

**Fifth Annual Survey of Knowledge Transfer
Activities in
Public Sector Research Establishments**

***Report to the Department for Business
Innovation & Skills***

**Final Report
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Fifth Annual Survey of Knowledge Transfer Activities in Public Sector Research Establishments

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1 Introduction

This report presents the results of the fifth (2007/08) annual survey of knowledge transfer activities in Public Sector Research Establishments (PSREs). It is based on the results of a questionnaire circulated to all PSREs and provides both numerical data and more qualitative indicators of knowledge transfer activities for the 2007/08 financial year.

The survey was designed and managed by the Department for Business Innovation & Skills (BIS).

In conformance with previous years, this report is structured in three further sections as follows

- **Section 2** sets out background information on the questionnaire design and administration, the target population and the response rates obtained
- **Section 3** presents findings on a number of key performance indicators for knowledge transfer, developed to permit comparison with data gathered through the annual higher education-business and community interaction survey (HE-BCI). Comparisons are also made with values obtained for the performance indicators in PSRE surveys carried out in previous years
- **Section 4** presents findings for all the other main sections of the questionnaire

The questionnaire can be found in **Appendix A** and a list of the responding organisations is given in **Appendix B**.

Partnerships UK would like to express its gratitude to all organisations and individuals that have provided data and information for this year's survey.

2 Background to the Fifth Annual Survey

2.1 PSREs and Knowledge Transfer

2.1.1 PSREs

PSREs are a diverse collection of public bodies carrying out research. This research supports a wide range of Government objectives, including informing Government policy making, statutory and regulatory functions and providing a national strategic resource in key areas of scientific research.

The PSREs covered by this exercise have been classified under four categories:

- 1 **Cultural Institutions** comprise art galleries, museums, and arts and heritage organisations.
- 2 **NHS Regions** information was provided by the NHS Innovation Hubs established in the English regions and devolved administrations.
- 3 **Departmental Research Bodies** represent **all other Departmental** PSREs not covered by the first two categories.
- 4 **Research Council Headquarters & Institutes.** The headquarters operations are responsible for administration and management of research funding and as a general rule do not themselves carry out research. The institutes (also known as centres / units) are the main research bodies performing intramural research on behalf of the parent Councils. They may either be 'owned' by the parent Research Council, receiving the great majority of their income from that source, or they may have a more distant relationship, being treated as 'centres of excellence' and receiving a block grant representing only a minority of their overall research funding.

2.1.2 Knowledge Transfer

There are a variety of PSRE 'knowledge transfer' activities. Free dissemination of research outputs tends to be the primary means of knowledge transfer, with benefits accruing to industry and wider society more generally, rather than to specific businesses. Other routes include research collaborations and contract research on behalf of industry, the licensing of technology to business users, the sale of services, data and software, and the formation of joint ventures and spin-off companies.

As part of the *Science and Innovation Investment Framework 2004-2014*, the Government established a basket of indicators to measure the responsiveness of the research base to the needs of the economy and public sector. These are being used to track performance over time and will allow cross-comparison with data emerging from the HEI sector as a result of the annual higher education-business and community interaction survey (HE-BCI).

The eight core indicators that are relevant to PSREs are:

- (1) Business representatives on governing bodies
- (2) Full time equivalent staff employed in commercialisation / industrial liaison offices
- (3) Number of patent applications
- (4) Number of patents granted
- (5) Number of licensing agreements
- (6) Income from IP licensing
- (7) Number of spin-offs
- (8) Income from business consultancy

Individual indicators may vary in importance from one PSRE to another.

Although the survey focuses on these indicators, it is important to recognise that the PSREs also have a wider impact through, for example, contributing to the development of government policy and in providing advice to businesses and other organisations. Therefore, in addition to these indicators, this survey has included a number of other questions which taken together are intended to provide a more comprehensive picture of PSRE KT activities.

2.2 Survey Design and Administration

2.2.1 Survey Design

The questionnaire for the current survey was largely based on the one used in the previous year. See **Appendix A**.

2.2.2 Survey Administration

Partnerships UK was commissioned by DIUS (now BIS) to carry out the following services as part of the fifth annual survey:

- Issue the survey to PSREs, dealing with enquiries and encouraging returns
- Verify data received in order to ensure its integrity
- Analyse submitted responses
- Provide a report setting out the survey results, including performance against the eight Science and Innovation Framework indicators

The survey has, in previous years, been carried out by Technopolis Ltd.

2.3 Response Rates

138 PSREs were identified as being in scope for the fifth survey. As was the case in previous years, some respondents arranged to prepare a 'joint' submission with data covering more than one PSRE. This most commonly happened with research councils and their institutes, specifically the Medical Research Council (MRC) arranged for MRC Technology to provide a consolidated response covering all 53 MRC institutes / units plus the headquarters operation (54 PSREs)

Table 1 provides a breakdown of the response rates by type.

Table 1 Survey response rates

Type of PSRE	Number of PSREs in scope	Number of PSREs responding	Response rate
Cultural Institutions	18	12	67%
Departmental Research Bodies	22	18	82%
NHS Regions	13	11	85%
Research Council HQs & Institutes	85	77	91%
Total	138	118	86%

2.4 Data Analysis

The completed questionnaires were compared against previous returns in order to identify variations requiring clarification. Anomalies were discussed with the concerned PSREs and where necessary corrections incorporated.

3 Science and Innovation Framework Indicators

As part of the *Science and Innovation Investment Framework 2004-2014*, the Government has established a basket of indicators to measure the responsiveness of the research base to the needs of the economy and public sector.

Table 2 below lists the eight indicators and presents two figures from the current (2007-8) survey for each: first, a 'raw' figure showing the sum of values supplied to us by the responding PSREs, and secondly a 'grossed-up' figure for the indicator to take account of missing values to compensate for the PSREs who did not respond. The latter, unlike previous surveys, does not assume that organisations that have provided a response are representative of all organisations in the particular group. Various alternate sources – for instance -annual reports – have been referenced to provide an improved estimate.

Also included in Table 2 (final column) are data taken from the most recent higher education-business and community interaction survey (HE-BCI), allowing some PSRE/HEI comparisons.

Table 2 Performance Indicators

	PSRE 'raw' data 2007-8	PSRE 'grossed-up' values 2007-8	HEIs 2007-8
Business representatives on governing bodies (%)	31	31	31
FTE staff employed in commercialisation offices	486	877	3834
Number of patent applications	379	461	1898
Number of patents granted	188	216	590
Number of licensing agreements	1136	1248	3193
Income from IP licensing	£146m	£196m	£45.5m
Number of spin-outs	89	114	219
Income from business consultancy	£37m	£77m	£154m

Table 3 shows the latest raw PSRE and HEI data on a *per-institution* basis, derived by dividing the corresponding figures in the above table by the respective numbers of institutions covered (160 HEIs and 138 PSREs, to which the 'grossed up' figures apply). This shows that, on this basis, HEIs have higher values than PSREs for each indicator except licensing income.

Table 3 Performance Indicators – calculated averages on a 'per institution' basis

	PSREs 2007-8	HEIs 2007-8
Business representatives on governing bodies (%)	31	31
FTE staff employed in commercialisation offices	6.4	24.0
Number of patent applications	3.3	11.9
Number of patents granted	1.6	3.7
Number of licensing agreements	9.0	19.9
Income from IP licensing	£1.42m	£0.28m
Number of spin-outs	0.83	1.4
Income from business consultancy	£0.56m	£0.96m

Table 4 provides a comparison between the PSRE figures obtained in the four previous years and those obtained in the current survey.

Table 4 Comparison of 2003-4, 2004-5, 2005-6, 2006-7, 2007-8 performance indicators – raw values

	First annual survey 2003-4	Second annual survey 2004-5	Third annual survey 2005-6	Fourth annual survey 2006-7	Fifth annual survey 2007-8	Change 2006-7 to 2007-8
Business representatives on governing bodies	175	214	247	207	209	1%
FTE staff employed in commercialisation offices	385	368	513	669	486	-27%
Number of patent applications	316	335	290	316	379	20%
Number of patents granted	228	148	193	172	188	9%
Number of licensing agreements ¹	621	352	286	604	1136	88%
Income from IP licensing	£33m	£46m	£186m	£116m	£146m	26%
Number of spin-outs	69	84	74	101	89	-12%
Income from business consultancy	£36m	£31m	£26m	£43m	£37m	-14%

It should be noted that the number and profile of establishments included in the fifth (2007-8) PSRE survey was different from those in the earlier surveys. For these reasons, we provide an alternative indication of year-on-year changes by comparing results from that subset of PSREs that provided data in all four years. Aggregated data from this group of 80 establishments is presented in Table 5.

From Table 5, we can observe that barring the significant increase in the number of licensing agreements and income thereof all other indicators remain broadly constant.

Table 5 Performance Indicators – comparison for PSREs responding to all four surveys (n=80)

	First annual survey 2003-4	Second annual survey 2004-5	Third annual survey 2005-6	Fourth annual survey 2006-7	Fifth annual survey 2007-8	Change 2006-7 to 2007-8
Business representatives on governing bodies	67	80	96	94	93	-1%
FTE staff in commercialisation offices	129	167	181	181	184	2%
Number of patent applications	147	158	182	190	176	-7%
Number of patents granted	67	90	128	108	106	-2%
Number of licensing agreements	52	50	106	202	225	11%
Income from IP licensing	£18m	£22m	£118m	£88m	£120m	36%
Number of spin-outs	43	40	46	48	47	-1%
Income from business consultancy	£2.7m	£3.1m	£3.9m	£1.5m	£1.4m	-1%

¹ Licensing agreements excludes agreements by cultural institutions for licensing copyright images to third parties.

4 Survey Results²

4.1 Research Activity

4.1.1 R&D Expenditure and Intensity

Table 6 shows measures of aggregate sizes of PSREs within the four groups, in terms of numbers of employees and financial income, together with their R&D expenditures and research intensity (defined as the percentage of income spent on R&D). In line with previous reports, we have taken a broad perspective, treating the entire organisation as the 'PSRE' rather than one or more sub-elements or units that perform R&D. This means that in the case of the Cultural Institutions, a given museum or gallery is taken to be the PSRE, and so data relating to staffing, income etc. will cover all of the organisation's staffing and income, not just that of a research unit. Similarly, in the case of the NHS Regions, data on staff levels and income relate to *all NHS activity within that region*. This has, in some cases, meant that respondents have had difficulty in supplying the required information.

Table 6 Organisational size, income and R&D intensity

(a) Raw survey data

	Number of Employees	R&D spend (£m)	Total Income (£m)	Research Intensity (%)
Cultural Institutions	10,165	66	1,890	3.5
Departmental Research Bodies	28,862	131	3,227	4.1
NHS Regions	275,246	1,070	75,162	1.4
Research Council HQs & Institutes	10107	515	1,610	32
Total	324,380	1,782	81,889	2.2

(b) 'Grossed-up' values

	Number of Employees	R&D spend (£m)	Total Income (£m)	Research Intensity (%)
Cultural Institutions	13,841	72	1,840	3.9
Departmental Research Bodies	37,398	549	3,287	16.7
NHS Regions	1,404,250	1,090	87,008	1.3
Research Council HQs & Institutes	12,078	927	2,187	42.4
Total	1,467,568	2,638	94,322	2.8

The Departmental Research Bodies (DRBs) and Research Council Institutes (RCIs) are the most research-intensive groups – accounting for 16.7% and 42.4% respectively.

It is worth noting that PSREs comprise a heterogeneous mix of organisations with varying objectives. An average figure can, therefore, be misleading.

² N.B. The figures shown in the tables are subject to rounding errors

4.1.2 Collaborative Research Projects

The proportions of PSREs undertaking collaborative research through formal and informal agreements are presented in Table 7. It reveals that nearly 93% of PSREs carry out collaborative research through *formal* agreements, while almost 53% collaborate informally.

Table 7 Collaborative research agreements

	Percentage of PSREs undertaking collaborative research through formal agreements	Percentage of PSREs undertaking collaborative research through informal agreements
Cultural Institutions	91.7	91.7
Departmental Research Bodies	84.2	31.6
NHS Regions	100.0	27.3
Research Council HQs & Institutes	100.0	64.7
Total	93.2	52.5

The numbers of collaborative research projects currently being undertaken by PSREs are presented in Table 8. The data suggests that, across all PSREs, over 25,000 new collaborative projects commenced during the year, with over 3,000 running from previous years. The NHS Regions show the highest numbers of collaborative projects by some margin.

Table 8 Numbers of collaborative research project

	New projects that commenced during this year		Projects running from previous years that are still active	
	Raw survey data	'Grossed-up' values	Raw survey data	'Grossed-up' values
Cultural Institutions	757	782	513	675
Departmental Research Bodies	812	1287	541	787
NHS Regions	18960	21247	180	324
Research Council HQs & Institutes	1292	2341	1297	1445
Total	21821	25657	2531	3231

4.1.3 Development of Graduates

Respondents were asked to give the percentage of their current projects involving students (MScs and PhDs). RCIs show the greatest propensity to involve students in their research projects, with on average 29% of projects contributing to the development of graduates. Cultural Institutions and NHS Regions involve students in less than 20% of their research projects. Within the Cultural Institutions the more 'science based' establishments show considerably higher student participation than others.

4.2 Knowledge Transfer Resources

4.2.1 Personnel

Numbers of staff employed in Technology Transfer Offices or similar units, and the proportion of these staff that have relevant professional qualifications, are shown in Table 9.

Collectively the responding PSREs employ 486 FTE dedicated KT staff, a figure which rises to 877 when the data is grossed-up to cover all PSREs.

Overall, around 46% of the staff employed in technology transfer offices or equivalent hold, or are training for, relevant professional qualifications.

Table 9 Numbers of staff engaged in technology transfer offices, industrial liaison offices, innovation hubs, contract offices and their equivalents

	Numbers of dedicated KT staff		Percentage holding or training for professional IP management qualifications
	'Raw' data	'Grossed-up' values	
Cultural Institutions	59	247	26.0
Departmental Research Bodies	250	348	43.3
NHS Regions	97	125	68.4
Research Council HQs & Institutes	80	157	46.4
Total	486	877	46.0

4.2.2 Training on Knowledge Transfer

The numbers of dedicated KT staff that provide training on knowledge transfer to other PSRE employees, and the proportion of employees in receipt of such training, are shown in Table 10. These numbers are consistent with findings in the previous year.

On average, less than 4% of all PSRE employees receive training in knowledge transfer. Not surprisingly, very low proportions of personnel employed by the NHS Regions and Cultural Institutions receive knowledge transfer training. In contrast, a significant proportion of the RCI staff and DRB staff receive some kind of training in knowledge transfer, which might be expected given their higher R&D intensity.

Table 10 Numbers of KT staff providing internal training on knowledge transfer

	Numbers of KT staff providing KT training to PSRE employees		Percentage of PSRE employees receiving training in KT
	'Raw' data	'Grossed-up' values	
Cultural Institutions	6	14	2.7
Departmental Research Bodies	25	44	18.9
NHS Regions	53	57	1.6
Research Council HQs & Institutes	31	33	24.8
Total	115	164	3.9

4.2.3 Funding for Technology Transfer Offices

Table 11 shows sources of funding for Technology Transfer offices and their equivalents. The largest contribution comes from PSRE's parent departments (45%), with other Government departments representing the second largest source (13%).

Table 11 Funding sources for TT offices

(a) 'Raw' data

	From PSRE general budget (£k)	From earmarked PSRE budget (£k)	From parent department (£k)	From other Govt departments (£k)	From businesses (£k)	From PSRE exploitation fund (£k)	From RDA or other devolved administration (£k)	From commercialisation / KT activity (£k)	Total Funding (£k)
Cultural Institutions	8,519	0	0	468	0	268	0	31,417	40,672
Departmental Research Bodies	10,004	370	105,000	30,000	50,000	647	50	5,414	201,485
NHS Regions	76	0	3,228	2,516	40	3,139	1,338	863	11,200
Research Council HQs & Institutes	311	42	211	402	0	657	39	812	2,474
Total	18,910	412	108,439	33,386	50,040	4,711	1,427	38,506	255,831

(b) 'Grossed-up' values

	From PSRE general budget (£k)	From earmarked PSRE budget (£k)	From parent department (£k)	From other Govt departments (£k)	From businesses (£k)	From PSRE exploitation fund (£k)	From RDA or other devolved administration (£k)	From commercialisation / KT activity (£k)	Total Funding (£k)
Cultural Institutions	9,287	0	0	584	0	348	0	38,208	48,427
Departmental Research Bodies	11,002	428	162,000	44,000	77,000	927	60	6,424	301,841
NHS Regions	78	0	3,324	2,520	42	3,200	1,382	873	11,419
Research Council HQs & Institutes	500	1,400	214	302	0	842	43	928	4,229
Total	20,867	1,828	165,538	47,406	77,042	5,317	1,485	46,433	365,916

4.2.4 Expenditure on IP Management

PSREs were asked to provide figures for their expenditure on the management of Intellectual Property, including patent, copyright and trademark costs, expenditure on legal services, and other related costs. The costs of staff employed within commercialisation and technology transfer offices are not included in these expenditure figures. Table 12 presents the results and suggests that total expenditure on IP management across all PSREs was about £6.6m in 2007-8.

Table 12 Expenditure on management of IP

	Expenditure on management of intellectual property (£k)	
	Raw survey data	'Grossed-up' values
Cultural Institutions	353	702
Departmental Research Bodies	2,180	3,674
NHS Regions	612	745
Research Council HQs & Institutes	448	1,435
Total	3,593	6,556

4.3 Knowledge Transfer Outputs

4.3.1 Publications

Table 13 presents data on the numbers of publications produced in the year, disaggregated into academic publications, papers produced to promote commercial services and 'other' publications.

Table 13 Numbers of publications

(a) Raw survey data

	Academic publications	Publications for commercialisation	Other publications	Total
Cultural Institutions	2,032	116	152	2,300
Departmental Research Bodies	2,806	110	2,544	5,460
NHS Regions	24,540	323	609	25,472
Research Council HQs & Institutes	5,512	50	294	5,856
Total	34,890	599	3,599	39,088

(b) 'Grossed-up' values

	Academic publications	Publications for commercialisation	Other publications	Total
Cultural Institutions	3,089	222	680	3,991
Departmental Research Bodies	3,122	282	4,476	7,880
NHS Regions	24,890	476	845	26,211
Research Council HQs & Institutes	6,940	85	376	7,401
Total	38,041	1,065	6,377	45,483

4.3.2 KT Opportunities and Invention Disclosures

PSREs were asked to provide data on the numbers of knowledge transfer opportunities and invention disclosures notified to technology transfer, industrial liaison, innovation hubs, and contract offices or their equivalent. Results are shown in Table 14. Across all PSREs we estimate that there were 3636 such notifications in 2007-8.

Table 14 KT opportunities and invention disclosures

	Number of notifications	
	Raw survey data	'Grossed-up' values
Cultural Institutions	44	52
Departmental Research Bodies	1,068	1,982
NHS Regions	1,153	1,294
Research Council HQs & Institutes	207	308
Total	2,472	3,636

4.3.3 Patenting

PSREs were asked about their patenting activity - the raw survey data and grossed-up figures are presented in Table 15 below. The total numbers of patent applications filed in the year across all PSREs (grossed-up data) are 170 (UK) and 291 (overseas). The corresponding figures for the number of patents *granted* in the year are 58 (UK) and 158 (overseas). The data from this year's survey suggests that collectively the PSREs have a portfolio of about 924 live UK patent applications and about 3,694 live overseas applications. The total number of patents held by PSREs is estimated at 427 (UK) and 1250 (overseas).

DRBs, NHS Regions and RCIs all contribute significantly to patenting activity. Cultural Institutions in most cases have no patent activity.

Table 15 Patent applications and granted patents

(a) Raw survey data

	New Patent Applications filed in-year		Patents granted in-year		Cumulative 'live' patent application portfolio		Cumulative 'live' patent granted portfolio	
	UK	Overseas	UK	Overseas	UK	Overseas	UK	Overseas
Cultural Institutions	0	2	0	0	0	0	11	13
Departmental Research Bodies	42	131	15	111	535	1,844	156	531
NHS Regions	45	52	10	7	123	120	56	28
Research Council HQs & Institutes	47	60	10	35	89	789	105	371
Total	134	245	35	153	747	2,753	328	943

(b) 'Grossed-up' value

	New Patent Applications filed in-year		Patents granted in-year		Cumulative 'live' patent application portfolio		Cumulative 'live' patent granted portfolio	
	UK	Overseas	UK	Overseas	UK	Overseas	UK	Overseas
Cultural Institutions	2	2	0	0	1	0	2	3
Departmental Research Bodies	63	164	33	109	684	2,491	233	737
NHS Regions	47	54	11	8	127	122	68	33
Research Council HQs & Institutes	58	71	14	41	112	1081	124	477
Total	170	291	58	158	924	3,694	427	1250

4.3.4 Licensing

Table 16 provides raw and grossed-up data on numbers of licence options and licences executed in the year and the cumulative portfolio held by the PSREs. Across all PSREs, using grossed-up figures, the estimated number of licences and options executed in the year is 1248, and the cumulative portfolio stands at 3446.

Income from licensing activity is presented in Section 4.3.6.

Table 16 Licence options and licences executed

	Number of licence options and licences executed in this year		Cumulative portfolio of executed licence options and licences	
	Raw survey data	'Grossed-up' values	Raw survey data	'Grossed-up' values
Cultural Institutions	30	33	90	98
Departmental Research Bodies	346	412	845	886
NHS Regions	78	89	167	178
Research Council HQs & Institutes	682	714	2123	2284
Total	1136	1248	3225	3446

4.3.5 Creation of Spin-offs and Start-ups

The survey explored PSRE activity with respect to the creation of spin-off and start-up firms. A number of different types of spin-offs and start-ups were identified, as follows:

- Those with some PSRE ownership, using intellectual property from the PSRE
- Those with no PSRE ownership, where the PSRE has assigned or licensed IP
- Staff start-ups, where current or former PSRE staff are company founders, and where the PSRE has neither ownership nor an IP agreement with the company

Table 17 presents data for the number of firms established in each category and the number still active after three years, as well as data on the employment, turnover and investment secured in association with the active firms.

Across the three categories of firm, a total of 89 new spin-offs were notified by responding organisations, the total (grossed-up) estimate being 114. Spin-offs where there is some PSRE ownership are the most numerous of the three types, accounting for two-thirds of new firms established. RCIs are the dominant category of PSRE with respect to the creation of spin-offs, though DRBs and NHS Regions are also active. No single PSRE stands out as

being particularly successful in producing spin-offs, with only a handful of PSREs having established three or more spin-offs.

Using grossed-up figures, employment across all active spin-offs is estimated at almost 4,500 and current annual turnover at over £73m. Based on the figures supplied we estimate that over £52m in external investment has been secured for the spin-off companies generated by PSREs.

Table 17 Spin-offs and Start-ups

(a) Raw survey data

	Spin-offs with some PSRE ownership		Spin-offs not owned by PSRE		Staff start-ups		Current employment of all active spin-offs (£k)	Current turnover of active spin-offs (£k)	External investment secured for spin-offs (£k)
	No. established	No. active after 3 years	No. established	No. active after 3 years	No. established	No. active after 3 years			
Cultural Institutions	2	2	0	0	0	0	0	0	17
Departmental Research Bodies	4	6	0	1	2	1	123	3,860	3,950
NHS Regions	26	6	4	4	0	0	10	550	3,380
Research Council HQs & Institutes	26	23	18	16	7	7	3,828	4,918	201
Total	58	37	22	21	9	8	3,961	9,328	7,548

(b) 'Grossed-up' values

	Spin-offs with some PSRE ownership		Spin-offs not owned by PSRE		Staff start-ups		Current employment of all active spin-offs (£k)	Current turnover of active spin-offs (£k)	External investment secured for spin-offs (£k)
	No. established	No. active after 3 years	No. established	No. active after 3 years	No. established	No. active after 3 years			
Cultural Institutions	0	2	0	0	0	2	0	0	24
Departmental Research Bodies	8	16	2	3	2	2	220	5,840	18,272
NHS Regions	30	3	9	12	7	11	34	40,715	28,250
Research Council HQs & Institutes	26	25	16	17	14	12	4,283	27,220	6,400
Total	64	46	27	32	23	27	4,537	73,775	52,946

4.3.6 Revenue Generating Agreements

PSREs were asked to provide data on the numbers of revenue generating agreements they have with commercial and non-commercial organisations, and the results are shown in Table 18. Based on the grossed-up data, we estimate that PSREs signed over 1,800 new revenue-generating agreements with commercial organisations in the year, and now hold a cumulative portfolio of nearly 5,800 such agreements. It is estimated that over 1,300 revenue-generating agreements have been signed with non-commercial organisations in the year, contributing to a cumulative portfolio of over 6,200.

In 2007-08, the DRBs had the largest numbers of revenue-generating agreements with commercial organisations.

Table 18 Revenue generating agreements³

(a) Raw survey data

	Number of agreements with commercial organisations, new in year	Cumulative portfolio of agreements with commercial organisations	Number of agreements with non-commercial organisations, new in year	Cumulative portfolio of agreements with non-commercial organisations
Cultural Institutions	18	53	5	11
Departmental Research Bodies	661	2,275	433	1,176
NHS Regions	307	633	246	749
Research Council HQs & Institutes	132	414	214	748
Total	1,118	3,375	898	2,684

(b) 'Grossed-up' values

	Number of agreements with commercial organisations, new in year	Cumulative portfolio of agreements with commercial organisations	Number of agreements with non-commercial organisations, new in year	Cumulative portfolio of agreements with non-commercial organisations
Cultural Institutions	38	88	16	28
Departmental Research Bodies	1,138	4282	750	2121
NHS Regions	320	644	254	772
Research Council HQs & Institutes	342	790	327	3286
Total	1,838	5804	1347	6207

³ The number of PSREs able to provide data on this issue was particularly low

4.3.7 Revenue Generation

Table 19 shows PSRE's total income from commercialisation activities. Income from commercialisation comprises receipts from licensing and other IP, consultancy work, leasing of facilities & equipment, training services and any other income generated from links with commercial organisations. The total revenue generation from commercialisation in the year, grossed-up to account for all PSREs, is estimated to be £669m. Excluding the NHS Regions, this equates to around 9.1% of total PSRE income.

Table 19 Income from commercialisation

	Total income from commercialisation (£k)	
	Raw survey data	'Grossed-up' values
Cultural Institutions	15,337	41,583
Departmental Research Bodies	253,661	499,709
NHS Regions	1,638	1,976
Research Council HQs & Institutes	108,863	125,778
Total	379,499	669,046

Table 20 provides a breakdown of income from commercialisation by source (commercial, governmental and other non-commercial) and by type (income from licensing, income from consultancy, income from leasing of facilities and equipment, income from training and 'other'). The Table reveals significant variation by type of PSRE with respect to the main sources and types of commercialisation income.

Table 20 Income from commercialisation, by source

(a) Raw survey data

	Licensing and other IP			Consultancy			Facilities and Equipment			Training			Other income from commercial links (£k)
	Business (£k)	Govt. Depts (£k)	Other (£k)	Business (£k)	Govt. Depts (£k)	Other (£k)	Business (£k)	Govt. Depts (£k)	Other (£k)	Business (£k)	Govt. Depts (£k)	Other (£k)	
Cultural Institutions	1,061	0	89	1,206	7,087	20	5,135	267	220	51	10	6	185
Departmental Research Bodies	37,287	17,605	362	34,362	142,813	9,894	1,080	4,273	270	3,166	400	683	1,466
NHS Regions	413	12	540	29	612	0	0	0	0	32	0	0	0
Research Council HQs & Institutes	88,183	300	609	1,178	361	396	11,105	0	2,342	24	10	47	4,308
Total	126,944	17,917	1600	36,775	150,873	10,310	17,320	4,540	2,832	3,273	420	736	5,959

(b) 'Grossed-up' values

	Licensing and other IP			Consultancy			Facilities and Equipment			Training			Other income from commercial links (£k)
	Business (£k)	Govt. Depts (£k)	Other (£k)	Business (£k)	Govt. Depts (£k)	Other (£k)	Business (£k)	Govt. Depts (£k)	Other (£k)	Business (£k)	Govt. Depts (£k)	Other (£k)	
Cultural Institutions	3,335	0	326	2,949	22,273	44	10,270	977	691	166	28	15	509
Departmental Research Bodies	57,795	32,104	701	71,015	295,147	20,448	2,093	8,279	558	6,543	776	1,411	2,840
NHS Regions	447	0	1,403	125	0	0	0	0	0	0	0	0	0
Research Council HQs & Institutes	98,358	368	803	2,663	830	910	13,235	0	2,996	30	13	61	5,512
Total	159,935	32,471	3,233	76,752	318,250	21,402	25,598	9,256	4,245	6,739	817	1,487	8,861

4.4 Other Knowledge Transfer Indicators

4.4.1 Business and community representation on governing bodies

Data on external business and community representation on PSRE governing bodies are shown in Table 21. The number of members on a PSRE governing body varies between 3 and 15, and, across all of the responding organisations, 31% of membership is drawn from commercial organisations.

Table 21 Business and community representation on governing bodies⁴

	Average size of governing body	% from commercial organisations	% from social, community and cultural groups	% from public sector organisations
Cultural Institutions	14.5	29.3	16.1	35.1
Departmental Research Bodies	9.1	39.1	12.4	39.6
NHS Regions	10.2	28.4	6.9	62.7
Research Council HQs & Institutes	12.6	27.9	0.9	40.3
All PSREs	11.8	31.1	8.6	42.2

Representation from social, community and cultural groups is relatively low for all types of PSRE except Cultural Institutions, constituting just 9% of total membership. The majority of governing body members – 42% overall – are from public sector organisations, with the proportion being highest for the NHS Regions (63%) and Research Council HQs and Institutes (40%).

4.4.2 Incentives for Knowledge Transfer and Commercialisation

PSREs were asked if a reward scheme for inventors was in operation, and, if so, whether rewards were granted for patented technologies only. The results are shown in Table 22 and reveal that over 76% of the responding PSREs do run some kind of scheme that rewards inventors. NHS Regions and RCIs have the highest propensity to reward inventors.

Table 22 Operation of reward schemes for inventors

	Percentage of PSREs offering rewards to inventors	Percentage of cases where rewards are restricted to patented technologies only
Cultural Institutions	10.0	0
Departmental Research Bodies	44.4	25.0
NHS Regions	90.0	0
Research Council HQs & Institutes	88.9	22.2
Overall	76.4	18.4

4.4.3 Performance Monitoring

The survey sought to determine (a) whether PSRE CEOs are being monitored on their organisation's commercialisation performance, and (b) whether satisfaction surveys are carried out to assess inventors' levels of satisfaction with the commercialisation service provided. The results are shown in Table 23, and reveal that commercialisation performance monitoring is carried out by over three-quarters of PSREs, with only 44% conducting inventor satisfaction reviews.

⁴ For the NHS, figures refer to the governing bodies of the regions' Innovation Hubs rather than the NHS Regions themselves, which do not have governing bodies.

Table 23 Performance monitoring

	Percentage of CEOs monitored on the PSRE's commercialisation performance	Percentage of PSREs carrying out inventors' satisfaction reviews
Cultural Institutions	33.3	0
Departmental Research Bodies	61.5	13.3
NHS Regions	90.9	81.8
Research Council HQs & Institutes	87.5	46.7
Overall	78.6	43.8

4.4.4 Citations and Publicity

Information was requested from PSREs on numbers of academic citations and numbers of newspaper and other media articles in the year. Less than one-third of the PSREs were able to provide data on academic citations, and hence it is not possible to provide 'grossed-up' numbers with any confidence. This scenario is exactly the same as the previous year - Cultural Institutions and NHS Regions had particular difficulty in providing data, with only six responses between them.

4.4.5 Knowledge Transfer Mechanisms and Routes

PSREs were asked to provide information on any other knowledge transfer activities not covered by the questions reported on above. Particular types of activity not covered above are as follows:

- TV and radio
- Websites providing access to data on institutional activity and related information
- Seminars and conferences
- Events for participants in industry, including exhibitions, workshops, ongoing and ad-hoc training
- Engagement with user groups
- Free consultancy
- Educational/discussion events with adult learners, academics and schools
- Communications through members' associations
- Press releases, fact sheets, newsletters
- Policy advice to Government, the EC, UN and other public bodies
- Tours of establishments for the public and educational bodies
- Forms of IP protection not covered in the questionnaire, such as copyright and trademarks

4.4.6 Long-term Impact of Knowledge Transfer

Finally, PSREs were asked to summarise any assessments carried out of the long-term impact of their knowledge transfer activities. Most institutions did not provide a reply, but of those that did several indicated that they included KT as a specific component of strategic reviews of their institutions and its activities. Specific knowledge transfer assessments cited by PSREs included:

- Surveys of visitors
- Customer satisfaction surveys
- Networking initiatives
- IP audits
- Social/economic impact studies
- Use of external consultants to survey/review KT activities

Questionnaire to be used in the survey of Public Sector Research Establishments**General guidance**

For any questions where exact figures are not available, please provide estimates.

Please provide figures for the last complete financial year (e.g. **April 2007 to April 2008**)

For any questions where you are unable to provide information, please answer as "not known" or "not applicable".

For Research Councils, except MRC, please do not include activities undertaken by individual Institutes (separate questionnaires are being sent to them) or staff covered by the HE-BCI survey. For RCs where all research is carried out by institutes or in HEIs, we would be grateful if the RC central office could still complete questions 1 - 16 as it helps to provide a fuller picture of activity to promote knowledge transfer from PSREs. Throughout the survey the term "non commercial" is used to cover Government Departments, other public bodies, universities and EU funding and "commercial" to cover businesses.

GENERAL INFORMATION

1. Name of PSRE [1]

2. Number of employees in PSRE [2]

3 PSRE's R & D and technological development expenditure (£) [3]

£ '000

4. PSRE's total income (£) [4]

£ '000

of which:

4.a income from parent Department (including grant)

£ '000

4.b income from other Government Department

£ '000

4.c income from commercial organisations

£ '000

4.d income from non commercial organisations

£ '000

5. Number of news items and citations for the PSRE:

5.a Number of academic citations [5.a]

5.b By Institute

5.c By researcher

5.d Number of newspaper and other media articles about the institute [5.d]

INFRASTRUCTURE / INTERNAL CAPACITY

6. How many of your PSRE's staff are engaged in Technology Transfer Offices, Industrial Liaison Offices, Innovation Hubs and Contract Offices and their equivalents [6]

7. Percentage of staff in Technology Transfer Office or equivalent with professional IP management/commercial qualifications and/or undergoing continuing professional development [7]

%

8. Number of staff in the Technology Transfer Office, Industrial Liaison Office, Innovation Hubs, Contract Office or their equivalent engaged in providing training on knowledge transfer to staff in the PSRE [8]

9. How are the Technology Transfer Offices, Industrial Liaison Offices, Innovation Hubs and Contract Offices or their equivalent funded?

Funding source:

9.a From PSRE's general budget

9.b From earmarked PSRE budget

9.c Funding from parent department [9.c]

9.d Funding from other government departments [9.d]

9.e Funding from business [9.e]

9.f Funding from Public Sector Research Exploitation Fund

9.g Funding from Regional Development Agencies or devolved administration

9.h Income from commercialisation/ knowledge transfer activities

10. External business and community representation on your PSRE's governing body [10]

10.a Total number of members of Governing body

10.b Number that are from commercial organisations [10.b]

10.c Number of these that are Directors of subsidiary companies which manage commercialisation activities on behalf of the PSRE	
10.d Number that are from social, community and cultural groups	
10.e Number that are from Public Sector organisations	
11. Percentage of all PSRE's staff receiving knowledge transfer training [11]	%
12. Development of graduates - percentage of current projects involving students (include MSc.s and PhDs) [12]	%
13. Does the PSRE operate a rewards scheme for inventors?	Y/N
If so, does the scheme provide rewards for patented technologies only?	Y/N
14. If the PSRE runs an awards for inventors scheme, proof of concept fund, seed fund or equivalent, how are these funded?	
Funding source:	
14.a From PSRE's general budget	£ '000
14.b From earmarked PSRE budget	£ '000
14.c Funding from parent department [14.c]	£ '000
14.d Funding from other government departments [14.d]	£ '000
14.e Funding from business [14.e]	£ '000
14.f Funding from Public Sector Research Exploitation Fund	£ '000
14.g Funding from Regional Development Agencies or devolved administration	£ '000
14.h Income from commercialisation/ knowledge transfer activities	£ '000
15. Is the PSRE CEO or equivalent monitored on the PSRE's commercialisation performance? [15]	Y/N
16. Does the Technology Transfer Office, Industrial Liaison Office, Innovation Hub, and Contract Office or their equivalents carry out any reviews of inventor's levels of satisfaction with the commercialisation service provided?	Y/N

INCOME GENERATING ACTIVITIES

17. Patents and licensing [17]

17.a Number of new patent applications filed in year:

UK

Overseas

17.b Number of patents granted in year:

UK

Overseas

17.c Cumulative portfolio of patents applications (e.g. all "live" patent applications held by PSRE):

UK

Overseas

17.d Cumulative portfolio of granted patents (e.g. all "live" granted patents held by PSRE):

UK

Overseas

18. Licences [18]

Number of licence options and licences executed in this year.

Cumulative portfolio of executed licence options and licences

19. Spin-offs and start-ups [19]

19.a Spin-offs with some ownership by your PSRE:

Number established

Number still active after at least 3 years

19.b Formal spin-offs, not owned by your PSRE:

Number established

Number still active after at least 3 years

19.c Staff start ups:

Number established

Number still active after at least 3 years

19.d Estimated current employment of all active firms [19.d]

19.e Estimated current turnover of all active firms (£)

19.f Estimated external investment secured for spin-offs and start-ups (£)
[19.f]

20. Expenditure on management of Intellectual Property (£) [20]

21. Income from commercialisation (£) [21]

21.a Income from licensing and other IP: [21.a]

From commercial organisations

From Government Departments

From other non commercial organisations

21.b Income from consultancy:

From commercial organisations

From Government Departments

From other non commercial organisations

21.c Income from use of facilities and equipment: [21.c]

From commercial organisations	£ '000
From Government Departments	£ '000
From other non commercial organisations	£ '000
21.d Income from training:	
From commercial organisations	£ '000
From Government Departments	£ '000
From other non commercial organisations	£ '000
Any additional research income generated from links with commercial organisations	£ '000

NON FINANCIAL IMPACT

22. Number of knowledge transfer opportunities and invention disclosures communicated to Technology Transfer Office, Industrial Liaison Office, Innovation Hubs and Contract Offices or their equivalent [22]

23. Number of collaborative research projects [23]

23.a Do you carry out any research through informal agreements? [23.a]

23.b Do you carry out any research through formal agreements? [23.b]

23.c Number of collaborative projects (only complete if the answer to at least one of the previous questions is "Yes")

23.d New projects that commenced during this year

23.e Projects running from previous years which are still active (with average number of years for which the projects have been running to date, if information available)

24. Business/community engagement - number of revenue generating agreements with commercial and non commercial organisations to exploit the research carried out by the Public Sector Research Organisation [24]

24.a Number of agreements with commercial organisations, new in year

24.b Cumulative portfolio of agreements with commercial organisations [24.b]

24.c Number of agreements with non commercial organisations, new in year

24.d Cumulative portfolio of agreements with non commercial organisations [24.d]

25. Number of publications [25]

25.a Academic [25.a]

25.b For commercialisation [25.b]

25.c Other [25.c]

OTHER ACTIVITY

26. Given the complicated and diverse range of knowledge transfer activities undertaken by PSREs it is not possible to cover all their activities in the information requested above. Therefore you may wish to use the text box to outline any other knowledge transfer activities not covered above (max 200 words)

27. The above questions are mainly aimed at providing a "snap shot" of knowledge transfer activities in PSREs. To help us develop a better understanding of the long-term impact of PSREs we are interested in any assessments you have carried out of the long-term impact of your knowledge transfer activities. We would therefore be grateful for a short summary (max 300 words) of any such assessments that you have carried out.

END OF SURVEY

Footnotes/definitions

1. For NHS the name of organisation should be that of the Innovation Hub. For all other organisations the name of organisation should be that of the Public Sector Research Establishment. Please use the name of the Laboratory/ Museum/Institute/Agency not that of the department carrying out research or the delivery arm managing the technology transfer or IP exploitation.

[\[Back to Question 1\]](#)

2. For NHS, please include an estimate of the total staff employed in the hospitals and trusts covered by the Innovation Hub. For all other organisations please include the total staff employed in the Public Sector Research Establishment – i.e. the Laboratory/ Museum/ Institute/ Agency as a whole not just the department carrying out research or the delivery arm managing the technology transfer or IP exploitation. Please provide the answer as full time equivalents. Please include any staff employed by subsidiary companies which manage commercialisation activities on behalf

[\[Back to Question 2\]](#)

of the PSRE, but not staff employed by start up or spin off companies covered by question 19

3. For NHS, please include an estimate of the total R&D expenditure for the hospitals and trusts covered by the Innovation Hub. For all other organisations please include the total R&D expenditure in the Public Sector Research Establishment – i.e. the Laboratory/Museum/Institute/Agency as a whole not just the Department carrying out research or the delivery arm managing the technology transfer or IP exploitation. Include all R&D expenditure including any work funded from external sources, such as income from collaboration and contract work, but do not include R&D in other organisations which is funded by the PSRE.

[\[Back to Question 3\]](#)

4. For NHS, please include an estimate of the total income for the hospitals and trusts covered by the Innovation Hub. For all other organisations please include the total income for the Public Sector Research Establishment – i.e. the Laboratory/ Museum/ Institute/ Agency as a whole not just the team carrying out research or the delivery arm managing the technology transfer or IP exploitation.

[\[Back to Question 4\]](#)

5.a For NHS please include an estimate covering all the hospitals and trusts covered by the Innovation Hub. For all other organisations please include the total for the Public Sector Research Establishment – i.e. the Laboratory/ Museum/ Institute/ Agency as a whole not just the Department carrying out research or the delivery arm managing the technology transfer or IP exploitation. The term academic citations is used to cover formal references in an academic journal, paper or other publication (including both peer reviewed and non peer reviewed publications) to earlier research work carried out by the PSRE and/or its staff. For "institutes" please include all citations for researchers working at the PSRE. The figures for "researcher" should be based on the total number of citations per institute divided by the number of researchers at the institute.

[\[Back to Question 5.a\]](#)

5.d. For NHS please include an estimate covering all the hospitals and trusts covered by the Innovation Hub. For all other organisations please include the total for the Public Sector Research Establishment – i.e. the Laboratory/ Museum/ Institute/ Agency as a whole not just the Department carrying out research or the delivery arm managing the technology transfer or IP exploitation. Please include all newspaper (national and regional) TV and radio references to your PSRE's activities of which you are aware.

[\[Back to Question 5.d\]](#)

6. For NHS, please include all staff working in the Innovation Hub. For other Public Sector Research Establishments please include all staff in Technology Transfer Offices, Industrial Liaison Offices and Contract Offices and their equivalents plus any communications staff or consultants spending a significant proportion of their time on commercialisation of research. Please include any staff employed by subsidiary companies which manage commercialisation activities on behalf of the PSRE or independent companies which manage knowledge commercialisation within the PSRE, but not staff employed by start up or spin off companies covered by question 14.e. Please provide the answer as full time equivalents.

[\[Back to Question 6\]](#)

7. Please include all staff in the Technology Transfer Office or equivalent with professional qualifications used to support commercialisation e.g. MBAs, Legal and/or IP law qualifications or undergoing ongoing continuing professional development e.g. PRAXIS or AUTM training courses.

[\[Back to Question 7\]](#)

8. Please include informal training such as IP awareness seminars as well as formal training

[\[Back to Question 8\]](#)

9.c. Do not include funding from the Public Sector Exploitation Fund under this heading.

[\[Back to Question 9.c\]](#)

9.d. Do not include funding from the Public Sector Exploitation Fund under this heading

[\[Back to Question 9.d\]](#)

9.e Only include any grants, donations or other funding which businesses have provided specifically to support the development of the PSRE's commercialisation/knowledge transfer activities. Do not include income received from consultancy, training, licensing or hire of facilities under this heading – which should be included under “Income from commercialisation/ knowledge transfer activities”

[\[Back to Question 9.e\]](#)

10. For NHS, please provide information on the governing body of the Innovation Hub. For all other organisations please provide information on the governing body for the Public Sector Research Establishment – i.e. the Laboratory/ Museum/ Institute/ Agency.

[\[Back to Question 10\]](#)

10.b. Under “commercial organisations” please include only those governing board members who are currently working for a for-profit business.

[\[Back to Question 10.b\]](#)

11. For NHS, please include an estimate based on the total staff employed in the hospitals and trusts covered by the Innovation Hub. For all other organisations please include the total staff employed in the Public Sector Research Establishment – i.e. the Laboratory/Museum/Institute/Agency as a whole not just the Department carrying out research or the delivery arm managing the technology transfer or IP exploitation. Include any training including continuing personnel development and training courses, and informal activities such as awareness raising seminars for staff.

[\[Back to Question 11\]](#)

12. This question has been included to help develop a better understanding of PSREs' role in developing the skills and professional expertise of graduates in the research base. Please include information on the percentage of projects hosted by your PSRE or hosted jointly by your PSRE and other organisations which involve staff who are working towards MSc.s or PhDs. Do not include the knowledge transfer training covered in the response to question 9.4.

[\[Back to Question 12\]](#)

14.c. Do not include funding from the Public Sector Exploitation Fund under this heading.

[\[Back to Question 14.c\]](#)

14.d. Do not include funding from the Public Sector Exploitation Fund under this heading.

[\[Back to Question 14.d\]](#)

14.e Only include any grants, donations or other funding which businesses have provided specifically to support the development of the PSRE's commercialisation/knowledge transfer activities. Do not include income received from consultancy, training, licensing or hire of facilities under this heading – which should be included under “Income from commercialisation/ knowledge transfer activities”.

[\[Back to Question 14.e\]](#)

15. For Innovation Hubs the response should refer to the CEO of the Innovation Hub. For all other PSREs the reply should refer to the CEO of the Laboratory/ Museum/Institute/Agency not that of the department carrying out research or the delivery arm managing the technology transfer or IP exploitation.

[\[Back to Question 15\]](#)

17. For the NHS please include an estimate to cover hospitals and trusts

[\[Back to Question 17\]](#)

covered by the Innovation Hub. For all other organisations please cover the Public Sector Research Establishment – i.e. the Laboratory/Museum/Institute/Agency as a whole not just the department carrying out research or the delivery arm managing the technology transfer or IP exploitation. Where data is requested for number of patents include PCT and EPO applications. Count each PCT and each EPO application as a single overseas patent application. Count each regional or national patent granted on the basis of a PCT as a single overseas patent granted and, if the countries covered include UK, a single UK patent granted. Count each EPO patent granted as a single overseas patent granted even if it covers more than one country and, if the countries covered include UK, also record a single UK patent granted.

18. Include licence options and licences (including licences for plant variety rights) granted in previous years which are still in operation during the current financial year plus any new licence options and licences which are executed (e.g. a commercial deal has been put in place) during the year.

[\[Back to Question 18\]](#)

19. For the NHS please include an estimate to cover hospitals and trusts covered by the Innovation Hub. For all other organisations please answer for the Public Sector Research Establishment – i.e. the Laboratory/ Museum/ Institute/ Agency as a whole not just the department carrying out research or the delivery arm managing the technology transfer or IP exploitation. The different types of spin off and start up are defined as: Spin-off (with PSRE ownership) - Spin-off companies established using the PSRE's intellectual property (IP) and in which there is some element of PSRE ownership. Spin-off (with no PSRE ownership) - Spin-off companies to which the PSRE has assigned or licensed IP, but in which there is no PSRE ownership. Staff start-ups - Start-up companies involving current or former PSRE staff as founders where the PSRE has neither ownership nor an IP agreement (In this case the PSRE staff must be connected to the PSRE immediately prior to formation of the company). Please only include those spin-offs and start-ups that have been established to commercialise research from the PSRE, not businesses that have been established to contract out non-research based activities (e.g. maintenance or cleaning services). Please do not include spin-offs or start-ups that are not currently economically active.

[\[Back to Question 19\]](#)

19.d. Provide answer as full time equivalents (FTEs) numbers of staff. Jobs that are created through PSREs hosting manufacturing facilities and laboratories within their sites should not be included here, but you may wish to include any jobs created in this way as part of your answer to question 21.

[\[Back to Question 19.d\]](#)

19.f. Please provide an estimate of all investments which have been secured by spin-off and start up companies from sources other than the Public Sector Research Establishment's seed funding e.g. from venture capitalists, business angels or market floatation.

[\[Back to Question 19.f\]](#)

20. Please include all expenditure on IP including patents, copyright and trade marks. This should include expenditure on e.g. prior art searches, filing patents and legal advice on potential IP infringement.

[\[Back to Question 20\]](#)

21. For the NHS please include an estimate to cover hospitals and trusts covered by the Innovation Hub. For all other organisations please include the total staff employed in the Public Sector Research Establishment – i.e. the Laboratory/ Museum/ Institute/ Agency as a whole not just the department carrying out research or the delivery arm managing the technology transfer or IP exploitation.

[\[Back to Question 21\]](#)

21.a. Please include income from all types of IP including patents, copyright and trade marks.

[\[Back to Question 21.a\]](#)

21.c. Include any income generated from hiring out of the PSREs' facilities and equipment to external bodies, but not work the PSRE carries out on behalf of external bodies and therefore exclude e.g. contract analytical services.

[\[Back to Question 21.c\]](#)

22. Include all disclosures where the Technology Transfer Office or equivalent has taken some action to assess the commercial potential of research e.g. carried out a prior art search.

[\[Back to Question 22\]](#)

23. For the NHS please include an estimate to cover hospitals and trusts covered by the Innovation Hub. For all other organisations please answer for the Public Sector Research Establishment – i.e. the Laboratory/ Museum/ Institute/ Agency as a whole not just the department carrying out research or the delivery arm managing the technology transfer or IP exploitation.

[\[Back to Question 23\]](#)

23.a. Please answer "yes" if the PSRE has contacts, collaboration and/or collaborates with external researchers on an informal basis, but does not always have any formal agreements with them.

[\[Back to Question 23.a\]](#)

23.b. Please answer "yes" if there are projects where there is a formal agreement between your organisation and an external organisation. This should include MoUs, strategic alliances and research contracts. It should exclude Material Transfer Agreements and contracts of employment with individual researchers or contracts for work which forms part of the core activity/management of the organisation but has been contracted out.

[\[Back to Question 23.b\]](#)

24. Include all agreements with business/non commercial organisations that generate revenue, including academic to academic MoUs, other MoUs, strategic alliances, research contracts, Material Transfer Agreements and Clinical Document Architecture. Please do not include agreements where another PSRE is the leading partner or contracts for work which forms part of the core activity/management of your PSRE but has been contracted out.

[\[Back to Question 24\]](#)

24.b. Include agreements which started in previous years which are still in operation during the current financial year plus any agreements which started during the current year.

[\[Back to Question 24.b\]](#)

24.d. Include agreements which started in previous years which are still in operation during the current financial year plus any agreements which started during the current year.

[\[Back to Question 24.d\]](#)

25. For the NHS please include an estimate to cover hospitals and trusts covered by the Innovation Hub. For all other organisations please answer for the Public Sector Research Establishment – i.e. the Laboratory/ Museum/ Institute/ Agency as a whole not just the department carrying out research or the delivery arm managing the technology transfer or IP exploitation.

[\[Back to Question 25\]](#)

25.a. Please include all articles published in an academic journal, paper or other publication (including both peer reviewed and non peer reviewed publications) by researchers working at the PSRE.

[\[Back to Question 25.a\]](#)

25.b. Please include all publications for an external audience that are used to market or raise awareness of the PSRE's commercial services.

[\[Back to Question 25.b\]](#)

25.c. Please include publications such as annual reports and publications for patients, researchers and customers.

[\[Back to Question 25.c\]](#)

END OF FOOTNOTES / DEFINITIONS

Appendix B

Responding Organisations

Cultural Institutions

Arts Council England
The British Library
The British Museum
Imperial War Museum
National Museum Wales
National Conservation Centre (National Museums Liverpool)
National Museums Scotland
Natural England
The Natural History Museum
The Royal Botanic Garden Edinburgh
Royal Botanic Gardens, Kew
Scottish Natural Heritage
Tate Gallery

Departmental Research Bodies

Cefas
CABE (Commission for Architecture and the Built Environment)
Central Science Laboratory
Defence Science & Technology Laboratory
The Environment Agency
Forensic Science Service Ltd
Forest Research
Health & Safety Laboratory
Met Office
National Horizon Scanning Centre, University of Birmingham
National Physical Laboratory
National Weights and Measures Laboratory
Ordnance Survey
Scottish Crop Research Institute
General Lighthouse Authorities Research and Radionavigation
UKAEA Culham Division
Veterinary Laboratories Agency

NHS Regions

Health Enterprise East
WIsH, the NHS Hub for Wales
NHS Innovations London
NHS Innovations North
TrusTECH the NW NHS Innovation Hub
NHS Innovations South East
NHS Innovations South West
MidTECH Innovations Ltd - NHS Innovations West Midlands
Medipex, NHS Innovations Yorkshire & Humber
HSC Innovations – Health and Social Care in Northern Ireland
NHS Innovations East Midlands
Training Hub for Operative Technologies in Healthcare (THOTH)

Research Council HQs and Institutes

Headquarters

Biotechnology and Biological Sciences Research Council
Council for the Central Laboratory of the Research Councils
Engineering and Physical Sciences Research Council
Medical Research Council
Natural Environment Research Council

Institutes⁵

Biotechnology and Biological Sciences Research Council Institutes

Babraham Institute
Institute for Animal Health
Institute of Food Research
John Innes Centre
Rothamsted Research

Medical Research Council Institutes

Division of Structural Biology
Asthma UK Centre in Allergic Mechanisms of Asthma
Biostatistics Unit
Epidemiology Unit
Molecular Haematology Unit
Social and Public Health Sciences Unit
Virology Unit
(UK) The Gambia
Anatomical Neuropharmacology Unit
Cancer Cell Unit
Cell Biology Unit
Centre for Behavioural and Clinical Neuroscience Institute (BCNI)
Centre for Causal Analyses in Translational Epidemiology
Centre for Developmental and Biomedical Genetics
Centre for Developmental Neurobiology at KCL
Centre for Genomics and Global Health
Centre for Neurodegeneration Research
Centre for Neuromuscular Diseases
Centre for Nutritional Epidemiology in Cancer Prevention and Survival (CNC)
Centre for Obesity and Related Metabolic Diseases
Centre for Outbreak Analysis and Modelling
Centre for Protein Engineering
RC Centre for Stem Cell Biology and Medicine
Centre for Stem Cell Research
Centre for Transplantation
Centre of Epidemiology for Child Health
Clinical Sciences Centre (CSC)
Clinical Trials Unit
Cognition and Brain Sciences Unit
Collaborative Centre for Human Nutrition Research
Dunn Human Nutrition Unit
Epidemiology Resource Centre
Functional Genetics Unit

⁵ Many of these are collaborative centres, jointly supported by other organisations

General Practice Research Framework (GPRF)
Human Genetics Unit
Human Immunology Unit
Human Reproductive Sciences Unit
Immunochemistry Unit
Institute of Hearing Research
International Nutrition Group
Laboratory of Molecular Biology (LMB)
Mammalian Genetics Unit
National Institute for Medical Research (NIMR) including the Biomedical NMR Centre
Prion Unit
Protein Phosphorylation Unit
Social, Genetic and Developmental Psychiatry (SGDP) Centre
Toxicology Unit
Unit for Lifelong Health and Ageing
MRC/Cancer Research UK/BHF Clinical Trial Service Unit & Epidemiological Studies Unit (CTSU)

Natural Environment Research Council Institutes
British Antarctic Survey
British Geological Survey
Centre for Ecology and Hydrology
Centre for Population Biology
Climate and Land Surface Systems Interaction Centre
Environmental Systems Science Centre
National Centre for Atmospheric Science
National Oceanography Centre,
Plymouth Marine Laboratory
Proudman Oceanographic Laboratory
Scottish Association for Marine Science
Sea Mammal Research Unit

Science and Technology Facilities Council
Chilbolton Observatory
Daresbury Laboratory
Rutherford Appleton Laboratory
UK Astronomy Technology Centre