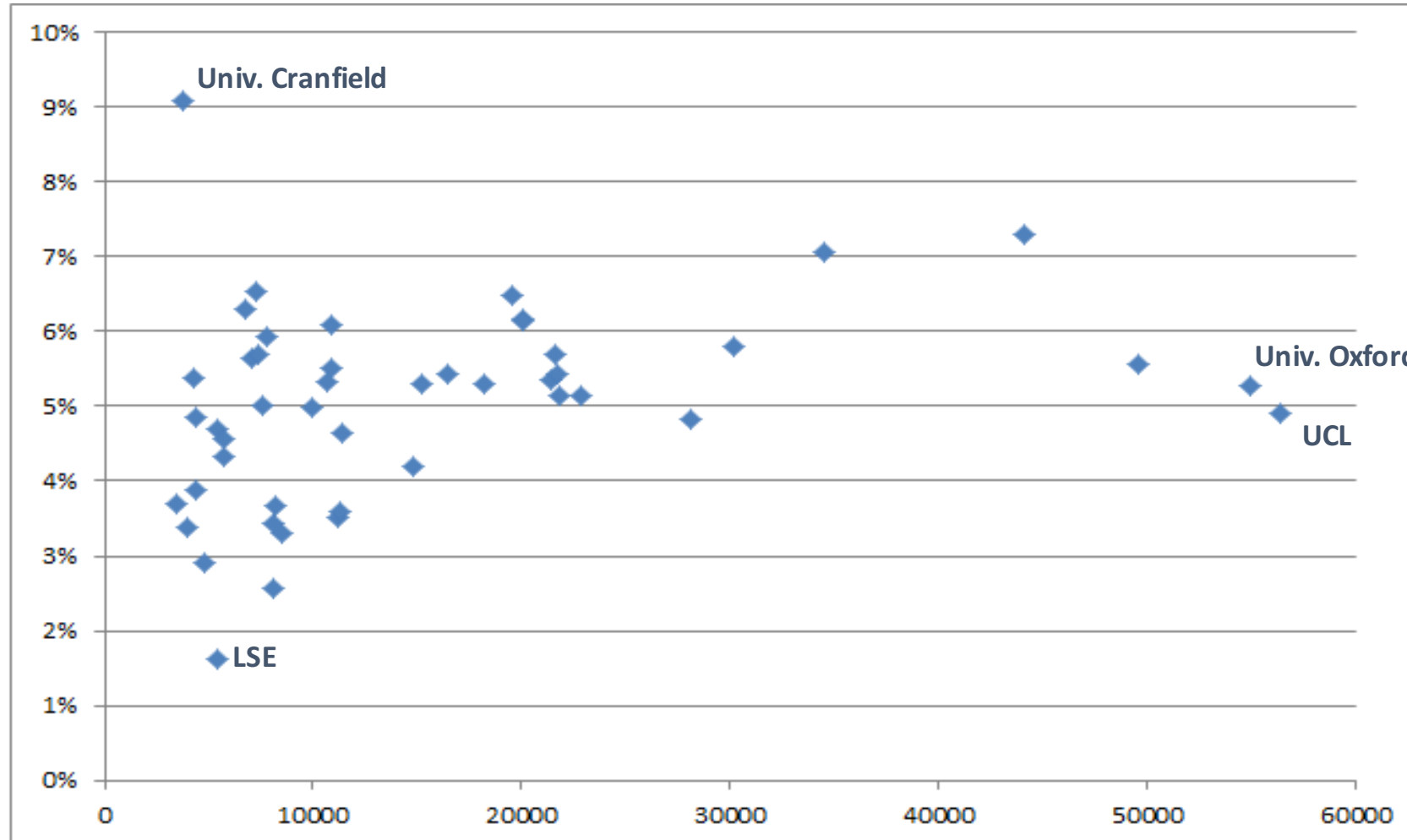
- Local UICPs (within the same UK region)
- Domestic UICPs (located elsewhere in the UK)
- Foreign UICPs (outside the UK)

... where the foreign UICP category is subdivided into:

- partner companies located in a EU member state
- other countries worldwide

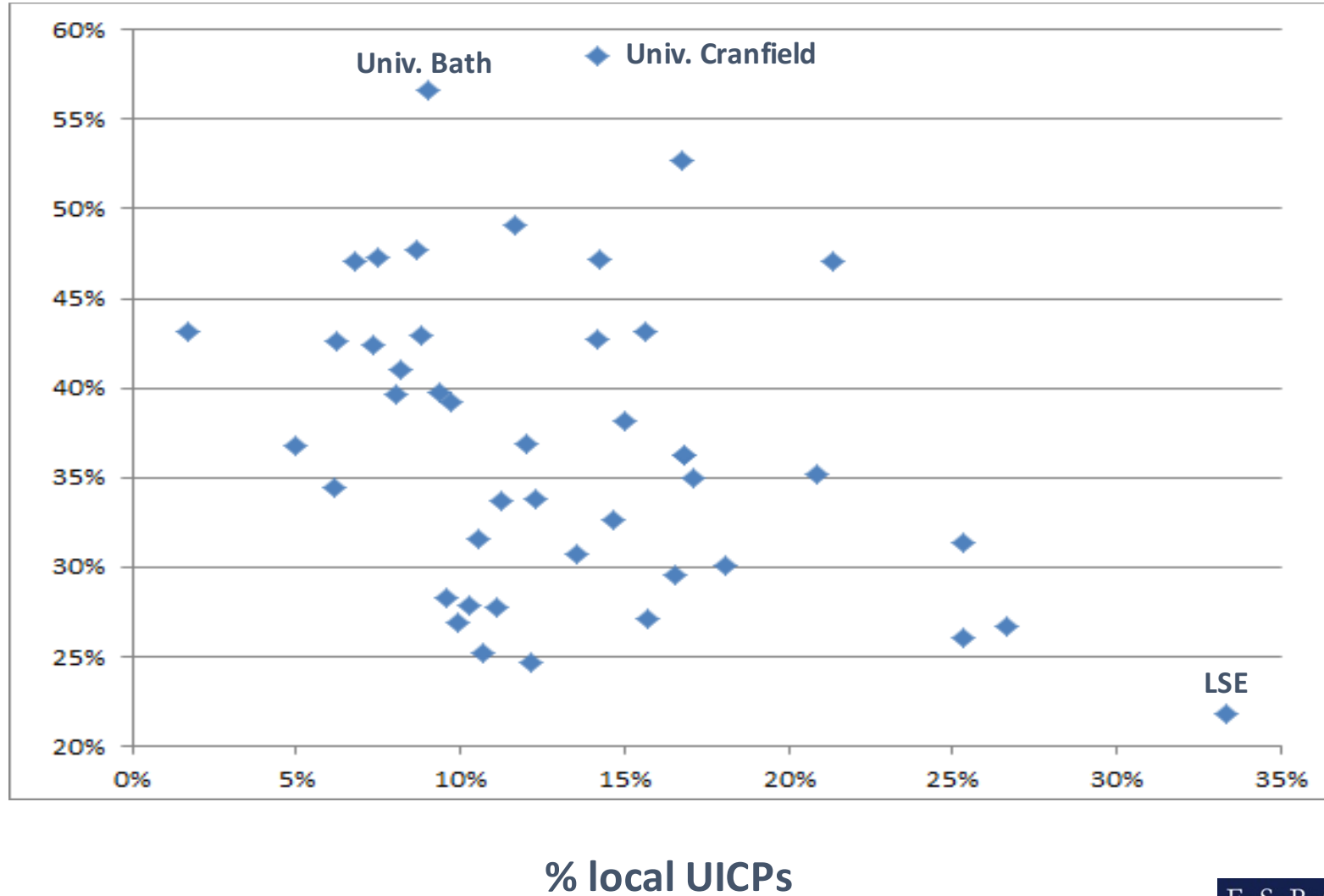
Research publication output and share of UICPs (47 UK universities)

% UICPs in publication output



Research publication output (2009-2015)

Domestic UICPs vs. Local UICPs (UK universities)

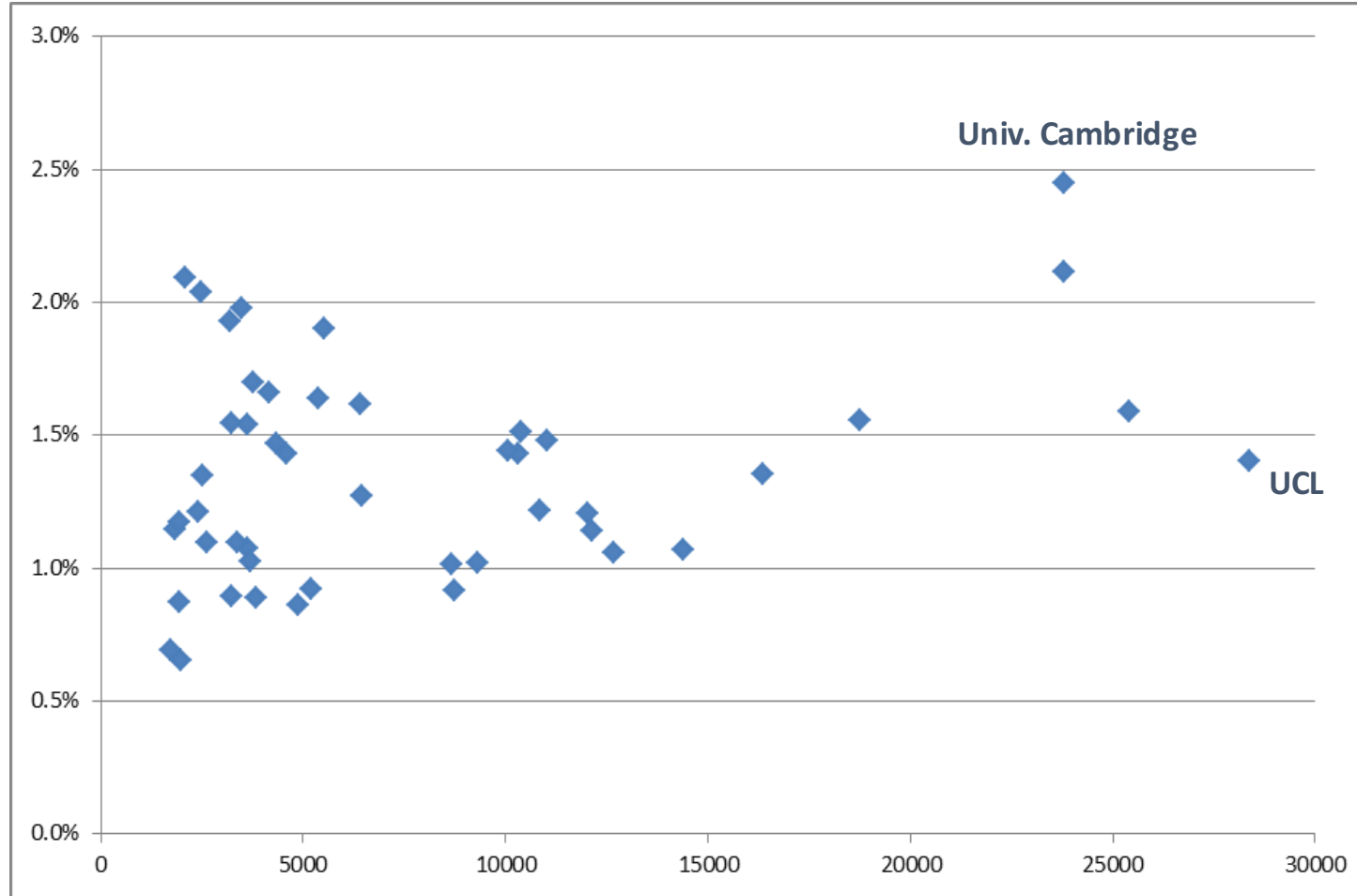


Top 10 UK universities by share of foreign UICPs

	Foreign UICPs (% of all UICPs)	Foreign UICPs (frequency range)
London School of Hygiene & Tropical Medicine	88%	251-500
University of Dundee	86%	251-500
King's College London	81%	1001-2500
University of Glasgow	80%	501-1000
Queen Mary University of London	79%	501-1000
University of Edinburgh	77%	1001-2500
University College London	77%	501-1000
University of Leicester	75%	251-500
London School of Economics and Political Science	75%	100-250
Imperial College London	72%	1001-2500

Total number of identified researchers and share of University-Industry Crossover Researchers (UICRs)

% UICRs in identified staff members



Staff members identified by bibliometric searches (2009-2015)

Further research in 2017

Online survey of selected UK-based researchers

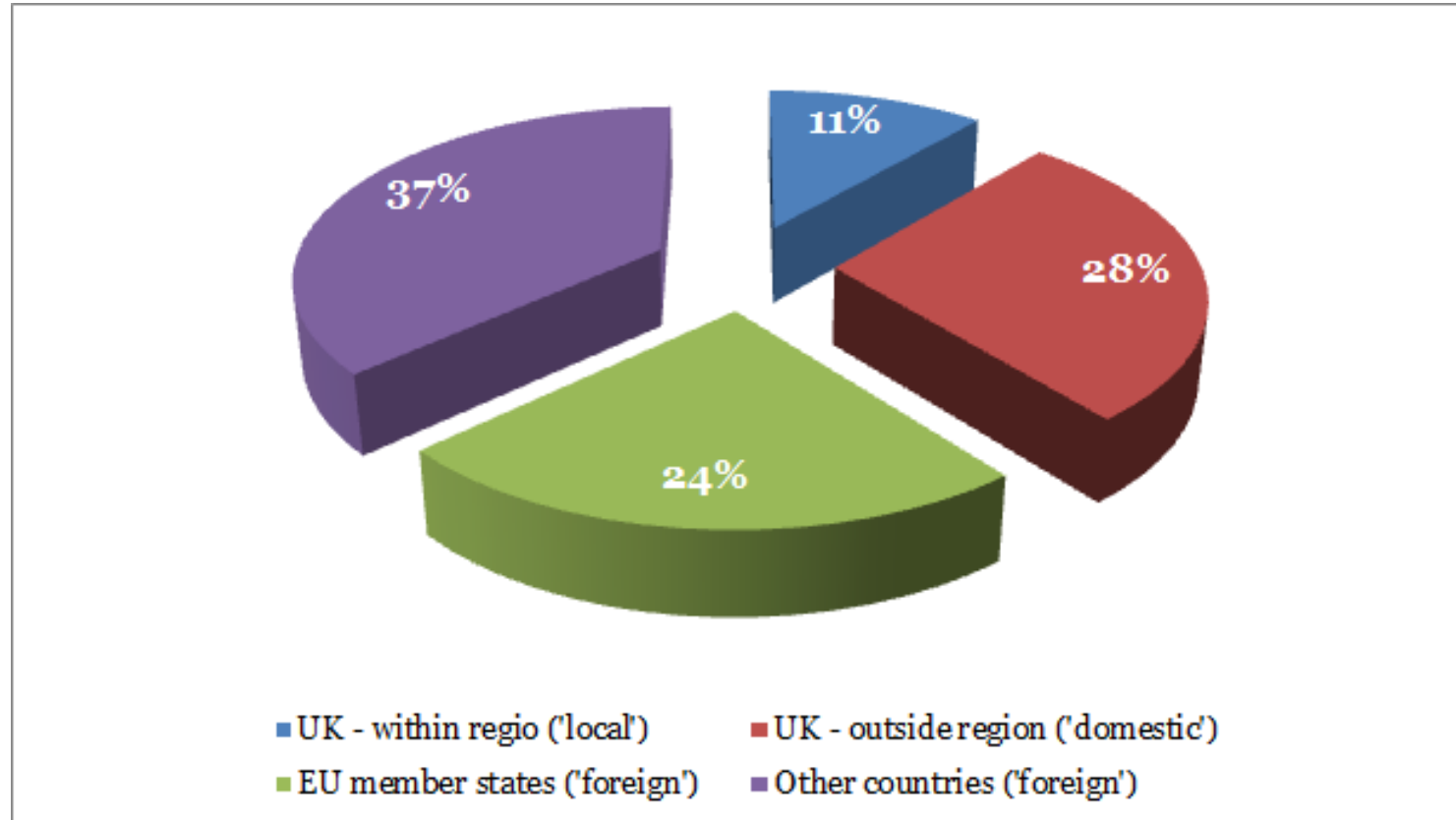
Collect information on: their Ull-related background, and opinions about Ull

Each targeted researcher will have a produced at least one UICP; focus on querying UICRs

Part 3:

Brexit related analysis

Distribution of partner firms in UICPs by geographical zone



Top 10 UK universities by share of foreign UICPs

	Foreign UICPs (% of all UICPs)	EU foreign-UICPs (% of all foreign UICPs)
London School of Hygiene & Tropical Medicine	88%	40%
University of Dundee	86%	49%
King's College London	81%	44%
University of Glasgow	80%	45%
Queen Mary University of London	79%	42%
University of Edinburgh	77%	38%
University College London	77%	39%
University of Leicester	75%	46%
London School of Economics and Political Science	75%	52%
Imperial College London	72%	42%

Top 10 UK universities by share of UICRs involving 'foreign' firms located outside the UK

	Foreign UICRs (% of all UICRs)	EU foreign UICRs (% of foreign UICRs)
London School of Hygiene & Tropical Medicine	60	30
University of Dundee	59	15
London School of Economics and Political Science	57	42
University of St Andrews	54	50
University of Kent	52	25
University of Edinburgh	51	41
Lancaster University	49	21
University of Leicester	48	39
University of Glasgow	48	56
University of Oxford	48	39

Collaboration and mobility data combined

Eight large UK universities account for the large majority of
UICPs and UICRs in 2009-2015

Each of these eight universities had at least 400 EU-UICPs
and 30 EU-UICRs

For more information:

“UK universities interacting with industry: patterns of research collaboration and inter-sectoral mobility of academic researchers”

CGHE Working Paper no. 14

Available on the CGHE website: www.researchcghe.org

Thank you
for your attention

tijssen@cwts.leidenuniv.nl

a.yegros@cwts.leidenuniv.nl