7th Survey of Knowledge Transfer Activities in Public Sector Research Establishments (PSREs) and Research Councils

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A **REPORT** SUBMITTED TO

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Study Team

Georgia Siora, WECD

Peter Milway, WECD

Anna Papazoglou, WECD

Melissa Roberts, WECD

Rosemary Stafford, Research Resource

Key Contact

Georgia Siora
Warwick Economics & Development Ltd.

Somerset House
Clarendon Place
Leamington Spa
CV32 5QN

T: +44(0) 1926 880405
E: gsiora@w-ecd.com

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Headline Results

This report presents the results of the 7th survey of Knowledge Transfer (KT) activities among Public Sector Research Establishments (PSREs) and other organisations that receive public sector funding for knowledge transfer activities.

BACKGROUND

The first survey took place in 2004 and the survey has historically covered the following groups of research establishments:

- **Cultural Institutions** – such as art galleries, museums, and arts and heritage organisations, mainly funded by the Department of Culture, Media and Sport (DCMS).
- **NHS Regions –** which are not institutions as such but relate to the research activities of all NHS Trusts within a UK region.
- **Departmental Research Bodies –** representing all other Government Department PSREs not covered by the first two categories.
- **Research Council Headquarters & Institutes**.

The eight Science and Innovation indicators that have been reviewed in every survey since 2004 were set out in the 2004-2014 Science and Innovation Investment Framework that was published in 2004. They aim to measure the responsiveness of the research base to the needs of the economy and public sector and include:

1. Business representatives on governing bodies
2. FTE 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 agreements
7. Number of spin-offs
8. Income from business consultancy

The diverse character of PSREs and possible alterations in their status over time as a result of changing ownership or legal status poses challenges in identifying the target population for such a survey. Detailed review of changes that have taken place since 2011 – the year the last survey was published, but also feedback from participating organisations, suggests that 65 umbrella research establishments fall within the scope of this survey covering around 100-125 research organisations (as some research establishments manage other specialist laboratories and research units that are independent from each other).

Of the estimated 65 organisations within the scope of this survey, 34 responded to this survey. Data have been grossed up by sector for Cultural Institutions, Departmental Research Bodies and Research Councils, using publicly available information for employment and income of the non-respondent organisations. Only two of the ten eligible NHS organisations responded to the survey. Therefore, data have not been grossed up for NHS institutions given the low response rate among these organisations.

The information and data presented in this report cover the 2012/13 financial year. Comparisons with the previous survey(s) are made, where possible.

KEY FINDINGS

In total, PSREs spent approximately £2.8 billion on R&D in 2012/13.

Among PSREs:

- Research Councils displayed the highest R&D intensity (defined as R&D spend / PSRE income), at 76%. This figure is skewed by the R&D intensity of the Medical Research Council (MRC) that stands at 93%. Excluding MRC, R&D intensity among Research Councils and Institutes would stand at 49%.
- Departmental Research Bodies reported the next highest R&D intensity at 41% - compared with 16% in the last survey.
- R&D intensity among Cultural Institutions stood at 13% - compared with 7% in the last survey.

Over a third of Governing Body members (36%) were from commercial organisations (compared with 31% in the previous survey). On the other hand, representation from social, community and cultural groups halved since the 2008/09 survey.

In terms of resourcing KT activities:

- Approximately £29 million was spent by PSREs on funding KT offices and related activities in 2012/13. This represents 46% of the budget allocated to these offices in 2008/09.
- Nearly two thirds of the KT budget (64%) came from PSREs' general and earmarked budget for KT activities. On the other hand, approximately 5% of the budget came from other Government Departments - compared with 14% in the previous survey.
- Approximately 1 in every 100 PSRE staff worked in dedicated knowledge transfer roles in 2012/13.
- Departmental Research Bodies were more likely than other PSREs to involve Graduates and Higher Level Apprentices in their work. It has been, however, highlighted by participating organisations that Apprenticeships may not be relevant for some areas of their work.
- Six out of 10 PSREs carried out collaborative research through formal agreements – compared with 9 in 10 in the last survey. This year's survey figures also suggest that RCs were more likely than other PSREs to carry out collaborative research with others though informal agreements.

Comparison of Science and Innovation indicators over the seven surveys shows that:

- Business representatives on PSRE Governing Bodies have increased over time - from 6 in 2008/09 to 16 in 2012/13. Over a third of Governing Body members (36%) were from commercial organisations, compared with 31% in the previous survey. On the other hand, representation from social, community and cultural groups halved since the 2008/09 survey.
- FTE staff in commercialisation offices has steadily increased over time – 36% since the last survey three years ago.
- The number of patent applications has remained at the same levels since 2007. On the other hand, the number of patents granted has increased in the same period.
- A steady increase in licencing agreements in the early years of the survey has been reversed in the last three years.
- Income from IP licencing increased between 2007 and 2009 but it has remained the same since then.
- The number of spinouts has doubled since the last survey three years ago – with PSREs holding some ownership of the spin out in 93% of the cases.

- Reported income from commercialisation activities including business consultancy has increased dramatically over time and in particular in the last three years.
- It is estimated that spinouts generated approximately £24 million in turnover and have attracted external investments valued at £200 million (ten times higher the figure reported in the last survey covering a larger number of spinouts).

Comparisons with Higher Education Institutions (HEIs) suggest that, on a per institution basis, PSREs exhibit higher values than HEIs in the following Science and Innovation indicators:

- Income from business consultancy
- Number of spinouts
- Income from IP licensing
- Number of patent granted (overseas) in a typical year

Overall, despite the challenging economic and funding environment and with less traditional stimulus put in place by PSREs to reward KT and commercialisation i.e. performance rewards for inventors, PSREs appear to have delivered more outputs in five out of the eight Science and Innovation indicators, with particularly impressive results in relation to spinouts and income from commercial activities.

The key challenge that PSREs see arising for them in the future is the need to balance a wide range, and sometimes conflicting, requirements. These include securing funding and sustainability of operations in a competitive environment and at the same time producing high quality research, supporting open innovation, and attracting and retaining well-paid and skilled staff.

The study has shown that, overtime, there has been more involvement of the private sector in management and ownership of PSREs. PSREs are also exploring a wide range of models to address tighter public sector contribution to their activities. In general, however, PSREs consider a supportive and flexible public sector environment as critical to their continuous success. The reason for this is that it is often difficult to attract private sector funding and support without some public sector backing given that impact of some of PSRE activities takes relatively long time to materialise. Strengthening of research and knowledge transfer capabilities may also require significant upfront investment that may be seen as carrying high risk by the private sector.

1. Introduction

1.1 This report presents the results of the seventh survey of knowledge transfer activities among Public Sector Research Establishments (PSREs) and other organisations that receive public sector funding for knowledge transfer activities such as Research Councils (RCs). It provides both quantitative and qualitative information relating to knowledge transfer activities for the 2012/13 financial year as well as comparisons with previous years, where possible.

1.2 This survey, similarly to the previous ones, was designed and managed by the Department for Business Innovation & Skills (BIS). The original questionnaire design for the first of these surveys was developed by the then Department for Trade and Industry (DTI) in 2004 with input from a wide range of PSREs, and was further extended and improved from the 2nd survey through a workshop-based consultative process. The 3rd questionnaire in 2006 introduced a small number of additional questions and other adjustments.

1.3 The current survey has taken place after a gap of three years (the report of the sixth survey was published in February 2011 based on 2008/9 data). In addition to previously asked questions, it asks respondents to state their perceptions of future challenges for their organisations. It is also the first time that the survey asks respondents to state involvement not only of MSc and PhD students but also Higher Level Apprentices with their work.

1.4 **PSREs vary greatly in remit, size, business model, financial arrangements, and legal status and governance structures**. This diversity coupled with changes that have taken place over time at institutional level (as a result, for example, of changes in ownership or legal status) **creates definitional challenges** i.e. which organisations are/remain PSREs? The starting point for the purposes of this survey has been the list of organisations that participated in the previous survey i.e. 87 umbrella establishments representing a total of 143 organisations as some research establishments oversee and/or support (and therefore respond on behalf of) specialist laboratories and research units that are independent from each other. For example, the Medical Research Council (MRC) has traditionally responded on behalf of the institutes it supports and its research units – a total of 54 organisations.

1.5 Within the three years since the last survey, significant organisational and funding changes have taken place in PSREs and RCs and an overview of these is provided in more detail in Section 2 of the report. Due to these significant changes, it was estimated that 65 of last survey's 87 establishments fall within the scope of this survey. The questionnaire was also sent to organisations whose status has changed since the last survey i.e. they may not be PSREs any more or they may have merged with other organisations.

1.6 The rest of the report is structured as follows:

- **Section 2** sets out the context for the survey including background information on PSREs and knowledge transfer activities and the questionnaire design and administration, the target population and response rates.
- **Section 3** presents findings on the profile of PSREs and a number of key performance indicators for knowledge transfer activities. Comparisons are also made with equivalent values from the previous years' surveys.
- **Section 4** presents findings for all other main sections of the questionnaire.
- The questionnaire can be found in **Appendix A** and brief descriptions of all organisations that received this questionnaire are included in **Appendix B**.

2. Context for the Survey

Public Sector Research Establishments (PSREs)

2.1 The UK science infrastructure consists in part of universities, and in part of a diverse collection of research and development institutes. Institutes that are mainly funded by the public sector, other than Higher Education Institutions, have to date been institutes and centres attached to Research Councils and government department laboratories. These are the so-called PSREs. PSREs have a very specific 'parent body', which could be a UK Research Council or Government department and that usually has a clear and direct responsibility for their work and investment. Therefore, PSREs in the UK that are affiliated to government departments provide research services required by their departments to fulfill their missions and those attached to Research Councils provide research and related services related to the missions of their Research Council.

2.2 It is worth noting that definitions of PSREs vary in different countries. According to OECD[1], the term public research organisation (PRO) is used to refer to a heterogeneous group of research performing centres and institutes with varying degrees of 'publicness'. This is understood in broad terms as the level of governmental influence on their research activities and funding, rather than just mere ownership.

2.3 In the UK, PSREs' primary function has been to undertake scientific research and service provision in areas relating to[2]:

- Improving quality of life;
- Promoting economic development through advances in basic science;
- Informing Government policy making; and,
- Undertaking statutory scientific testing and regulatory functions.

2.4 Within this broad framework, PSREs tend to fall into two groups: a) those that are part of or directly sponsored by Government departments; and, b) those that are part of, or directly sponsored by one of the UK Research Councils. Within this broad coverage, these include:

a. **Departmental Research Bodies sponsored (currently or in the past) by Government Departments** as follows:

- **Cultural Institutions** - funded by the Department of Culture, Media and Sport (DCMS), although they may also receive funding from other sources (such as the National Lottery). They comprise art galleries, museums, and arts and heritage organisations.
- **NHS Regions –** which are not institutions as such but relate to the research activities of all NHS Trusts within a given region of the UK. Between 2002 and 2005 the Department of Health established 'Innovation hubs' to provide an innovation management service for most if not all of the NHS Trusts within a given region. It is these Innovation Hubs that were invited to respond to survey on behalf of the trusts within their region.
- **Departmental Research Bodies –** representing all other Government Department PSREs not covered by the first two categories.

b. **Research Council Headquarters & Institutes**. The headquarters' operations of Research

[1] Public Research Organisations, OECD, 2011, www.innovationpolicyplatform.org.
[2] John Baker Report 1999.

Councils (RCs) 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.

2.5 Within this context, it becomes evident that PSREs vary greatly in employment size, legal status and governance structures. For example, they include organisations such as the Defence Science and Technology Laboratory (Dstl) with 3,877 FTE employees, the Ordnance Research Survey with 20.5 FTE employees and the NHS Innovation South East with 7.9 FTEs. The group also includes Executive Agencies[3] and entities that have full Trading Fund Agency status[4].

2.6 In the last twenty years, PSREs have also seen their governance structures and roles changing, in some cases quite significantly. Many countries including the UK have been working to reform their public research system to increase its efficiency and responsiveness to social and economic needs but also as a response to tighter public budgets and the need to demonstrate return on investment of taxpayers' monies. As a result, there has been more involvement of the private sector in the ownership and management of PSREs but also mergers and transfers.

2.7 At the same time, the importance of PSREs within the public sector funded science and innovation ecosystem remains. The 2nd report of Session 2013-14 produced by the House of Lords Select Committee on Science and Technology in November 2013 stated that *'In our view, it is important that the Government ensures that the capabilities of PSREs, both their provision of scientific infrastructure and their leadership role, are protected. Some of the PSREs are funded from outside the science budget and they should not be quietly trimmed away. The scientific infrastructure held by PSREs must be maintained as a public good and made available to both the wider scientific and end user communities. Whatever governance arrangements exist, and may be put in place in the future, it is important that the role of PSREs in providing national infrastructure is not eroded…PSREs are often custodians of data, expertise and mid-range facilities. We recommend that BIS Ministers ensure that the funding and governance mechanisms in place effectively protect the public goods generated by these institutions'.*

2.8 **It is acknowledged that this is a dynamic landscape and the classification of PSREs as such may not always accurately reflect their latest status and purpose. However, any future work in this area (for research purposes but also for ensuring sound funding allocations of public funds) would benefit from revisiting and agreeing a definition for PSREs**[5].

PSRE's Role in Knowledge Transfer

2.9 The rationale for supporting and funding PSREs through the public purse has been justified to date as addressing one or more of the following market failures[6]:

[3] Executive agencies were created to enable executive functions within government to be carried out by a well-defined business unit with a clear focus on delivering specified outputs within a framework of accountability to Ministers. Executive Agencies: A Guide for Departments, Cabinet Office, October 2006.

[4] Trading Funds are a means of financing the revenue-generating operations of a government department, which takes them outside the supply process. They are not separate legal entities and remain part of a department (or are departments in their own right). A trading fund is part of government established under the Government Trading Fund Act 1973.

[5] In August 2014, BIS will publish a report by Keith Smith, Professor of Innovation Economics at Imperial, which provides a taxonomy of PSREs.

[6] PSREs and the Science Base: a policy for sustainable trading and joint strategic investment in PSRE infrastructure, Final Report of the Research

- The core-funded work they do is often potentially commercially unattractive to private sector suppliers.
- The work they do is 'difficult' by virtue of the infrastructure and facilities required, which may require a high level of physical or biological security or a permanent commitment for custodianship, or a high level of quality assurance or an uneconomic support system which HEIs are unwilling to consider.
- The government has determined that an in-house scientific capability is a strategic imperative, either because it wishes to be able to commandeer specialist scientific resources in emergency situations or because of a potential contribution the capability will make to national security operations.
- The government wishes to insure against the risk that the particular scientific services will not be available to it when required in the future.

2.10 Within this context, it appears that although knowledge transfer, i.e. flows of scientific knowledge, from PSREs is important, commercialisation of PSREs' research outputs is not a priority. However, knowledge transfer activities can create benefits for the wider economy. For example, exploitation of intellectual capital may result in products, which generate significant wealth and employment[7]. In fact, there is a variety of PSRE 'knowledge transfer' activities that could potentially generate wealth. These would include 'free' dissemination of research outputs, 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.

2.11 In June 2004, the then Government published a ten-year Science and Innovation Investment Framework 2004-2014 (alongside the 2004Spending Review) which set out the Government's commitment to the sustainability of the UK research base, including PSREs. The framework included 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 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).

2.12 The eight core indicators that are relevant to PSREs and have been reviewed in every survey since 2004 are:

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

Council Institute and Public Sector Research Establishment Sustainability Study (RIPSS) Steering Group, 2004.

[7] Office of Science and Technology, July 2000.

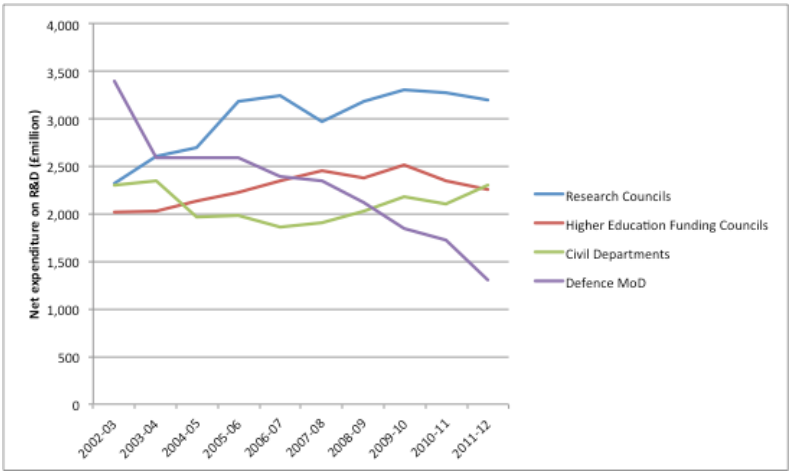
2.13 Individual indicators vary in importance from one PSRE to another and therefore, any comparisons should be undertaken with caution.

2.14 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 organizations. 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 knowledge-related activities.

Changes since the 6th Survey

2.15 A number of funding and operational changes that have taken place since the last survey in 2008/09 need to be considered in assessing trends over time. For example, although the Government invests significant funding on research and development, budgetary constraints have affected this expenditure since the last survey in 2008/9. In 2011/12, net Government expenditure (adjusted for inflation) on Research & Development in stood at £9.7 billion, a decrease of £659 million since 2008/9. Review of recipients of funding indicates that there has been an increase in R&D expenditure on Government Departments[8] from £2 billion in 2008/9 to £2.3 billion in 2011/12. On the other hand, Government expenditure on Higher Education has declined by £117 million since 2008/9 standing at £2.3 billion in 2011/12. Government expenditure on Research Councils has also declined; it stood at £3.19 billion in 2011/12 (down by £13 million since 2008/09).

Figure 1: Net Government Expenditure on R&D 2002/03 to 2011/12 (real terms)



Source: Science, engineering and technology statistics 2013 (ttps://www.gov.uk/government/publications/science-engineering-and-technology-statistics-2013)

Fig. 1 is a line graph showing Net Government Expenditure (£m) on R&D 2002/03 – 2011/12 (real terms) for Research Councils, Higher Education Funding Councils, Civil Departments and MoD.

2.16 In terms of specific support to PSREs, the Public Sector Research Exploitation Fund (PSREF) was launched following the Baker Report in 1999 to encourage the commercialisation of the intellectual property from research carried out in public sector research establishments. The Fund also aimed to add value by providing commercialisation/knowledge transfer capacity and resources in organisations that had not previously had such capacity, and by the subsequent development of

[8] These figures exclude MoD (Government expenditure on MoD R&D, stood at £1.3 billion in 2011/10, representing 62% of the 2008/9 expenditure).

spin-off opportunities that would not otherwise have been identified. Under four rounds of funding between 2001 and 2008, 390 projects were funded with a total of £80.9m.

2.17 According to the evaluation of the impact of the Fund[9], the PSREF funding had some significant impacts upon the innovation pipeline/pathway of PSREs and their knowledge transfer and commercialisation activities including (based on information provided by 40 PSREs) nearly 1,200 disclosures recorded, 856 innovations actually reviewed with 219 of these commercialised. Furthermore, 200 licence deals resulted in 62 products on the market and 29 spin-outs. However, no further rounds have been funded since Round 4 in 2008.

2.18 Since the last survey, a number of changes have also taken place at PSRE/institutional level among all PSRE groups including Government Departmental Research Bodies. There are currently 38 PSREs associated with Government Departments across science and the arts. These include 20 Cultural Institutions and 18 Departmental Research Bodies as shown in Figure 2.

Figure 2: Departmental PSREs – Science and the Arts

Cultural Institutions	Department Research Bodies
Arts Council England	Agri-Food and Biosciences Institute of Northern Ireland
British Library	Animal Health and Veterinary Laboratories Agency (AHVLA)
The British Museum	AHDB Potato Council
English Heritage	FERA
Historic Scotland, Technical Conservation Group	Cefas
Imperial War Museum	Defence Science & Technology Laboratory (Dstl)
Museum of London	Forest Research
National Gallery	Health and Safety Laboratory (HSL)
Amgueddfa Cymru – National Museum Wales	Health Protection Agency (HPA)
Conservation Technologies (National Museums Liverpool)	Met Office
National Galleries of Scotland	DairyCo
National Museums of Scotland	Moredun Research Institute
Natural England	National Physical Laboratory (NPL)
Natural History Museum	National Measurement Office – NMO (formerly NWML)
Science Museum Group (SMG)	Ordnance Survey
Royal Botanic Garden Edinburgh	Research & Radionavigation (Trinity House)
Royal Botanic Gardens Kew	Culham Centre for Fusion Energy (CCFE) – Part of the United Kingdom Atomic Energy Authority -
Scottish Natural Heritage	Veterinary Laboratories Agency
Tate	
Victoria and Albert Museum	

2.19 The last survey did not include the Science Museum Group (SMG). SMG incorporates the Science Museum, the Science Museum Library and the Wellcome collections of the history of medicine at South Kensington; the Museum of Science and Industry at Manchester, the National Railway Museum at York; the National Media Museum at Bradford, the National Railway Museum at Shildon; and Concorde 002 with its associated exhibition at Yeovilton. Collection stores are located in Wroughton, Swindon; Blythe House in West Kensington; Foundry Lane in York and Black Dyke Mills in Bradford. SMG was managed directly by Government until 1984, when the Board of

[9] Public Sector Research Exploitation Fund Evaluation, WECD fro BIS, August 2012.

Trustees of the Science Museum was established under the National Heritage Act 1983. Thereafter, the Museum ceased to operate as part of a Government department. SMG now has the status of a non-departmental public body, operating within the public sector but at arm's length from its sponsor department, the Department for Culture, Media and Sport (DCMS). However, while research occurs across all museum departments, from learning to exhibitions, the Research & Public History Department was established in 2012 to specifically support the Group's academic activities.

2.20 In relation to the other Departmental Research Bodies, a number of changes have occurred/are currently taking place:

- The Commission for Architecture and the Built Environment (CABE) was an executive non-departmental public body of the UK government, established in 1999. It was funded by both, the Department for Culture, Media and Sport (DCMS) and the Department for Communities and Local Government (DCLG). It was merged into the Design Council on 1 April 2011.
- The Environment Agency has stated that it should not be regarded as a PSRE but as an Executive non-Departmental Public Body of Defra.
- The UK Government announced the closure of the Forensic Science Service (FSS) in December 2010, citing monthly losses of £2m as justification. The FSS finally closed on 31 March 2012. The FSS archives - a collection of case files and retained casework samples such as microscope slides, fibre samples and DNA samples - has been retained to allow review of old cases. Forensic work is now contracted out to the private sector.
- NESTA (National Endowment for Science Technology and the Arts) became an independent charity on 1 April 2012. A government review in 2010 concluded that, while NESTA provided a valuable role, it did not need to be a public body and that its activities were better suited to the voluntary sector. This led to NESTA becoming an independent charity in 2012, along with a name change to Nesta.
- The Scottish Crop Research Institute (SCRI) joined forces with the Macaulay Land Use Institute and are both part of James Hutton Institute.
- On April 1, 2009, the Scottish Fisheries Protection Agency and Fisheries Research Services were merged with the Scottish Government Marine Directorate to form Marine Scotland, part of the Scottish Executive.
- In October 2013, it was announced that the Bee Health Inspectors, the Plant Health and Seed Inspectorate, the GM Inspectorate and UK Government Decontamination Service, all currently within Fera, will remain in the Defra network, due to their enforcement and statutory functions. These functions will come together with AHVLA to form a new agency by October 2014.

2.21 In relation to NHS related organisations, the following 10 organisations fall within the scope of the current survey:

- Health Innovations East
- NHS Innovations North (North East)
- TrusTECH the NW NHS Innovation Hub
- NHS Innovations South East Ltd
- MidTECH Innovations Ltd – NHS Innovations West Midlands
- Medipex NHS Innovations Yorkshire & Humber

- NHS Northern Ireland
- Scottish Health Innovations Ltd (previously Greater Glasgow Health Board)
- The NIHR Horizon Scanning Centre (NIHR HSC), previously the National Horizon Scanning Centre (NHSC)
- NHS South West

2.22 In addition to the closure of two NHS Innovation Hubs (NHS Innovation East Midlands and NHS Innovation London) since the last survey, a number of other developments in the status of the NHS organisations have taken place and are described below.

- The Training Hub for Operative Technologies in Healthcare (THOTH) was formed in 2006, with funding from the Department of Health, the Department for Business, Innovation & Skills (then the Department of Trade and Industry) and Imperial College with support-in kind. From inception it was hosted within the Chelsea and Westminster Hospital NHS Foundation Trust in space rented by Imperial College. It was renamed NHS Training for Innovation (TFI) in Spring 2009. TFI's principal funding was exhausted at the end of financial year 2012/2013 and TFI-led programmes were suspended at that time with the majority of outputs being made available to partners for access by users. TFI initiated and sponsored the creation and launch of the National Association of Medical Device Educators and Trainers (NAMDET[10]). Aimed at Medical Device Trainers, Risk Management, and the Medical Device Industry, the now independent association provides a platform for support, discussion and sharing of best practice in this vital healthcare segment. NAMDET was formally incorporated as a not for profit company limited by guarantee in October 2011, and began to function with a Full Board of Directors on 1st January 2012.
- NHS Innovations North continues to be delivered by RTC North Limited on behalf of Academic Health Science Network for the North East and North Cumbria. RTC North is a long established business support organisation. It originated as the Regional Technology Centre (RTC) for the North East and Cumbria – one of a network of 12 set up by the then government in 1987. RTC North grew steadily into its current position as one of the leading independent technology transfer companies in Europe employing over 40 people.
- NHS Innovations South West Limited (NISW) is a private, not-for-profit, company limited by guarantee. Until April 2013 NISW was fully funded by the South West Strategic Health Authority, but it is now operating with a NHS Trust membership model and income from additional sources. NISW offers commercial support to NHS staff by providing a service to identify, protect and develop innovative healthcare solutions and accompanying intellectual property, sourced from within the NHS. It also provides business development consultancy on a commercial basis to non-NHS clients with an interest in the NHS as a collaborator and / or as a customer and commercial marketplace and can help with the adoption of recognised new technologies and systems where they have proven patient and system benefits. It works via a small team of commercially experienced Business Development Managers who support a network of Trust Innovation Leaders (TILs) and provide other complimentary services to organisations in the region. The TILs are embedded in NHS Trusts and work on developing innovation and enterprise within their organisations, having been trained by NISW and achieved the CMI-accredited Diploma in 'Innovation Leadership and Change Management'.

[10] http://www.namdet.org.uk

2.23 It is recognised that the survey may have been difficult for NHS-related organisations to complete. They tend to cover a very large customer base across a large number of organisations, which operate autonomously and under a separate governance structure. In addition, a lot of the impact that the NHS hubs have relates to patient benefit, i.e. cost savings, efficiencies, better outcomes for patients etc. These are not always easily quantifiable. The types of IP that NHS deals with are also mainly non-patent forms of IP, which are again difficult to quantify financially.

2.24 In relation to the Research Councils, there are 4 Research Council HQs, which in the past were included in the survey as affiliated PSREs:

- The **Engineering and Physical Sciences Research Council (EPSRC),** which stated that it should not be regarded as a PSRE and therefore should not be included in this survey.
- The **Biotechnology and Biological Sciences Research Council (BBSRC)**, which provides strategic funding to eight institutes[11]. These are: The Babraham Institute, The Institute of Biological, Environmental & Rural Sciences (IBERS), the Institute of Food Research (IFR), the John Innes Centre, The Pirbright Institute, the Roslin Institute, Rothamstead Research and The Genome Analysis Centre. The institutes deliver innovative, world-class bioscience research and training, leading to wealth and job creation, generating high returns for the UK economy. They have strong links with business, industry and the wider community, and support policy development. The institutes' research underpins key sectors of the UK economy such as agriculture, bioenergy, biotechnology, food and drink and pharmaceuticals. In addition, the institutes maintain unique research facilities of national importance. In 2012, BBSRC introduced a separate funding stream to support the knowledge exchange and commercialisation (KEC) activities at institutes strategically funded by the Council[12]. The aim of the KEC grant is to provide support for the essential core infrastructure and capability required to deliver the institute-wide knowledge exchange and commercialisation activities that underpin all Institute Strategic Programmes Grants (ISPG) and National Capabilities Grants (NCG). BBSRC's goal in providing this funding is to **enable** the successful application of the intellectual assets of the Institutes to maximise their public benefit and impact. Within this context, and as clearly stated in BBSRC's policy for knowledge exchange and commercialization[13], '*…BBSRC delegates responsibility for the identification, management and application of intellectual assets arising from research funded by the Council to the host institution*'. Each institute has developed a strategy and plans for knowledge exchange and commercialisation, and progress in delivering these are reviewed on an annual basis on the advice of the BBSRC Bioscience for Industry Strategy Panel. Therefore, it is the Institutes (rather than BBSRC) that hold information relevant to this survey – and they have been asked to respond directly to the survey.
- **Natural Environment Research Council (NERC)** declared a similar position to BBSRC i.e. relying upon the individual institutes/centres funded by the Council to respond to this survey.

[11] http://www.bbsrc.ac.uk/organisation/institutes/institutes-of-bbsrc/institutes-of-bbsrc-index.aspx

[12] IBERS and Roslin, as institutes embedded within universities, and therefore with access to funding from the relevant Higher Education Funding Councils did not receive a KEC grant. Roslin Institute set up in 1993 is now part of the University of Edinburgh. The Roslin Foundation holds the residual financial reserves of the Roslin Institute held before the transfer on 1st May 2008 of the staff, research activities and related assets of The Roslin Institute into the University of Edinburgh. It has a number of subsidiary companies: Roslin Cells - a leader in the isolation of new clinical grade undifferentiated stem cells for use in research and therapy; Well Cow – has developed a unique wireless telemetry bolus system that measures rumen pH and temperature in cows; Roslin BioCentre— life science focussed science park, home to an impressive array of research intensive companies; Roslin Cellab — stem cell technology company, providing contract research, product development work and stem cell culture training for academic and commercial clients; Roslin Developments — commissioned the construction of the new Roslin Institute building at Easter Bush; and, Roslin Eggs — developing and exploiting avian transgenic know-how in the production of recombinant proteins.

[13] http://www.bbsrc.ac.uk/organisation/policies/position/policy/knowledge-exchange-commercialisation.aspx, May 2010.

NERC funds six major environmental research centres: British Antarctic Survey (BAS), British Geological Survey (BGS), the CEH – Centre for Ecology & Hydrology (CEH), the National Oceanography Centre (NOC), the National Centre for Atmospheric Science (NCAS), the main administrative centre of which is at the University of Leeds and National Centre for Earth Observation (NCEO), which is now part of the Department of Metrology at the University of Reading[14]. It is worth noting that this survey has taken place at a critical time for NERC and the centres. As it is briefly summarised below, a review of future ownership and governance of the centres is under way.

- NERC has been reviewing the relationship with its wholly-owned research centres to enable greater clarity of NERC's role and thereby make easier greater alignment with other Councils and the wider BIS family, and to improve the centres' roles as science delivery partners and provide an opportunity for them to develop outside of public sector. To inform Council's consideration of this issue, NERC issued a call for evidence on 2 July 2013, and also established an independent external advisory panel under the chairmanship of Professor Robert Allison, vice-chancellor of Loughborough University, to consider the potential benefits and risks of this change, prior to a more detailed analysis of possible alternatives to the present arrangements. The call for evidence raised a number of concerns about such a transition: the need, for example, to ensure on-going, open access to the considerable data collections of the centres, and the possible effect on access to NERC infrastructure. Respondents emphasised the need to ensure both the short and long term sustainability of the centres and their individual missions. The external advisory panel also addressed the issue of long-term sustainability and concluded that continuing the *status quo* was unlikely to maintain the national significance and importance of the science supported by NERC and the centres. At its meeting on 4-5 December 2013, Council considered the first project gateway - to decide whether the potential benefits are likely to be realisable and whether they outweigh the attendant risks. Taking into consideration the responses to the call for evidence, Council accepted the view that the *status quo* was not a viable option, in that ways need to be found that allow NERC to focus on its primary role as a research council, and that the centres must be provided with greater operational freedom. Council considered that there should be a detailed examination of how these objectives can be achieved, whether within or outside of the public sector, and that alternative ownership models must be examined before it can take a firm view on which might be the appropriate long-term future for NERC and the centres. It also recognised that there were aspects of a possible transition that needed detailed discussion with Government: the extent to which NERC-owned assets, such as ships, buildings or data, could be transferred to independent entities; and how NERC would ensure continued advice and emergency responses to Government. Council has asked the NERC Executive, together with the centres, to robustly test how the *status quo* might be changed independently of a change of ownership, as well as developing detailed plans for independent governance that might best suit centres' future missions. This analysis will inform a second gateway decision, currently scheduled for July 2014.
- The only Research Council HQ that appears to fall within the scope of the current survey (and have indeed responded to it on behalf of all its operations including its Laboratories) is **the Science & Technology Facilities Council (STFC**).

[14] NCEO has been directly involved in the establishment of the Satellite Applications Catapult, based in Harwell, Oxfordshire, working with companies including Astrium, Logica, Vega and the Technology Strategy Board and UK Space Agency, to make the UK the leading country for both Earth observation capability and downstream services. NCEO spends £6.49m per year on Earth observation and this new link with the Catapult will help ensure that research is fully exploited.

2.25 During 2012 the Medical Research Council (MRC) also initiated a programme to develop and strengthen partnerships including a major programme to transfer a number of existing MRC research units to MRC/University unit partnerships. Under the programme directly funded MRC units staffed by MRC employees were transferred to MRC-University units, whereby MRC funding is provided to the university and staff are now university employees. At 31 March 2013 the MRC supported:

- 3 institutes (as in previous survey)
- 22 MRC research units (28 previously)
- 3 MRC-University research units (22 previously)
- 27 university centres and charity partnerships

2.26 By January 2014 there were 27 research units (11 MRC units and 16 MRC-University units) and 25 university centres and charity partnerships. The MRC is also part a consortium of six UK scientific and academic organisations to create the Francis Crick Institute as a world-leading centre of biomedical research and innovation. In 2015, researchers from the MRC National Institute of Medical Research (NIMR) will move into the Francis Crick Institute's new interdisciplinary facilities[15].

2.27 The foregoing issues highlight that the environment within which PSREs and RCs operate has changed significantly since 2008/09. In total, taking these changes and views into account, it is estimated that 65 PSREs fall within the scope of this survey – covering between 98-125 organisations (depending on whether the 27 University partnerships supported by MRC are regarded as PSREs or not).

PSREs in Scope of the Survey and Responses

2.28 As shown in Figure 3, of the estimated 65 organisations within the scope of this survey, 34 responded (52% response rate). Of the non-respondents, 10 organisations stated that they were unable to respond to the questionnaire due to other commitments and lack of resources. All the non-responding organisations were emailed and telephoned on several occasions with a request for them to participate.

Figure 3: Survey Response Rates

PSRE Group	Number of Organisations in Scope	Number of Organisations responding[16]	Response Rate
Cultural Institutions	20	10	50%
Departmental Research Bodies	18	10	55%
NHS Regions/Institutions	10	2	20%
Research Councils HQs	1	1	100%
Research Councils Institutes	16	11	69%
Total	65	34	52%

2.29 On receipt of completed questionnaires, checks were undertaken to validate the data. These included identification of significant outliers and any major gaps in information provided. Analysis of trends over time has involved:

[15] Further information is available from the MRC's website at http://www.mrc.ac.uk/about/institutes-units-centres/
[16] End June 2014.

- Setting out sets of tables for respondents to the current survey (2013) and previous surveys.
- Comparisons of findings between the last two surveys and over time, where possible.
- Comparison of responses in relation to knowledge transfer indicators for institutions that responded to both latest surveys (2008/09 and current) in order to compare changes among the same cohort of respondents.
- Data have been grossed up by sector for Cultural Institutions, Departmental Research Bodies and Research Councils, using publicly available information for employment and income of the non-respondent organisations (including information on employment and income of non-respondents drawing from PSRE related public available information such as the Annual Civil Service Employment Survey (ONS, 2014- based on 2013 data) and PSREs' Annual Reports and Corporate Plans. Data have not been grossed up for NHS institutions given the relatively low response rate among NHS PSREs.

3. Profile of PSREs and Knowledge Transfer Activities

3.1 This section provides an overview of the profile of PSREs and their knowledge transfer activities based on facts and figures provided by PSREs that responded to this survey including:

- PSREs' employment, income, sources of income and R&D spend and governance;
- PSREs' resourcing of Knowledge Transfer (KT) activities in terms of people, funding, collaborations and skills development including placements of graduates, post graduates and Apprenticeships;
- Performance of PSREs in KT outputs and outcomes over time, as captured by the survey's science and innovation indicators;
- Incentives in operation to support KT and Commercialisation i.e. stimulus; and,
- Additional KT outputs/outcomes and impacts generated through PSRE activity including citations and articles but also jobs and income generated by spinouts.

3.2 Information is presented by broad sectoral groups i.e. Cultural Institutions, Departmental Research Bodies, Research Councils and Institutes and NHS. Due to the diversity of organisations involved in the survey, **any comparisons between groups should be presented with caution and within the relevant context.**

Profile of PSREs

3.3 Figures 4 and 5 (raw survey data and 'grossed-up' values respectively) show 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[17]. As mentioned earlier, no grossed up values have been provided for the NHS regions.

3.4 As shown in Figure 5, it is estimated that collectively, **PSREs within the scope of this survey spent approximately £2.8 billion on R&D in 2012/13.** This represents 44% of their estimated combined income.

3.5 The Research Councils displayed the highest R&D intensity (76%). This figure is skewed by the R&D intensity of MRC – 93%. Excluding MRC, R&D intensity among Research Councils and Institutes would stand at 49%. Departmental Research Bodies had the next highest R&D intensity at 41% - representing a considerable increase from 16% in 2011. R&D intensity among Cultural Institutions stood at 13% - this has increased from 7% in the 2008/09 survey.

Figure 4: PSREs' Organisation Profile – Raw Survey Data

PSRE Group	FTE Employees	R&D spend (£)	Income (£)	R%D Intensity
Cultural Institutions	7,090	97,032,064	773,601,000	13%
Departmental Research Bodies	8,622	487,133,085	1,193,483,541	41%
NHS Regions	21	56,667	852,000	7%
Research Council HQs and Institutes	8,159	934,793,000	1,231,101,000	76%
Total	**23,892**	**1,519,014,816**	**3,199,037,541**	**47%**

[17] R&D spend / PSRE income.

Figure 5: PSREs' Organisation Profile – Grossed up Values

PSRE Group	Number of FTE Employees	R&D spend (£)	PSREs' income (£)	R&D Intensity 2012/13	R&D Intensity 2008/09
Cultural Institutions	15,356	270,153,925	2,153,838,000	**13%**	7.5%
Departmental Research Bodies	17,285	789,033,233	1,933,143,541	**41%**	15.6%
Research Council HQs and Institutes	14,405	1,739,594,373	2,291,006,000	**76%**	55.8%
Total excl. NHS	**47,046**	**2,798,781,531**	**6,377,987,541**	**44%**	

3.6 In terms of overall income, it appears that, on average, 77% comes from the parent department, 10% from other Government Departments, 8% from commercial organisations and 5% from non-commercial organisations. As shown in Figure 6, there is some variation of sources of funding among PSRE groups. For example, Research Councils are by far more likely to generate their income from commercial organisations than other PSREs.

Figure 6: PSREs' Sources of Income (%) – Grossed up Values

PSRE Group	From Parent department	From Government departments	From commercial organizations	Non-commercial organisations
Cultural Institutions	76%	15%	8%	1%
Departmental Research Bodies	78%	12%	6%	3%
Research Council HQs and Institutes	76%	5%	10%	9%
Total	**77%**	**10%**	**8%**	**5%**

3.7 As shown in Figure7, **the average number of members on a PSRE Governing Body has increased from 6 in 2008/09 to 16 in 2012/13**. Governing Bodies appear to be larger since the last survey consisting of between 8 and 33 members (compared with a range of 3 -14 members in the last survey).

3.8 On average, over a third of Governing Body members (**36%) in 2012/13 were from commercial organisations (compared with 31% in 2008/09)**. Notable, however, the proportion of Governing Body members from commercial organisations reduced significantly in Departmental Research Bodies since 2008/09 (down to 15% from 40%). Representation from social, community and cultural groups and from public sector organisations also declined since 2008/09.

Figure 7: Composition of Governing Body – Raw Survey Data

PSRE Group	Average Size	% from commercial organisations	% from social, and cultural groups	% from public sector organisations
Cultural Institutions	33	43%	7%	16%
Departmental Research Bodies	9	15%	4%	55%
NHS Regions	8	38%	6%	38%
Research Council HQs and Institutes	8	24%	0%	22%
Total 2012/13	**16**	**36%**	**5%**	**23%**
Total 2008/09	**6**	**31%**	**10%**	**41%**

Resourcing of Knowledge Transfer Activities

3.9 Figure 8 shows numbers of staff employed in Knowledge Transfer (KT) or similar units and the proportion of these staff that have relevant professional qualifications. Collectively the responding PSREs employed 328 FTE dedicated knowledge transfer (KT) staff in 2012/13 – or, an estimated 611 equivalent in grossed up values. This number suggests that **approximately 1 in every 100 (1.3) PSRE employees worked in dedicated knowledge transfer roles in 2012/13.**

3.10 The proportion of staff employed in technology transfer offices or equivalent offices/posts and holds (or, is training for) relevant KT professional qualifications, varied by type of PSRE. For example, in Departmental Research Bodies, it ranged between 30% in the Health and Safety Laboratory to 60% in Dstl and 100% in Forest Research, Moredun Research Institute and the UK Atomic Energy Authority.

Figure 8: PSRE staff engaged in technology transfer offices, industrial liaison offices, innovation hubs, contract offices and their equivalents

PSRE Group	Dedicated KT Staff/Industrial Liaison Officers, Innovation Hubs and Contract Officers (No)		% professional IP management/commercial qualifications and/or undergoing CPD
	Raw Data	Grossed up Values	
Cultural Institutions	106	230	30% - 100%
Departmental Research Bodies	122	243	30% - 100%
NHS Regions	22	n/a	80%
Research Council HQs and Institutes	78	138	50% - 100%
Total	**328**	**611**	

3.11 The survey also asked PSREs about the numbers of dedicated KT staff that provided training on knowledge transfer to other PSRE employees (Figure 9). Responses suggest that **37% of the dedicated KT staff provided internal KT training to other PSRE employees –** the equivalent figure in 2008/09 survey was 33%.

3.12 **It is estimated that approximately £29million was spent on KT and equivalent offices by PSREs** in 2012/13. This represents 46% of the budget allocated to these offices in 2008/09[18].

3.13 In terms of sources of funding for KT and similar offices, the largest contribution was made through PSREs' general and earmarked budget (64% of all KT allocated budget). In comparison, however, with the 2008/09 survey:

- Nearly no funding at all was allocated to these offices from commercialisation budgets (which could possibly mean that KT offices have become part of the mainstream activities of PSREs and are funded by the core PSRE budget).
- Approximately 5% came from other Government Departments - compared with 14% previously.
- There was no budget for KT offices through PSREF (that represented around 7% of the overall budget in 2008/09).

[18] Figures exclude NHS PSREs.

Figure 9: Funding Sources for KT/Equivalent Offices – Grossed up Values

	From PSRE general budget (£)	From earmarked PSRE budget (£)	From parent department (£)	From other Governmental departments (£)	Other public sector funding	From commercial organisations (£)	From commercialisation / KT activity (£)	Other (£)	Total Funding (£)
Cultural Institutions	3,006,905	831,694	-	-	1,429,989	-	-	-	5,268,589
Departmental Research Bodies	1,611,033	2,402,573,	18,627	81,797	-	846,844	-	56,205	5,017,080
Research Council HQs and Institutes	4,892,413	5,759,089	880,225	18,609	-	-	3,722	7,071,575	18,625,633
Total	9,510,352	8,993,356	898,852	100,407	1,429,989	846,844	3,722	7,127,780	28,911,302
2012/13	33%	31%	3.1%	0.3%	4.9%	2.9%	0.0%	24.7%	
2011/12	57%	1.00%	1.00%	7.00%	7% (PSREF)		28%		63,084,000

3.14 The proportion of PSREs in collaborative research through formal and informal agreements in 2012/13 is presented in Figure 10. **Six out of 10 PSREs carried out collaborative research through *formal* agreements, with 3 out of 10 collaborating *informally***. The proportion of PSREs carrying collaborative research through formal agreements was much higher in the 2008/09 survey at 94%. The figures also suggest that Research Councils were more likely than other PSREs to have carried out collaborative research with others though informal agreements.

Figure 10: Collaborative Arrangements

PSRE Group	Percentage of PSREs undertaking collaborative research through formal agreements	Percentage of PSREs undertaking collaborative research through informal agreements
Cultural Institutions	60%	30%
Departmental Research Bodies	70%	30%
Research Council HQs and Institutes	67%	44%
Total	**61%**	**33%**

3.15 The survey also asked about PSREs' involvement with graduate employment and higher -level apprenticeships. As shown in Figure 11, **Departmental Research Bodies were more likely to involve Graduates and Higher Level Apprentices in their work.** It needs, however, to be recognised that Apprenticeships may not be relevant to some organisations.

Figure 11: Development of Graduates (Averages)

PSRE Group	% Graduates (MSc & PhD)	% Higher Level Apprenticeships
Cultural Institutions	29%	6%
Departmental Research Bodies	54%	100%
NHS Regions	10%	n/a
Research Council HQs and Institutes	36%	2%
Total	**38%**	**20%**

PSRE Knowledge Transfer Performance

3.16 As mentioned in Section 2 of the report, the 2004-2014 Science and Innovation Investment Framework set out the Government's commitment to the sustainability of the UK research base, including PSREs. The framework included a basket of indicators to measure the responsiveness of the research base to the needs of the economy and public sector. Figure 12 provides an overview of these figures over the years (2003-4 to 2012/13) and shows that:

- Business representation on PSRE Governing Bodies has increased over time.
- FTE staff in commercialisation offices has also steadily increased over time, including since 2008/09 (by 36%).
- The number of patent applications has remained relatively unchanged since 2007. On the other hand, the number of patents granted has increased, including since the last survey (by 49%).
- The number of spinouts has doubled since three years ago – with PSREs holding some ownership of the spinouts in 93% of the cases.
- Reported income from commercialisation activities including business consultancy has increased dramatically over time and in particular in the last three years.
- On the other hand, a steady increase in licencing agreements in the early years – nearly double between the 4th and 5th and 5th and 6th surveys has been replaced by a reduction in the last three years.
- Income from IP licencing increased between 2007 and 2009 but it has remained the same since then.

Figure 12: Science and Innovation Indicators 2003/04 – 2012/13

	1st annual survey 2003-4 (n=107)	2nd annual survey 2004-5 (n=116)	3rd annual survey 2005-6 (n=135)	4th annual survey 2006-7 (n=138)	5th annual survey 2007-8 (n=138)	6th annual survey 2008-9 (n=143)	7th annual survey 2012-13 – Grossed up values	Change 2008-9 to 2012-13
Business representatives on governing bodies (%)	175	214	247	207	209	231	405	75%
FTE staff employed in commercialisation offices	385	368	513	669	486	448	611	36%
Number of patent applications	316	335	290	316	379	392	322	-18%
Number of patents granted	228	148	193	172	188	230	342	49%
Number of licensing agreements	621	352	286	604	1,136	2,579	1,164	-55%
Income from IP licensing	£33m	£46m	£186m	£116m	£146m	£198m	£195m	0%
Number of spin-outs	69	84	74	101	89	83	143	72%
Income from business consultancy	£36m	£31m	£26m	£43m	£37m	£100m	£166m	66%
Incl. income from Use of Facilities and Equipment and Training							£133m	199%

3.17 It is worth noting that the number of PSREs responding to the survey has varied over the years. To eliminate this possible bias, the performance of the same cohort of PSREs that responded to both latest surveys was examined. As illustrated in Figure 13, review of data provided by those that responded to both surveys (current and 2008/09) confirmed that:

- Both business representation on PSRE Governing Bodies and PSRE staff employed in knowledge transfer/commercialisation offices have increased.
- Spinouts and income from business consultancy have both seen a dramatic increase since 2008/09.

Figure 13: Science and Innovation Indicators – Same Cohort of PSREs

Comparisons of those who responded in both 6th and 7th surveys – Raw Survey Data

	6th survey 2008-9	7th survey 2012-13	Change 2008-9 to 2012-13
Business on governing bodies	**78**	**152**	**94%**
PSRE staff (FTE) employed in commercialisation offices	**170**	**292**	**72%**
Number of patent applications	272	183	-33%
Number of patents granted	193	193	0%
Number of licensing agreements	2,112	643	-70%
Income from IP licensing (£)	165,096,774	104,619,544	-37%
Number of spin-outs	**27**	**77**	**185%**
Income from business consultancy (£)	**6,195,388**	**22,542,581**	**264%**

3.18 Figure 14 provides an overview of the performance of PSREs and Higher Education Institutions in terms of key Science and Innovation indicators used for the purposes of this survey. The HEI figures are derived from the 2011-12 Annual Higher Education-Business and Community Interaction survey (HE-BCI). Although the HEI data relate to a significantly greater volume of R&D activity[19] than is the case for PSREs, collectively, **PSREs are comparing relatively well, in particular, in relation to income generation from business consultancy.**

Figure 14: Science Innovation Indicators – PSREs and HEIs

Performance Indicators		Grossed Up Values PSRE data	HEIs Latest (2011-12 Survey)
Business representatives on governing		36%	
FTE staff employed in commercialisation		611	
Number of patent applications		322	2,274
Number of patents granted	In a typical year:	342	826
Number of licensing agreements	In 2012-13	1,164	
	All executive license options	25,803	
Income from IP licensing	Commercial organisations:	190,414,577	£68.8m
	Government Departments	3,398,241	
	Other non-commercial organisations	1,543,144	
Number of spin-outs	With some ownership by PSRE:	136	191
	Not owned by PSRE:	7	
Income from business consultancy	Commercial Organisations	126,203,673	£153.0m
	Government Departments	30,328,146	
	Non-commercial Organisations	9,546,790	

[19] Based on 161 participating institutions.

3.19 Further analysis also shows that, at institutional level (i.e. on a per institution basis), **PSREs exhibit higher values than HEIs for certain science and innovation indicators**. These are:

- **Income from Business Consultancy**
- **Number of Spinouts**
- **Income from IP Licensing**
- **Number of patent granted (overseas) in a typical year**

Figure 15: Performance Indicators Averages – Calculated on a Per Institution Basis

Performance Indicators	PSREs 2012-13		HEIs Latest (2011-12 Survey)
Number of patent applications	In 2012-13 (UK):	5.69	14.12
	In 2012-13 (overseas):	4.91	
	In a typical year (UK):	4.34	
	In a typical year (overseas):	9.08	
Number of patents granted	In a typical year (UK):	4.36	5.13
	In a typical year (overseas):	9.79	
Number of licensing agreements		35.78	44.57
Income from IP licensing	Commercial organisations	£6,112,383	£0.43m
	Government Departments	£490,830	
	Other non-commercial organisations	£169,107	
Number of spin-outs	With some ownership by PSRE:	6.1	1.19
	Not owned by PSRE:	1.3	
Income from business consultancy	Commercial Organisations:	£6,213,278	£0.95m
	Government Departments	£9,539,261	
	Other non-commercial organisations	£4,480,710	

Incentives for Knowledge Transfer and Commercialisation

3.20 The survey also sought to determine whether any incentives were put in place to support knowledge transfer and science and innovation commercialisation activities by asking whether:

a. PSRE CEOs are being monitored on their organisation's commercialisation performance; and,

b. Satisfaction surveys are carried out to assess inventors' levels of satisfaction with the commercialisation service provided.

3.21 A shown in Figure 16, the occurrence of incentives by PSREs has been reduced since three/four years ago. CEOs' performance monitoring was carried out by just over half the PSREs (55%) in 2012/13. The equivalent figure in 2008/09 was 73%. Only a quarter of PSREs (25%) undertake inventor satisfaction reviews, compared with 59% in 2008/09.

Figure 16: Incentive Schemes - Raw Survey Data

	6th Survey (2008/09)	7th Survey (2012/13)
% of CEOs monitored on the PSRE's commercialisation performance	73%	55%
% of PSREs carrying out inventors' satisfaction reviews	59%	25%

3.22 PSREs were also asked if a reward scheme for inventors was in operation. As shown in Figure 17, 56% of the responding PSREs did run some kind of scheme that rewards inventors in 2012/13 (compared with 73% in 2008/09). Research Council Institutes were more likely to reward inventors.

Figure 17: Reward Schemes for Inventors - Raw Survey Data

PSRE Group	6th Survey (2008/09)	7th Survey (2012/13)
Cultural Institutions	7%	11%
Departmental Research Bodies	42%	70%
Research Councils HQs Institutes	94%	89%
Total % of PSREs operating a reward scheme for inventors	**73%**	**56%**

3.23 Two thirds of PSREs running such a scheme funded it through commercialisation/knowledge transfer activities. Over a third also relied upon earmarked PSRE budgets as shown in Figure 18.

Figure 18: Sources of funding for inventors' reward schemes - Raw Survey Data

Source of Funding	% of respondents[20]
PSRE General Budget	31%
Earmarked PSRE Budget	37.5%
Parent Department	31%
Commercialisation/Knowledge Transfer Activities	62.5%
Other	19% (Proof of concept funded from internal funds and/or the development of spin-out businesses themselves)

[20] More than one sources of funding could be reported.

Additional Outputs and Impacts

3.24 The survey also explored additional PSRE activity that could either contribute to their KT and commercialisation activities e.g. articles and publications or, it could result from PSRE KT and commercialisation activities e.g. jobs and income generated through spinouts and start-ups.

3.25 As shown in Figure 19, the survey showed that the overall number of media articles for the PSREs has risen since the previous survey. Of the PSREs that were able to provide data on the number of newspaper and other media articles regarding their activities, Departmental Research Bodies received the highest volume of media coverage, with a total of 41,083 articles, a much higher figure than the 24,814 articles reported in the previous survey.

Figure 19: Number of Newspaper and Other Media Articles – Raw Survey Data

PSRE Group	Number of Articles 2012/13[21]	Number of Articles 2008/09[22]
Cultural Institution	18,151	23,319
Departmental Research Bodies	41,083	24,814
Research Councils HQs and Institutes	9,239[23]	10,949
NHS Regions	2	19
Total	**68,475**	59,101

3.25 In terms of academic citations, there has been an increase in the number of academic citations since the last survey – as shown in Figure 20, numbers have doubled. The Medical Research Council responded to the last survey but it did not provide numbers for citations; it has done so for this survey and hence the two numbers quoted.

Figure 20: Academic Citations - Raw Survey Data

	2012/13	2008/09
All respondents excluding MRC	73,653	32,503
All respondents including MRC	182,072	32,503

3.26 Research establishments are also involved in a wide range of other KT activities that are not captured by the above indicators. These include:

- Visits to PSREs from stakeholders. For example, the Pirbright Institute is visited by others organisations in the animal health sector – including, NFU, Trade Associations, International delegations – to discuss disease, policy, funding and good practice.
- PSRE experts providing national and international advice and policy guidance, as issues/inquiries arise.

3.27 In terms of impact and despite the higher response rate in 2011, **reported turnover and investment by spinouts was significantly higher in the current survey than the previous one** as shown in Figure 21.

[21] 27 respondents (7 Cultural Institutions, 9 DRBs, 9 Research Councils, 2 NHS Regions)
[22] 53 respondents (14 Cultural Institutions, 20 DRBs, 17 Research Councils, 2 NHS Regions)
[23] An additional 7,000 online articles were produced by Research Institutes including the British Antarctic Survey.

Figure 21: Spinout Impacts, 2008/9 and 2012/13

PSRE Group	Turnover of active spinouts (£)		External Investment Secured for spinouts (£)	
	2012/13[24]	**2008/09**[25]	**2012/13**[26]	**2008/09**[27]
Departmental Research Bodies	£11,311,000	£1,660,124	£120,000,000	£6,386,000
Research Council HQs and Institutes	£12,756,000	£1,800,000	£82,800,000	£985,000
Total	**£24,067,000**	£20,169,124	**£202,800,000**	£10,011,000

[24] 18 respondents (7 DRBs, 6 Research Councils)
[25] 38 respondents (12 DRBs, 11 Research Councils)
[26] 34 respondents (11 DRBs, 9 Research Councils)
[27] 18 respondents (6 DRBs, 6 Research Councils)

4. Future Outlook

4.1 PSREs were asked to state key challenges they are facing in the future and also their future plans. 20 out of the 34 PSREs provided detailed feedback.

4.2 Future challenges as perceived by PSREs are summarised below:

- The majority of PSREs stated that the reduction in Government funding and the resulting **intensified competition for funding** coupled with **the need to producing good/high quality research** constitute the two key challenges for them in the future.
    - As mentioned specifically by one of the PSREs, '*Real-terms reductions in government funding coupled with a scientific research inflation rate of around 10% means that PSREs are under greater than ever pressure to do more with less. This has led to a desire to do even more translational research to raise more money from industry. However, there are at least two major concerns with this. First, even large companies have found the last few years very challenging and their budgets for external research collaboration have come under pressure. Most SMEs simply do not have the revenue stream to invest significantly in research collaborations with PSREs; many of them are living a hand-to-mouth existence. So such revenue streams are challenging to secure. Second, translational research [that aids companies] requires that there is basic research to translate. Encouraging translational research and collaboration with industry through Government-funded schemes must be measured so as to not skew available funding and undermine basic research. Today's basic research is what we hope to translate 3, 5 or 10 years hence; if basic research is starved now, we will be starving translational research in the future'.*
    - Furthermore, for some research establishments, it is not possible to engage with the private sector as there is an ever increasing number of companies that they can collaborate with and licence to due to Modelling and Simulation (M&S) activities[28]. As stated by one of the respondents, '*...these are financially driven by new metrics and so we are looking for more development stage projects. R&D needs to be de-risked through the public sector; but the review and lead time for such funding and for co-funded projects with industry is long'.*
- PSREs also mentioned that there is some **unhelpful tension in Government priorities** when it comes to commercialisation of research activities. As stated by one PSRE '*Commercialisation of research results that aims to maximise public ROI against Open Access to public funded research results. Where should PSREs put their effort?'*
- PSREs see these conditions as posing challenges for them in the future including continuing the smooth operation of the organisation itself, in terms of keeping up with **utilities and capital costs, maintaining competitive scientific pay and attracting high calibre and highly skilled employees but also contract management and marketing activities.** In the words of PSREs:

  '... *[The key challenge is] to ensure the infrastructure and on-going capital investment is well supported in order to maximize KE and technology development opportunities. This funding is being eroded and along with it the ability to compete in the market place to take innovations and research developments to the commercial stage'.*

[28] M&S integrates the principles of biology, pharmacology, and statistics to address key decisions through the application of mathematical models.

- Within an uncertain economic climate, a number of PSREs also highlighted the **risks that could arise in the future for establishing genuine partnerships-collaborations**. As stated by one PSRE, '*The reduction in Government subsidy will mean that informal partnerships are more likely to be formalised and out onto a commercial footing'.*
- It is also worth noting the **specific issues and challenges highlighted by the NHS hubs**. These include:
  - Lack of parent department (DH and NHS England) support for IP commercialisation and '*they have put policies in place and originally supported the NHS hubs, but have devolved financial support to frontline NHS providers i.e. healthcare providers*.'
  - Healthcare providers (NHS organisations) are under pressure to deliver services within an environment of increasing demand and restricted finances, and within an annual financial cycle. They therefore do not support the medium to long-term innovation activities that the NHS hubs provide. Nor do they want to make particular innovations widely available, as there is now a competitive healthcare provider environment.
  - Although alternative providers have attempted to provide services for the two NHS Hubs that have closed, their coverage is incomplete and there are often issues of conflict of interest with non-PSRE innovation support organisations.
- For PSREs, **sufficient stability and flexibility in the funding environment** is needed in the future to enable long-term strategic planning and evolution, and allow local management to be agile and effective. **Managing visibility, clarity of mission, and a distinct identity** are also vital in forming alliances with industry, international and charitable funders; and in attracting staff and students.

4.3 Despite the challenging environment going forward, a number of significant successes/impacts to date and decisions on new approaches were reported. Examples of these are given below.

- **British Antarctic Survey (BAS)**: In March 2013, the Minister for Universities and Science announced a £3-million investment to create an Innovation Centre at the British Antarctic Survey. Funded by NERC, the Innovation Centre will combine and expand upon the expertise of BAS and the University of Cambridge to create first class research partnerships in new areas, access new streams of funding and demonstrate the economic benefit of our work through closer working with businesses.
- **FERA:** Fera commissioned impact case studies on approximately 10% of its business. These case studies showed that Fera contributed to £280M-£2,028M of recurring avoided costs to industry and society, helped to safeguard industries, helped to trade and develop new markets (turnover of £3.3-£3.7bn); and guided public investment of £78M. This puts the organisation in a good position for its future plans; in May 2014, the Secretary of State for Environment, Food and Rural Affairs announced that Defra is launching a procurement exercise to find a joint venture partner for Fera. The rationale for this move is that a joint venture will protect and enhance its scientific capabilities in the long term, and free it from public sector constraints. This will give Fera the opportunity to access new markets and grow its non-Government business, which it cannot do in its current capacity.
- **Forest Research (FR):** FR successes have continued albeit without BIS funding. FR is a comparatively small organisation and external commercial products take time. However, the team was successful in obtaining two Genomia R&D diversification grants. The first aims to develop an ecological network tool for planners and developers. The second aims to develop

a software platform for determining forest scale Hylobius (a forest pest that attacks valuable conifer species) risk. FR is also leading an initiative between Forest Research and the nursery sector to form a company limited by guarantee. The purpose of the co-operative is to produce selected and improved Sitka spruce planting stock (a valuable tree species) to take forward a tree-breeding programme (to increase the production of high yielding seedlings which can then be planted and grown and will give better yield). After considerable work, third party investment was secured in respect of a FR spin out company, the C-Cure Solutions Ltd (that specialises in land remediation using charcoal based products). The offer comprises a sizeable initial investment and will results in dividends for FR. The business/private partners will bring considerable commercial acumen to the development of C-Cure.

- **Health & Safety Laboratory (HSL):** HSL undertakes a significant amount of KT activity through our accreditation to the Government Information Fair Traders Scheme (IFTS), which allows for commercial exploitation of our Crown Copyright materials. The majority of licences included in these figures are issued under IFTS principles.
- **STFC:** Its Campus Development runs tech transfer in the UK for the European Space Agency and HepTECH and is soon to sign a contract to carry out Tech Transfer for the Fusion Industries. Business Incubation activities have developed on STFC campuses over the last 4 years and have been responsible for supporting 94 companies, creating in excess of 110 jobs facilitated over £70m investment into those companies.
- **UK Atomic Energy Authority**: During 2013/14 we were building our capability in knowledge transfer and IP. Training for all staff is planned but not yet (at March 2014) put in place. A new BD team is now in place, along with Strategic Business Units to take the commercialisation of fusion research forward, which will increase collaboration further during 2014/15.

APPENDICES

APPENDIX A - Survey Questionnaire

7th Survey of Knowledge Transfer Activities in Public Sector Research Establishments

General Instructions

The survey seeks information across a range of areas in relation to knowledge transfer activities in Public Sector Research Establishments (PSREs). The Department commissioned a series of six similar surveys in the past, the last of which covered 2008/09. This 7th survey aims to provide an up to date picture of PSREs and highlight how activities and PSREs have changed over the last 5 years. Therefore, for the purposes of benchmarking data against previous responses and to explore the impact of changing business models, some organisations that were previously PSREs have been included in the scope.

In completing the questionnaire, please note:

- For NHS, all information provided should relate to the hospitals and trusts covered by the Innovation Hub.
- For all other organisations, all information provided should relate to the Public Sector Research Establishment (current/former) i.e. the Laboratory/ Museum/Institute/Agency as a whole and not only that of the department carrying out research or the delivery arm managing the technology transfer or IP exploitation.
- For Research Councils (RCs), 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 – 17 as it helps to provide a fuller picture of activity to promote knowledge transfer from PSREs.
- Please note that 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.
- Please provide figures for the last complete financial year **(e.g. April 2012 to April 2013)**, unless otherwise stated.
- For any questions where exact figures are not available, please provide estimates.
- For any questions where you are unable to provide information, please answer as 'not known' or 'not applicable'.
- Further guidance is also provided at the end of the questionnaire.

Please return survey **by email** to rosemary.stafford@researchresource.co.uk before 28th February 2014.
If for any reason you are unable to meet this deadline please do let us know.

For clarification or further information, please contact either Georgia Siora at gsiora@w-ecd.com or Peter Milway at peter.milway@w-ecd.com

Thank you for your cooperation and contribution.

A. GENERAL INFORMATION

1) **Name of PSRE** (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 (and former PSREs). 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).

.....

2) **Has the status of the PSRE changed since 2008/9? (Please delete those that do not apply).**

   a. **Yes**
   Please describe the current status of the PSRE.....

   b. **No**
   c. **Do not know**

3) **Number of Full Time Equivalent (FTE) employees in PSRE**

£

4) **PSRE's R & D and technological development expenditure**

£

5) **PSRE's income:**

Source of Income	Amount £
Parent Department (including Grant)	
Government Department	
Commercial Organisations	
Non-Commercial Organisations	
Other (please specify)	
Total	

6) **Number of news items and citations for the PSRE:**

News and Citations	Number
Academic citations	
By Institute	
By Researcher	
Newspaper and other media articles about the institute	
Other (please specify)	

B. INFRASTRUCTURE / INTERNAL CAPACITY

7) **How many of your PSRE's staff (FTE) are engaged in Technology Transfer Offices, Industrial Liaison Offices, Innovation Hubs and Contract Offices and their equivalents?**

8) **Percentage of staff in Technology Transfer Office or equivalent with professional IP management/commercial qualifications and/or undergoing continuing professional development**

%.....

9) **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**

10) **How are the Technology Transfer Offices, Industrial Liaison Offices, Innovation Hubs and Contract Offices or their equivalent funded?**

Funding Source	Amount £
PSRE General Budget	
Earmarked PSRE Budget	
Parent Department	
Other Government Department(s)	
Other Public Sector funding	
Commercial Organisations	
Commercialisation/Knowledge Transfer Activities	
Other (please specify)	

11) **Representation on your PSRE's governing body**

Type	Number of representatives
Commercial Organisations	
Academic Institutions	
Public Sector Organisations	
Social, Community and Charity Groups	
Other	
Total	
How many of these are Directors of subsidiary companies which manage commercialisation activities on behalf of the PSRE	

12) **Percentage of all PSRE's staff receiving knowledge transfer training.** Please include any training including continuing personnel development and training courses, and informal activities such as awareness raising seminars for staff.

%....

13) **Development of graduates – percentage of current projects involving students and graduates (include MScs and PhDs)**

Type of Graduate/Student	% Of current projects involving
Graduates (MSc & PhD)	
Student Placements	
Higher Level Apprenticeships	

14) **Does the PSRE operate a rewards scheme for inventors? (Please delete those that do not apply).**

a. **Yes**
   Does the scheme provide rewards for patented technologies? Y/N/Do not know
b. **No**
c. **Do not know**

15) **If the PSRE runs an awards-for-inventors scheme, proof of concept fund, seed fund or equivalent, how are these funded? (Please tick all those that apply).**

Funding Source	Funded by
PSRE General Budget	
Earmarked PSRE Budget	
Parent Department	
Other Government Department(s)	
Other Public Sector funding	
Commercial Organisations	
Commercialisation/Knowledge Transfer Activities	
Other (please specify)	

16) **Is the PSRE CEO or equivalent monitored on the PSRE's commercialisation performance? (Please delete those that do not apply).**

a. Yes
b. No
c. Do not know

17) **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? (Please delete those that do not apply).**

a. Yes

b. No

c. Do not know

C. INCOME GENERATING ACTIVITIES

18) Patents and licensing

Patents	Number	
	UK	Overseas
New patent applications filed in 'typical' year		
Patents granted in a 'typical' year		
New patent applications filed in 2012/13		
All 'live' patent applications currently held by the PSRE		
All 'live' patents currently held by the PSRE		

19) Licences

Licences	Number
Number of license options executed in 2012/13	
All executive licence options and licences by the PSRE	

20) Spin-offs and start-ups

	Number	Number still active after at least 3 years
Spins-off with some ownership by your PSRE		
Formal spin-offs, not owned by your PSRE		
(Staff) start-ups		

21) Estimated current FTE employment of all active firms

22) Estimated current turnover of all active firms

£

23) Estimated external investment secured for spin-offs and start-ups

£

24) Expenditure on management of Intellectual Property

£

25) Income from commercialisation by activity and source

Source of Incomes	£
Licensing and other IP from:	
Commercial Organisations	
Government Departments	
Other non-commercial organisations	
Consultancy	
Commercial Organisations	
Government Departments	
Other non-commercial organisations	
Use of Facilities and Equipment	
Commercial Organisations	
Government Departments	
Other non-commercial organisations	
Training	
Commercial Organisations	
Government Departments	
Other non-commercial organisations	
Any additional research income generated from links with commercial organisations	
Other	

D. NON-FINANCIAL IMPACT

26) Number of knowledge transfer opportunities and invention disclosures communicated to Technology Transfer Office, Industrial Liaison Office, Innovation Hubs and Contract Offices or their equivalent

27) Collaborative research projects

	None (tick as appropriate)	Number of projects (complete if you do carry projects under the listed categories)		
		Total	Industry	Academia
Research through informal agreements?				
Research through formal agreements?				
New projects that commenced in 2012/13				
Projects running from previous years which are still active				

28) 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

Agreements	Number
With Commercial Organisations, new in year	
Cumulative portfolio of agreements with commercial organisations	
With non-Commercial Organisations, new in year	
Cumulative portfolio of agreements with non-commercial organisations	
Other	

29) Publications

	Number	
	Total to date	In the last year
Academic		
For commercialisation		
Other		

E. Additional Information

30) What do you consider to be the key challenges for PSRES in the future? Please use the text box below to provide your assessment.

31) You may also wish to use the text box below to outline any other knowledge transfer activities not covered above.

32) To help us develop a better understanding of the long-term impact of PSREs we are also 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 if you could please forward us a copy of the report or the relevant link.

END OF SURVEY

APPENDIX B – Brief Profiles of PSREs

The Agri-Food & Biosciences Institute (AFBI) was created on 1st April 2006 as an amalgamation of the Department of Agriculture and Rural Development (DARD) Science Service and the Agricultural Research Institute of Northern Ireland (ARINI). AFBI is a DARD Non-Departmental Public Body (NDPB). AFBI carries out high technology research and development, statutory, analytical, and diagnostic testing functions for DARD and other Government departments, public bodies and commercial companies. AFBI's areas of expertise include: animal and plant health, animal behaviour and welfare, livestock genetics, sustainable land use, renewable energy, climate change, marine and freshwater ecosystems, crops and grassland research, plant health and environmental protection, farm animal and fish disease surveillance, marine biotoxins, chemical surveillance for veterinary drug residues in animals, feed and food, food science (microbiology and chemistry) and agri-food and rural economics. AFBI is managed by an independent Board which is also responsible for monitoring its performance. Website: : www.afbini.gov.uk	
Animal Health and Veterinary Laboratories Agency Animal Health and Veterinary Laboratories Agency (AHVLA) is an executive agency of the Department for the Environment, Food & Rural Affairs (Defra). The agency was formed on 1 April 2011, following the merger of Animal Health and the Veterinary Laboratories Agency. AHVLA works to prevent and control farm animal disease in England, Scotland and Wales, protect the health and welfare of farmed animals and safeguard public health from food-borne disease. Its range of activities includes scientific research, welfare inspections, and the registration and licensing of imports of endangered wildlife. The agency also provides an emergency response to outbreaks of notifiable animal diseases. Website: www.defra.gov.uk/ahvla	
Arts Council of England Arts Council England was formed in 1994 when the Arts Council of Great Britain was divided into three separate bodies for England, Scotland and Wales. It is a non-departmental public body of the Department of Culture, Media and Sport. Arts Council England is the national development agency for the arts in England, distributing public money from the Government and the National Lottery. Arts Council England supports a range of activities across the arts, museums and libraries - from theatre to digital art, reading to dance, music to literature, and crafts to collections. The Arts Council operates within a Royal Charter which governs all its decisions. Website: www.artscouncil.org.uk	

Atomic Weapons Establishment

The Atomic Weapons Establishment (AWE) is responsible for the design, manufacture and support of warheads for the United Kingdom's nuclear deterrent. This involves research, design, development, manufacture, in-service support and safe dismantling and disposal when weapons are retired from service. British nuclear warheads are designed and developed at the Atomic Weapons Establishment at Aldermaston. They are manufactured at the Royal Ordnance Factory at Burghfield and at Aldermaston, using components made at the Royal Ordnance Factory at Cardiff. Whilst AWE's sites and facilities remain in government ownership, their management, day-to-day operations and the maintenance of Britain's nuclear stockpile is contracted to a private company: AWE Management Limited (AWE ML). AWE ML is a consortium comprising three equal partners: Serco Group plc, the Lockheed Martin Corporation and Jacobs Engineering Group. Following competition, a contract was awarded to AWE ML covering an initial period of 10 years from April 2000. In 2003, the contract was extended to a 25-year term following a detailed evaluation of AWE ML's long-term partnering proposals. The contract is priced in five-yearly periods. The current contract period took effect from 3 April 2013.

Website: www.awe.co.uk

Babraham Institute

The research of Babraham Institute is focused upon understanding the biological mechanisms underpinning lifelong health and wellbeing. It comprises 28 research laboratories are grouped into four programmes: Signalling, Lymphocyte Signalling and Development, Epigenetics and Nuclear Dynamics, funded by four Institute Strategic Programme Grants (ISPGs) awarded by the BBSRC. Additional response mode grant funding from the BBSRC, MRC, Wellcome Trust, other charities, EU and industry supports uplift from these core research programmes.

Website: www.babraham.co.uk

Biotechnology and Biological Sciences Research Council

BBSRC was established by Royal Charter in 1994 by incorporation of the former Agricultural and Food Research Council (AFRC) with the biotechnology and biological sciences programmes of the former Science and Engineering Research Council (SERC).

BBSRC invests in bioscience research and training in the UK and is one of the 7 Research Councils that work together as Research Councils UK (RCUK). BBSRC is funded by the Government's Department for Business, Innovation and Skills (BIS).

Website: www.bbsrc.ac.uk

British Antarctic Survey

British Antarctic Survey (BAS) was formed in 1962 and undertakes the majority of Britain's scientific research on and around the Antarctic continent. Headquartered in Cambridge, BAS employs more than 400 staff and is part of the Natural Environment Research Council (NERC). The NERC reports to the UK government's Department for Business, Innovation and Skills (BIS). BAS operates five research stations, two Royal Research Ships and five aircraft in and around Antarctica.
Website: www.antarctica.ac.uk/

British Geological Survey

Founded in 1835, the British Geological Survey (BGS) is the United Kingdom's premier centre for earth science information and expertise. BGS is responsible for advising the UK government on all aspects of geoscience as well as providing impartial geological advice to industry, academia and the public.
The BGS is part of the Natural Environment Research Council (NERC), which is the UK's main agency for funding and managing research, training, and knowledge exchange in the environmental sciences. The NERC reports to the UK government's Department for Business, Innovation and Skills (BIS).
Website: www.bgs.ac.uk

British Library

The British Library was established by the British Parliament with the British Library Act, 1972. The library is sponsored by the Department for Culture, Media and Sport. It is located on the north side of Euston Road in St Pancras, London.
Its collections include more than 150 million items, in over 400 languages including books, magazines, manuscripts, maps, music scores, newspapers, patents, databases, philatelic items, prints and drawings and sound recordings.
Website: www.bl.uk/

The British Museum

The British Museum was founded in 1753, **the first national public museum in the world.** The British Museum is a non-departmental public body sponsored by the Department for Culture, Media and Sport.
Under the British Museum Act 1963, the Trustees of the British Museum of Great Russell Street London WC1B 3DG are the corporate body with the legal duty to hold the Museum's collection and make it available to a world audience.
Website: www.britishmuseum.org

The British Potato Council

Potato Council is a division of the Agriculture & Horticulture Development Board since 2008, and aims to develop and promote Britain's potato industry. It was set up by the Potato Industry Development Council Order 1997.

Potato Council raises approximately £6m p.a. through levy (80% from growers, 20% from buyers) which is spent largely on assisting industry to improve competitiveness and sustain demand for potatoes.

Website: http://www.potato.org.uk

Centre for Ecology & Hydrology

The Centre for Ecology & Hydrology (CEH) is part of the Natural Environment Research Council (NERC). CEH was formed in April 2000 from a merger of four long-established research institutes to provide an integrated Research Centre:

- Institute of Hydrology
- Institute of Terrestrial Ecology
- Institute of Freshwater Ecology
- Institute of Virology & Environmental Microbiology

CEH's research is aimed at improving understanding of the environment and the processes that support life on Earth. CEH is particularly interested in the impacts of human activity on the world and in developing ready-to-use approaches for achieving environmental sustainability.

Website: http://www.ceh.ac.uk/

Centre for Environment, Fisheries and Aquaculture Science

Cefas was created on 1 April 1997 from the former Directorate of Fisheries Research under the government's Next Steps programme. Cefas provides scientific and technical support, consultancy and advice to the Department for Environment, Food & Rural Affairs (Defra) and other customers, in the fields of fisheries' science and management, environmental assessment, aquaculture and fish health.

Website: www.cefas.defra.gov.uk

DairyCo

DairyCo is the milk division of the Agriculture and Horticulture Development Board (AHDB). It replaced the Milk Development Council in 2008.

DairyCo is funded entirely by milk producers, via a statutory levy on all milk sold off-farm, at the rate of 0.06p per litre. This provides an annual income of around £6.5m.

Website: www.dairyco.org.uk

Defence Science and Technology Laboratory

Dstl was formed on 1 July 2001 when the Defence Evaluation and Research Agency (DERA) was split into two parts, Dstl and Qinetiq. Dstl is MOD's in-house Science and Technology (S&T) organisation. Its purpose is to maximise the impact of science and technology for the defence and security of the UK.

As a Trading Fund, Dstl's activities are funded entirely by customer contracts from MOD and security sector departments and agencies. Website: www.dstl.gov.uk

English Heritage
The Historic Buildings and Monuments Commission for England was established on 1 April 1984 by the National Heritage Act 1983. English Heritage is the Government's statutory adviser on the historic environment and our role is to help people understand, value, care for and enjoy England's rich historic environment. It is best known for looking after the National Heritage Collection of historic sites and monuments and the guardianship of over 500,000 objects and 12 million photographs in its public archives.
Website: www.english-heritage.org.uk

The Food and Environment Research Agency
The Food and Environment Research Agency (Fera) was launched as an executive agency of the Department for Environment, Food and Rural Affairs (Defra) on 1 April 2009. The organisation employs around 900 staff. The majority of the staff and activities are based at Sand Hutton near York. Fera's overarching purpose is to "support and develop a sustainable food chain, a healthy natural environment, and to protect the global community from biological and chemical risks".
Website: www.fera.defra.gov.uk

Forest Research
Forest Research is the Forestry Commission's Research Agency and main research provider. The overall objective of the Forestry Commission (FC) is to lead the development and promotion of sustainable forest management and to support its achievement internationally.
FR currently employs 171 (full-time equivalent) staff at Alice Holt Lodge in Hampshire, the Northern Research Station near Edinburgh, the Institute of Biological, Environmental and Rural Sciences (IBERS) at Aberystwyth University, and at field stations across England, Scotland and Wales.
Website: www.forestry.gov.uk/forestresearch

Forest Service
Forest Service is an Executive Agency within the Department of Agriculture and Rural Development (Northern Ireland). The main objective of Forest Service is to contribute to the economic development of the entire forestry sector in Northern Ireland, whilst at the same time promoting the sustainable management of forests for multiple use and conserving and enhancing the rural environment.
Website: www.dardni.gov.uk/forestservice

Health and Safety Laboratory
HSL is an Agency of Health and Safety Executive (HSE), which is a statutory body established by section 10 of the Health and Safety at Work etc. Act 1974. HSE is an Executive Non-Departmental Public Body with Crown status, sponsored by the Department for Work and Pensions (DWP). HSL is based in Buxton, Derbyshire and employs around 350 staff.
Website: www.hsl.gov.uk

Health Enterprise East
Health Enterprise East Limited (HEE) is the NHS Innovation Hub for the East of England, affiliated to Papworth Hospital NHS Foundation Trust and based at Cambourne Business Park, Cambourne, Cambridge.
Health Enterprise East provides a broad range of services to NHS organisations, providing expert advice, funding and support to NHS innovators to translate their ideas into practice.
Operating within the NHS, Health Enterprise East also provides product development consultancy services to technology-based companies looking to access the UK market. HEE works with clinical key opinion-formers and senior NHS managerial, commissioning and procurement staff on a daily basis.
Website: www.hee.org.uk

Historic Scotland
Historic Scotland (HS) is an Agency within the Scottish Government and is directly responsible to Scottish Ministers for safeguarding the Scotland's historic environment, and promoting its understanding and enjoyment. HS also carries out statutory functions relating to two acts of Parliament - the Ancient Monuments and Archaeological Areas Act 1979, which allows HS to schedule sites of national importance and take them into state care, and the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997 that grants HS the authority to list structures for their architectural or historical significance.

National Measurement Office
The role of the National Measurement Office is to ensure UK measurement is accurate, fair and legal. It has the lead responsibility for policy on measuring instruments in use for trade and is responsible for the implementation of European Directives on measuring instruments and provides the focus for legal metrology in the UK. The National Measurement System (NMS) is part of the NMO, which is the UK's national infrastructure of laboratories that deliver world class measurement, science and technology. NMO carries out agreed projects on a 3 year basis under this programme.
The Agency was created in 1987 and is an executive Agency of the Department for Business, Innovation and Skills.
Website: http://www.bis.gov.uk/nmo

National Museums and Galleries of Wales
National Museum Wales has the largest public art collection in Wales, most of which is at the National Museum in Cardiff. The displays there contain Welsh, British and European paintings from the Renaissance to the present day, ranging from Tudor portraits and the French Impressionists to cutting-edge contemporary art.
It is a Welsh Government sponsored body.
Website: http://www.museumwales.ac.uk/

National Museums Liverpool

National Museums Liverpool (NML) is one of the world's great museum organisations. Its origins go back to 1851 and the founding of what is now World Museum. It was established as a national museums group in 1986 and changed its name to National Museums Liverpool in 2003. It is core-funded by the Department for Culture, Media and Sport.

Website: http://www.liverpoolmuseums.org.uk/index.aspx

National Museums of Scotland

The National Museum incorporates the collections of the former National Museum of Antiquities of Scotland, and the Royal Museum. As well as the main national collections of Scottish archaeological finds and medieval objects, the museum contains artifacts from around the world, encompassing geology, archaeology, natural history, science, technology and art.

Website: http://www.nms.ac.uk/default.aspx

National Nuclear Laboratory

National Nuclear Laboratory plays a key role in the UK and global nuclear industry. There are three core areas in which it operates as a business: Waste management and Decommissioning, Fuel Cycle Solutions and Reactor Operations Support. NNL offers vital support to reactor operations in the UK, including post irradiated examination and the performance of fuel components and graphite. Its services cover power station chemistry, endoscopy and metallography.

Website: http://www.nnl.co.uk/

The National Oceanography Centre Southampton

The National Oceanography Centre (NOC) undertakes integrated ocean research and technology development from the coast to the deep ocean. It provides long-term marine science capability including: major facilities; sustained ocean observing, mapping and survey; data management, and scientific advice.

It opened in 1996, although its origins are back to the years immediately after World War Two. The National Oceanography Centre (NOC) is part of the Natural Environment Research Council (NERC).

Website: http://noc.ac.uk/

National Physical Laboratory

NPL is an internationally respected centre of excellence in measurement and materials science. It provides the scientific resources for the National Measurement System financed by the Department for Business, Innovation and Skills. NPL also offers a range of commercial services, applying scientific skills to industrial measurement problems, and manages the MSF time signal. The NPL cooperates with professional networks such as those of the IET to support scientists and engineers concerned with areas of work in which it has expertise. It delivers world-leading measurement solutions that are critical

to commercial research and development, and support business success across the UK and the globe. It was founded in 1900. Website: http://www.npl.co.uk/	
Natural England Natural England is the government's advisor on the natural environment. It provides practical advice, grounded in science, on how best to safeguard England's natural wealth for the benefit of everyone. Its remit is to ensure sustainable stewardship of the land and sea so that people and nature can thrive. It is our responsibility to see that England's rich natural environment can adapt and survive intact for future generations to enjoy. Natural England was established on 1 October 2006 by the Natural Environment and Rural Communities Act 2006. As a non-departmental public body (NDPB), Natural England is independent of government. However, the Secretary of State for Environment, Food & Rural Affairs has the legal power to issue guidance to Natural England on various matters. Website: http://www.naturalengland.org.uk/	
Natural Environment Research Council The Natural Environment Research Council (NERC) supports research, training and knowledge transfer activities in the environmental sciences. The Natural Environment Research Council delivers independent research, survey, training and knowledge transfer in the environmental sciences, to advance knowledge of planet Earth as a complex, interacting system. The council's work covers the full range of atmospheric, Earth, biological, terrestrial and aquatic sciences, from the deep oceans to the upper atmosphere, and from the geographical poles to the equator. NERC began in 1965 when several environmental (mainly geographic) research organizations were brought under the one umbrella organization. It is a non-departmental public body and receives funding from the Department for Business, Innovation and Skills (BIS). Website: http://www.nerc.ac.uk/	
Natural History Museum The Natural History Museum in London is a museum exhibiting a vast range of specimens from various segments of natural history. The museum is home to life and earth science specimens comprising some 70 million items within five main collections: botany, entomology, mineralogy, palaeontology and zoology. It is a world-renowned centre of research specialising in taxonomy, identification and conservation. The Natural History Museum Library contains extensive books, journals, manuscripts, and artwork collections linked to the work and research of the scientific departments. It was established in 1753 and is an exempt charity and a non-departmental public body sponsored by the Department for Culture, Media and Sport. Website: http://www.nhm.ac.uk/index.html	

NERC Centres for Atmospheric Science

NCAS is one of NERC's six research centres. Its administrative centre is based at the University of Leeds and carries out research programmes on:

- The science of climate change, including modelling and predictions
- Atmospheric composition, including air quality
- Weather, including hazardous weather
- Technologies for observing and modelling the atmosphere

Website: http://www.ncas.ac.uk/

NHS Innovations North

NHS Innovations North is the NHS Innovation Hub for the North East of England and is a service delivered by RTC North Limited on behalf of the NHS.

NHS Innovations North was established in 2001 in order to champion the cause of healthcare innovation as well as identifying, developing and commercialising intellectual property (IP) created by NHS employees.

Website: http://www.nhsinnovationsnorth.org.uk/

NHS Innovations South East

NISE has always worked under the NHS banner, complying with DH branding instructions, and reporting to DH on a regular basis. Its industry engagement consultancy services cover a wide range of activities designed to support companies in the development, adoption and diffusion of innovative healthcare solutions over:

- Opportunity Analysis
- NHS Market Access
- Innovation Networking
- Issue Identification
- Concept Creation
- Pre-procurement Support
- Stakeholder Analysis
- Legal Services
- Intellectual Property (IP) Management

NISE was set up in 2004 in response to the Department of Health Intellectual Property framework and guidance.

Website: http://www.innovationssoutheast.nhs.uk/

NHS Innovations South West

The main goal of NISW is to facilitate the identification, creation, adoption and spread of innovations, firstly within the NHS in the South West of England, secondly throughout the NHS nationally and, lastly, throughout healthcare services globally. Until April 2013 NISW was fully funded by the South West Strategic Health Authority, but it is now operating with a NHS Trust membership model and income from additional sources.

Website: http://www.nisw.co.uk/

Ordnance Survey

Ordnance Survey forms the national mapping agency for Great Britain. It is one of the world's largest producers of maps.

To the public, Ordnance Survey is best known for its paper maps. In fact, there are around 650 different recreational and leisure maps alone, together covering every corner of Britain. And even in the internet age, it still sells around 2.5 million paper maps every year. Furthermore, it provides digital mapping services both to the public and private sectors.

Ordnance Survey has its origins in June 1791 when surveyors began mapping southern Britain.

It is an executive agency and non-ministerial government department of the Government of the United Kingdom.

Website: http://www.ordnancesurvey.co.uk/

Plymouth Marine Laboratory

PML focuses global issues of global warming and sustainability. It monitors the effects of ocean acidity on corals and shellfish and reports this information to the UK government. It also cultivates algae that could be used to make biofuels or in the treatment of waste water by using technology such as photo-bioreactors. PML works alongside the Boots Group to investigate the usage of algae in skin care protects, because of their content of compounds that adapt to protect themselves from the sun.

The Plymouth Marine Laboratory was founded in 1988. In 2002 PML became an independent company limited by guarantee (clg) with charitable status. PML is governed in accordance with charity law by a Board of Trustees.

Website: http://www.pml.ac.uk/

Plant Bioscience Ltd

Plant Bioscience Limited (PBL) is an independent technology management company specialising in plant, food and microbial science. Its services are available to any researcher or research organisation that is seeking assistance and advice with protecting and commercialising new technology.

PBL was established in 1994 by the Gatsby Charitable Foundation and the John Innes Centre. In 2004, the BBSRC became a shareholder in PBL, endorsing the company's position as a key channel for new biotechnologies emerging from public funding.

Website: http://www.pbltechnology.com

The Pribright Institute

The Pirbright Institute, formerly known as the Institute for Animal Health, is a world leading centre of excellence in research and surveillance of virus diseases of farm animals and viruses that spread from animals to humans. The Institute contributes to global food security and health, improving quality of life for animals and people.

It is an institute of the Biotechnology and Biological Sciences Research Council.

Website: http://www.pirbright.co.uk

Public Health England

Public Health England is an executive agency of the Department of Health in the United Kingdom.

It is responsible for: making the public healthier by encouraging discussions, advising government and supporting action by local government, the NHS and other people and organizations; supporting the public so they can protect and improve their own health; protecting the nation's health through the national health protection service, and preparing for public health emergencies; sharing information and expertise with local authorities, industry and the NHS, to help them make improvements in the public's health; researching, collecting and analysing data to improve the understanding of health and come up with answers to public health problems; reporting on improvements in the public's health so everyone can understand the challenge and the next steps; helping local authorities and the NHS to develop the public health system and its specialist workforce.

Website: https://www.gov.uk/government/organisations/public-health-england

Roslin Foundation

Following the transfer on 1st May 2008 of the staff, research activities and related assets of the Roslin Institute into the University of Edinburgh, the old legal entity continued and was renamed as the Roslin Foundation. It has It has a number of subsidiary companies:

- Roslin Cells - a leader in the isolation of new clinical grade undifferentiated stem cells for use in research and therapy.
- Well Cow – has developed a unique wireless telemetry bolus system that measures rumen pH and temperature in cows.
- Roslin BioCentre— life science focussed science park.
- Roslin Cellab — stem cell technology company, providing contract research, product development work and stem cell culture training for academic and commercial clients.
- Roslin Developments — commissioned the construction of the new Roslin Institute building at Easter Bush.
- Roslin Eggs — developing and exploiting avian transgenic know-how in the production of recombinant proteins

Website: http://www.roslinbiocentre.com

Rothamsted Research

Rothamsted is the longest running agricultural research station in the world, providing cutting-edge science and innovation. Its mission is to deliver the knowledge and new practices to increase crop productivity and quality and to develop environmentally sustainable solutions for food and energy production. Rothamsted integrates biotechnology with other areas of science such as agronomy and agro-ecology so both existing and new knowledge can be implemented through agricultural practice.

Rothamsted Research Limited is an independent charitable company, limited by guarantee and governed by a Board of non-executive Trustee Directors.

The Biotechnology and Biological Sciences Research Council

(BBSRC) and Lawes Agricultural Trust (LAT) are its largest funder and landowner respectively. Website: http://www.rothamsted.ac.uk/	
Royal Botanical Gardens, Edinburgh The Garden is first and foremost a scientific institution, dedicated to discovering and describing plants and their relationships, evolution, conservation and biology. Formal education courses include the teaching and supervision of horticultural and postgraduate botanical research students. RBGE also runs an inspiring programme of events and exhibitions for all interest and age groups. (RBGE) was founded in the 17th century as a physic garden, growing medicinal plants. It is now sponsored by the Scottish Government's Rural and Environmental Research and Analysis Directorate (RERAD). Website: http://www.rbge.org.uk	
Royal Botanical Gardens, Kew As well as being one of London's top visitor attractions, Kew is also a world leader in plant science and conservation. Its work helps to discover and describe the world's plant and fungal diversity, safeguard the world's plant life for our future, promote the sustainable use of plants and inspire an appreciation of plants and the environment. Its education programmes, dissemination activities, our national and international partnership networks are fundamental in ensuring the transfer of our specialist knowledge to the global community. The Royal Botanic Gardens, Kew was founded in 1759. Kew is an Executive Non-Departmental Public Body created under the National Heritage Act 1983, sponsored by Defra and which operates under a Board of Trustees. Website: http://www.kew.org	

Science Museum Group The Science Museum Group (SMG) is a collection of British museums, comprising: The Science Museum in South Kensington, London; The Museum of Science and Industry in Manchester; The National Railway Museum in York. The National Railway Museum at Shildon in County Durham ("Locomotion"); The National Media Museum (formerly the National Museum of Photography, Film and Television) in Bradford; The Science Museum at Wroughton in Swindon, Wiltshire. Website: http://www.sciencemuseum.org.uk/	
Scottish Association for Marine Science (SAMS) SAMS is one of Europe's leading marine science research organizations and one of the oldest oceanographic organizations in the world. The institute carries out advanced research in the marine environment, including polar research in the Arctic and Antarctic. In addition to marine research, in the fields of marine processes and climate change, renewable energy, the Arctic, marine prosperity and sustainability, and mining impacts, the institute has a commercial branch and an education department. Website: http://www.sams.ac.uk/	

Scottish Fisheries Protection Agency The Scottish Fisheries Protection Agency (SFPA) is responsible for both deterring illegal fishing in Scottish waters, as well as monitoring the compliance of the fisheries industry in Scotland with the relevant Scottish and European Union laws on fisheries. Although it has its origins though back in the early 19th century, in April 1991 the Scottish Fisheries Protection Agency was established as an executive agency of the Scottish Office with the resources of 230 staff. Website: http://www.scotland.gov.uk/	
Scottish Health Innovations Ltd Scottish Health Innovations Ltd works in partnership with NHS Scotland to protect and develop new innovations that come from healthcare professionals. By developing these ideas, SHIL creates new products and technologies that will improve patient care and generate income for NHS Scotland. SHIL was set up in 2002 by NHS Scotland and Scottish Enterprise. The SHIL Board is drawn from the public and private sectors; Although SHIL works very closely with the NHS, it remains an independent organisation with the freedom to operate commercially. Website: http://www.shil.co.uk/	
Scottish Natural Heritage SNH's work is about caring for the natural heritage, enabling people to enjoy it, helping people to understand and appreciate it, and supporting those who manage it. Scottish Natural Heritage is funded by the Scottish Government and was established in 1992 by Act of Parliament. It constitutes a Scottish public body. Website: http://www.snh.gov.uk/	
Sea Mammal Research Unit SMRU is a Natural Environment Research Council (NERC) Collaborative Centre that provides the UK's main science capability in the field of marine mammal biology. SMRU Ltd was set up in 2006 and is an independent NERC collaborative centre. Website: http://www.smru.st-andrews.ac.uk/	
STFC and its Laboratories STFC is one of the UK's seven publicly funded Research Councils responsible for supporting, coordinating and promoting research, innovation and skills development in seven distinct fields. It carries out civil research in science and engineering, and funds UK research in areas including particle physics, nuclear physics, space science and astronomy (both ground-based and space-based). It was formed in April 2007 as a merger of the Particle Physics and Astronomy Research Council (PPARC). Website: http://www.stfc.ac.uk/home.aspx	

Tate Gallery
The Tate is an institution that houses the United Kingdom's national collection of British art, and international modern and contemporary art. It is a network of four art museums: Tate Britain, London (until 2000 known as the Tate Gallery, founded 1897), Tate Liverpool (founded 1988), Tate St Ives, Cornwall (founded 1993) and Tate Modern, London (founded 2000), with a complementary website, Tate Online (created 1998). Tate is not a government institution, but its main sponsor is the Department for Culture, Media and Sport.
The gallery was founded in 1897.
Website: http://www.tate.org.uk/

Trinity House
The Corporation of Trinity House of Deptford Strond, known as Trinity House is a private corporation. It has three core functions: it is the official General Lighthouse Authority for England, Wales, the Channel Islands and Gibraltar responsible for the provision and maintenance of navigational aids, such as lighthouses, lightvessels, buoys, and maritime radio/satellite communication systems; it is also an official deep sea pilotage authority, providing expert navigators for ships trading in Northern European waters; it is also a maritime charity, dispersing funds for the welfare of retired seamen, the training of young cadets and the promotion of safety at sea.
It was granted a Royal Charter by Henry VIII in 1514.It is governed under a Royal Charter (rather than a non-departmental public body).
Website: http://www.trinityhouse.co.uk/

Trustech
TRUSTECH is an NHS organization that aims to improve healthcare through the development of innovative products and services. It works with NHS organizations, companies and regional, national and international bodies and networks to bring forward new ideas and help to put them into practice.
It was established in 2001 and has built a wealth of experience in managing and developing innovation in the healthcare sector.
TRUSTECH is one of the NHS innovations hubs.
Website: http://www.trustech.org.uk/

UK Atomic Energy Authority
The United Kingdom Atomic Energy Authority (the Authority) is a UK government research organization responsible for the development of nuclear fusion power. The Authority now focuses on UK and European fusion power research programs at Culham in Oxfordshire, including the world's most powerful fusion device, the Joint European Torus.
The Authority was established on 19 July 1954. It is an executive non-departmental public body of the Department for Business, Innovation and Skills.
Website: https://www.gov.uk/government/organisations/uk-atomic-energy-authority

UK Hydrographics Office The United Kingdom Hydrographic Office (or UKHO) is an organization within the UK government responsible for providing navigational and other hydrographic information for national, civil and defense requirements. The UK Hydrographic Office has been charting the world's oceans for more than 200 years with the primary aim of providing navigational products and services for the Royal Navy and merchant mariners to save and protect lives at sea. In addition it serves small craft and leisure mariners and provides a range of consultancy services. UKHO also plays a central role, in support of the Maritime and Coastguard Agency, in discharging the navigation element of the UK's Safety of Life at Sea Treaty obligations for waters of UK national responsibility. It was formed in 1795. The office is an Executive Agency, and trading fund, of the Ministry of Defense and is directly responsible to the Minister for Defense Personnel, Welfare & Veterans. Website: http://www.ukho.gov.uk	United Kingdom Hydrographic Office
Victoria & Albert Museum The Victoria and Albert Museum (often abbreviated as the V&A), London, is the world's largest museum of decorative arts and design, housing a permanent collection of over 4.5 million objects. Its collection spans 5,000 years of art, from ancient times to the present day, from the cultures of Europe, North America, Asia and North Africa. It was founded in 1852 and is a Non-Departmental Public Body of the Department for Culture, Media and Sport. Website: http://www.vam.ac.uk/	V&A