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Collaboration by the Numbers:

UK PSRE's in the Innovation Ecosystem

Paola Barr and Lesley Thompson
Elsevier

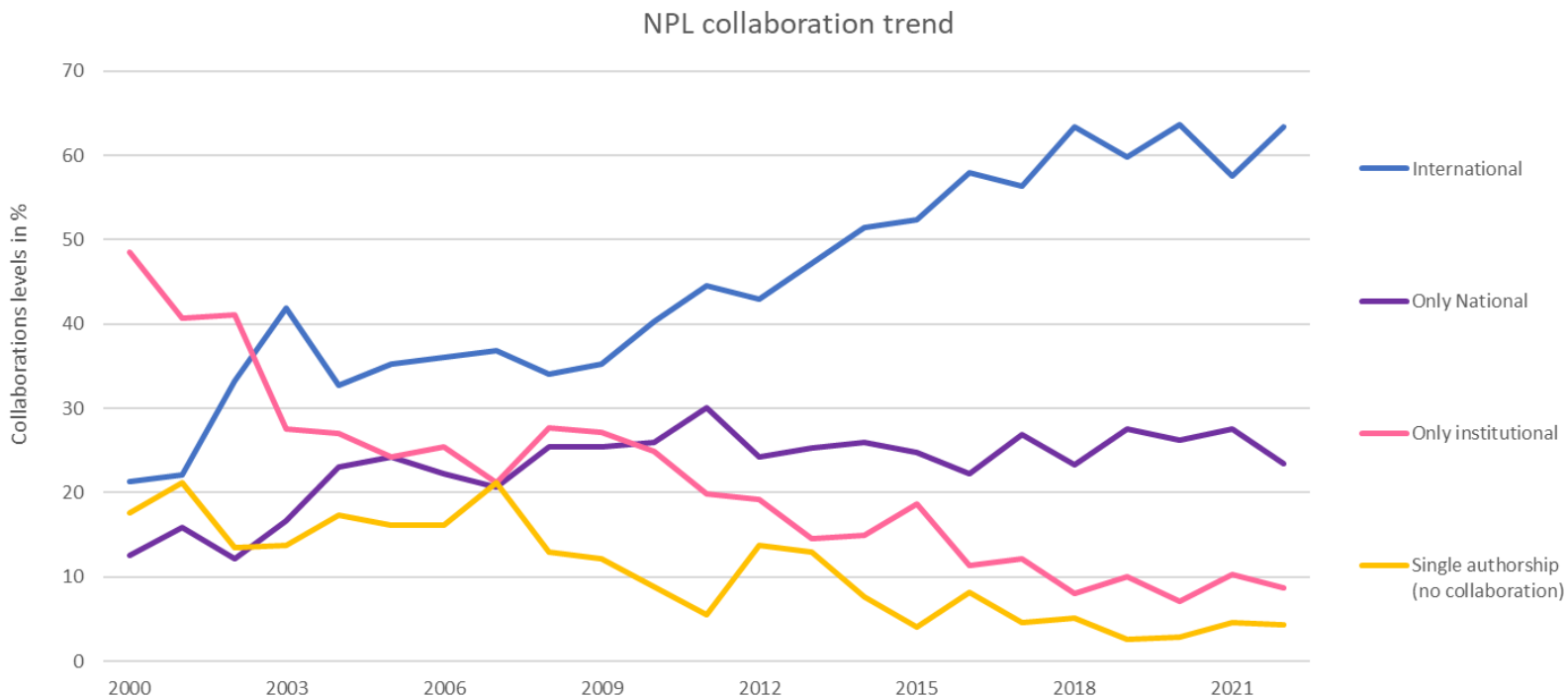


Introduction

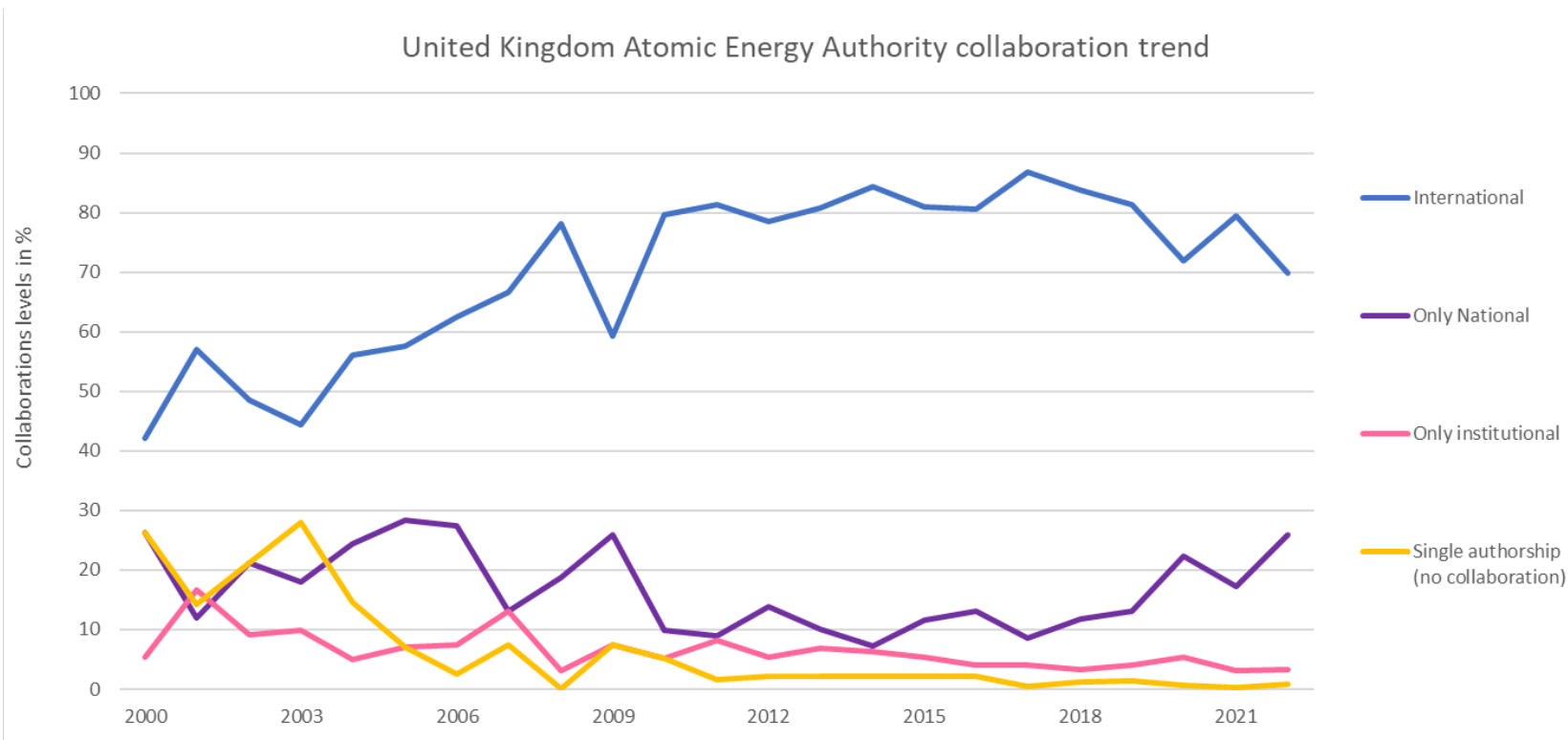


- PSRE's ?- makes comparison complex
- Focus on NPL, UKAEA-Culham & National Metrology Institutes
- Data will come from publications, patents and Research Fish
- Will cover collaboration insights

NPL collaboration over time- from publication data

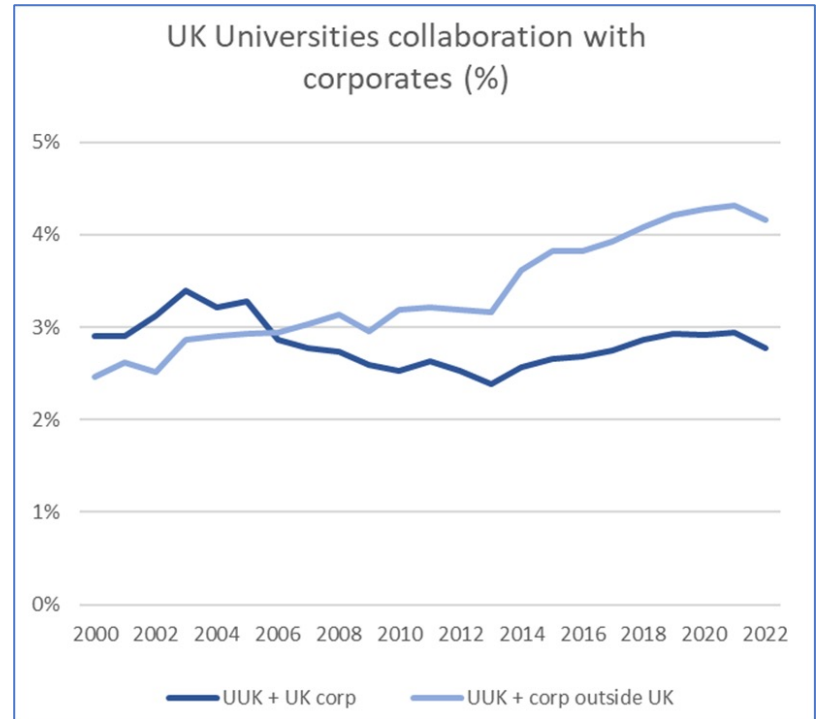
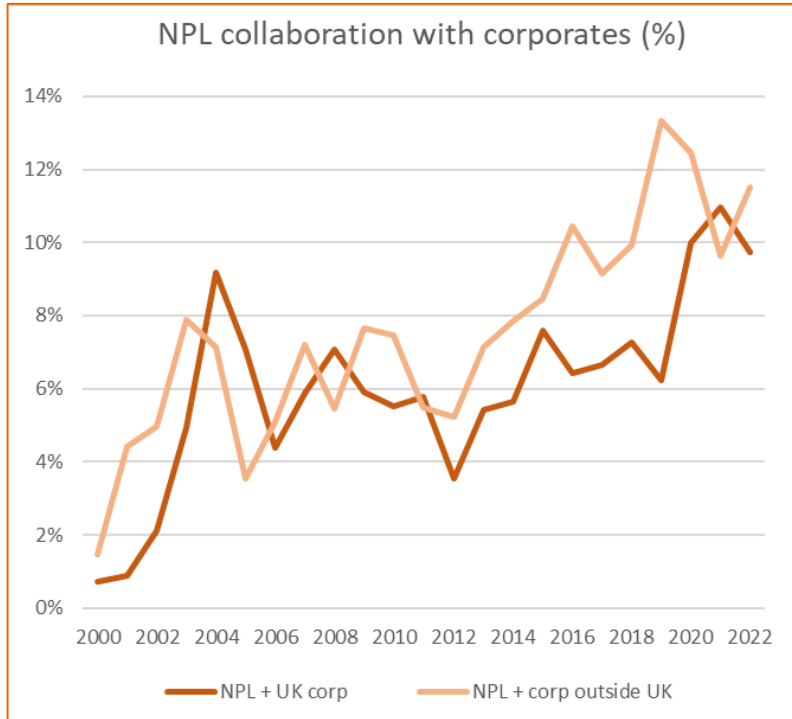


UKAEA Culham collaboration over time- from publication data



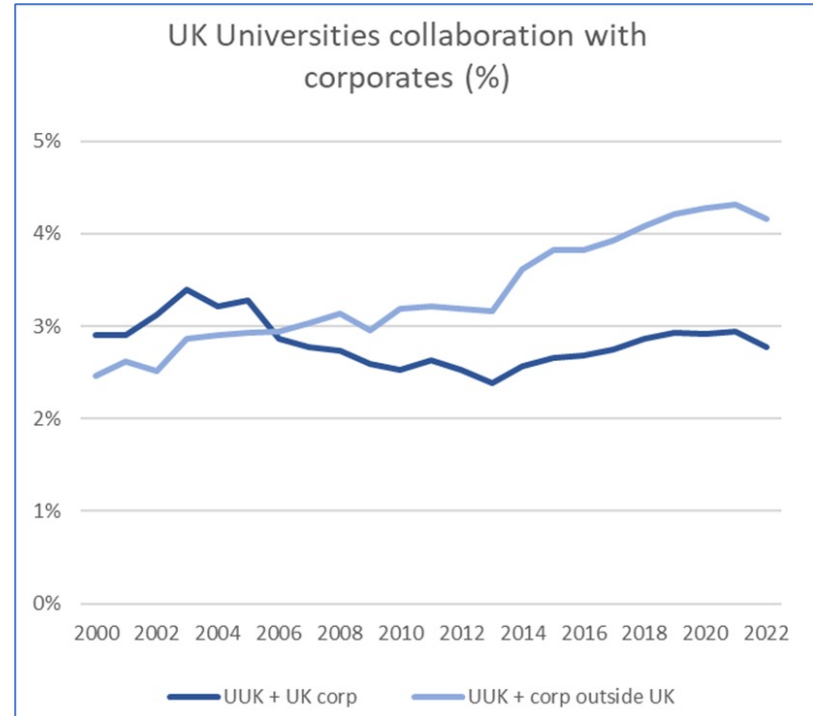
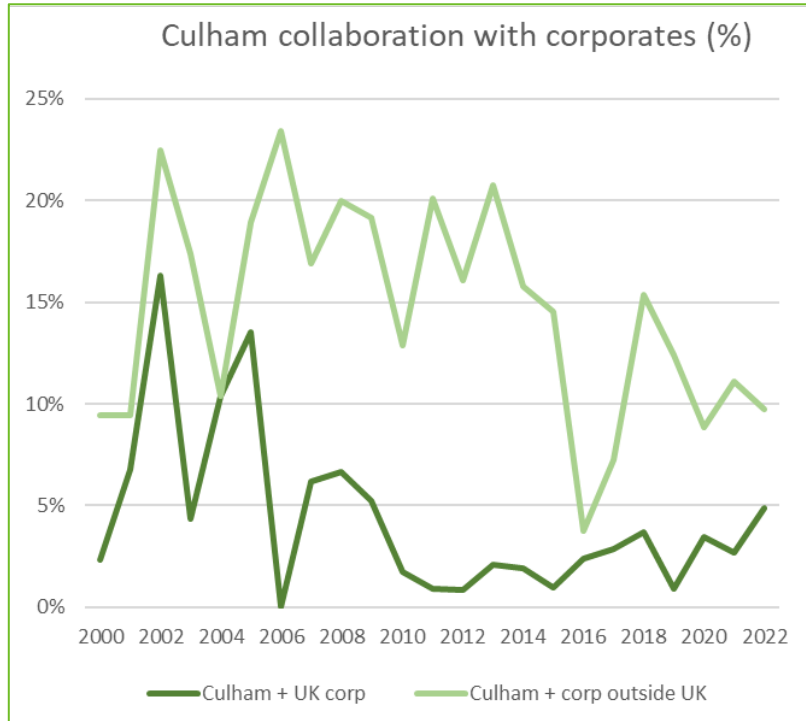
NPL compared to UK Universities

Collaboration with Corporates- UK, non-UK



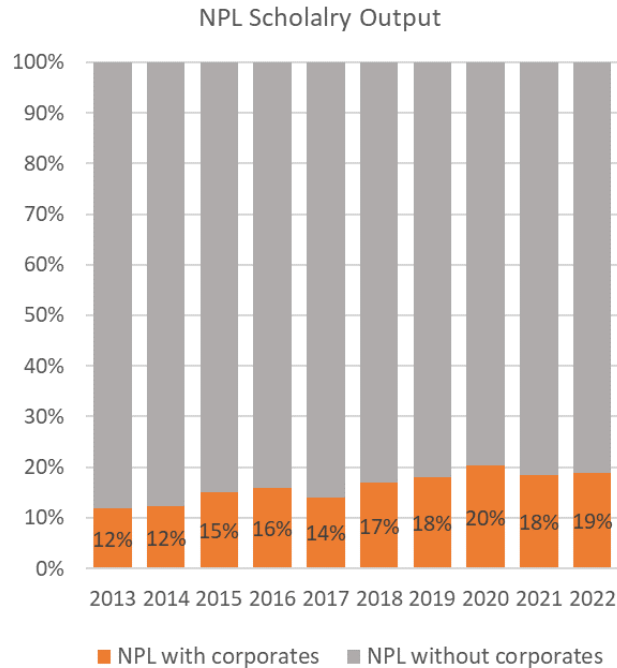
UKAEA Culham compared to UK Universities

Collaboration with Corporates- UK, non-UK

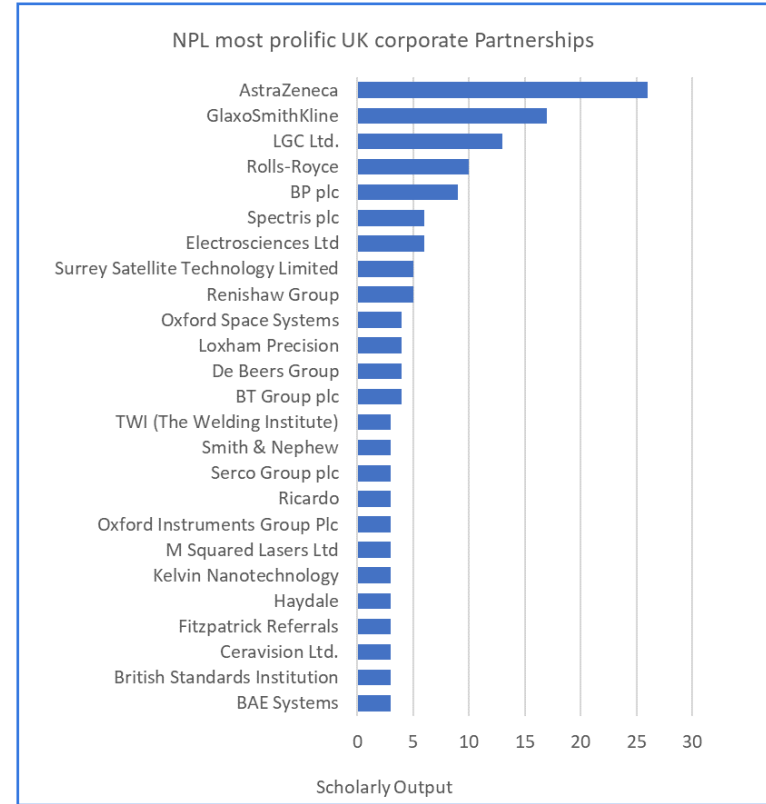
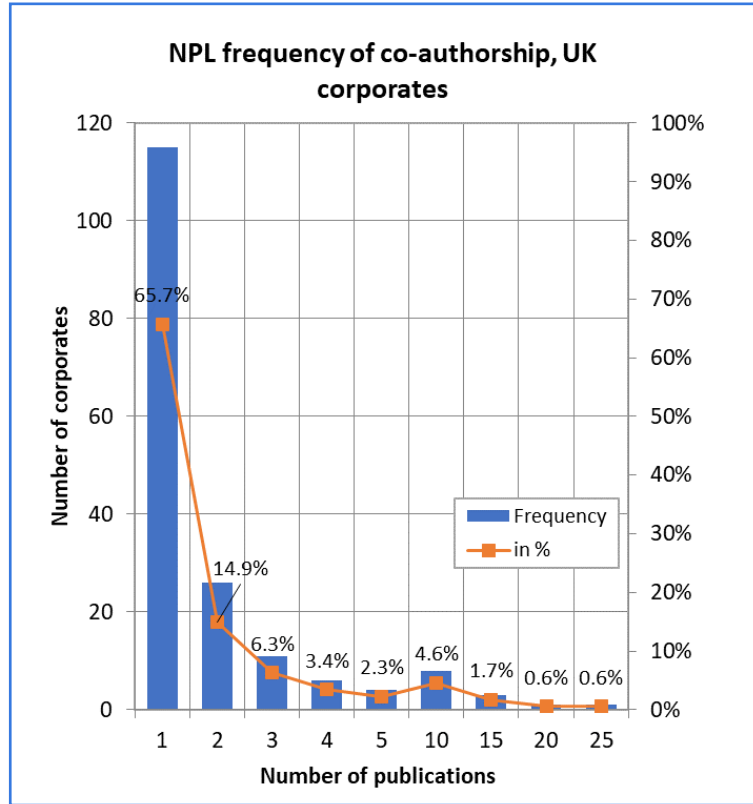


NPL co-authorship with corporates

175 different corporates in the UK and 260 outside the UK

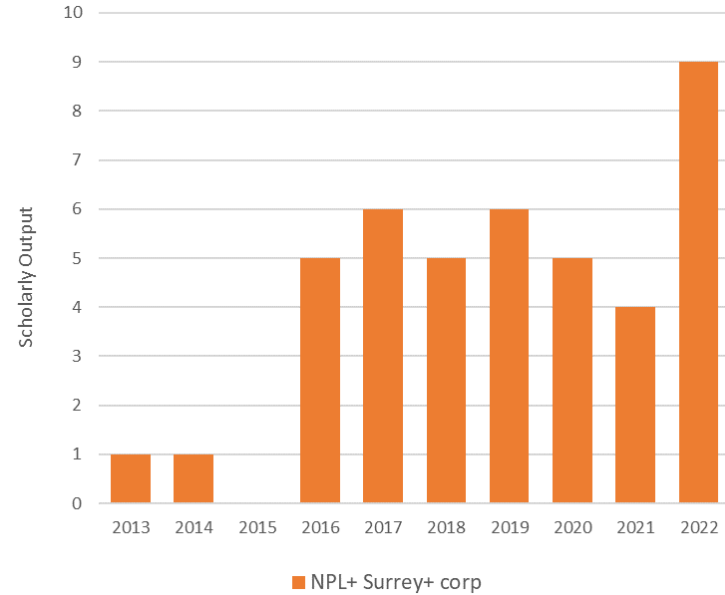
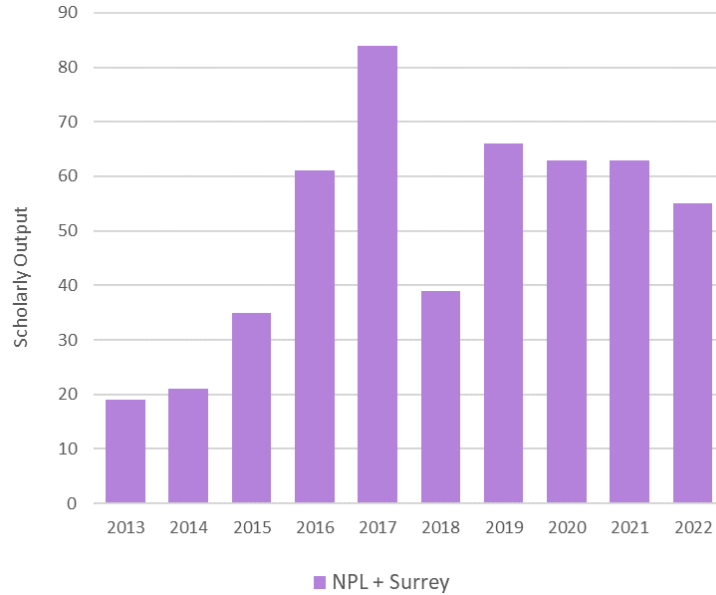


NPL co-authorship with corporates (2013-2022 publications)



NPL with Surrey Co-authorship

Increasing involvement also with the industry



Corporates with more than one academic paper with NPL+Surrey in the last 10 years

AstraZeneca, MedAustron, Tata Group India

Fitzpatrick Referrals, Fluxim AG, Keysight Technologies

Brockmann Counsult GmbH, Electrosiences Ltd, General Electric, Rolls-Royce, ULVAC Inc

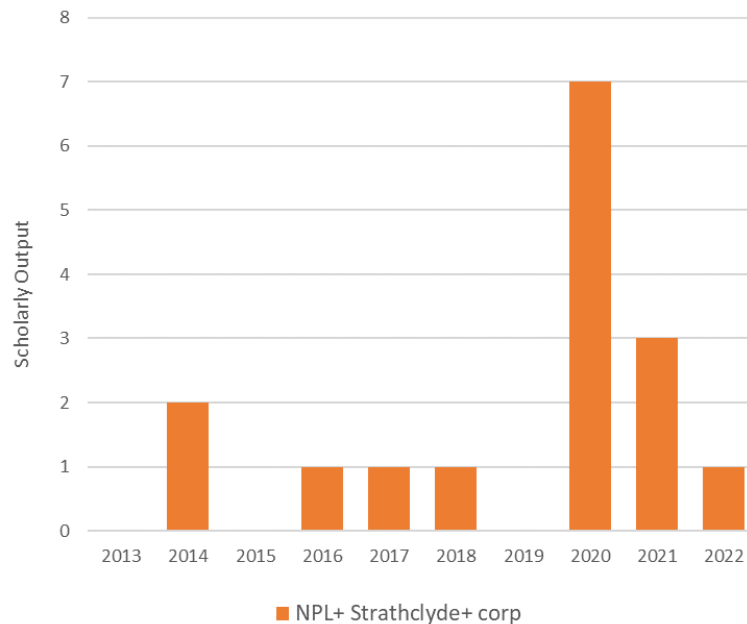
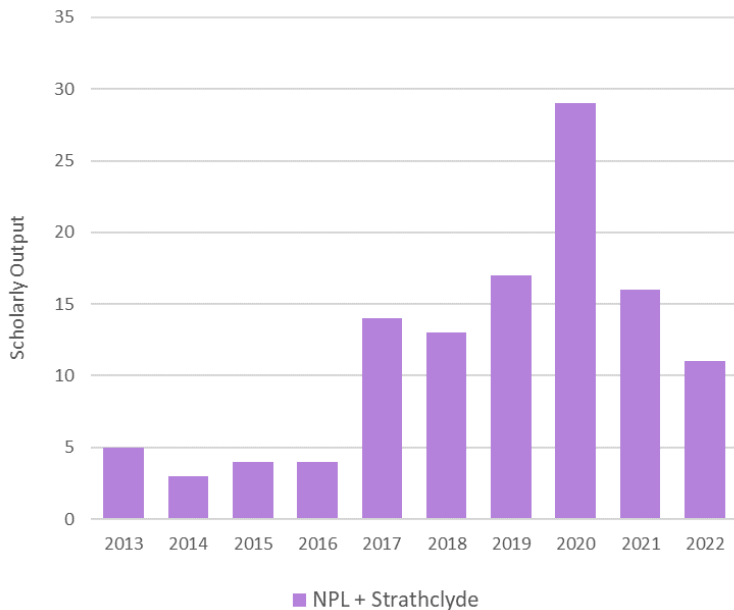
4 publications

3 publications

2 publications

NPL with Strathclyde Co-authorship

Increasing involvement also with the industry

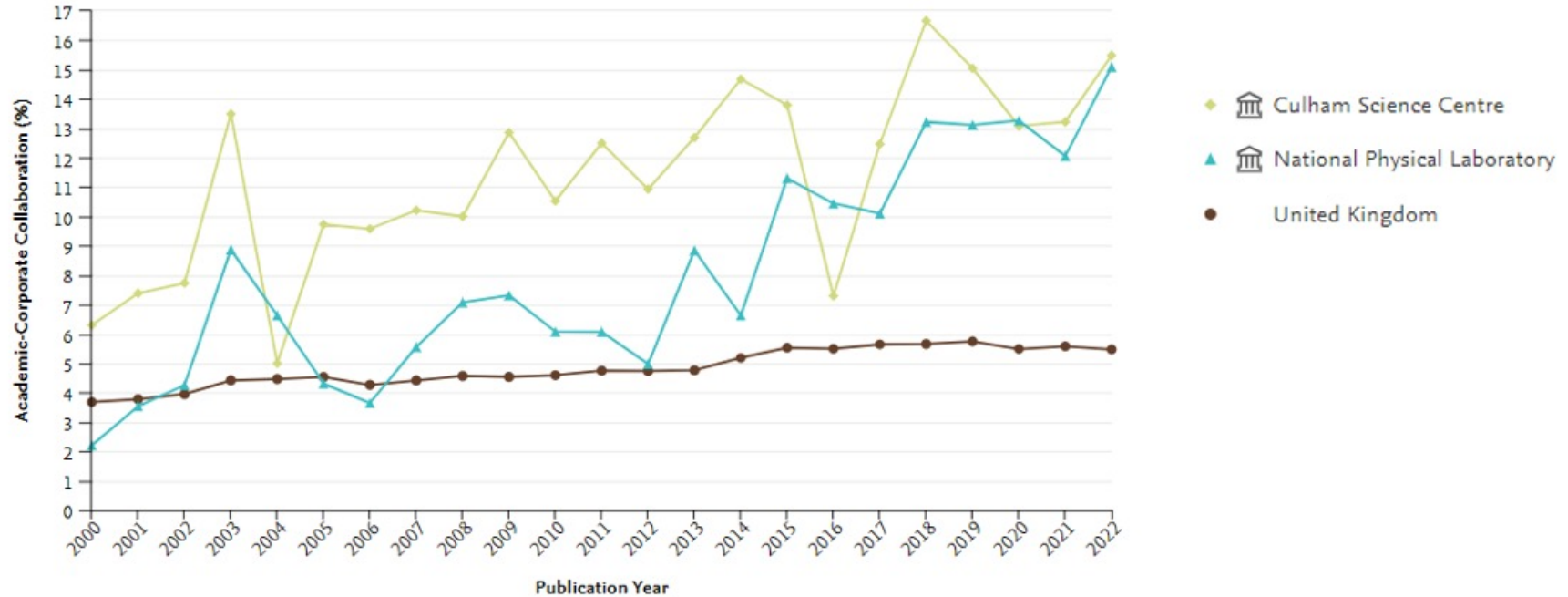


Corporates with more than one academic paper with NPL + Strathclyde in the last 10 years

Bruker Corporation; CSEM SA; M Squared Lasers Ltd; Synaptec Ltd.; Teledyne e2v Limited

2 publications

The trend of Academic-Corporate collaboration at *NPL*, *UKAEA Culham* and the UK



And another perspective

Research Fish-Those awarded grant by UKRI, Wellcome, CRUK and other funders in the UK are asked to complete returns on the outcomes and impact of their funded work to evidence impact on the RF Platform.

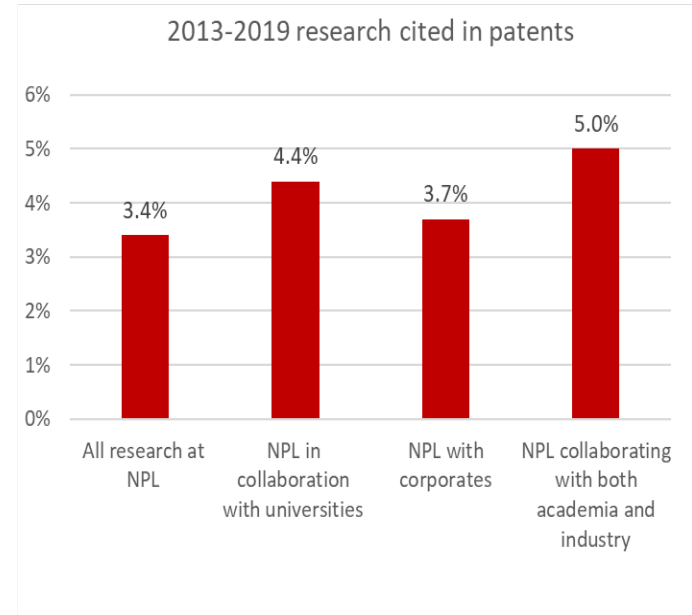
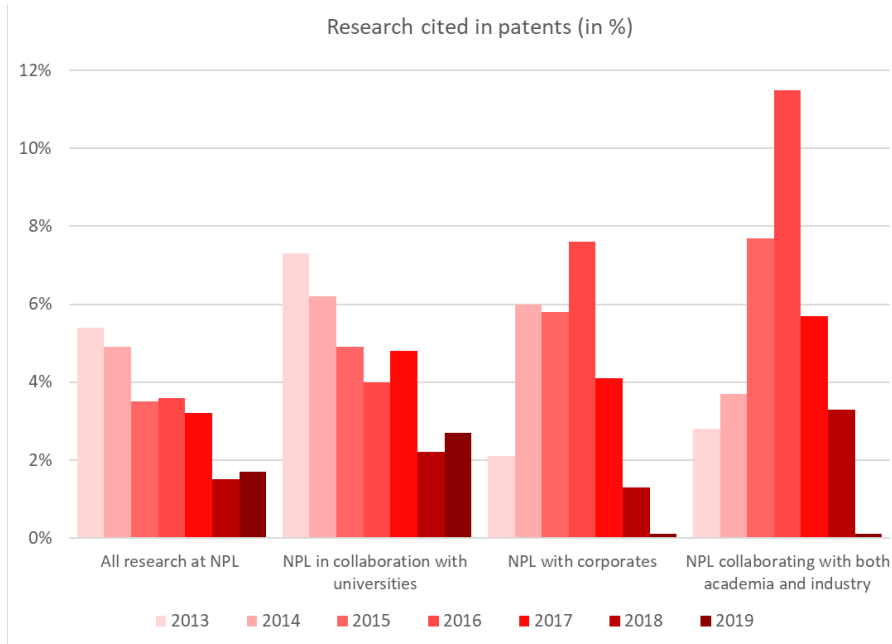
In Research Fish:

- 150 awards explicitly involved NPL
- There are more than 500 declared collaborations with NPL
- 60 instances of follow-on funding involving NPL collaborations
- 50 awards reported use of NPL Facilities

These data confirm publication data observations, plus.

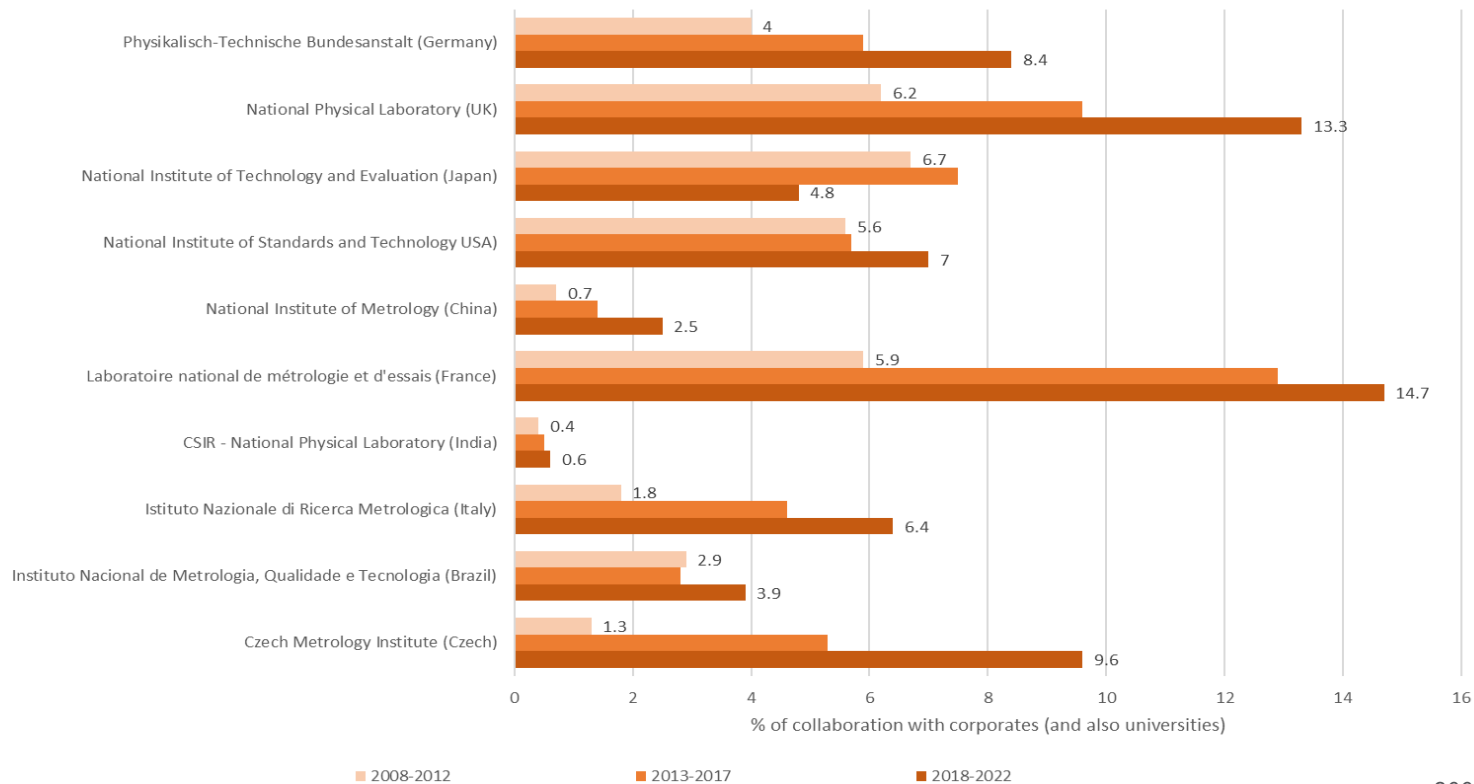
NPL Patent Citations

when NPL collaborates with both universities and the industry, research is most highly cited in patents



NPL and other National Measurement Laboratories

Academic & Corporate Collaboration



To conclude

- This is a partial picture, but reveals some key trends
- *NPL* and *UKAEA Culham* plus *National Measurement Labs* increasingly collaborate with Universities and Corporates
- This collaboration is national and international
- And.....

A screenshot of the SCK CEN Publications website. The header is purple with the text "sck cen Publications". Below the header, a white banner reads "Welcome to SCK CEN's public Institutional Repository". A search bar is present with a magnifying glass icon and the text "Advanced search". Below the search bar, there are three icons: a person icon labeled "Profiles 314", a house icon labeled "Research units 26", and a book icon labeled "Research output 650". At the bottom, a paragraph of text describes the Institutional Repository as an online source for collecting, preserving, and disseminating the intellectual output of SCK CEN.

sck cen
Publications

Welcome to SCK CEN's public Institutional Repository

Advanced search

Profiles 314 Research units 26 Research output 650

The Institutional Repository is an online source for collecting, preserving, and disseminating the intellectual output of SCK CEN. It provides access to research articles, public reports, student theses and conference proceedings produced by SCK CEN staff and students. For specific requests, please contact us at publications@sckcen.be.

Collaborations within the past 5 years.


<https://researchportal.sckcen.be/>



Thanks

For further information please contact
L.Thompson@ Elsevier.com





Additional data not presented at
UIDP Meeting



Published Academic Research at the National Physical Laboratory

4,554 publications 2013-2022

FWCI 1.16

4,554 ▼

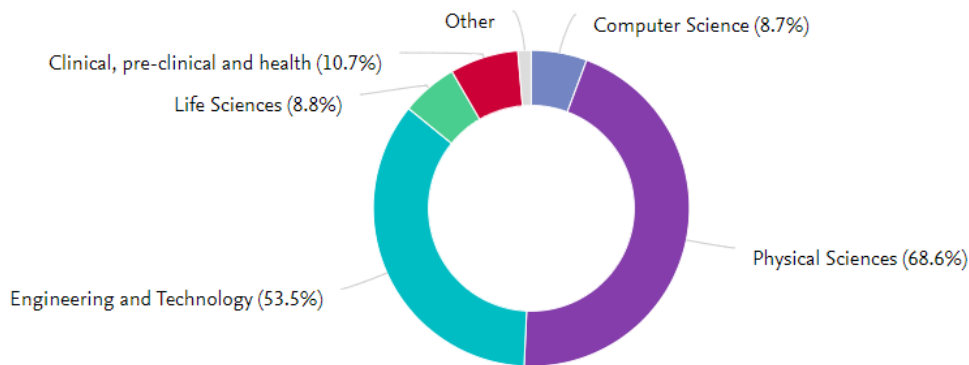
Scholarly Output ⓘ

52.4% All Open Access

1.16

Field-Weighted Citation Impact

Publication share by Subject Area



Topic	Scholarly Output ↓	Publication Share	Field-Weighted Citation Impact
Calibration; Thermocouples; Fixed Point T.10250	128	17.39% ▼	1.01
Laser; Optical Lattices; Atomic Clocks T.1323	84	2.88% ▼	2.30
Secondary Ion Mass Spectrometry; Tof-Sims; Secondary Emission T.2799	64	6.16% ▲	1.06
Ionization Chambers; Photon Beams; Dosimetry T.5441	54	4.23% ▲	1.41
Microresonators; Solitons; Comb and Wattles T.9544	49	1.20% ▲	1.39

NPL Collaboration with Universities

NPL Academic collaborators	Country	with or without corporates				with also corporates			without corporates		
		Scholarly Output	FWCI	International Collaboration (%)	Academic-Corporate Collaboration (%)	Scholarly Output	FWCI	International Collaboration (%)	Scholarly Output	FWCI	International Collaboration (%)
University of Surrey	UK	507	1.11	58.6	8.3	42	1.49	66.7	465	1.08	57.8
University College London	UK	373	1.52	52.5	18.2	68	1.63	88.2	305	1.49	44.6
Imperial College London	UK	311	1.44	47.6	17.4	54	1.88	72.2	257	1.34	42.4
University of Cambridge	UK	146	1.61	55.5	18.5	27	1.38	88.9	119	1.66	47.9
University of Oxford	UK	141	1.85	61	17.7	25	2.22	80	116	1.77	56.9
King's College London	UK	136	1.49	46.3	13.2	18	2.11	94.4	118	1.4	39
University of Manchester	UK	134	1.41	64.2	14.9	20	1.13	70	114	1.45	63.2
Université Paris-Saclay	France	125	1.49	100	10.4	13	2.11	100	112	1.41	100
Royal Holloway University of London	UK	123	0.94	86.2	8.1	10	1.23	100	113	0.92	85
University of Strathclyde	UK	121	1.31	46.3	15.7	19	0.92	68.4	102	1.38	42.2
University of Edinburgh	UK	109	1.38	74.3	17.4	19	1.28	94.7	90	1.39	70
University of Nottingham	UK	103	1.56	47.6	26.2	27	1.68	59.3	76	1.52	43.4
University of Birmingham	UK	102	1.6	56.9	18.6	19	1.64	68.4	83	1.59	54.2
University of Glasgow	UK	94	1.45	57.4	38.3	36	1.57	75	58	1.37	46.6
University of Brighton	UK	89	1.2	92.1	0	0			89	1.2	92.1
Chalmers University of Technology	Sweden	85	1.17	100	11.8	10	1.50	100	75	1.13	100
University of Liverpool	UK	76	1.69	72.4	17.1	13	2.83	84.6	63	1.46	69.8
Heriot-Watt University	UK	72	0.97	56.9	12.5	9	1.00	100	63	0.97	50.8
KU Leuven	Belgium	68	1.31	100	16.2	11	2.13	100	57	1.15	100
The University of Tokyo	Japan	68	1.85	100	8.8	6	6.88	100	62	1.36	100

NPL Collaboration with Corporates



NPL Corporate collaborators	with or without universities			with also universities		without universities	
	Scholarly Output	FWCI	Academic-Corporate Collaboration (%)	Scholarly Output	FWCI	Scholarly Output	FWCI
MedAustron	76	1.55	93.4	71	1.54	5	1.66
VTT Technical Research Centre of Finland Ltd.	51	0.97	80.4	41	1.11	10	0.41
AstraZeneca	26	1.6	92.3	24	1.64	2	1.13
Nippon Telegraph & Telephone	18	1.14	72.2	13	1.23	5	0.88
GlaxoSmithKline	17	2.21	82.4	14	2.59	3	0.4
IBM	17	1.07	100	17	1.17	0	
DFM - Dansk Fundamental Metrologi A/S	13	1.14	84.6	11	1.33	2	0.13
LGC Ltd.	13	0.97	76.9	10	1.03	3	0.76
Menlo Systems	13	1.03	100	13	1.03	0	
TopGaN Ltd	13	0.62	100	13	0.62	0	
Danish Technological Institute	11	1.01	100	11	1.01	0	
Thales	11	1.38	90.9	10	1.38	1	1.32
Rolls-Royce	10	1.23	100	10	1.23	0	
BP plc	9	0.39	11.1	1		8	0.37
Keysight Technologies	9	0.58	77.8	7	0.68	2	0.24
Thermo Fisher Scientific, Inc.	9	1.93	77.8	7	2.39	2	0.34
Shimadzu Corporation	8	1.03	75	6	1.28	2	0.28
SINTEF	8	0.62	62.5	5	0.95	3	0.06
Air Liquide S.A.	7	0.83	42.9	3		4	0.45