

Biotechnology and Biological Sciences Research Council

Annual Report and Accounts

2014 - 2015

Biotechnology and Biological Sciences Research Council (BBSRC)
Annual Report and Accounts 2014 - 2015

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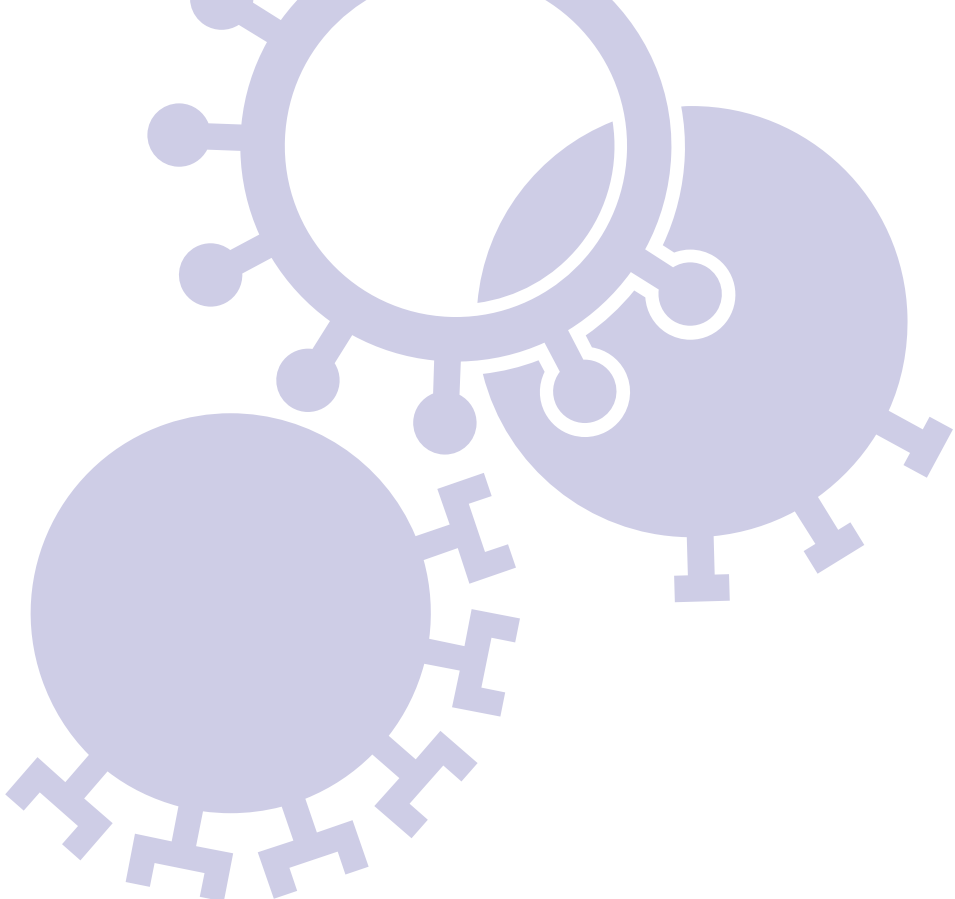
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This Report provides an overview of BBSRC's major activities during the period 1 April 2014 to 31 March 2015.

This Report is accessible at www.bbsrc.ac.uk/annualreport. Readers may wish to refer to previous Annual Reports also found on this page: BBSRC Strategic Plan 2010-2015 at www.bbsrc.ac.uk/publications/policy/strategy/strategic-planindex.aspx; and the BBSRC Delivery Plan 2011-2015 at <http://www.bbsrc.ac.uk/documents/delivery-plan-2011-2015-pdf/>

BBSRC

The Biotechnology and Biological Sciences Research Council (BBSRC), established by Royal Charter in 1994, is the UK's principal funder of basic and strategic research across the biosciences, in universities and research centres throughout the UK. BBSRC is funded primarily by the Science Budget through the Department for Business, Innovation and Skills (BIS).



BBSRC works collaboratively with its sister Research Councils through Research Councils UK (RCUK) in areas that include: cross-Council programmes of research; research training and careers development; knowledge exchange and economic impact; communications, public engagement and administrative harmonisation. www.rcuk.ac.uk

Updated information on BBSRC's policies, activities and impact is accessible at: www.bbsrc.ac.uk

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Chair's statement

As a member of the Councils of the Science and Engineering Research Council and the Agriculture and Food Research Council in the 1980s, the founding Chief Executive of BBSRC in the 1990s and the outgoing Council Chair this year, I often ponder on the organisation and development of science – particularly biotechnology and bioscience – in the UK in the past three decades.

These are undoubtedly exciting times for all involved. Bioscience continues to be breathtaking and that is why most of us do it. But biological approaches and solutions will be crucial to tackling sustainably the global challenges of the next century: feeding a growing population with limited natural resources, creating new pharmaceuticals, fibres and high value chemicals, reducing our dependence on fossil fuels and improving the health of our populations.

In the UK, we are globally well placed to help meet these challenges: investment in our research base by Government, charities and industry produces more research and at a higher quality than the rest of the world. And, with less than 1% of the world's population, the UK generates 8% of the world's scientific papers and has 16% of the most cited papers. The UK continues to punch above its weight in bioscience, maximising the efficiency of every pound spent on research.

In this context, I wanted to share some reflections:

- Bioscience research becomes evermore multidisciplinary involving many different areas of expertise. In my own basic science laboratories I employ mathematicians, statisticians, computer scientists, physicists, chemists, biochemists, cell biologists, whole organism biologists and clinicians. Multidisciplinarity will become even more important as we strive to apply bioscience to the problems the world faces and will need to include expertise from the natural, physical and social sciences and humanities.
- BBSRC has a continuing responsibility to maintain the health of the fundamental biosciences right across the various sub-disciplines from molecule to cell to organisms to interactions with the living environment. This basic bioscience is the foundation on which we rely to maximise the impact of our work.
- We must continue to encourage our scientists to be on the lookout for new ways that their science can translate into strategic areas even if the original objectives were purely curiosity driven. Investigator-led research has as much to offer wealth creation as the strategic and applied. Astex, the company that I co-founded in 1999, had its origins in a fascination for macromolecular structure and interactions but led to a drug discovery operation that sold for \$886 million in 2013.
- Translation not only requires bright minds and supportive regulation but also needs a research ecosystem where academia, industry large and small and policy makers join-up and coordinate. BBSRC is doing this brilliantly with Government support at Babraham – now with 60 companies on its research campus – Norwich Research Park and elsewhere. Fostering this ecosystem will be increasingly important in the coming years as we strive to ensure

bioscience research can make its way from discovery in the lab to application as smoothly as possible.

- Research is becoming more multi-national with increasing numbers of young scientists coming from abroad to UK research laboratories. My academic laboratory over the past decade has included scientists from 27 countries, with researchers from India, China, UK and Brazil being the largest groups, able to speak over 37 languages between them – it is important for groups like mine that others continue to be able to join our labs.
- There are increasing numbers of collaborations internationally; for BBSRC, Brazil, India and China have been particularly important and will continue to be so. For the health of UK bioscience it is important that BBSRC continues to foster these and other productive international relationships.
- And finally, it is clear that new conceptual developments, for example in understanding evolution or cell growth, can have significant impacts elsewhere both in the physical sciences and in medicine.

With thanks

I would like to thank our retiring Council members for their time, support and wisdom: Mr Jim Godfrey, Professor Russell Foster and Dr Will West. And I warmly welcome the new members who have been appointed throughout the past year, who bring a wealth of experience from a broad variety of sectors: Dr Neil Brewis, Professor Richard Cogdell, Professor Maggie Dallman, Professor Judith Petts, Professor Helen Sang, Dr Belinda Clarke and Dr Deborah Keith.

I would also like to take this opportunity to wish my successor Sir Gordon Duff the very best. His appointment was announced by Universities, Science and Cities Minister Greg Clark in March. Sir Gordon was previously Chair of the Medicines and Healthcare Products Regulatory Agency (MHRA) and is currently Principal of St Hilda's College, Oxford. I know he will bring first-class leadership to the Council and invaluable expertise in an exciting, but challenging climate.

I leave BBSRC in a very strong position, well recognised in government as an innovative and collaborative research body with many impacts on future health and wealth creation in the UK. We have a superb Chief Executive with experience in academia and industry, a very effective research secretariat, a well thought through relationship with the National Institutes of Bioscience and an increasingly effective involvement with the academic communities in our universities.

Professor Sir Tom Blundell FRS
BBSRC Chair
June 2015



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Chief Executive's summary

■ BBSRC invests in world-class bioscience research and training on behalf of the UK public. Our aim is to further scientific knowledge, to promote economic growth, wealth and job creation and to improve quality of life in the UK and beyond.

This is the UN Food and Agricultural Organization's (FAO) year of soil, a resource which many of us take for granted. Yet a resilient and fertile soil underpins our ability to grow food and enables a sustainable environment. In the same way bioscience research and development fundamentally underpins much of our economy. World-class research, highly skilled people and cutting-edge facilities are the deep, rich soil that will enable a buoyant bioeconomy and stimulate its growth. Over the past year, we in BBSRC have been thinking more holistically about the research we invest in and its translation within a bioeconomy framework.

Bioscience has made huge progress in the last 50 years and this increased knowledge now offers enormous potential to transform the economy and improve wellbeing. Of course this is not just true for the UK and many countries have already recognised the power of bioscience to drive growth in the global economy.

BBSRC has worked with the three chairs of the government's Bioscience Leadership Councils to develop the following working definition of the UK bioeconomy: "All economic activity derived from bio-based products and processes which contribute to sustainable and resource efficient solutions to the challenges we face in food, chemicals, materials, energy production, health and environmental production."¹

With BBSRC's portfolio spanning agriculture, food and nutrition, health and ageing, bioenergy and industrial biotechnology, BBSRC is uniquely placed to drive and shape the basic science underpinning the UK bioeconomy.

We cannot do this in isolation and as well as working with other funders and government departments it will also be important to ensure that all stakeholders are engaged in developing the bioeconomy agenda. This will require regulatory and investment frameworks and a strong two-way engagement with society.

In October BBSRC published a position statement² on new and emerging techniques for crop improvement in order to stimulate discussion on how these approaches can be best employed to tackle the challenges of climate change and a growing global population. The statement was produced by a group of experts following a workshop involving experts from a variety of backgrounds, including plant scientists, regulators and social scientists.

These novel techniques, which can introduce precise genetic changes into plants, are currently being used in research labs as a tool to help understand the function of genes. Commercial applications are likely to follow: new and improved crop varieties produced with these methods could be available world-wide over the coming years.

It is appropriate that the UK should take a lead in driving this debate forward since it is renowned for excellent plant science research and agricultural innovation.

BBSRC's position statement is a starting point and over the coming year we will be working closely with our stakeholders and others both nationally and internationally to move this sensitive debate forward.

Such global challenges require international partnerships and joint approaches. BBSRC has made agricultural productivity a focus of activities in the first year of the Newton Fund, working with partner countries and other UK delivery partners to ensure the benefits of a bioeconomy to promote the economic development and welfare of developing countries. In Europe, BBSRC has continued to work with the Department for Environment, Food and Rural Affairs (Defra) and partners across 21 European countries in the Joint Programming Initiative in Agriculture, Food Security and Climate Change (FACCE-JPI), implementing a shared strategic research agenda through alignment and joint funding. The International Wheat Yield Partnership (IWYP) officially came into operation last November bringing together research funders, international aid agencies, foundations, companies and major wheat research organisations to help raise the genetic yield potential of wheat by up to 50% over the coming 20 years.

Open, effective relationships with key stakeholders are vital to the success of BBSRC's mission. Whilst advances in bioscience hold great promise to increase prosperity and improve lives, they also pose challenging questions that must be addressed openly and transparently. BBSRC is committed to engaging with a diverse range of stakeholders to help maximise the potential benefits bioscience has to offer as well as to garner a diverse understanding of the societal context in which bioscience operates.

We have some clear strategic priorities in this area which were informed in great measure by the results of an independent stakeholder benchmarking exercise,

¹ The three Bioscience Leadership Councils are: Industrial Biotechnology Leadership Forum (IBLF), Agri-tech Leadership Council (ATCL) and the Synthetic Biology Leadership Council.

² <http://www.bbsrc.ac.uk/documents/genetic-crop-improvement-position-statement-pdf/>

conducted by IPSOS Mori³ which BBSRC published in August. The report draws on research taken from in-depth interviews carried out in February and March 2014 with a selection of BBSRC's corporate stakeholders, as well as the results from an online survey completed by nearly 400 of BBSRC's wider stakeholders.

The report shows that BBSRC is viewed as a key organisation in UK bioscience, funding cutting-edge research and driving priority areas such as global food security and synthetic biology. BBSRC is also perceived to have a strong reputation, is trusted and has largely positive working relationships with stakeholders.

The report offers useful insights into areas for improvement such as proactively forging closer relationships with non-governmental organisations (NGOs) and policy makers. The better utilisation of our stakeholder base and improvements in communicating our key messages to a variety of audiences were also areas highlighted.

Communicating the impact of the science we invest in is not always easy but is absolutely crucial. For BBSRC to earn, secure and maintain the best possible environment for the UK bioscience community, we need to clearly demonstrate the value of research in challenging economic times.

A recent analysis from the Campaign for Science and Engineering (CASE) shows that government investment in R&D has been on overall decline since 2009 and that the UK remains in 12th place among the 28 EU member states for total R&D spend as a proportion of GDP.

In recognition of the importance of demonstrating the case for future science funding I have been working as 'Impact Champion' across the Research Councils. Part of building the case for research is to demonstrate how we have delivered impact in the past from investments by government, collectively and as individual research councils. Across the Research Councils we have been looking at how best to do this and I have been working with colleagues on a cross-council initiative to demonstrate the impact and vision of the Research Councils, with the powerful, coherent message that the UK is the best place to do research. As part of this we have brought together the many compelling impact stories all the Research Councils have to tell, under the new banner of 'Research, Innovate and Grow'. These examples will be used in a variety of ways to present in a coherent picture the importance of UK research to the UK economy and society.

Researchers too have a major role to play in helping us to communicate the importance of their work. Our 20th anniversary year offered us a fantastic opportunity to demonstrate to a broad cross section of society the hugely important role that bioscience plays in all of our lives. In November over 6,500 people attended the BBSRC's Great British Bioscience Festival in East London. During the festival over 70 researchers brought their work to life with a variety of interactive exhibitions. The event was a huge success that exceeded all expectations. This success was typified by a favourite visitor quote from a mother "What your organisation provided has made my children bubble with enthusiasm... if you want to inspire future generations this is the way to do it..."

There is no doubt that people are the organisation's strongest asset both internally – BBSRC's staff – and externally – the researchers we fund. When I visit BBSRC-funded researchers across the country, I am always hugely impressed by their skill, commitment and innovative thinking. I would like to thank all researchers, partners, institutes and BBSRC staff – your dedication means that UK bioscience is well placed to offer solutions to some of the pressing global challenges we face over the coming decades.

As he stands down as BBSRC's Chair, I would like to thank Professor Sir Tom Blundell for his considerable effort in shaping BBSRC and driving forward UK bioscience over the past two decades, firstly as BBSRC's founding Chief Executive and more latterly as Chair of BBSRC Council. He is a true friend to BBSRC and will be sorely missed when his tenure ends in June, by me and the BBSRC community. I wish him well with his continued research. However, I am confident that the gap Tom leaves will be admirably filled by Sir Gordon Duff. Gordon brings with him a wealth of experience and leadership and I look forward to working with him.

The FOA's slogan for the 2015 year of soil is 'healthy soils are the basis for healthy food production'. I believe that a healthy base of skilled and productive bioscience researchers is the basis for a healthy bioeconomy. There are uncertain times ahead for research and innovation in the UK, BBSRC, Research Councils and other funders too but I believe that the strength of the UK's bioscience base is well recognised and that we have an excellent track record of delivery which will stand us in good stead. I am proud of BBSRC's role in supporting the UK's world-leading bioscience sector and we will continue to nourish our 'soil'.

The following pages highlight just some of our successes over the past year. A more detailed look at our progress against our objectives can be found at:

<http://www.bbsrc.ac.uk/documents/1415-scorecard-pdf>

Professor Jackie Hunter

BBSRC Chief Executive

23 June 2015



Strategic report

Funded by Government, BBSRC invested over **£509M** in world-class bioscience in 2014-15.

BBSRC research and the people we fund are helping society to meet major challenges, including food security, green energy and supporting people to have healthier, longer lives. Our investments underpin important UK economic sectors, such as farming, food, industrial biotechnology and pharmaceuticals.

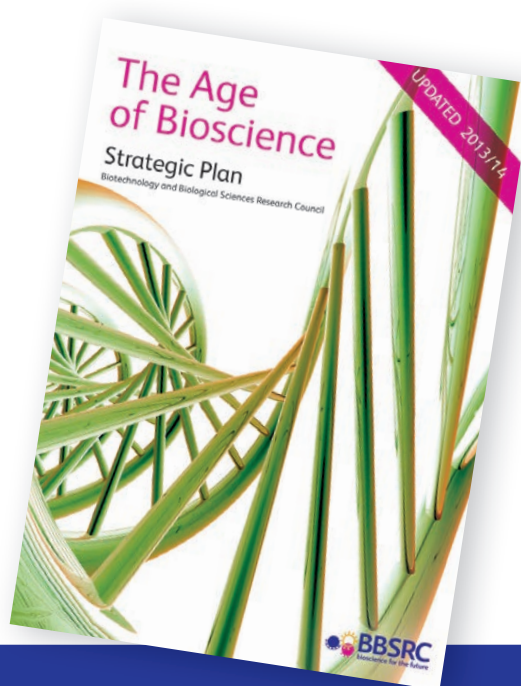
£139M investment in capital funding for UK science infrastructure

In 2013-14 we published a refreshed strategic plan – The Age of Bioscience. In it we identified leading priorities and themes. It is these priorities and themes that we have continued to develop and deliver against in 2014-15.

Throughout the Strategic Report pages, we have highlighted some of our achievements this year and the progress we have made under the specific headings of our key strategic research priorities and enabling themes.

To read more visit:

<http://www.bbsrc.ac.uk/documents/strategic-plan-pdf/>



BBSRC'S Priorities & Themes

1. World-class bioscience - BBSRC sustaining world-class bioscience in the UK
2. Agriculture and food security – deliver bioscience to help meet the global food security challenge (grand challenge 1)
3. Industrial Biotechnology and Bioenergy (IBBE) – delivering bioscience to help UK become a low carbon economy (grand challenge 2)
4. Bioscience for health – driving advances in fundamental bioscience underpinning health and quality of life (grand challenge 3)
5. Enabling innovation – maximising the impact of our science and skilled people (enabling theme 1)
6. Exploiting new ways of working – enabling innovative working practices (enabling theme 2)
7. Partnerships – working with stakeholders to deliver our vision for global impact from UK bioscience (enabling theme 3)

BBSRC 2014-15 Deliverables and milestones at a glance

Priority/theme	Deliverables/Milestones	Progress	Further examples on page:
World-class bioscience sustaining world-class bioscience in the UK	<ul style="list-style-type: none"> ■ Employ balanced portfolio of funding mechanisms to prioritise fundamental bioscience ■ Maintain internationally competitive research institutes 	<ul style="list-style-type: none"> ■ Research funding priorities refreshed for responsive mode grants ■ Institute mid-term reviews successfully completed in December 2014, enabling continued investment 	7
Agriculture and food security – deliver bioscience to meet the global food security challenge	<ul style="list-style-type: none"> ■ Contribute to improved coordination of UK research to support food security challenges ■ Increase leverage from national and international funders 	<ul style="list-style-type: none"> ■ £39M joint investment in 53 projects through Agri-Tech Catalyst ■ Joint BBSRC and US National Foundation funding for promising photosynthesis research 	9
Industrial Biotechnology and Bioenergy – delivering bioscience to help a low carbon economy	<ul style="list-style-type: none"> ■ Implement proposals for partnerships with industry through the Industrial Biotechnology Catalyst to support research underpinning manufacture of high value chemicals, liquid and gaseous biofuels and industry chemicals 	<ul style="list-style-type: none"> ■ Rapid implementation of Industrial Biotechnology Catalyst, with 47 projects funded in 2015 and a further investment of £40M for two additional rounds later this year 	11
Bioscience for health – driving advances in fundamental bioscience underpinning health and quality of life	<ul style="list-style-type: none"> ■ Develop knowledge to increase national defence against infectious diseases 	<ul style="list-style-type: none"> ■ Joint zoonoses programme launched in 2014, with £20.5M funding 11 international projects looking at diseases that pass from animals to humans 	13
Enabling innovation – Maximising the impact of our science and skilled people	<ul style="list-style-type: none"> ■ Further development of BBSRC Research and Innovation Campuses 	<ul style="list-style-type: none"> ■ Completion and handover of Centrum building, Norwich ■ Opening of Bennett building, Babraham Appointment of CEO for the Easter Bush Innovation Centre 	15
Exploiting new ways of working – enabling modern and sustainable research infrastructure and the adaptation of new ways of working	<ul style="list-style-type: none"> ■ Development of new Synthetic Biology Research Centres ■ Drive bioinformatics underpinning research and innovation 	<ul style="list-style-type: none"> ■ £32M awarded to new Centres in Edinburgh, Manchester and Warwick ■ £7.5M investment in new infrastructure to improve storage and curation of biological data 	18
Partnerships – working with national and international stakeholders to maximise impact of UK bioscience	<ul style="list-style-type: none"> ■ Further build partnerships across UK Government and overseas for international strategic aims ■ Sustain public confidence in research 	<ul style="list-style-type: none"> ■ Coordinating international wheat research activities through the International Wheat Yield Partnership (IWYP) ■ Published new corporate communications and engagement strategy 	20

Due to the nature of the research we fund and the scale of the grand challenges we are addressing, much of what we support is on-going and evolving.



Creating the environment for world-class bioscience

BBSRC continues to support and develop a robust, forward looking research base. This not only involves funding the best science and training but also providing strategic funding for eight world-class institutions, central to delivering BBSRC's vision and strategic priorities. Some key highlights from 2014-15 include:

■ **£83.6M competitive grants awarded to researchers across the UK**

Our grant committees have operated to their usual high standards and have enabled us to invest in projects as diverse as breeding to select root traits that physically manipulate soil to understanding the molecular basis of ageing, all of the very highest academic quality.

■ **Revising responsive mode grant priorities**

Following the update of BBSRC's strategic plan last year, BBSRC refreshed its research funding priorities for Responsive Mode grants last May.

For many of the previous priorities relatively modest revisions have been made, some have been merged and four new research funding priority areas have been introduced. These are:

- **Combatting antimicrobial resistance**
- **Food, nutrition and health**
- **Reducing waste in the food chain**
- **Sustainably enhancing agricultural production**

As well as prioritising these funding areas BBSRC remains committed to funding world-class research across the biological sciences through Responsive Mode grants and other funding calls. A significant proportion of BBSRC's portfolio funds this underpinning research.

■ **Supporting PhD students**

In October former Business Secretary Vince Cable announced £125M of funding over five years to support the training and development of 1,250 PhD students.

BBSRC has invested this in 12 leading UK research organisations through Doctoral Training Partnerships that provide the best skills and training for PhD students. Of the 1,250 students, 30% of students will be trained in agriculture and food security, 20% in industrial biotechnology and bioenergy, 10% in bioscience for health, and the remaining 40% in other world-class frontier bioscience to help fuel future discoveries.

■ **£15.8M long-term funding supporting capacity building**

Five new grants, funded through BBSRC's Strategic Longer and Larger grants (SLoLas) scheme were awarded in January, giving world-leading teams long-term funding and resources to address major challenges. Funding went to Sheffield, Kent,

Manchester, Glasgow and Oxford and projects include synthetic biology for light-powered cell factories, micro-factories to produce pharmaceuticals, new vaccines for livestock and understanding the human cell cycle.

■ **Determining the UK's needs to deal with plant and animal pathogens**

BBSRC has worked closely in partnership with the Government Office for Science and Defra on a key report to determine the UK's future needs for science capability to predict, detect and respond to animal and plant pests and diseases. The review *Animal and plant health in the UK: building our science capability*⁴ was published last December. BBSRC is working closely with colleagues in Government to deliver the implementation plan for this review, including the development of a high level strategy for animal and plant health, led by Professor Jackie Hunter, due to be published later in 2015.

■ **Twelve new Future Leader Fellows awarded, marking BBSRC's 20th anniversary**

As part of a programme of activities to mark its 20th anniversary, BBSRC awarded 12 new fellowships enabling early career scientists to carry out independent research to become future research leaders.

The Anniversary Future Leader Fellowship scheme provides support for researchers to gain leadership skills whilst undertaking independent research, representing BBSRC's continued commitment to the supply of highly skilled professional scientists in the UK. Each award is worth up to £300K which includes funding for research, a personal salary, provisions and training.



⁴ <https://www.gov.uk/government/publications/animal-and-plant-health-in-the-uk-building-our-science-capability>

■ Plans for new Food and Health Research Centre

To deliver a step change for food and health research and the translation of science into innovative, healthy food products and therapies, plans for a new Food and Health Research Centre are underway. Researchers from IFR, Norfolk and Norwich University Hospital and the University of East Anglia will be brought together in the proposed new building, alongside partners from the JIC and TGAC, to uniquely integrate multidisciplinary bioscience and clinical expertise. BBSRC will work with all partners involved to seek the necessary capital funding.

■ Delivery of pioneering £135M high-containment laboratories

In October, BBSRC's National Virology Centre, a state-of-the-art high-containment laboratory at The Pirbright Institute was opened. The new laboratories will greatly enhance UK capability to prevent and control virus diseases of livestock and viruses that spread from animals to people.



■ Completing mid-term reviews of all institute strategic programmes

BBSRC provides strategic funding for eight world-class institutions

- The Babraham Institute
- The Institute of Food Research (IFR)
- The John Innes Centre (JIC)
- Rothamsted Research
- The Pirbright Institute
- The Institute of Biological, Environmental and Rural Sciences (IBERS)
- The Roslin Institute
- The Genome Analysis Centre (TGAC)

The Institutes have independently formed the National Institutes of Bioscience



A BBSRC-funded research collaboration has developed a new open access tool called PolyMaker that will support the selection of beneficial traits for future crop breeding programmes.

With a rising global population leading to increased pressure on food resources, it is becoming ever more essential that crop breeding programmes work to enhance the security of global food sources.

Crop breeding programmes can make use of genetic information to improve the efficiency of the selection of preferred traits, helping to secure future food supplies. However, current tools are mainly designed for diploid organisms, such as humans, and perform poorly when applied to polyploid species, such as bread wheat which has multiple groups of chromosomes.

Scientists from The Genome Analysis Centre and John Innes Centre have developed PolyMaker that facilitates the design of genome specific primers for polyploid species.

As an open access tool, researchers and crop breeders can submit their own candidate genetic markers and PolyMaker returns suggested primers to screen for the genetic variant (allele) that tag vital traits in their crop samples. The automated process significantly reduced turnaround time compared to the current manual method.



Agriculture and food security

BBSRC is the main UK public investor in agri-food research, covering topics across crops, livestock, aquaculture, soil, food chemistry, agri-engineering and nutrition. Some key highlights from 2014-15 include:

■ Investing £39M in 53 projects through the Agri-Tech Catalyst

The Agri-Tech Catalyst was set up in 2013 to help accelerate agricultural innovation with £70M of funding from the Department for Business, Innovation and Skills (BIS), BBSRC and the Department for International Development (DIFD).

The Agri-Tech Catalyst, run by BBSRC and Innovate UK, is designed to support collaborative research between scientists and businesses to springboard projects from lab to market place. In the third round of funding, announced this March, research included the 'Sunshine Egg' – a project to help reduce vitamin D deficiency in humans by enriching naturally laid chicken eggs with higher levels of the vitamin via chicken feed, and developing a 3D camera technology to identify when broccoli is ready for harvesting – a key step towards the development of a fully automatic robotic harvesting system for the vegetable which will significantly reduce production costs.

■ Launching Sustainable Agriculture Research and Innovation Club (SARIC)

Last May, BBSRC, NERC and 14 industry partners, funded five projects, totalling £1M, to address challenges to the efficiency, productivity and sustainability of UK farming. The grants were funded as part of the new Sustainable Agriculture Research and Innovation Club (SARIC), developed by BBSRC and NERC, together with industry. Among the projects funded is work to better manage crop disease, to minimise nutrient loss from plants and to set up a knowledge exchange system between UK growers. Over the next five years SARIC will be investing up to £10M to address key challenges as identified by industry.

■ Investing additional funds in promising UK/US photosynthesis research

Three research teams – each composed of scientists from the UK and the USA – have been awarded over £5M in additional funding to build on their research findings and develop new ways to improve photosynthesis. The main goal of this potentially high-impact research is to develop methods to increase the yields of important crops that are harvested for food and sustainable biofuels. The funding announced last June is from BBSRC and the National Science Foundation (NSF) in the United States following significant progress achieved via the initial round of funding, also jointly awarded by BBSRC and the NSF in 2011.

■ Announcing £7M for new approaches to tackling bovine tuberculosis (bTB)

Last July BBSRC announced £7M for new approaches to tackling bTB, one of the biggest challenges facing cattle farming in the UK. £5M is available for scientists conducting fundamental research into the disease with an additional £2M for scientists to develop non-animal models to accelerate bTB research. This funding is in collaboration with Defra and the National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs).

■ Developing three new soil initiatives with NERC

In October BBSRC and NERC, alongside other partners, joined forces to fund three new soil initiatives. The investment of over £7M will provide a Centre for Doctorial Training, The Global Food Security 'Soil and Rhizosphere Interactions for Sustainable Agriecosystems, (SARISA) programme and the appointment of a Soil Coordinator.

■ Building capacity in aquaculture research

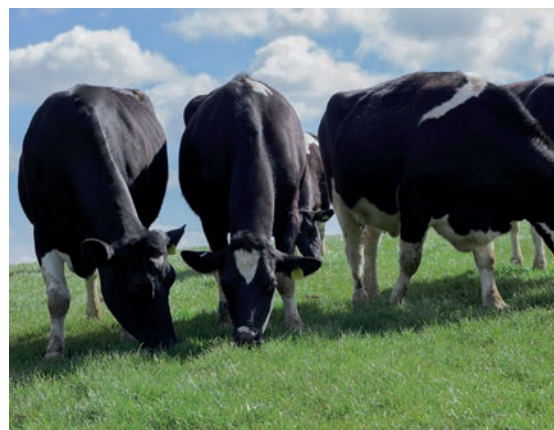
In October £6M of funding was announced to deliver bioscience and environmental science research projects that address key priorities in aquaculture. In the UK farmed fish and shellfish are a growing component of food supplies.

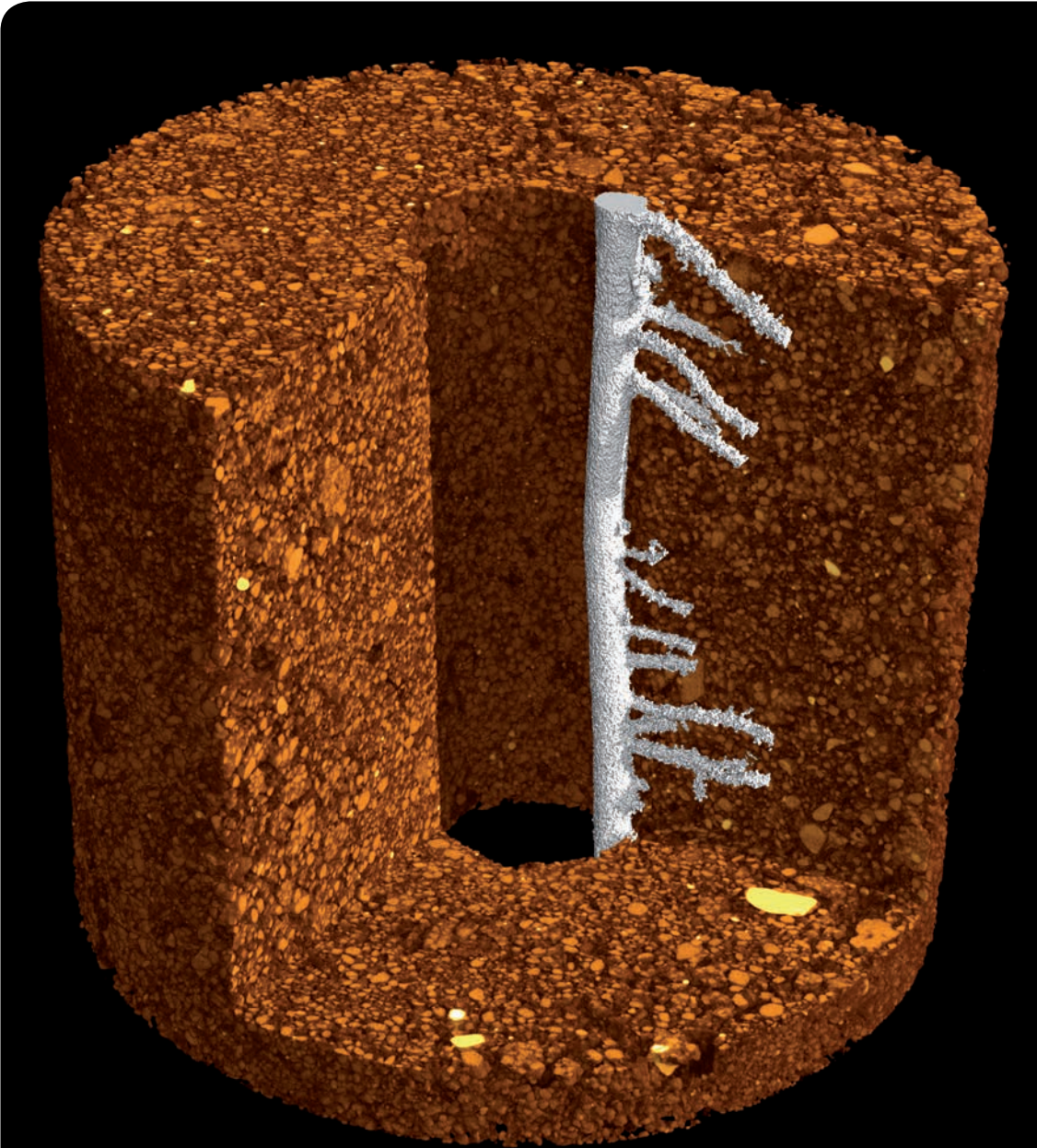
■ Funding research to ensure high standards of welfare for all managed animals

BBSRC is committed to ensuring high standards of welfare for all managed animals, and in December put out a research call in this area. The aim of the programme is to encourage fundamental research that looks to understand and promote the welfare of managed animals in the UK, including farmed, laboratory and companion animals.

■ GM omega-3 field trial permission granted

Rothamsted Research was granted permission by Defra to carry out a field trial with GM Camelina plants that produce omega-3 fish oils in their seeds last year. The trial tested whether GM *Camelina sativa* plants are able to make significant quantities of omega-3 long chain polyunsaturated fatty acids in the seed of the plant under field conditions.





Plants sense water in soil to grow roots in the right direction

■ Scientists have discovered how the presence of even small amounts of water can influence the structure of plant roots in soil, a finding that opens up new possibilities to improve water and nutrient foraging for important food crops.

The degree of root branching determines the efficiency of water uptake and acquisition of nutrients in crops. Understanding the regulation of root branching is therefore of vital importance.

Using an advanced form of X-ray imaging BBSRC-funded researchers from the University of Nottingham, working with several international groups including colleagues in the USA, have discovered that root branching is profoundly influenced by the distribution of water in soil.

The researchers have called this 'hydropatterning' and showed that it is common to the experimental model species *Arabidopsis* as well as the important food crops maize and rice. Their results were published in the journal *Proceedings of the National Academy of Sciences* last June.



Industrial biotechnology and bioenergy

BBSRC is the leading public investor in IBBE and is actively working with partners to build a thriving IBBE sector. BBSRC invests in research projects at various stages of development to increase the UK's capability to sustainably manufacture materials, chemicals and energy. Some key highlights from 2014-15 include:

■ **Rapid implementation of the Industrial Biotechnology Catalyst**

BBSRC announced 47 new projects at the start of this year funded through the IB Catalyst. The £40M investment will enable research ranging from making biofuel from household waste to using bacteria to make the building blocks for new medicines.

The Catalyst, funded by Innovate UK, BBSRC and EPSRC, was set up in 2014 to support UK researchers and companies to work together to bring their biotechnology innovations to market and to help cement the UK's position as a world leader in this sector.

The new projects include:

- Ingenza and the University of Plymouth are developing new biopharmaceuticals that could be used to make a new class of antibiotics.

- IFR is leading a feasibility study with partners Palm Paper Ltd, Vireol Bio-Industries plc and Lenzing to investigate turning paper 'crumble' destined for the landfill into fermentable sugars.
- The Integr-algal project led by Algaecytes Ltd partnered by the University of Nottingham is exploring a new method for maximising the amount of omega-3 oils that can be harvested from algae – 'making fish oil without the fish'.
- Biome Technologies and the University of Liverpool are looking at the technical and commercial feasibility of manufacturing bio-based polyester from cellulose-based compounds. The SeaGas project, led by the Centre for Process Innovation, is working on producing bio-methane fuel from seaweed by anaerobic digestion. Project partners include The Crown Estate, the Centre for Environment, Fisheries and Aquaculture, the Scottish Association for Marine Science, Queen's University Belfast and Newcastle University.



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- Manufacturing biofuels from food crop by-products such as straw could be made quicker and cheaper thanks to the work of scientists in the UK and France.

BBSRC-funded researchers from the University of York have discovered variant straw plants whose cell walls are more easily broken down to make biofuels, but which are not significantly smaller or weaker than regular plants.

The discovery could help ease pressure on global food security as biofuels from non-

food crops become easier and cheaper to make. One answer is to make fuels from woody, non-food parts of plants such as straw. These are rich in polysaccharides (sugar chains) which can be broken down into simple sugars and then fermented into ethanol for fuel. However, such biofuels are currently too expensive because of the cost of digesting the woody tissues into simple sugars.

Their findings were published in September in the *Proceedings of the National Academy of Sciences*.

■ **Securing funding for two additional rounds of Industrial Biotechnology Catalyst funding**

Last November, £40M of additional Catalyst funding was announced by former Secretary of State for Business Vince Cable, enabling an additional two rounds of funding to be made later this year.

■ **Publication of report identifying opportunities for scaling up IBBE**

A study commissioned by BBSRC, EPSRC, Innovate UK and the Industrial Biotechnology Leadership Forum was published; it documents major investment opportunities to build UK excellence and leadership in translating IBBE research into industrial products and processes.

C1 gas fermentation and high value products from microalgae were highlighted as two strategic areas where investment could have a major impact at a national and international level, delivering large benefits for the UK bioeconomy.

The report was published in March by NNFFC and Inspire Biotech.⁵

■ **BBSRC Executive Director, Innovation and Skills being appointed to a director of the UK BioIndustry Association (BIA)**

Dr Celia Caulcott will serve on the board from 1 January 2015 for a term of three years. She was one of four new directors appointed at the association's Annual General Meeting.

© Creatas



■ A BBSRC C-funded PhD student has discovered that treating enzymes with a bacterial superglue allows them to be boiled without permanent loss of function, a discovery which could have implications across many biotechnology processes.

Enzymes are biological molecules which speed up specific reactions. Enzymes from most organisms lose their structural organisation and stop working at temperatures higher than about 40°C.

This lack of stability poses a problem in many industrial processes in which enzymes are

used, including for producing biofuels, for diagnostics, and in the food industry and so ways to increase enzyme stability are highly desirable.

Working with a team at the University of Oxford, Chris Schoene, a BBSRC Industrial CASE student, used a bacterial 'glue' called SpyTag to stick opposite ends of enzymes together and form a closed loop.

The team now plans to apply this technology to other industrially important enzymes in collaboration with Sekisui Diagnostics.



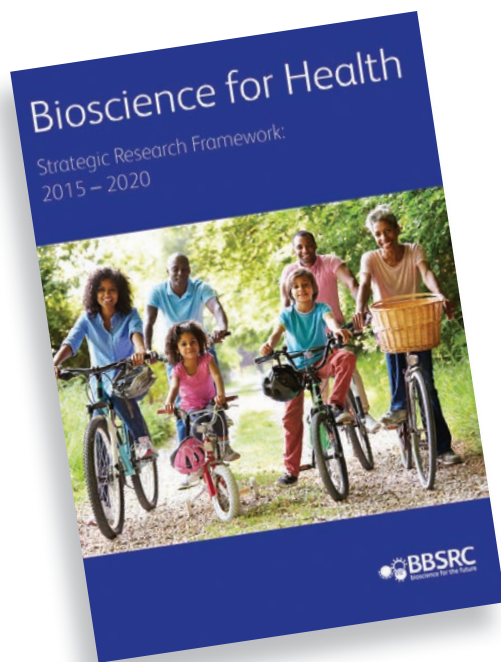
Bioscience for health

BBSRC supports world-leading bioscience research to build a deep, integrated understanding of healthy human systems across the life course, including understanding biological mechanisms underlying normal physiology, the role of food and nutrition; with the aim of improving the health and welfare of both humans and animals. Some key highlights from 2014-15 include:

■ **Publication of new vision for bioscience for health**

BBSRC's vision for bioscience for health was published this March setting out BBSRC's strategic research vision over the next decade to support research and innovation to improve the health and welfare of humans and animals.

Although the framework identifies key long-term goals set over a 10 year period to guide future activities, it will remain dynamic and respond to forthcoming challenges and opportunities falling within this key priority.



To read more, visit:
<http://www.bbsrc.ac.uk/documents/bioscience-for-health-booklet/>

■ **Joint working in food, nutrition and health**

In March, BBSRC, MRC and ESRC published a vision for joint working in food, nutrition and health research, recognising that collaboration between Councils is crucial in this interdisciplinary research area. It complements BBSRC's strategic framework for investment in food, nutrition and health research over the next five years, also published in March.

The document was developed by a joint expert steering group and recognises that, where research problems are influenced by a variety of interacting biological, medical and social factors, approaches which consider these interdependencies will provide a more effective basis for new health policies, therapies, products and interventions.

■ **Joining 'war cabinet' on antimicrobial resistance**

BBSRC is part of a 'war cabinet' set up to tackle antimicrobial resistance (AMR). The cross-council initiative backed by eight government bodies and the Wellcome Trust will coordinate the work of medical researchers, biologists, engineers, vets, economists, social scientists, mathematicians and even designers in a multipronged approach to address the multifaceted problem of AMR. BBSRC is the only funder investing in research across human, animal and plant pathogens which enables synergies across species to be explored in AMR and also supports the One Health agenda.

■ **Launching The UK Veterinary Vaccinology Network**

In August BBSRC funded a new multidisciplinary network of veterinary vaccinology experts to help in the fight against animal diseases, some of which have the potential to spread to humans. The UK Veterinary Vaccinology Network will draw together major UK research players to enhance the uptake of new technologies in order to design, develop and deliver safe and effective next-generation vaccines against new and (re)-emerging diseases.

■ **Developing Animal Welfare Research Network**

To foster multidisciplinary collaborations that will add benefit to animal welfare research by creating links between animal welfare researchers and the broader academic community, BBSRC has announced funding for a community-led Animal Welfare Research Network for a period of three years. The network will be focused on research contributing to the welfare of managed animals (including farmed, laboratory and companion animals), both vertebrates and relevant invertebrates (e.g. bees), and will encourage links to researchers working on non-managed species.

In 2014 an Animal Welfare Working Group was formed to review BBSRC-funded animal welfare research. The Group identified the animal welfare community as small and specialised but split into silos such as observational, disease and behavioural research, which may not encourage multidisciplinary collaborations across a broad range of scientific expertise. This new network will address this fragmentation.

■ **Developing multi-partner zoonoses programme**

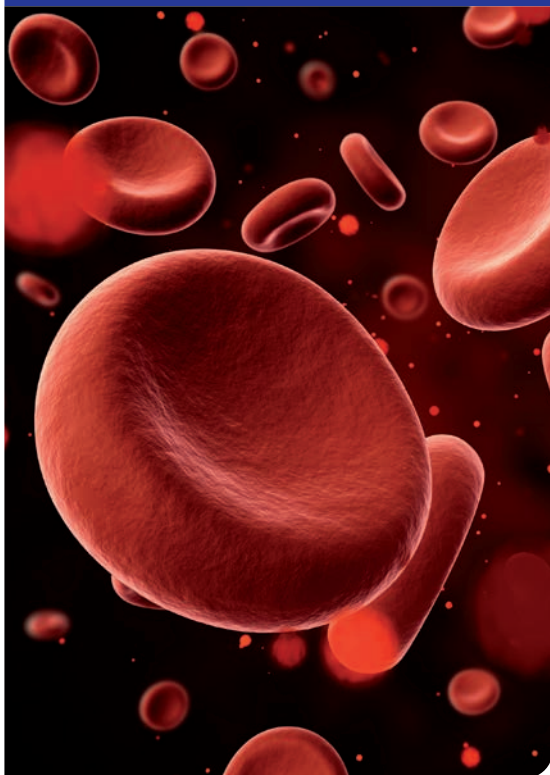
In November a new £20.5M programme of research and training to tackle diseases that can pass from animals to humans was announced funded by BBSRC, the Defence Science and Technology Laboratory (Dstl), Department for International Development (DFID), ESRC, MRC and NERC. Over the next five years the Zoonoses and Emerging Livestock Systems (ZELS) programme will fund 11 projects in developing countries in Africa and Asia. In addition, £1.5M of funding will give 15 students from the UK and developing countries doctoral training in ZELS-related research.

■ The first comprehensive computer model to simulate the development of blood cells could help in the development of new treatments for leukaemia and lymphoma, say researchers at the University of Cambridge and Microsoft Research.

The human body produces over 2.5 million new blood cells during every second of our adult lives, but how this process is controlled remains poorly understood. Over the past two years an interdisciplinary team of researchers have developed a computer model to help gain a better understanding of the control mechanisms that keep blood production normal. The details were published in the journal *Nature Biotechnology* in March. Not only does this model help to understand normal control of blood cells, it can also be used to understand cancers of the blood – for which around 30,000 new patients each year are diagnosed. These cancers, which include leukaemia, lymphoma and myeloma, occur when the production of new blood cells gets out of balance, for example if the body produces an overabundance of white blood cells.

The research was supported by the Medical Research Council, the Biotechnology and Biological Sciences Research Council, Leukaemia and Lymphoma Research, the Leukemia and Lymphoma Society, Microsoft Research and the Wellcome Trust.

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■ Researchers at BBSRC-funded Babraham Institute, in collaboration with the Wellcome Trust Sanger Institute Single Cell Genomics Centre, have developed a powerful new single-cell technique to help investigate how the environment affects our development and the traits we inherit from our parents.

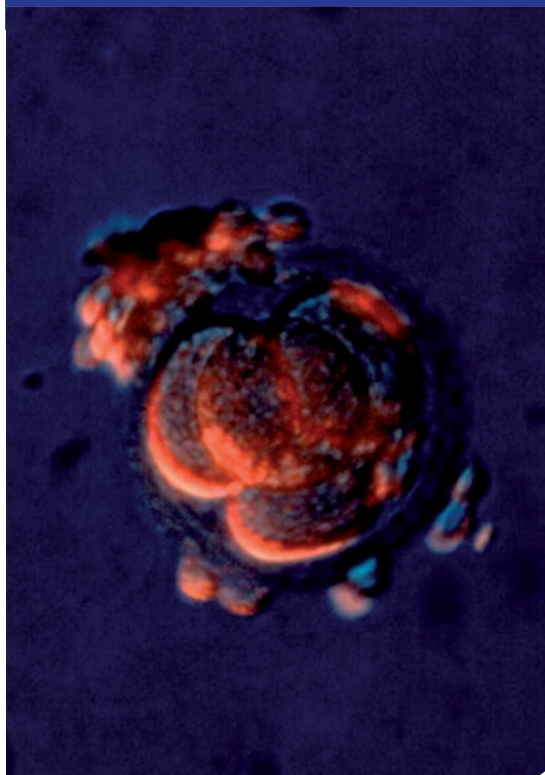
This single-cell approach will boost understanding of embryonic development, could enhance clinical applications like cancer therapy and fertility treatments, and has the potential to reduce the number of mice currently needed for this research.

The technique can be used to map in detail the 'epigenetic marks' on all the chromosomes in a single cell. Epigenetic marks are chemical tags or proteins that mark DNA and act as a kind of cellular memory. They do not change the DNA sequence but record a cell's experiences onto the DNA, which allows cells to remember an experience long after it has faded and to pass on information to daughter cells, potentially even between generations.

The ability to capture the full map of these epigenetic marks from individual cells will be critical for a full understanding of early embryonic development and cancer progression and aid the development of stem cell therapies.

The research was published in *Nature Methods* last July.

© Wellcome Images





Enabling innovation

To maintain our world-leading bioscience base in the UK and to help deliver the potential of the bioeconomy, we need to engage and nurture a vibrant community of researchers. BBSRC plays a crucial role in ensuring that the brightest minds are attracted to bioscience careers across the pipeline.

By investing in the skills base, BBSRC not only supports research but also helps to secure the nation's future, driving inward investment, creating new jobs and maintaining the UK's position as a global leader. Some key highlights from 2014-15 include:

■ Continued development of highly successful research industry club model

BBSRC has several different models of encouraging industry, academics and other organisations to interact; our Research and Technology Industry Clubs have been particularly successful.

- Last May, in partnership with NERC, BBSRC launched a club to support projects that will help provide solutions to key challenges affecting the sustainability of the UK crop and livestock sectors. The Sustainable Agriculture Research & Innovation Club (SARIC) will invest up to £10M over the next five years to address key challenges to these sectors, as identified by industry.

SARIC will bring together the environmental and biological science research base with industry, exploiting knowledge to progress towards more sustainable agricultural systems for the future.

- Last June, £4M of research funding to six projects to investigate diet and health was awarded by BBSRC and the MRC with the backing of 15 food and drink companies as part of the Diet and Health Research Industry Club. The new research includes investigating how diet affects health, including on osteoarthritis, brain function, cholesterol and type-2 diabetes.
- In March, BBSRC's Animal Health Research Club (ARC) announced over £6M of funding for research to improve the health of livestock. Eight studies will take place at institutions around England and Scotland in farmed fish, poultry, sheep, pigs and cattle to understand and combat pervasive and costly diseases in these species which cost UK farmers millions of pounds a year. £5.8M has come from BBSRC with the rest from the Scottish Government.

■ Renewing support for Enterprise Fellowships

Funded by BBSRC and delivered by Royal Society of Edinburgh (RSE), Enterprise Fellowships encourage the development of new businesses building on previously funded BBSRC research. BBSRC and RSE have renewed their commitment to entrepreneurship within life sciences by re-entering into an agreement to support the Fellowships for three years.

Three Enterprise Fellowships funded by BBSRC were awarded in 2014-15

■ Committing to strengthening vulnerable skills and capabilities

BBSRC and MRC, in collaboration with the Society of Biology, have identified vulnerable skills and capabilities facing the UK bioscience and biomedical science research base.

In consultation with academia, businesses and other research organisations, skills and capabilities within the following five areas were highlighted: interdisciplinarity, maths, statistics and computation, physiology and pathology, agriculture and food security and core research and subject specific skills.

Strengthening vulnerable skills and capabilities within these areas could help support UK researchers to deliver further impact for society and the economy. Following consultation with advisory panels, BBSRC will look to support vulnerable skills and capabilities to help maintain the UK's world-leading bioscience research base and in particular will focus on: interdisciplinarity, maths, statistics and computation, physiology and pathology, and agriculture and food security.

■ Developing a programme to advance biofilm science and technology

Biofilms, such as plaque found on teeth and corrosion-causing slime on ships hulls, form when microorganisms join together and stick to surfaces. Biofilms create major challenges and opportunities for researchers, industry and society. To explore these further BBSRC in partnership with Innovate UK held a strategic biofilm workshop in December and as a result up to £2.5M of joint funding will be available for a biofilm competition launched this year.



BBSRC's anniversary awards to demonstrate pride in UK's world leading research base.

■ **Acknowledging outstanding contributions to bioscience**

BBSRC recognised outstanding contributions to bioscience made by four of its research community. As part of BBSRC's 20th anniversary, the awards demonstrate pride in the UK's world-leading bioscience research base and the impact it has achieved in the last two decades.

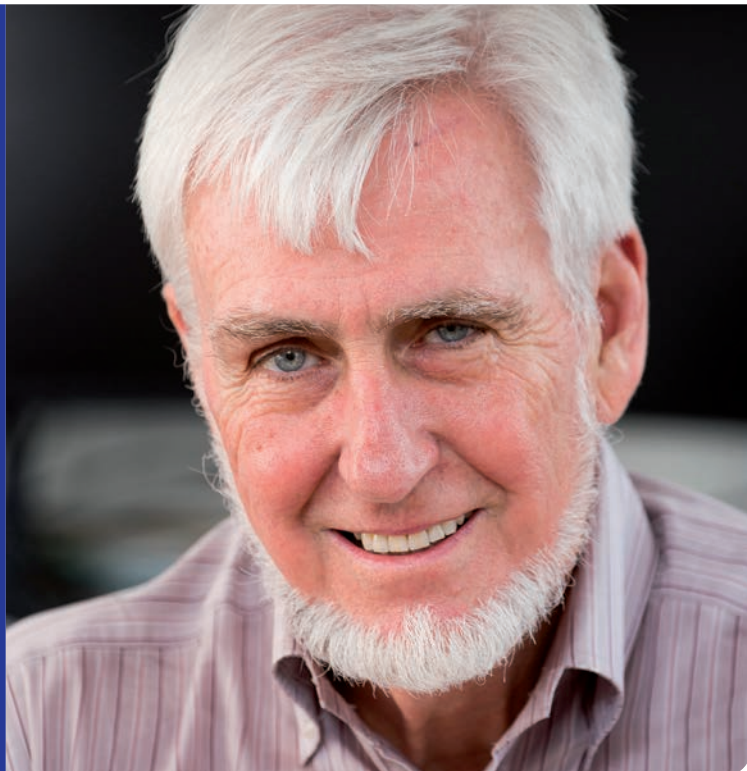
Professor Caroline Dean from JIC, Professor Dame Linda Partridge from University College London and Professor Jeff Errington from Newcastle University won awards for excellence in bioscience and Professor Russell Foster from the University of Oxford won an award for excellence in bioscience communication.

■ **Announcing BBSRC's Innovator of the Year 2014**

Professor Ian Givens from the University of Reading received the BBSRC Innovator of the Year award for his work to reduce saturated fat in cows' milk. He was also named Social Innovator of the Year. Commercial Innovator of the Year was awarded to Professor Andrew Hopkins and Most Promising Innovator was won by Dr Travis Bayer from Imperial College London.

Innovator of the Year promotes excellence amongst researchers, knowledge exchange practitioners, departments and institutions by recognising successful approaches to innovation and impact in biosciences.

■ Professor John O'Keefe, whose neuroscience research has been funded by BBSRC, was awarded the Nobel Prize for Physiology or Medicine last October. He received the award for discovering the brain's 'inner GPS' which allows us to navigate our environment. The findings contribute important understanding into Alzheimer's, as sufferers often experience difficulty recognising their environment. Professor O'Keefe shares the award with Norwegian researchers May-Britt Moser and Edvard Moser. This prestigious award highlights the excellence of the UK research community through its pioneering and world-leading science.



© David Bishop, UCL

■ **Creating environments to drive and accelerate innovation from UK bioscience**

BBSRC is currently working with partners to develop five UK Research and Innovation Campuses, with seven of its eight strategically funded institutes embedded within them.

Each campus is centred on a critical mass of world-leading bioscience, strategically supported by BBSRC, providing a unique environment where fledgling and other bioscience-based companies can access specialist facilities and exchange ideas with leading researchers, creating a low-risk environment for fostering early-stage innovation.

■ **Babraham Research Campus**

The opening of the Bennett building last September marked the completion of a £44m project, on schedule and budget. All elements have been formally handed over to a campus company (BBT Ltd) for ongoing operation, and all buildings are currently 100% let, with a total of over 50 companies now resident on campus.

Building on the success of the P44 project, a new project, managed by BBT Ltd but with BBSRC involvement (total value c.£15m, including £6M government contribution via BBSRC), is underway to deliver an additional bioincubator – on target for completion in December 2015 – and improvements to campus amenities, conferencing and business interaction space. The target completion time is late 2016.

■ **Norwich Research Park (NRP)**

Last July the Centrum building opened, becoming the hub of Norwich Research Park, and September saw the successful completion and formal closure of the £26M project. All completed elements, minor outstanding items, and remaining (part-funded, indirectly managed) project items were formally handed over to the campus operating company NRP LLP with exception of the NRP Enterprise Centre, where BBSRC maintains direct membership on a separate UEA-chaired Project Board.

■ **Rothamsted Centre for Research and Enterprise**

Last April the foundation stone of the new Innovation Hub was laid and in March construction of both the Innovation Hub building and major extension to the Conference Centre was completed on schedule and on budget. Post-construction fit-out is now underway, and both buildings are scheduled to be fully operational in May 2015.



■ **Aberystwyth Innovation and Enterprise Campus**

Steady progress is being made on the £40M campus project. Full project funding from three partners – Aberystwyth University, BBSRC, and Welsh European Funding Office – totaling £40.5m was formally confirmed and announced last December.

■ **The Easter Bush Innovation Centre (EBIC)**

Pre-construction work continues at EBIC. In January a formal site visit and tree planting was carried out by HRH Princess Anne. On-site construction is due to start this spring. A future governance vehicle for the Innovation Centre has been agreed and a new CEO John McKenzie was appointed in November 2014.



Exploiting new ways of working

New tools and capabilities continue to revolutionise bioscience, making it possible to ask and solve previously intractable questions and inspiring breakthroughs. BBSRC continues to support developments in tools and technologies and approaches that enable researchers to push the boundaries of scientific discovery and increase the impact of their research. Some key highlights from 2014-15 include:

■ **£40M awarded for three new Synthetic Biology Research Centres**

In January £32M was awarded to establish three new Synthetic Biology Research Centres at the University of Edinburgh, the University of Manchester and the University of Warwick funded by BBSRC, EPSRC, MRC and capital investment from UK Government.

The centres will receive funding over five years to boost national research capacity and to ensure that there is the expertise to nurture the growing synthetic biology industry in the UK. An additional £8M has been awarded to research partnerships across the UK to help create the DNA starting blocks required for synthetic biology applications.

■ **Opening state-of-the-art plant imaging facility**

In September the Houndsfield Facility, a state-of-the-art plant imaging facility, at the University of Nottingham's Sutton Bonington Campus opened. Funded by BBSRC, the European Research Council, the Wolfson Foundation and the University of Nottingham, the facility will provide some of the world's most advanced, non-invasive technologies to analyse plant root architecture directly in soil.

■ **Implementing single system to gather research outcomes**

BBSRC-funded researchers are now able to use *Researchfish* to highlight the impact of their research. Research Councils UK (RCUK) are the first research funders in Europe to implement a single system for gathering details of research outcomes across all research disciplines. The harmonised approach was launched in September.

The Research Councils are now using *Researchfish* to collect structured information on the outcomes from all Research Council-funded projects. Grant holders can highlight their achievements and, in turn, RCUK can use this information to better understand the impact of research funding and strengthen the evidence base for research investment in the future. So far 85% of BBSRC's research community has registered.

■ **Strengthening investment in bioinformatics and biological resources**

In February, BBSRC invested £7.5M in new infrastructure to improve the storage and curation of enormous datasets that will unlock untold discoveries in important areas like health, agriculture and sustainable fuels.

In order to investigate complex biological phenomena, researchers need access to comprehensive, integrated data resources that are accessible for the whole community.

Access to primary research data is vital for the advancement of science, to validate existing observations, and provides the raw materials for new discoveries. Sharing data in a standardised way can enable exciting breakthroughs as researchers interrogate big datasets to spot undiscovered patterns of biological importance.

To meet these challenges, BBSRC is strengthening investment in bioinformatics and biological resources, focusing on the needs of the research community, and facilitating the development of sustainable models of operation.

■ **Launching Biological Visualization Network**

A new Biological Visualization Network was launched at the start of this year, hosting a collection of notable visualisation tools produced by biologists and visualisation researchers.

The BBSRC-funded site is a central resource for information on bio-visualisation and will be supplemented with annual meetings for networking and educational purposes, focused around emerging trends in visualisation and challenges facing biology.

■ **Guaranteeing UK access to advanced crystallography technology**

The UK's structural biology community will have access to the most advanced crystallography technology in the world as a result of a £5.64M investment from BBSRC, MRC and the Wellcome Trust towards the European X-ray Free Electron Lasers (XFEL) project, under construction in Germany.

Crystallography is used to determine the 3D structure of the molecular machines of life, and has transformed our understanding of living things. It can be used to develop new pharmaceutical drugs, antibiotics and new sources of chemicals and energy.

The money will guarantee UK researchers the chance to use serial femtosecond crystallography (SFX) at the European XFEL, a cutting-edge technique to determine the three-dimensional shape of biological molecules at high resolution and incredible speeds.

A hub for scientists who wish to use SFX will also be established at the Diamond Light Source in Oxfordshire to train and prepare UK researchers.

■ **Winning construction award for high-security bio-containment laboratories**

The BBSRC National Virology Centre: The Plowright Building at The Pirbright Institute won the Judge's Special Award at the prestigious British Construction Industry (BCI) Awards in October. The building, engineered by leading built environment specialist Shepard, received the accolade as an inspirational construction.

The award recognises the unprecedented level of technical ingenuity that went into the building of these state-of-the-art, high-security bio-containment laboratories – both ahead of time and under budget.



© Matt Berriman (Wellcome Trust Sanger Institute)

■ The largest collection of genomic data from parasitic worms (or “helminths”) ever assembled has been published in the new, open-access *WormBase ParaSite*. Developed jointly by EMBL-EBI and the Wellcome Trust Sanger Institute, with BBSRC funding, this new resource will be a major asset in the fight against parasitic worms, which infect more than one billion people worldwide.

Roundworms, whipworms, hookworms and other helminths produce a disease burden that exceeds that of malaria or tuberculosis. The Helminth Genome Initiative is a global community of researchers dedicated to reducing this disease burden by identifying weaknesses in the worms' genetic code. Funded by the BBSRC, WormBase ParaSite

provides a public resource (comprising database, web interface and web services) to access data emerging from these and other initiatives. The public database currently contains 97 draft genome sequences from a total of 89 helminth species, including 58 released early (i.e. in advance of publication), and is updated as new data are produced.

WormBase ParaSite allows researchers to combine these data to identify genetic similarities in species that share certain traits, such as the ability to invade through human skin. This approach will increase our understanding of parasite biology and speed up the difficult, costly search for potential targets of novel drugs.



Partnerships

To maximise the potential social and economic benefits of bioscience, multidisciplinary, multi-agency and multinational working is required. BBSRC works with a wide range of stakeholders from industry to NGOs, the public to governments, nationally and internationally to deliver its vision for global impact from UK bioscience. Some key highlights from 2014-15 include:

■ Publication of a European vision for synthetic Biology

An ambitious strategic vision for synthetic biology across Europe was published by the Synthetic Biology ERA-NET, a project aimed at developing and coordinating synthetic biology across the European Research Area. BBSRC coordinated the document, highlighting its commitment to ensuring the UK plays a central role in the development of national and international synthetic biology.

The document sets out an ambitious vision for the future of European synthetic biology, highlighting major opportunities and challenges over the next five to ten years. It contains a series of targeted recommendations designed to empower national and international funding agencies, policy bodies and other stakeholders with the strategic framework to support this important research field.

■ Joining with national charity to tackle hearing loss

In January, charity Action on Hearing Loss and BBSRC announced £4M into hearing research. This new funding will support 13 projects in total, investigating how the inner ear develops, and how it and our hearing changes as we get older. These investments will also go towards supporting research into treatments for tinnitus, identifying genetic causes of hearing loss and developing more accurate hearing tests.

■ Helping broaden network to value our natural environment

BBSRC is co-funding a multidisciplinary team to coordinate the NERC-led Valuing Nature Programme, set up to better understand the market value of ecosystems and the services they provide, such as fresh water. The new funding will further develop and broaden the existing Valuing Nature Network which brings together those interested in valuing nature including natural scientists, economists and policy makers.

The five year, £6.5M programme is funded by BBSRC, NERC, ESRC, AHRC and Defra. It aims to better understand and represent the complexities of the natural environment in valuation analyses and to consider the wider societal and cultural value of ecosystem services.

BBSRC is encouraging its community to join the network and contribute to this debate – particularly in relation to sustainably enhancing agricultural production while maintaining the natural capital on which it and other ecosystem services depend.

■ Promoting the economic development and welfare of developing countries through the Newton Fund

In the first year of the Newton Fund, BBSRC was able to work with RCUK and other UK partners to ensure benefits of the bioeconomy contribute to the economic development and welfare of partner countries. Initial activities included joint centre approaches with China, India and Brazil in agricultural nitrogen and a joint wheat call with Embrapa in Brazil to encourage international research to enhance the sustainability of wheat production in the context of the wider ecosystem. Additionally, in partnership with DFID, DBT India and ESRC, BBSRC delivered a trilateral aquaculture 'sandpit' which will result in an investment of up to £10M in collaborative research to underpin sustainable aquaculture production for food security across developing countries.

■ Coordinating international wheat research activities

The International Wheat Yield Partnership (IWYP) officially came into operation last November. IWYP is a novel funding and coordination partnership for stimulating wheat research and development and the translation of scientific discoveries into elite wheat varieties ready for marketing to both non-industrialised and industrialised countries. It brings together research funders, international aid agencies, foundations, companies and major wheat research organisations to help raise the genetic yield potential of wheat by up to 50% over the next 20 years.

IWYP was instigated by BBSRC, the International Maize and Wheat Improvement Center (CIMMYT), Mexico's Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA) and the U.S. Agency for International Development (USAID) in 2012.


In November 2014, Dr Jeff Gwyn was appointed as Program Director to lead IWYP towards its vision of increasing wheat yields. The partnership will both support core infrastructure and facilitate transnational open calls for research, all targeted at raising the yield potential of wheat. A first call for proposals, seeking breakthrough discoveries that will lead to large increases in wheat grain yields, closed in March 2015.

■ Inspiring future scientists

In November BBSRC, in partnership with the London Science Festival, held a weekend family bioscience festival in Bethnal Green in East London. The Great British Bioscience Festival was the culmination of BBSRC's anniversary activities and was aimed at bringing interactive bioscience to new audiences. The festival comprised 19 different research groups representing the breadth of BBSRC-funded research in a hands-on manner.

Over 6,500 people attended the three-day festival including 570 school children from 13 local schools. Feedback from the event was overwhelmingly positive and an external evaluation report from the weekend concluded: "Visitors left feeling engaged and enthused by bioscience, with new knowledge and a greater understanding of science and how science works. They also left with a greater awareness of BBSRC."



 *Huge congratulations to @BBSRC for #GBbioscifest event in Bethnal Green this weekend. My family made four visits.*

 *@BBSRC #GBbioscifest Great day out, a science festival on our doorstep. Brilliant*

■ Engaging with diverse audiences

- BBSRC uses a variety of channels to raise awareness of BBSRC, BBSRC research, its impact and relevance.
- In the past year BBSRC has published over 300 online news articles and has issued 49 press releases to the media resulting in 370 news articles in print, online and broadcast channels, achieving publicity for BBSRC research estimated to be worth over £436,000 per month. Due to changing monitoring services last year, these figures are not comparable with previous years due to different monitoring procedures.
- BBSRC's YouTube channel has received 134,517 hits over the year, with an average of 532 minutes being watched every day.
- BBSRC's Tumblr blog, set up last year, has received 21,364 visitors, predominantly aged between 18 and 34.
- BBSRC's twitter account has over 16,000 followers.
- BBSRC has also responded to 15 parliamentary questions and 38 freedom of information requests.
- Over the past year BBSRC's website had over 2.3M page views. The most visited sections were funding, news and events, and grants search. As part of cross-Research Council harmonisation and efficiency efforts BBSRC's website moved to a shared technical platform in late March 2015.

■ Refreshing framework for communications and engagement

In January BBSRC published a new corporate communications and engagement strategy⁶. The strategy has a single overarching aim to secure and maintain the best possible environment for the UK bioscience community to undertake research and to realise the potential of bioscience to deliver economic growth, wellbeing and improved quality of life in the UK and beyond.

The aim of this refreshed document is to provide an accessible and coherent framework to ensure that all BBSRC communications and interactions with external bodies and individuals support the above aim.

The new strategy builds on the feedback from BBSRC's stakeholder benchmarking exercise and also draws on discussions with BBSRC's Bioscience for Society Strategy Panel and council.

BBSRC, along with the other Research Councils underwent a Cabinet Office-led Communications Capability Review, which was published in March. The findings of the BBSRC report were very positive. Comments included: "The review panel was impressed with the communications team... [which] is widely regarded as high performing, well-organised and focused with a strong commitment to the business aims and objectives of BBSRC."⁷

⁶ <http://www.bbsrc.ac.uk/documents/bbsrc-comms-strategy-pdf/>

⁷ <http://www.bbsrc.ac.uk/documents/reviews/1503-communications-capability-review/>

■ **Continuing coordination of the Global Food Security (GFS) Programme**

The GFS programme is driving forward a new programme of research across its partners on resilience of the UK food system in a global context. The aim is to bring together the natural and social sciences to deliver research co-designed with policymakers and industry focused around three strands: sustainable landscapes, international supply chains, and consumer choice. Funding is currently being determined and it is anticipated that the programme will be launched in late 2015.

The GFS programme is continuing to deliver its programme of public engagement with the establishment of a new public panel. This innovative mechanism will help bring the views of the public into our decision making and will include surveys and deliberative dialogue. It will also seek to understand how views change over time as panel members become more informed.

■ **Ensuring best practice in the openness agenda**

Last June, BBSRC enlisted the help of an advisory group, composed of external experts, council members and others, to help BBSRC explore what 'openness' might mean for BBSRC and how we could become a more open organisation. Based on the advice and outputs from the group, BBSRC now has a set of principles for openness and an agreed set of specific actions that BBSRC will take forward to become more open. The Principles of Openness for BBSRC are being transparent, participatory and accountable.



© Rothamsted Research

■ Professor Martin Parry from Rothamsted Research, a BBSRC strategically funded institute, was presented with the National Friendship Award by the Chinese Vice Premier Ma Kai in September.

The award was one of 100 National Friendship Awards presented this year to experts from different countries around the world.

Leading the 20:20 Wheat institute strategic programme at Rothamsted, Professor Martin Parry is a world expert who strives to increase

the yield potential of wheat. Over the past 10 years Professor Parry has established long, fruitful and rewarding collaborations with colleagues at Henan Tianmin Seed Co. as well as at leading academic institutions including the Chinese Academy of Agricultural Sciences and the Chinese Academy of Sciences, both located in Beijing.

Professor Parry also collaborates with experts in the Northwest Agricultural & Forestry University, Yangling and the China Agricultural University, Beijing.



Financial Review

The financial statements have been prepared on a going concern basis. For full disclosure please refer to note 1a(ii) of the accounts.

In 2014-15 BBSRC had a working budget of £515M (£494M in 2012-13), comprising £381M resource and £134M capital. The increase reflects the profiling of capital funding for large projects. The table below shows BBSRC's budgetary outturn against allocation.

£'000	Programme	Admin	Capital	Non cash	Total
Initial Allocation	351,471	16,300	134,400	12,718	514,889
Target Outturn	358,333	16,900	137,400	10,100	522,733
Outturn	358,154	16,847	137,312	12,068	524,381
Underspend / (overspend)	179	53	88	(1,968)	(1,648)
Underspend / (overspend) %	0.05%	0.31%	0.06%	(19.50%)	(0.32%)

BBSRC's budget outturn set out in the table above is based on government budgeting rules as set out in HM Treasury's *Consolidated Budgeting Guidance 2014-15* and aligns to the budget results recorded by BIS for BBSRC. It differs from the figures reported in the financial statements.

Reconciliation of outturn to financial statements	
Expenditure per outturn	524,381
Reconciling items (AME spend relating to provisions)	1,178
Notional UK SBS charges	4146
Net gain on revaluation of property, plant and equipment	(30,363)
Total comprehensive expenditure	499,342

Programme Budget

During the year, BBSRC spent £459.2M on research and capital grants (compared with £432.4M in 2013-14). The increase in grant expenditure reflects BBSRC's continued commitment to invest in high-quality bioscience research and facilities. An analysis of research funding is included in note 2 of the accounts.

In 2014-15 BBSRC provided £50.5M for training and fellowship awards (compared with £52.3M in 2013-14).

BBSRC's initial capital allocation for 2014-15 is set out in the table below.

Capital Budget 2014/15	£'000
Base capital allocation	29,700
Research facilities at the Pirbright Institute	34,000
Research campus developments at Babraham and Norwich	17,000
ELIXIR European biological data storage hub	19,500
e-infrastructure	4,200
Synthetic Biology	25,000
Big Data	5,000
TOTAL ALLOCATION	134,400

The first phase of investment at the Pirbright Institute to construct new high containment virology laboratories was successfully completed within target for cost, time and quality during 2013-14. During 2014-15, commissioning and validation works completed and the building is now in full use. Work is underway on the second phase.

Capital commitment at 31 March 2015 was £184M, £11M lower than at 31 March 2014 (£195.2M) for two reasons: (i) several of BBSRC's major capital investment programmes are ending in 2014-15; and (ii) BBSRC has not yet received capital allocations beyond 2015-16, as these will be determined as part of the next comprehensive spending review.

The net book value of BBSRC's tangible fixed asset base increased by £18.5M from £384.1M in 2013-14 to £402.6M in 2014-15; this is mainly due to spend at Pirbright and the campuses.

During the year, several assets that were held for sale with a net book value of £2.657M were sold for £2.698M as detailed in note 10 to the accounts.

Impairments in 2014-15 amounted to £2.46M, compared to £5.61M in 2013-14. The impairments relate to several assets taken back from The Roslin Institute after a lease expired.

Administration Budget

In 2014-15, BBSRC received an administration allocation of £16.3M (2013-14: £17.5M), a decrease of £1.2M on the previous year. The budget reduction reflects continuing austerity measures across Government.

Clear Line of Sight

During 2014-15, BBSRC continued to work within the HM Treasury's 'Clear Line of Sight' accounting environment, which aims to simplify the reporting of public finances, and improve transparency and accountability. As part of this pan-government initiative BBSRC's parent Department, BIS, has a legal requirement to produce consolidated resource accounts for 2014-15 incorporating the financial results of its partner organisations.

UK Shared Business Services Ltd (UK SBS Ltd)

UK SBS Ltd provides processing services in human resources, procurement, payroll, finance, grants and IT to all seven Research Councils.

Creditor Payment Policy

BBSRC observes HM Treasury guidance and makes every effort to pay creditors within 5 days of receipt of invoice. Where this is not possible, BBSRC observes the CBI's Prompt Payers' Guide, and adheres to the principles of the Prompt Payers' Code, endeavouring to ensure compliance with the agreed terms of payment of creditors' invoices and to pay them within 30 days of

receipt of invoice. During 2014-15, 85.9% of undisputed invoices were paid within 5 working days (83.3% in 2013-14). During 2014-15, 98.2% of undisputed invoices were paid within 30 calendar days (98.9% in 2013-14).

Auditors

BBSRC's Accounts are audited by the Comptroller and Auditor General in accordance with Section 2(2) of the Science and Technology Act 1965. The audit fee for the year was £85,000 (2013-14: £85,000). No non-audit work was performed by the Auditors during the year. In so far as the Accounting Officer is aware, there is no relevant audit information of which BBSRC's auditors are unaware, and the Accounting Officer has taken all the steps that she ought to have taken to make herself aware of any relevant audit information and to establish that the BBSRC's auditors are aware of that information.

Professor Jackie Hunter

BBSRC Chief Executive and Accounting Officer
23 June 2015



Key funding and performance data

BBSRC Comprehensive Spending Review 2010 Allocations				
	2011-12 £'000	2012-13 £'000	2013-14 £'000	2014-15 £'000
Programme Resource	370,306	359,471	351,471	351,471
Administration Resource	27,236	26,116	17,488	16,300
Sub Total Resource	397,542	385,950	368,959	367,771
Programme Non-Cash	7,500	7,900	10,100	10,100
Administration Non-Cash	2,431	2,486	2,551	2,618
Sub Total Non-Cash	9,931	10,386	12,651	12,718
Total Resource DEL	407,473	396,336	381,610	380,489
Base Capital Allocation	38,000	29,700	29,700	29,700
Capital Projects	86,000	73,600	82,200	104,700
Total Capital DEL	124,000	103,300	111,900	134,400
Total BBSRC DEL	531,473	499,636	493,510	514,889

Summary of grant applications and success rates			
	2011-12	2012-13	2013-14
Number of applications (excluding Fellowships)	1,469	1,507	1865
Success rate by number (%)	30	29	27
Equivalent success rate by value (%)	29	28	27

Applications and success rates by gender						
Success rates by number (%)						
	2011-12		2012-13		2013-14	
	Male	Female	Male	Female	Male	Female
Project grants	29.0	24.9	26.7	22.5	27.3	22.4
Programme grants	53.4	33.3	41.3	33.3	32.3	22.5
New investigators	38.2	24.1	24.2	21.7	28.3	25.0
Fellowships	8.6 ¹	6.3 ²	5.7 ³	6.3	5.0	13.0

Percentage of female applicants from total applications and from successful applications for peer-review funding						
	2011-12		2012-13		2013-14	
	Total	Successful	Total	Successful	Total	Successful
Project grants	22.5	20.0	21.9	19.1	23.4	20.0
Programme grants	20.5	13.9	18.0	15.1	20.6	15.3
New investigators	29.9	21.2	25.8	23.8	32.7	30.0
Fellowships	31.4	25.0	31.4	33.3	36.5	60.0

¹ In 2011-12 a total of four awards were available

² Fellowships were offered to two female applicants, one of whom declined

³ In 2012-13 a total of five awards were available and two male applicants declined awards

Due to the timing of data production, figures for 2014-15 are not available at the time of going to press

BBSRC funding to funded institutes in 2014-15 (£M)

Institute	BBSRC strategic grants	BBSRC other funding	BBSRC capital funding	Total BBSRC funding
Babraham Institute (BI) ⁶	13.1	1.7	12.5	27.3
Pirbright Institute (PI) ⁴	14.6	4.8	23.6	43.0
Institute of Food Research (IFR)	9.7	2.8	8.2	20.7
John Innes Centre (JIC)	14.1	14.9	9.2	38.2
Rothamsted Research (RRes)	14.1	5.3	16.1	35.5
The Genome Analysis Centre (TGAC)	6.5	1.0	4.6	12.1
Roslin Institute at the University of Edinburgh (RI) ⁵	7.9	0.0	6.1	14.0
Institute of Biological, Environmental and Rural Sciences at Aberystwyth University (IBERS) ⁵	4.4	0.5	2.3	7.2
2014-15 Totals	84.4	30.4	82.6	197.4
2013-14 Totals	82.3	42.3	59.1	183.8

⁴ Formerly the Institute for Animal Health (IAH)

⁵ Two BBSRC-funded institutes, Roslin Institute and the Institute of Biological, Environmental and Rural Sciences, are embedded in the University of Edinburgh and Aberystwyth University, respectively. Competitive Research Grant funding, provided under the 'Other Funding' category, is provided direct to the Universities and not included here.

⁶ Includes BBT Ltd

Top 25 universities by grant funding

2014-15			2013-14		
University	£M		University	£M	
1 University of Manchester	19.61	1	The University of Manchester	18.14	
2 University of Edinburgh	17.91	2	University of Cambridge	16.49	
3 University of Cambridge	16.30	3	University College London	12.34	
4 University College London	14.42	4	University of Nottingham	12.17	
5 University of Nottingham	13.31	5	The University of Edinburgh ⁵	11.54	
6 University of Oxford	12.30	6	Imperial College London	10.77	
7 Imperial College London	11.61	7	University of Oxford	10.40	
8 University of Bristol	10.07	8	University of Glasgow	9.08	
9 University of Warwick	10.02	9	University of Bristol	8.51	
10 University of Glasgow	9.31	10	University of Warwick	7.61	
11 University of York	6.65	11	University of Sheffield	6.24	
12 King's College London	6.38	12	King's College London	6.19	
13 University of Sheffield	6.07	13	Newcastle University	5.67	
14 University of Leeds	5.66	14	University of Liverpool	5.42	
15 University of Newcastle Upon Tyne	5.40	15	University of Leeds	5.38	
16 University of Liverpool	5.19	16	University of Exeter	5.20	
17 University of Birmingham	4.58	17	University of York	4.47	
18 University of Dundee	4.21	18	University of Dundee	4.30	
19 University of East Anglia	4.16	19	University of Birmingham	3.93	
20 University of Exeter	4.00	20	Cardiff University	3.58	
21 University of Southampton	3.82	21	University of Reading	3.36	
22 Cardiff University	3.35	22	Royal Veterinary College	3.23	
23 University of Aberdeen	3.27	23	University of East Anglia	3.18	
24 University of Reading	3.12	24	University of Southampton	3.16	
25 University of Leicester	3.06	25	University of St Andrews	3.11	

Spending analysis and performance indicators

An analysis of research funding can be found in note 2 of the Accounts. Further spending analysis can be found on BBSRC's website at: <http://www.bbsrc.ac.uk/organisation/spending/spending-index.aspx>

BBSRC's key deliverables are set out in the Delivery Plan 2011-15, and in the recently updated Delivery Plan 2015-16. Progress against deliverables and milestones is measured using a Scorecard, both available at: <http://www.bbsrc.ac.uk/news/planning/bbsrc-delivery-plan.aspx>



Key funding and performance data

Efficiency Programme

As set out as part of the 2010 spending review settlement, the Research Councils have begun implementation of an efficiency programme to drive down the costs and overheads associated with research. The efficiency savings derived from this programme are being re-invested in research.

In the spring of 2011 RCUK published *Efficiency 2011-15: Ensuring Excellence with Impact* describing how the Research Councils would implement the recommendations in Sir William Wakeham's report *Financial Sustainability and Efficiency in Full Economic Costing of Research in UK Higher Education Institutions*. The efficiency savings are being applied to both research grants and fellowships awarded via competitive routes to Research Organisations and also to Research Council institutes. The combined savings for the first two years of the programme (2011-12 and 2012-13) have exceeded the planned £30.5 million and £82.2 million targets with details provided in the programme's annual report at http://www.rcuk.ac.uk/RCUK-rod/assets/documents/documents/RCUK_Efficiency_Savings_Report_2012-13.pdf. The combined saving for the third year (2013-14) are planned to be £138.5 million rising over the four year Spending Review period to reach a total of £428 million over the full period.

Alongside these measures the Research Councils also introduced changes to the requests for equipment on grants, including asking applicants to demonstrate how the usage of the equipment will be maximised. RCUK is currently working with university partners to develop options to promote and assist equipment sharing, including exploring the issues around asset registers. There is good anecdotal evidence of significant progress by universities to promote sharing, and of very efficient usage of large pieces of experimental equipment.

Staff Report

On 1 April 2015, there were 1439 BBSRC employees in institutes funded by BBSRC and in the BBSRC Office, compared to 1580 on 1 April 2014. Of the 1439 staff, 1130 were based at BBSRC strategically funded institutes and 309 were based in BBSRC Office – which includes staff in Joint Service Units which BBSRC hosts on behalf of all of the Research Councils.

As at 1 April 2015, 39% (561) of the BBSRC-employed staff were in the science category. 27% of BBSRC employees in senior posts (pay bands PC1-F) are female. The comparable figure for 2013-14 was 26%.

	Male	Female
Directors (PC1&PC2)	7.7	4.0
Senior Managers (Bands F&G)	32.6	15.5
Other employees (Bands B to E)	81.1	182.3
Total	121.4	201.8

Under revised governance arrangements for BBSRC strategically funded institutes, existing BBSRC staff at Institutes remain BBSRC employees working under a deployment agreement. These staff will therefore continue to be included in BBSRC data; however, staff employed locally by institutes on different terms and conditions will be excluded from BBSRC statistics.

BBSRC's employment policies, strategies and guidance are set out in the BBSRC Employment Code, which can be found on our website: www.bbsrc.ac.uk/organisation/policies/employment/code-index.aspx

Employee Engagement

BBSRC has active employee engagement and during 2014-15 has progressed a number of continuous improvement activities such as:

- BBSRC achieved reaccreditation at the end of 2014 at the Silver standard for the Investors in People (IIP) Award, building on our initial award at the basic level. This reflects the efforts of line managers, staff and HR teams, working with the BBSRC Office Employee Group (SOEG) and Trades Unions completing internal reviews against the IIP standards and action planning to develop the silver benchmark requirements. During 2014 a staff group has developed core BBSRC values which are now being embedded in behaviours across the office. This engagement work is closely aligned with the Office of the Future project, and the BBSRC lean team work to continue driving efficiency across the organisation and is notable in the context of the continuing challenges for staff.
- In October 2014 BBSRC participated in the sixth annual Civil Service People Survey achieving a 68% engagement index, which benchmarks at +6% against other high-performing units completing the survey. 92% of staff are interested in their work and have a clear understanding of the organisation's purpose. BBSRC has consistently been viewed as a good employer, reported as being fair and inclusive, with 90% of staff being treated with respect by their colleagues.
- Overall line management is described as very effective; employees report confidence in the decisions made by their line manager and receive regular feedback on their performance, and are able to access the right leaving and development opportunities. There are challenges which the Executive Group continues to work on around leadership and managing change, career development and career progression, and SOEG are working with the BBSRC lean team to deliver focussed action planning across these areas. In general there continues to be strong evidence of positivity around employee engagement and BBSRC as an employer.

Learning and Development

BBSRC continues to offer a mature provision of learning and development activities through a number of modules, which includes training courses accessed through the RCUK core catalogue delivered by UK Shared Business Services. In addition to the core suite of offerings BBSRC continues to develop strategic leadership and management capability through the senior leadership programme, and sponsors a number of 'high value' awards, including professional accreditations and other recognised qualifications, which have included an MSc in Food Policy, CIPD Intermediate Certificate in HR Management, and CIMA; these are considered through an open competition on a bi-annual basis where individual cases are evaluated to ensure consistency and effective training budget spend; return on investment is monitored.

BBSRC Office responses to the 2014 Civil Service People Survey reflected a 74% positive response from staff concerning their ability to access the right learning and development opportunities.

Diversity and Equality

BBSRC recognises that diverse ideas, experiences, backgrounds and perspectives are fundamental to successful science and innovation. BBSRC is committed to embedding equality and diversity in the way we operate and the way we work with our partners and stakeholders, sharing best practice and considering how we can use our position as an opinion leader in the biosciences to influence culture change.

BBSRC has published its two year Equality and Diversity Strategy and associated action plan: <http://www.bbsrc.ac.uk/about/policies/employment/equality-diversity>, which set out the areas in which we will focus our attention to achieve our vision, the targets we have set and what we want to achieve by March 2017.

In addition we continue to work collaboratively with the other Research Councils including on collecting consistent management information, developing equality and diversity awareness training (including in relation to unconscious bias), and improving diversity in public appointments on councils. In relation to the latter, a key event in 2014-15 was a cross-council diversity event aimed at engaging those individuals responsible for the appointment process in a discussion of the benefits of improving the gender balance on RCUK Councils. Attendees included Research Council chairs and CEOs, as well as representatives from BIS. The event was facilitated by Professor Susan Vinnicombe from Cranfield and a member of the Davies Review panel. The outcomes of the event and resultant action plan are available on the RCUK website at: <http://www.rcuk.ac.uk/RCUK-prod/assets/documents/skills/OutcomeofRCUKDiversityinPublicAppointments2014.pdf>

Health, Safety, Biosafety and Security

Health, Safety Biosafety and Security (HSBS) is a priority and BBSRC is committed to ensuring that it is an integral part of all we do. We take a holistic approach, embracing all the physical, psychological and social factors that impact on occupational HSBS. Risks are proportionately, sensibly and practicably managed. The HSBS team focus resources on priorities and achieving key outcomes, to support scientific business transformation and delivery.

The HSBS team have delivered a substantial programme of work over the past 12 months, against a background of significant change. This includes the achievement of the Health and Wellbeing Award and being nominated by Mental Health First Aid (MHFA) as a champion in exemplary leadership. All BBSRC strategically supported institutes have been audited. We continue to manage change positively and support our staff by ensuring that our policies and procedures continue to be enabling and solutions focused. The HSBS Team and the Trade Unions have a positive and productive relationship. We have worked collaboratively with the other Research Councils and wider external networks, proactively engaging with the Institution of Occupational Safety and Health (IOSH) in research about the return to work process after long-term illness.

RIDDOR Reported Incidents

It is a legal requirement to report certain incidents and ill health at work. The number of RIDDOR Reportable Incidents has decreased from 7 in 2013/14 to 5 in 2014/15. A summary of the data from the last three years can be found below.

Annual Occurrence, Reportable Incident Category (defined as in RIDDOR 1995)	2012-13	2013-14	2014-15
Contact with moving machinery or material being machined	0	1	0
Hit by a moving, flying or falling object	0	0	1
Hit by a moving vehicle	0	0	0
Hit by something fixed or stationary	1	0	0
Injured while handling, lifting or carrying	0	2	0
Slipped, tripped or fell on the same level	3	2	0
Fell from a height	1	0	0
Trapped by something collapsing	0	0	0
Drowned or asphyxiated	0	0	0
Exposed to, or in contact with, a harmful substance	0	0	0
Exposed to fire	0	0	0
Exposed to an explosion	0	0	0
Contact with electricity or an electrical discharge	0	0	0
Injured by an animal	0	0	0
Physically assaulted by a person	0	0	0
Another kind of accident	1	2	0
Total accidents	6	7	1
Cases of occupational disease	2	0	1
Dangerous Occurrence	1	0	3
Overall total	9	7	5

Sickness Absence: BBSRC Swindon Office	2012-13	2013-14	2014-15
Total days of absence	1526	2140	2216
Frequency of absences lasting longer than 28 days	23	12	12
Total days of long term sickness	536	933	826
Average days of sick absence per person at BBSRC Office	5.29	6.11	6.67

Sustainability

Environmental Policy

BBSRC has formalised and strengthened its corporate Environmental Policy which confirms its commitment to promote environmental best practice. Energy efficiency is an important element of the policy.

BBSRC-funded institutes occupying BBSRC sites have fully supported the corporate Environmental Policy and have formulated their individual environmental policies, specific to their own activities, to reflect the framework of the BBSRC policy. Specifically BBSRC is committed to:

- Understanding its environmental impacts, including the direct environmental impacts of the research that it sponsors. It requires recipients of BBSRC funding to monitor and minimise any adverse impacts on the environment and local communities.
- Compliance with relevant environmental legislation, and, where appropriate, adoption of current standards of best practice.
- Continual development of objectives and targets to reduce environmental impacts through the application of realistic, measurable and achievable performance indicators.
- The efficient use of energy and natural resources, minimising waste and encouraging effective re-use and recycling.
- Minimising the environmental impacts of new buildings and structures through good specification and design whilst supporting their primary function.
- Working with suppliers and contractors to promote approaches to supply chain management and product sourcing that minimise adverse environmental impacts.
- Raising awareness and training staff in best practice in order to ensure effective resource management.
- Raising awareness and maintaining dialogue with external stakeholders, including commercial and domestic tenants, contractors, suppliers, local communities, local authorities and other organisations, to identify key environmental issues and to ensure standards of best practice on site.
- Regularly reviewing its environmental impacts and environmental management practices.

Energy Policy

BBSRC is committed to reducing energy consumption to the lowest practical level, commensurate with the realistic needs of the research programme. The policy commitments are:

- To promote best practice in energy and environmental conservation and to implement strategies to reduce energy consumption and cost.
- To promote energy and environmental conservation and to encourage all staff to be efficient with their use of energy.
- To ensure, as far as possible, that new buildings, plant and equipment are designed to provide for a high but cost effective standard of energy and environmental conservation.
- To implement energy efficient capital schemes at institute sites.
- To adopt energy purchasing strategies to achieve the best prices from the marketplace and to seek opportunities for purchasing renewable energy.
- To measure and reduce carbon emissions.

Environmental Management and Implementation

RCUK, the body that hosts the seven research councils within Polaris House, has been awarded and implements an Environmental Management system (EMS) via ISO 14001.

BBSRC is active in promoting and supporting its associated institutes in attaining accreditation for Environmental Management systems under ISO 14001; Rothamsted Research at Harpenden has been awarded ISO 14001.

The environmental impact, together with the monitoring and usage of resources within Polaris House is managed by the Joint Building Operations Services (JBOS) which has set a target of reducing to five per cent waste disposal to landfill by 2017. It is hoped that this target will be met in 2015-16 as all food waste has been diverted from landfill to a composting site. However, reporting on the actual quantities of waste disposal will not be available until after the publication of this document.

JBOS has continued to implement and integrate energy saving and carbon reducing technologies into the building systems. There are various technologies available for future consideration, such as:

- Photovoltaic electrical generation
- Combined heat and power generation
- Installation of low energy lighting;
- Bore hole water supply.

The above are technologies that require substantial capital investment, together with extended payback periods that in many cases extend beyond the expected efficient operational life of the integrated components. These technologies require careful examination prior to the commitment of funds to these sizable investments.

As at 31 March 2015, it can be reported that:

- Free cooling to the IT server room is now in place
- Low energy 'LED' type lighting is being installed within the areas of Polaris House that are undergoing refurbishment
- Together with automatic PIR lighting control
- The installation of photovoltaic panels upon the south-facing roof of Polaris House is being considered via a government-wide funding initiative
- Waterless urinals have been installed in all male toilet areas
- PIR lighting control has been installed within the multi-storey car park.

Sustainability

BBSRC is fully committed to a programme of review and reduction in the use of energy, finite resources and waste disposal.

The majority of BBSRC's carbon emissions emanate from the use of mains supplied electricity within its head office, Polaris House, and it is this resource that, when targeted with energy saving technologies, will return the highest level of reductions.

Professor Jackie Hunter

BBSRC Chief Executive and Accounting Officer
23 June 2015



Directors' report

Corporate Information

Governance

BBSRC is an independent non-departmental public body of the Department for Business, Innovation and Skills (BIS), established by Royal Charter. BBSRC's working relationship and lines of accountability with its sponsor department BIS are defined through a Management Statement and Financial Memorandum, which are subject to periodic review.

BBSRC's Chief Executive, in her role as Accounting Officer, is accountable to the public via Parliament. Parliament monitors and influences BBSRC's work through its Select Committees and the Parliamentary Ombudsman.

Council

The Governance Statement in the accounts describes the role of Council within BBSRC's governance framework and provides information about Council's membership, performance and attendance. Information about Council's Boards is also contained within the Governance Statement. More information about Council can be found at: www.bbsrc.ac.uk/organisation/structures/council and the membership of Council and main advisory boards can be found in the Governance Statement.

Note 25 in the accounts contains details of related party transactions. Registers of interest for Council, Boards and Committees can be found at: www.bbsrc.ac.uk/web/FILES/Conflicts/council_conflicts.pdf

Panels and Committees

BBSRC's strategy advisory structure comprises the panels listed below. Membership can be found on BBSRC's website at: www.bbsrc.ac.uk/organisation/structures/panels

- Bioscience for Health Strategy Advisory Panel
- Bioscience for Industry Strategy Panel
- Bioscience for Society Strategy Panel
- Bioscience Skills and Careers Strategy Panel
- Exploiting New Ways of Working Strategy Advisory Panel
- Food Security Strategy Advisory Panel
- Industrial Biotechnology and Bioenergy Strategy Advisory Panel
- Integrative and Systems Biology Panel
- Research Advisory Panel

BBSRC has a number of committees which assess applications for responsive mode grant funding and assess studentship and fellowship applications. BBSRC's committees are listed below and membership can be found on BBSRC's website at: www.bbsrc.ac.uk/organisation/structures/committees. A list of members in BBSRC's peer review and strategy pool of experts is also available at this webpage.

- Committee A – animal disease, health and welfare
- Committee B – plants, microbes, food and sustainability
- Committee C – genes, development and STEM approaches to biology
- Committee D – molecules, cells and industrial biotechnology
- Committee E – fellowships and other personal awards

BBSRC Estates Management Policy and Strategy

BBSRC has in place a corporate policy (and procedures) for estate management, environmental performance reporting and capital maintenance work through which it ensures that Institutes manage their estates in accordance with best practice, including energy and environment management. As a result Institutes are required to:

- Define and implement 10-year estate strategies and capital investment plans
- Support strategic science objectives,
- Identify future infrastructure requirements and
- Ensure sustainability, fitness for purpose, legal compliance and value for money.

Institutes' estate and capital investment plans include routine and backlog maintenance programmes which feed into the institutes' business plans, the annual business planning process and the BBSRC 10 year Estate Strategy and Capital Investment Plan which is reviewed and updated annually according to business drivers and needs.

The BBSRC ten-year Estate Strategy and Capital Investment Plan (2011/12 – 2021/22) aims to ensure that the sustainable provision of the institutes' facilities, equipment and IT infrastructure will be able to deliver BBSRC's strategic science objectives. This has included the rationalisation, modernisation and improvement in the estate to serve future needs; a commitment to continue to invest in new/replacement facilities, backlog maintenance and equipment; working with organisations or funders from across the private and third sectors.

Protected Personal Data Related Incidents

BBSRC recognises and fully supports the need for effective information governance in protecting its information and the information entrusted to it in the course of its business. Compliance with data protection law is taken very seriously and as such, BBSRC provides all employees with annual basic training on their responsibilities. BBSRC continues to monitor and assess its information risks in order to identify and address any weaknesses, and ensure continuous improvements of its systems and procedures.

There have been no personal data related incidents in 2014-15 requiring reporting to the Information Commissioner's Office.

INFORMATION COMMISSIONERS OFFICE IN 2014-15				
Statement on Information risk	<ul style="list-style-type: none"> - All staff have been provided with Information Governance and Data Protection Awareness training, either through new starter inductions or annual refresher training. - Privacy Impact Assessments are routinely carried out on new systems to ensure that BBSRC remains compliant with data protection legislation and put in necessary security controls. - Data Sharing Agreements are routinely implemented as and when BBSRC is required to share data with other organisations. 			
Date of incident (month)	Nature of incident	Nature of Data Involved	Number of People Potentially Affected	Notification Steps
	0	0	0	0
Further action on information risk	Revision of the Data Protection Policy is in progress. Revision of the Retention Schedule has been completed to comply with legislation and business requirements.			

Incidents deemed by the Data Controller not to fall within the criteria for report to the Information Commissioner's office but recorded centrally within the Department are set out in the table below

Category	Nature of incident	Total
I	Loss of inadequately protected electronic equipment, devices or paper documents from secured Government premises	0
II	Loss of inadequately protected electronic equipment, devices or paper documents from outside secured Government premises	0
III	Insecure disposal of inadequately protected electronic equipment, devices or paper documents	0
IV	Unauthorised disclosure	0
V	Other	3

Total number of protected personal data related incidents formally reported to the Information Commissioner's Office, by category number.							Total number of other protected personal data related incidents by category number.						
	I	II	III	IV	V	Total		I	II	III	IV	V	Total
2014-15	0	0	0	0	0	0	2014-15	0	0	0	0	3	3
2013-14	0	0	0	0	0	0	2013-14	0	0	0	0	3	3
2012-13	0	0	0	0	0	0	2012-13	0	0	0	1	0	1
2011-12	0	0	0	0	0	0	2011-12	0	0	0	1	0	1

BBSRC does not sell data and therefore is not making a statement with regard to the requirements set out in HM Treasury and Office of Public Sector Information guidance.

Since its formation BBSRC has been subject to the Freedom of Information Act. During 2014-15 BBSRC provided information in response to 35 requests (2013-14: 28)

Professor Jackie Hunter

BBSRC Chief Executive and Accounting Officer
23 June 2015

Remuneration Report

Council Chair and Council members except Chief Executive

Policy (unaudited information)

Remuneration rates are the same across the Research Councils. The rates are reviewed each year by the Department for Business, Innovation and Skills (BIS). In considering the new rates, BIS may take into account the increase given to the senior civil service. BIS consults with the Research Councils and the agreed change is implemented in October.

Appointments are non-pensionable and there is no entitlement to compensation for loss of office. No fee is payable in respect of Civil Servants, employees of Research Councils and other Non-Departmental Public Bodies and Agencies.

Remuneration (audited information)

Standard Fee Paid to Council Members (£ per annum)	2014-15	2013-14
Council Chair	16,430	16,430
Council Members who also chair Committees	9,110	9,110
Council Members	6,850	6,850

	Appointments		Remuneration £000s	
	From	To	2014-15	2013-14
Chair – Professor Sir Tom Blundell FRS	01/07/2009	30/06/2015	16	16
Deputy Chair and Chief Executive – Professor Jackie Hunter CBE	21/10/2013	21/10/2017	N/A	N/A
Professor Sir David Baulcombe FRS	01/04/2009	31/03/2016	7	7
Dr N Brewis	01/04/2014	31/03/2018	7	0
Dr B Clarke	23/03/2015	31/03/2019	0	0
Professor R Codgell	01/04/2014	31/03/2018	7	0
Professor M Dallman	01/04/2014	31/03/2018	7	0
Professor Russell Foster FRS	01/04/2011	31/03/2015	7	7
Professor Carole Goble OBE	01/04/2013	31/03/2017	7	7
Mr Jim Godfrey OBE	01/04/2009	31/03/2015	7	7
Dr Mike Goosey	01/04/2011	31/03/2015	7	7
Mr David Gregory	01/04/2010	31/03/2018	9	9
Professor Sarah Gurr	01/04/2012	31/03/2016	7	7
Dr D Keith	23/03/2015	23/03/2019	0	0
Professor J Petts	01/04/2014	31/03/2018	7	0
Professor David Richardson	01/04/2012	31/03/2016	7	7
Professor H Sang	01/04/2014	31/03/2018	7	0
Dr Will West	01/04/2011	31/03/2015	7	7
Professor Tim Wheeler	01/04/2012	31/03/2016	0	0

The total emoluments of the Chairman were honoraria of £16,430 (2013-14: £16,430). The Chairman's appointment is non-pensionable and there is no entitlement to compensation for loss of office.

As noted in the policy section above, no fees are payable to Professor Hunter.

Committee Chairs and Members (unaudited information)

The remuneration of Committee Chairs and Members is set by the Financial Management Group of the Research Councils. Committee remuneration rates are reviewed every two years by the Research Councils' Finance Directors Group. It was decided to maintain the remuneration rates at their current level for 2014-15.

Committee Rates (£ per day)	2014-15	2013-14
Committee Chair	230	230
Committee Members	170	170

Chief Executive and BBSRC Executive Directors (audited information)

Remuneration Committee

The Chief Executive's remuneration is determined by the Permanent Secretary of the Department for Business, Innovation and Skills. The Permanent Secretary is advised by a Remuneration Committee chaired by the Director General of Research Councils. The Chair of BBSRC Council is consulted.

BBSRC Remuneration Board

The remuneration of BBSRC Executive Directors is reviewed and adjusted annually by the Council Remuneration Board. The Board is chaired by the Chair of Council and other membership comprises the Chief Executive and three Council Members, at least one of whom must have an industry background. Members of the Remuneration Board are listed within the Governance Statement in the Accounts.

Policy

Subject to successful performance, the Chief Executive's salary rises by a cost of living increase and a pre-determined incremental increase up to a salary ceiling. In addition, non-consolidated, non-pensionable annual performance related pay may be awarded for performance towards objectives agreed by BBSRC and the Chief Executive.

BBSRC's Remuneration Board reviews performance against a series of objectives, categorised between fundamental, value-added or breakthrough, in determining each Executive Director's annual salary level and any Performance Related Pay award. The Board will also take account of public sector pay constraints, relativities, job weight and any special factors. Increases are normally awarded from 1 July annually.

Contractual Policy

Professor Jackie Hunter was appointed BBSRC Chief Executive on 21 October 2013 on a four year fixed term contract, with the option for extension.

BBSRC Executive Directors are members of the BBSRC Executive Group. The Executive Directors are on indefinite contracts, similar to the majority of BBSRC staff, with notice periods of three months. Executive Directors' remuneration for 2014-15 is detailed in the table below. No Executive Director is in receipt of benefits in kind.

Employee Name	Start Date	Expired Term	Notice Period
Paul Burrows	01/07/2009	Open ended no Expired Term	13 weeks
Celia Caulcott	15/09/2008	Open ended no Expired Term	13 weeks
Paul Gemmill	15/12/2003	Open ended no Expired Term	13 weeks
Jackie Hunter	21/10/2013	21 October 2017	3 months
Jan Juillerat	01/03/2012	Open ended no Expired Term	13 weeks
David Parfrey	01/11/2008	Open ended no Expired Term	13 weeks
Steve Visscher	01/10/2008	Open ended no Expired Term	13 weeks
Melanie Welham	01/10/2012	Open ended no Expired Term	13 weeks

Remuneration of Senior Employees (audited information)

Single total figure of remuneration								
Executive Directors	Salary (£'000)		Bonus Payments (£'000)		Pension Benefits (£'000)		Total (£'000)	
	2014-15	2013-14	2014-15	2013-14	2014-15	2013-14	2014-15	2013-14
Mr Paul Burrows	85-90	85-90	0-5	0-5	17	122	105-110	210-215
Dr Celia Caulcott	105-110	105-110	5-10	5-10	40	60	145-150	170-175
Mr Paul Gemmill	95-100	95-100	5-10	5-10	23	24	125-130	125-130
Professor Jackie Hunter*	140-145	60-65	0	0	N/A	N/A	140-145	60-65
Ms Janet Juillerat	85-90	85-90	0-5	0-5	20	64	110-115	155-160
Mr David Parfrey	100-105	95-100	5-10	5-10	27	49	130-135	150-155
Mr Steve Visscher**	150-155	145-150	5-10	10-15	N/A	N/A	155-160	160-165
Professor Melanie Welham	95-100	95-100	0-5	0-5	38	37	135-140	135-140

* Professor Jackie Hunter is not a member of the RCPS. Bonus for 13-14 and 14-15 had not been agreed at time of print.

** Mr Steve Visscher is a member of the RCPS but as at 31 March 2014 and 31 March 2015 he was a deferred member paying no contributions and no pension benefits are calculated.

Salary and Allowances

Salary and allowances covers both pensionable and non-pensionable amounts and includes: gross salaries; performance related pay; overtime; allowances and any ex-gratia payments. It does not include amounts which are reimbursement of expenses directly incurred in the performance of an individual's duties.

Benefits in Kind

The monetary value of benefits in kind covers any benefits provided by the employer and treated by HM Revenue and Customs as a taxable emolument. There were no benefits in kind for any of the senior management during the year.

Bonuses

Bonuses are based on performance levels attained and are made as part of the appraisal process. Bonuses relate to the performance in the year in which they become payable to the individual. The performance related pay awards reported in 2014-15 relate to performance in 2014-15 and the comparative awards reported for 2013-14 relate to the performance in 2013-14.

Pay Multiples

Reporting bodies are required to disclose the relationship between the remuneration of the highest-paid director in their organisation and the median remuneration of the organisation's workforce.

The banded remuneration of the highest-paid Executive Director in BBSRC in the financial year 2014-15 was £155,000-£160,000 (2013-14: £160,000-£165,000). This was 5.54 times (2013-14: 5.27) the median remuneration of the workforce, which was £30,150 (2013-14: £29,647).

In 2014-15, 0 employee received remuneration in excess of the highest-paid director (2013-14: 0).

Total remuneration includes salary, non-consolidated performance-related pay, benefits-in-kind as well as severance payments. It does not include employer pension contributions and the cash equivalent transfer value of pensions.

Pension Benefits

Executive Director	Accrued pension and lump sum at pension age as at 31/03/2015	Real increase in pension and lump sum at pension age	Cash equivalent transfer value as at 31/03/2015	Cash equivalent transfer value as at 31/03/2014	Real increase in cash equivalent transfer value
	£'000	£'000	£'000	£'000	£'000
Mr Paul Burrows	155-160	2.5-5.0	753	705	14
Dr Celia Caulcott	15-20	0-2.5	313	267	22
Mr Paul Gemmill	15-20	0-2.5	368	340	22
Professor Jackie Hunter*	N/A	N/A	N/A	N/A	N/A
Ms Janet Juillerat	30-35	0-2.5	474	436	12
Mr David Parfrey	20-25	0-2.5	391	347	21
Mr Steve Visscher**	N/A	N/A	N/A	N/A	N/A
Professor Melanie Welham	5-10	0-2.5	67	38	18

* Professor Jackie Hunter is not a member of the RCPS

** Mr Steve Visscher is a member of the RCPS but at 31 March 2014 and 31 March 2015, he was a deferred member, paying no contributions and no pension benefits are calculated.

Details of Pension Scheme

The employees of the Council are members of the Research Councils' Pension Schemes (RCPS) which are defined benefit schemes funded from annual grant-in-aid on a pay-as-you-go basis. The benefits are by analogy to the Principal Civil Service Pension Scheme, except that while the schemes provide retirement and related benefits based on final or average emoluments, redundancy and injury benefits are administered and funded by the Council. The scheme is administered by the Research Councils' Joint Superannuation Service with the associated grant-in-aid managed by BBSRC.

From 30 July 2007, employees may be in one of four defined schemes; either a 'final salary' scheme (classic, classic plus or premium); or a career average scheme (nuvos). Pensions payable are increased annually in line with changes in the Retail Prices Index (RPI). Employees' contributions vary between 1.5% and 8.85% depending on scheme. The employer's contribution is agreed by the RCPS Board of Management on the recommendation of the Government Actuary's Department (GAD) and is set at 26.0% of pensionable pay.

The Research Councils Pension Scheme (RCPS) is a 'by-analogy' scheme to the Principal Civil Service Pension Scheme (PCSPS) and as a result any changes made to the PCSPS, including member contribution rates, are automatically applied to the RCPS. The PCSPS are changing the rates of employee pension contribution rates from 1 April 2015. Members of the **classic**, **premium**, **classic plus** and **nuvos** schemes will be affected.

A table of increases by pay band and scheme is provided below.

Annual Pensionable Earnings (full-time equivalent basis)	Classic Scheme		Premium, Classic Plus and Nuvos	
	Current contribution rate	New 2015 contributions	Current contribution rate	New 2015 contributions
Up to £15,000	1.50	3.00	3.50	4.60
£15,001 - £21,000	3.00	4.60	5.00	4.60
£21,001 - £30,000	4.48	5.45	6.48	5.45
£30,001 - £47,000	5.27	5.45	7.27	5.45
£47,001 - £60,000	6.06	7.35	8.06	7.35
£60,001 - £150,000	6.85	7.35	8.06	7.35
£150,001+	6.85	8.05	8.85	8.05

A Partnership Pension Account was made available to new staff from 1 October 2002, based on the portable Stakeholder Pension introduced by the Government in 2001. This is a defined contribution scheme. The employers pay the RCPS 0.8% of pensionable pay to cover death in service and ill health benefits. The employers pay the balance to the employee's private pension provider.

The accrued pension quoted is the pension the member is entitled to receive when they reach pension age or immediately on ceasing to be an active member of the scheme if they are already at or over pensionable age. Pensionable age is 60 for members of classic, classic plus and premium and 65 for members of nuvos.

On 1 April 2015 PCSPS launched a new pension scheme called Alpha. This scheme is similar to the Nuvos career average scheme but with the retirement age aligned to the state pension age. RCPS cannot at present create a by-analogy Alpha scheme as the legislation does not currently permit this. Reform options are currently being discussed with HM Treasury and, BIS have given permission for RCPS to continue 'as is' beyond April 2015.

For further details about the Research Councils Pension Scheme pension arrangements can be found at the website <http://jsspensions.nerc.ac.uk/>

Cash Equivalent Transfer Value (CETV)

A Cash Equivalent Transfer Value (CETV) is the actuarially assessed capitalised value of the pension scheme benefits accrued by a member at a particular point in time. The benefits valued are the member's accrued benefits and any contingent spouse's pension payable from the scheme. A CETV is a payment made by a pension scheme or arrangement when the member leaves a scheme and chooses to transfer the benefits accrued in the former scheme. The pension figures shown relate to the benefits that the individual has accrued as a consequence of their total membership of the pension scheme, not just their service in a senior capacity to which disclosure applies. The CETV figures include the value of any pension benefit in another scheme or arrangement which the individual has transferred to the Research Councils' pension arrangement and for which the RCPS has received a transfer payment commensurate with the additional pension liabilities being assumed. They also include any additional pension benefit accrued to the member as a result of their purchasing additional years of pension service in the scheme at their own cost.

Real increase in the value of the CETV

The real increase in the value of the CETV reflects the increase effectively funded by the employer. It takes account of the increase in accrued pension due to inflation, contributions paid by the employee (including the value of any benefits transferred from another pension scheme or arrangement) and uses common market valuation factors for the start and end of the period.

Compensation for loss of office

There has been no compensation for loss of office of senior managers in 2014-15 or 2013-14.

Professor Jackie Hunter
BBSRC Chief Executive and Accounting Officer

Date: 23 June 2015

Annual Accounts 2014-2015

Statement of Responsibility of Council and Chief Executive as Accounting Officer

Under Section 2(2) of the Science and Technology Act 1965, the Secretary of State with the consent of HM Treasury has directed BBSRC to prepare for each financial year a statement of accounts in the form and on the basis set out in the Accounts Direction. The accounts are prepared on an accruals basis and must give a true and fair view of the state of affairs of BBSRC and its net expenditure, changes in taxpayers' equity, and cash flows for the financial year.

In preparing the Accounts, the Accounting Officer is required to comply with the requirements of the Government Financial Reporting Manual (www.financial-reporting.gov.uk) and in particular to:

- observe the Accounts Direction issued by the Secretary of State including the relevant accounting and disclosure requirements, and apply suitable accounting policies on a consistent basis;
- make judgments and estimates on a reasonable basis;
- state whether applicable accounting standards as set out in the Government Financial Reporting Manual have been followed, and disclose and explain any material departures in the financial statements; and
- prepare the financial statements on a going concern basis, unless it is inappropriate to presume that the Council will continue to operate.

The Department for Business, Innovation and Skills has appointed the Chief Executive as Accounting Officer of BBSRC. The responsibilities of an Accounting Officer, including responsibility for the propriety and regularity of the public finances for which the Accounting Officer is answerable, for keeping proper records and for safeguarding BBSRC's assets, are set out in the NDPB Accounting Officers' Memorandum issued by HM Treasury and published in *'Managing Public Money'*.

BBSRC Annual Governance Statement by Chief Executive

1. Scope of Responsibility

As Accounting Officer, I have responsibility for maintaining a sound system of internal control that supports the achievement of BBSRC's policies, aims and objectives, whilst safeguarding the public funds and departmental assets for which I am personally responsible, in accordance with the responsibilities assigned to me and disclosed in 'Managing Public Money'.

The BIS Accounting Officer has designated me as the Accounting Officer of BBSRC, responsible for the effective, safe and efficient operation of the Council in accordance with the Management Statement and Financial Memorandum agreed between BBSRC and its sponsoring department, the Department for Business, Innovation and Skills (BIS).

BBSRC, together with other Research Councils, is reliant on the UK Shared Business Services Ltd (UK SBS Ltd) for the provision of administration systems and this statement also explains the oversight and assurance process and results for the service supplied.

2. The Purpose of the Governance Statement

The Governance statement, for which I take personal responsibility, gives a clear understanding of the dynamics of BBSRC and its control structure. It records the stewardship of BBSRC, and provides a sense of BBSRC's performance during the year and how successfully it has coped with the challenges it faced. The statement explains how BBSRC has complied with the principles of Good Governance, reviews the effectiveness of these arrangements, and complies fully with the Corporate Governance Code.

3. Governance Framework

BBSRC is an Arm's Length Body of BIS, established by Royal Charter. BBSRC's working relationship and lines of accountability with its sponsor department BIS are defined through a Management Statement, Code of Practice and Financial Memorandum. These documents were reviewed through a cross Research Council Governance Group operating under the auspices of the Efficiency and Reform Group and updated and revised versions are being reviewed by BIS and are expected to be issued early in the 2015-2016 financial year.

In my role as BBSRC's Accounting Officer, I am supported by BBSRC's Council, its Boards, and the Executive team within BBSRC.

BBSRC Council

Council is BBSRC's top level decision-making body, and comprises the Chair, me, and between 10 and 18 other members, at least half of whom are appointed for their qualification in relevant science. Users of research in both Government and industry are also represented. All members are appointed by the Secretary of State for Business, Innovation and Skills, and are required to abide by a code of practice that covers conflicts of interests and general conduct.

Council is a body corporate with executive responsibilities set up under the Science and Technology Act of 1965 and by Royal Charter (amended 1993) thus ensuring that it has separate legal status. Council members have corporate responsibility for the actions of Council and BBSRC staff. Council meets at regular intervals throughout the year and exercises full and effective control over the activities of BBSRC and its staff. Council decides all issues of major importance, including: issues of corporate strategy; key strategic objectives and targets; major decisions involving the use of financial and other resources; and substantive personnel issues, including key appointments. Nevertheless, Council delegates responsibility to me, as Chief Executive, and BBSRC staff to the maximum extent possible.

Examples of recent Council meeting agenda items for discussion include:

- Preparation for the next Comprehensive Spending Review
- Outcomes of the BBSRC Corporate Stakeholder Survey
- BBSRC Communications Strategy
- BBSRC Strategically Funded Institutes
- BBSRC Scientific Risks

The table below shows Council membership and number of meetings attended during 2014-15:

Council Members	No. of meetings attended 2014-2015 (max. 5)
Professor Sir Tom Blundell FRS (Chair) - BBSRC Chair	5
Professor Sir David Baulcombe FRS - Academic	5
Dr Neil Brewis - Industry/User	5
Professor Richard Cogdell FRS FRSE - Academic	3
Professor Margaret Dallman - Academic	5
Professor Russell Foster CBE FRS - Academic	2
Professor Jackie Hunter CBE - BBSRC Chief Executive	5
Mr David Gregory - Industry/User	5
Mr Jim Godfrey OBE - Industry/User	3
Dr Mike Goosey - Industry/User	5
Professor Carole Goble OBE - Academic	4
Professor Sarah Gurr - Academic	4
Professor Helen Sang - Academic	5
Professor Judith Petts CBE - Academic	5
Professor David Richardson - Academic	4
Dr Will West - Industry/User	3
Professor Tim Wheeler - Government User	4

In line with good corporate governance practice, each year BBSRC carries out a formal appraisal of the performance of Council. Collective appraisal provides Council with an opportunity to consider its own effectiveness and to comment on issues which are not normally part of its usual business.

Members of Council (excluding Chair and myself) are required to complete an online questionnaire which provides information for an anonymous and confidential collective report. It is then presented to Council for an open discussion on issues of significant note.

BBSRC also has in place annual appraisals of individual Council members. The resulting reports are used in the process for considering Council re-appointments.

Council's Boards

Council approves the membership of the three Boards that report to it; namely the Appointments Board, Audit Board and the Remuneration Board. The Chair of each Board is required to report regularly on the work of their respective Boards and to take forward specific tasks as directed by Council.

Appointments Board

Appointments Board is responsible for the open and transparent selection processes for the appointment of members to BBSRC Panels and Committees. BBSRC Panels advise on strategy development and Committees assess funding applications. Appointments are made on the basis of quality and suitability to carry out in full the responsibilities of the Panel or Committee to which the appointments are being made, with due regard to; the balance of expertise, appropriate representation of 'user community' on each Panel and Committee, achieving a balance of members in terms of location at both institutional and regional levels on each Panel or Committee, and diversity issues.

Appointments Board meets twice per year, although it also deals with appointments by correspondence throughout the year. The table below shows Appointments Board membership and number of meetings attended during 2014-2015:

Appointment Board Members	No. of meetings attended 2014-2015 (max. 1)
Professor C Goble (Chair)	1
Professor David Richardson (Deputy Chair) - BBSRC Council Member	1
Professor Richard Bardgett - BBSRC Committee	0
Dr Fiona Marston - Independent	1
Professor Rod Hubbard - Independent	1
Professor Anne Osbourn - Independent	0
Professor Chris Rawlings - Independent	1
Professor Barry Hirst - Independent	0
Professor Anne Willis - Independent	1

Council is provided with the minutes of Appointments Board and is asked to approve appointments to Panel and Committee Chairs. During 2014-15 the Appointments Board Chair highlighted to Council the need to carry on previous work on increasing the diversity of applicants to BBSRC Strategy Panels and the Pool of Experts.

Audit Board

The Audit Board Chair and at least three non-executive members are appointed by Council, being members independent of management and free of any relationship that, in the opinion of Council, would interfere with the exercise of independent judgement as Board members.

Audit Board meets at least four times a year, three meetings plus an additional teleconference, to monitor standards of risk management, corporate governance, internal control reports from the Audit and Assurance Services Group (AASG), external audit reports and to review the annual statutory accounts of BBSRC and the BBSRC-hosted Research Councils' Pension Schemes. Audit Board approves BBSRC's internal audit programme plan for the year in the light of the key risks identified as part of the risk management framework. In particular, business critical programmes are picked out for special assessment by the Audit Board on an on-going basis.

The table below shows Audit Board membership and number of meetings attended during 2014-15:

Audit Board Members	No. of meetings attended 2014-2015
Mr David Gregory (Chair) - Council Member	4
Professor Anne Dell - Council Member	4
Mr David Mann - Independent	4
Mr Philip Ratcliffe - Independent	4
Mr Jim Godfrey - Council Member	2
Professor Richard Cogdell - Council Member	1

Council is provided with the minutes of Audit Board and is given an oral update by the Audit Board Chair. During 2014-2015 the following points were highlighted to Council:

- The finalisation of the 2013-2014 Annual report and Accounts for BBSRC and the 2013-2014 statutory accounts of the Research Councils Pension Schemes which BBSRC hosts
- The timetable for the finalisation of the 2014-2015 BBSRC Annual Accounts and RCPS Accounts
- Scientific and Strategic Risks for BBSRC
- Audit Planning for 2014-15 and progress on Audits for 2014-15
- Review of the Terms of Reference for the Audit Board
- Changes to the Research Council Pension Schemes

In line with good corporate governance practice, each year BBSRC carries out a formal appraisal of the performance of Audit Board. Collective appraisal provides the Board with an opportunity to consider its own effectiveness and to comment on issues which are not normally part of its usual business.

Members of the Board (excluding Chair) are required to complete an online questionnaire which provides information for an anonymous and confidential collective report. It is then presented to The Board and Council for an open discussion on issues of significant note.

BBSRC also has in place annual appraisals of individual Board members. The resulting reports are used in the process for considering re-appointments.

Remuneration Board

The Remuneration Board is responsible for ensuring compliance with Public Sector pay guidance and promoting the aims of the BIS and Government Policy on Senior Remuneration. The Board is responsible for evaluating the performance of the Directors in BBSRC Office and determining their remuneration. Remuneration Board also has a review role as follows:

- review reports from Institute Chairs (local Remuneration Boards);
- monitor local procedures to confirm they are in line with good practice;
- monitor outcomes and identify possible inconsistency of standards;
- identify any diversity issues; and
- alert Chairs of Governing Boards to cases where apparent inconsistencies or diversity issues may require a reappraisal of standards or procedures.

Remuneration Board meets once per year. The table below shows Remuneration Board membership and number of meetings attended during 2014-2015:

Remuneration Board Members	No. of meetings attended 2014-2015 (max. 1)
Professor Sir Tom Blundell (Chair) - BBSRC Chair	1
Professor Jackie Hunter - BBSRC Chief Executive	1
Professor Sarah Gurr - BBSRC Council Member	1
Dr Michael Goosey - BBSRC Council Member	1
Dr Neil Brewis - BBSRC Council Member	1

Executive

BBSRC Executive Group comprises me, the Deputy Chief Executive and Executive Directors. Executive Group meets fortnightly, alternating between operational issues and strategic issues. Executive Group is responsible for taking forward actions on all matters emanating from Council and its Boards. It also ensures that relevant business is laid before Council in a timely manner, and reviews business associated with BIS and RCUK.

It is the role of all Executive Directors to support and advise me regarding my responsibility to ensure the effective, safe and efficient operation of BBSRC. Executive Directors' Stewardship Statements are completed by each BBSRC Group Executive Director and the Deputy Chief Executive on an annual basis, and the results are discussed at an Executive Group meeting. These statements provide assurance to me, in my role as Accounting Officer, that a sound system of internal control has been in place throughout BBSRC for the year and the data used in the accounts has been reliable and of good quality.

For 2014-2015 the Assurance ratings changed to move in line with the rest of Government. The four categories of assurance are now substantial, moderate, limited and unsatisfactory. The combined view from the Stewardships Statements was that all of BBSRC's business areas were given either substantial or moderate ratings which is comparable to 2013-14 full or substantial assurance ratings. Executive Directors discussed the areas where weaknesses or improvements were identified, and agreed that adequate mitigating actions were in place. This provided me with a satisfactory level of assurance.

Institutes

BBSRC's scientific remit requires research that is most appropriately delivered at mission-orientated Institutes with specialist facilities, alongside that conducted in university research departments, and new multidisciplinary and 'virtual' centres.

In 2011-12, revised governance arrangements were implemented for Institutes previously sponsored by BBSRC, which resulted in independence of these bodies from BBSRC. BBSRC Executive Directors continue to meet regularly with Institutes to discuss high level policy and strategic issues. In terms of BBSRC's assurance regarding Institutes, BBSRC's Audit Board focuses on the following:

- BBSRC's grants funding, where no changes are proposed to the current RCUK Assurance programme which provides an annual report to the BBSRC Audit Board;
- BBSRC's owned estate, where associated risks are managed via BBSRC's Risk Management System which Audit Board reviews regularly;
- BBSRC's capital developments, which are included within Audit Board's regular reports on business critical programmes, as well as in BBSRC's Risk Management System; and
- reputational risks to BBSRC from Institute activities, which are again managed via the BBSRC Risk Management System as appropriate.

4. System of Internal Control

The system of internal control is designed to manage risk to a reasonable level rather than eliminate all risk of failure to achieve policies, aims and objectives; it can therefore only provide reasonable and not absolute assurance of effectiveness. The system of internal control is based on an ongoing process designed to identify and prioritise the risks to the achievement of BBSRC's policies, aims and objectives, to evaluate the likelihood of those risks being realised and the impact should they be realised, and to manage them efficiently, effectively and economically. The system of internal control has been in place in BBSRC for the year ended 31 March 2015 and up to the date of approval of the annual report and accounts, and accords with HM Treasury guidance.

5. The Risk and Control Framework

Overall responsibility for risk management in BBSRC rests with me as the Chief Executive and Accounting Officer. I sign this annual Governance Statement as part of the audited Annual Accounts. The task of implementing and maintaining the risk management policy and strategy is delegated to the Executive Director, Finance and Campus Operations who fulfils the role of the Director responsible for risk. However, all BBSRC Executive Directors share the responsibility to ensure the effective application of BBSRC's risk management strategy and policy. Within this established structure, BBSRC gives leadership to the process by a number of means, including:

- setting out a risk management policy and strategy and defining the BBSRC level risk appetite;
- signing up to risk management assurance statements at the most senior levels within BBSRC;
- reviewing the BBSRC register of key risks at every Executive Group meeting and reviewing the register in depth at three out of four of the yearly Audit Board meetings;
- reinforcing risk management at all levels in the organisation;
- appointing Executive Directors as risk "owners" for all risks identified. Each Group has a Risk Manager in place and all controls in place to mitigate risks have an appointed Control Owner. The Executive Directors, Risk Managers and Control Owners are all undertaking training from the Governance team in Risk Management and the use of the BBSRC Risk Management System;
- a formal PRINCE 2 based project management approach with embedded risk management is used for major activities, including the business critical programmes;
- hosting the RCUK Audit and Assurance Services Group (AASG) which is responsible for providing an assessment of internal control to Chief Executives, through a carefully determined and managed internal audit programme. AASG currently includes the RCUK Assurance unit which is responsible for managing and undertaking the Research Councils Assurance Programme. In BBSRC the AASG programme forms a key part of an overall Assurance Map which brings activities, risks and assurance together;
- considering the interests of key stakeholders and operational partners in the formation and delivery of risk management policy and strategy;
- using the Office of Government Commerce Gateway review process for significant programmes, including the business critical programmes below; and
- a formal whistle-blowing procedure set out in BBSRC's Employment Code, with the Chair of BBSRC's Audit Board acting as a confidential, external contact.

BBSRC actively encourages a culture of effective risk management. This recognises that effective risk management is an essential component of successful business operations, rather than simple risk avoidance.

BBSRC adopts HM Treasury best practice on corporate governance and risk management. Risk management and internal control are considered on a regular basis by BBSRC Executive and Audit Board during the year. Both groups regularly review the strategic and operational risks and the risk management framework, and receive reports on business critical programmes pertaining through the year.

The activities of AASG in respect of BBSRC are reviewed by Audit Board and the scope of the internal audit plan for the coming year, which is based on the overall assessment of risk, is agreed. With this overarching view of audit activities, Audit Board plays a pivotal role in evaluating and reviewing the evidence supporting the Chief Executive's assurance statement on internal control.

The Council's role, in terms of risk management, is to oversee the work of Audit Board through review of Audit Board minutes and key risks highlighted by the Audit Board Chair.

Risk Assessment

The new BBSRC Risk Management System became operational in October 2014. All key users and managers have undergone training. The implementation of the system involved the production of documentation including a revised risk policy, guidance to staff on the management of risk and guidance on the use of the new system. A fundamental change is that risks are now reviewed across BBSRC and there is no distinction between Corporate and Group risks. This has significantly increased the level of transparency and openness regarding risk throughout the organisation.

The Risk Management System identifies key risks and the possible threat/opportunity should these risks crystallise. It assesses the probability, impact and proximity, and considers the inherent, current and target exposure levels. Existing controls and mitigation plans are noted alongside an indication of the current trajectory of the risk. If risks materialise, they are transferred to the Issues Log and managed by the Issues Owner.

The BBSRC Risk Register is regularly monitored and reviewed by BBSRC's Executive Group and is circulated to three out of four of the yearly Audit Board meetings. At 31 March 2015, the BBSRC Risk Register had 67 risks which had been agreed and were being monitored. Of these 67 risks, 10 had a red current risk score. The successful delivery of mitigations plans will reduce this exposure to zero risks with a red score. I believe that this supports the view that active risk management is having a strong influence and impact on BBSRC operations.

In 2013-2014 BBSRC conducted a risk-based review of fraud and error in accordance with instructions from BIS. The review included an assessment of the potential for fraud and error, a capacity assessment and an action plan. The outcome of the review was that there were no particular high-risk areas of fraud and error within BBSRC. The action plan was revisited in 2014-2015. This work has removed the need for separate work to be undertaken under the Managing Risk of Financial Loss initiative.

Macpherson

The Macpherson review was in response to a perceived need to keep track of the most business critical analytical models in use in government and ensure that they are fit for purpose. Following the review BBSRC assessed its uses of analytical modelling and did not identify any that were considered to be business critical. This was communicated to BIS and I can confirm that BBSRC complies with the requirements set out by the BIS Director General of Finance, Howard Orme, in his letter dated 15 May 2013.

Tax Assurance Reporting

Following the Review of Tax Arrangements of Public Sector Appointees published by the Chief Secretary to the Treasury in May 2012, departments and their organisations are required to publish information on their senior off-payroll engagements earning more than £220 per day. For 2014-15 and 2013-14 there were none for BBSRC.

Transparency of Spend

In support of the government's transparency agenda we publish details of all of our spend including Government Procurement Card (GPC) transactions regardless of value.

Details of all BBSRC transactions are published on both our website and the government site www.data.gov.uk.

Business Critical Programmes

Business Critical Programmes (previously defined as Business Critical Projects) are defined as programmes that could have a major and pervasive effect across one or more of BBSRC's principal areas of activity. Failure of any of these programmes could adversely affect the Council's operation and reputation or financial position.

The business critical programmes at 31 March 2015 were as follows:

- Campus Funding totalling £70M for the development of the research campuses at the strategic partnership Institutes;
- The ELIXIR programme totalling £75M, which plans to expand facilities for biological data-storage at the European Bioinformatics Institute in Cambridge and deliver a new technical hub, in support of life sciences research and its translation;
- The Pirbright Redevelopment Programme totalling £260M for the first two construction phases to produce truly world-class facilities;
- The Centre for Food and Health based at the Norwich Research Park

Counter Fraud

BBSRC's Fraud and Bribery Policy was reissued in 2014-2015 as part of a package of counter fraud measures. This also included the roll out of a mandatory e-Learning awareness training package covering fraud and bribery which has been completed by all staff.

I consider the level of risk of financial loss to which the BBSRC has been exposed to be low and I am confident that the BBSRC's financial statements for 2014-2015 are free from material misstatement from fraud. There were no instances of fraud identified within BBSRC during 2014-2015.

Regularity

I can confirm that for the financial year ended 31 March 2015, neither I nor my staff authorised a course of action, the financial impact of which is that transactions infringe the requirements of regularity as set out in Managing Public Money.

Efficiency

As set out as part of the 2010 spending review settlement, the research councils have been implementing an efficiency programme to drive down the costs and overheads associated with research. The efficiency savings derived from this programme are being re-invested in research.

In the spring of 2011 RCUK published *Efficiency 2011-15: Ensuring Excellence with Impact* describing how the Research Councils would implement the recommendations in Sir William Wakeham's report *Financial Sustainability and Efficiency in Full Economic Costing of Research in UK Higher Education Institution*. The efficiency savings are being applied to both research grants and fellowships awarded via competitive routes to research organisations and also to research council institutes. The combined savings for the first three years of the programme (2011-12, 2012-13 and 2013-14) have exceeded the planned £251.2M target with details provided in the programme's last annual report at http://www.rcuk.ac.uk/RCUK-prod/assets/documents/documents/RCUK_Efficiency_Savings_Report_2013-14.pdf

At the time of writing the 2014-15 report had not been published, but at the start of 2014-15 the programme continued to be on target to meet the overall four year target of £427.8M. Additionally, the Efficiency Programme will be extended by an extra year to include 2015-16.

Alongside these measures the Research Councils also introduced changes to the requests for equipment on grants, including asking applicants to demonstrate how the usage of the equipment will be maximised. RCUK has worked with university partners to develop options to promote and assist equipment sharing, including exploring the issues around asset registers. There is good anecdotal evidence of significant progress by universities to promote sharing, and of very efficient usage of large pieces of experimental equipment.

UK Shared Business Services Ltd (UK SBS Ltd)

UK SBS Ltd (UK SBS) provides processing services in human resources, procurement, payroll, finance, grants and ISS to all seven Research Councils. Last year our Annual Governance Statement noted that ownership and control of UK SBS passed from the Research Councils to BIS.

In 2014-2015 there have been significant changes in the assurance recording arrangements. The Government Internal Audit Agency (GIAA) now has the responsibility for the UK SBS audit programme. The GIAA reports provide input to the UK SBS CEO's Quarterly Assurance Letters which provide the cornerstone of the assurance I receive regarding UK SBS. GIAA use the government ratings of Substantial, Moderate, Limited and Unsatisfactory.

GIAA have provided **Limited Assurance** for the internal control operated within UK SBS and an opinion of **Moderate Assurance** for Customer Facing operations (excluding Procurement).

I note the positive content of the UK SBS CEO's Quarterly Assurance Letters and welcome them as a source of assurance for this year and in future years. As a result of the assurance provided by the UK SBS CEO, it is pleasing to note that UK SBS has continued to deliver in a number of areas and improvements have been noted in some areas. I do however highlight the following as key areas of risk:

- UK SBS continues to operate in a challenging environment with often changing and sometimes conflicting priorities. During the year this has included:
 - uncertainty relating to staff reductions resulting from budget pressures and the levels of knowledge and experience of the current UK SBS staff, following a 40% turnover in staff resulting from the 2014-15 Voluntary Exit Scheme,
 - the planned transfer of some transactional services to Shared Services Connected Limited (SSCL), although a decision has now been made to discontinue on this path,
 - the upgrade of the Oracle 12.0.6 Platform for new customers,
 - uncertainty around the resilience of the 12.0.6 platform for existing customers and its ability to provide the necessary levels of support, even allowing for the ongoing support arrangements that have been negotiated with Oracle.
 - the transfer of the Peer Review Process back to the Research Councils and
 - uncertainty about the future of UK SBS pending the outcome of the BIS 2020 Review,
- The lack of any disaster recovery capability for Oracle 12.0.6 customers,
- Whilst some progress has been made in improving the control framework in UK SBS over the last 12 months the controls have yet to become sufficiently embedded in the organisation. The scope and scale of improvements required across parts of the framework for the Company are significant.
- Through the assurance letter, GIAA reviews and the review of procurement undertaken by PWC, UK SBS have highlighted the following areas that require improvement:
 - IT Governance and Management
 - Procurement
 - Payroll

I particularly highlight procurement which received an Unsatisfactory Assurance level from GIAA.

- In relation to a wider review with cross-council customer governance groups and other cross-council groups I highlight a number of improvements in performance and control. Also reflected is a challenging and changing business environment and the loss of experienced staff. This is coupled with a decline in the pace at which change and improvements are being delivered.
- The need to revisit the continued relevance of the Business Services Agreement (BSA) and Critical Performance Indicators (CPIs) across all services. Action is in hand to review CPIs relating to HR/Payroll, Procurement and ISS system bandwidth.
- Shortfalls on a significant number of existing CPIs across all services, with a caveat, that performance within Finance Service Delivery has, overall, been fairly steady with some exceptions.
- Across service areas councils continue to work with UK SBS and seek improvements in relation to:
 - Procurement
 - iRecruitment
 - Debt management
 - Payroll overpayments
 - Non-employee expenses
 - Service Requests
 - Business Continuity and Disaster Recovery.

I accept the general picture provided by the UK SBS CEO in that the organisation has undergone significant change and reorganisation in 2014-15. I am pleased to note that UK SBS have clearly recognised that problems and issues exist and have been transparent and open in reporting these in the most recent assurance letter. Even so, the current assurance picture clearly highlights the need for continued improvement. This may be indicative of resource issues, the impact of which we have yet to fully feel as personnel continue to leave.

Overall Assurance

There is no room for complacency and I will expect a significant improvement in the assurance levels, the active management of the key areas of risk and the level of service through 2015-16. BBSRC, in concert with the other Research Councils, will support UK SBS going forward and continue to monitor on-going performance both by UK SBS and within Research Council operations.

Audit and Assurance Services Group (AASG)

The Director of AASG is required to provide me with an opinion on the overall adequacy and effectiveness of the BBSRC's framework of governance, risk management and control. This opinion is provided in accordance with Governance Internal Audit Standards and is informed through the work of internal audit completed during the year in line with the internal audit plan agreed by management and the Audit Board. For 2014-15 the internal audit plan covered two assurance components, Shared Services assurance being provided by the Government Internal Audit Agency:

- BBSRC core activities; and
- Cross-Council assurance.

Based on the work of internal audit, the Director of AASG was able to provide the following assurance that the system of internal control in place at the BBSRC for the year ended 31 March 2015 was operating effectively.

The overall opinion

Sufficient internal work has been undertaken to allow the Director of AASG to provide a positively stated (evidence-based) and reasonable (not absolute) assurance opinion on the overall adequacy and effectiveness of BBSRC's system of internal control. The overall opinion is

■ Moderate Assurance

Although this appears a lesser level of assurance this rating is analogous to and equal to last year's substantial assurance. The ratings have changed from Full, Substantial, Limited, No Assurance, to the new pan government ratings of Substantial, Moderate, Limited, Unsatisfactory.

Some improvements are required to enhance the adequacy and effectiveness of the framework of Governance, Risk Management and Control. There are no qualifications to this opinion.

The basis for the overall opinion

The overall opinion is the professional judgement of the Director of AASG based on the results of 27 individual assurance engagements in the approved risk-based internal audit plan for 2014-15. This excludes 2 advisory assignments and 8 cancellations/deferrals.

Of the 27 assurances provided, 33.3% (9) reflect substantial assurance and 59.3% (16) reflect moderate assurance. BBSRC's realised assurance of 96% (i.e. the proportion of assurances provided at substantial or moderate assurance level) has increased over the previous year's level (88.4%). In determining the overall opinion, an assurance weighting is applied to each element of the internal audit plan to take account of its significance to the organisation's complete system of internal control.

Greater significance is attached to assurances within the organisation's core client activity because of their closer alignment and relevance to BBSRC's objectives and risk priorities.

Significant Audit Findings

7 core audits were carried out in BBSRC and all received substantial or moderate assurance. No significant control weaknesses were identified that should be disclosed in the governance statement.

20 Cross-client audits have been completed to date, of which 35% (7) received Substantial assurance and 55% (11) received moderate assurance.

10% (2) of the audits received an overall rating of Limited assurance; Follow up of 2013-14 recommendations and Research Funding Programme (RFP) – Programme Management reflects key strategic weaknesses in the current programme and its rationale.

No significant control weaknesses were identified that should be disclosed in the governance statement.

BBSRC receives services from UK SBS. Responsibility for the internal audit of UK SBS transferred to the Government Internal Audit Agency (GIAA) from 1st April 2014. In response to this, a review of Retained Functions was included in the cross-client programme which has received an overall rating of Moderate Assurance. The assurance provided by UK SBS on their customer processes is consistent with that provided by AASG on retained functions.

Conclusion

From the internal audit programme as a whole, I am able to gain the necessary confidence and assurance on the workings of the audit framework, but note that progress on the resulting actions needs to continue.

RCUK Funding Assurance

Assurance activities focus on the control environment and its effectiveness in ensuring compliance with the Research Councils' terms and conditions which accompany grant funding, with a further strand of work focusing on the scrutiny of the costing methodology used in research organisations, which for universities is the Transparent Approach to Costing (TRAC). The programme is an important element of the risk management framework for the BBSRC with an annual report produced for me, as the Accounting Officer, which reports on activities undertaken in the year as well as proposed activities for the following year.

The Research Councils' UK Funding Assurance Unit is hosted by BBSRC and acts on behalf of the Research Councils by reviewing the regularity of expenditure on Research Council grants at all eligible Research Organisations. In 2014-15 28 assurance assignments were undertaken, comprising 8 visits, 3 enhanced desk-based reviews and 17 desk-based reviews. Findings for the year across this activity indicate that a satisfactory level of assurance can be reported based on the work undertaken.

Following a 2012-2013 AASG conducted independent Review of Funding Assurance Delivery Methodology (AASB Orange Paper 44), there was a shift of emphasis from an AASG assessment of a Research Organisation's (RO) control environment to an evidence-based self-assessment completed by the RO. In March 2014 a further review of assurance activity expressed concern that there was a potential conflict between the traditional independent and objective viewpoint provided by Internal Audit and the input into policy which is the part of the function of the Assurance Team. A paper was provided to the Research Councils' Efficiency Reform Group (ERG) which recommended decoupling assurance from internal audit. This proposal was accepted in principle by ERG and the decoupling will take effect from April 2015.

6. Review of Effectiveness and Conclusion

As Accounting Officer, I have responsibility for conducting an annual review of the effectiveness of BBSRC's governance, risk management and internal control. My review is informed by the work of the internal auditors and the Executive Directors within BBSRC, and comments made by the external auditors in their management letter and other reports. The Governance Statement represents the end product of the review of the effectiveness of the governance framework, risk management and internal control.

The principal elements of support for the Accounting Officer's assurance statement are the work of the Audit Board and the BBSRC Executive, including the review of business critical programmes, the annual report from the Director of AASG, BBSRC Executive Directors' stewardship statements, the risk management frameworks developed by BBSRC, and responses to external management letters which identify where control gaps exist.

There are still significant issues which require close scrutiny going forwards:

- UK SBS Ltd service delivery – the current assurance picture highlights the need for continued improvement and I expect significant improvement in assurance levels, the active management of the key areas of risk and the level of service provided by UK SBS through 2015-16. BBSRC will continue to work collaboratively with other Research Councils to support UK SBS and continue to monitor on-going performance by UK SBS and within Research Council operations.
- UK SBS Ltd technical platform - there is a separate but linked issue which also has a potentially significant impact on future shared services provision. BBSRC, like all Research Councils, is currently operating with a technical platform (Oracle) provided by UK SBS Ltd which requires upgrading. This upgrade will be a major project due to the current system being significantly customised and the associated need to decouple the Grants system (Siebel).
- Capital funding – BBSRC has a number of large scientific estates which require considerable capital investment to develop and maintain. In 2013-14, BBSRC was delighted to receive further capital funding which enabled the continued development of world-class scientific facilities. Such funding is critical for the UK to retain facilities which enable world-leading research. BBSRC maintains capital strategies and plans enabling investment to be prioritised and utilised effectively.
- Efficiencies and savings - like all public sector bodies, in this continuing period of austerity and economic uncertainty BBSRC faces cost challenges and budget pressures. BBSRC is focused on delivering efficiencies and administration cost savings, and continues to work collaboratively with other Research Councils to explore the opportunity for greater process harmonisation. From March 2014 BBSRC began providing an Estates Management service to the Natural Environment Research Council (NERC) in order to maximise the efficiency of both BBSRC and NERC, ensuring we have critical mass in key functions.

I have considered the evidence provided with regards to the production of the Annual Governance Statement. The conclusion of the review is that BBSRC's overall governance and internal control structures result in risk being managed to a reasonable level and I can provide assurance that it supports the achievement of the BBSRC's policies, aims and objectives.

Professor Jackie Hunter
BBSRC Chief Executive and Accounting Officer

Date: 23 June 2015

The Certificate and report of the Comptroller and Auditor General to the Houses of Parliament

I certify that I have audited the financial statements of Biotechnology and Biological Sciences Research Council for the year ended 31 March 2015 under the Science and Technology Act 1965. The financial statements comprise: the Statements of Comprehensive Net Expenditure, Financial Position, Cash Flows, Changes in Taxpayers' Equity; and the related notes. These financial statements have been prepared under the accounting policies set out within them. I have also audited the information in the Remuneration Report that is described in that report as having been audited.

Respective responsibilities of the Board, Accounting Officer and auditor

As explained more fully in the Statement of Accounting Officer's Responsibilities, the Board and the Accounting Officer are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view. My responsibility is to audit, certify and report on the financial statements in accordance with the Science and Technology Act 1965. I conducted my audit in accordance with International Standards on Auditing (UK and Ireland). Those standards require me and my staff to comply with the Auditing Practices Board's Ethical Standards for Auditors.

Scope of the audit of the financial statements

An audit involves obtaining evidence about the amounts and disclosures in the financial statements sufficient to give reasonable assurance that the financial statements are free from material misstatement, whether caused by fraud or error. This includes an assessment of: whether the accounting policies are appropriate to the Biotechnology and Biological Sciences Research Council's circumstances and have been consistently applied and adequately disclosed; the reasonableness of significant accounting estimates made by Biotechnology and Biological Sciences Research Council; and the overall presentation of the financial statements. In addition I read all the financial and non-financial information in the Annual Report to identify material inconsistencies with the audited financial statements and to identify any information that is apparently materially incorrect based on, or materially inconsistent with, the knowledge acquired by me in the course of performing the audit. If I become aware of any apparent material misstatements or inconsistencies I consider the implications for my certificate.

I am required to obtain evidence sufficient to give reasonable assurance that the expenditure and income recorded in the financial statements have been applied to the purposes intended by Parliament and the financial transactions recorded in the financial statements conform to the authorities which govern them.

Opinion on regularity

In my opinion, in all material respects the expenditure and income recorded in the financial statements have been applied to the purposes intended by Parliament and the financial transactions recorded in the financial statements conform to the authorities which govern them.

Opinion on financial statements

In my opinion:

- the financial statements give a true and fair view of the state of Biotechnology and Biological Sciences Research Council's affairs as at 31 March 2015 and of the net expenditure after notional charges for the year then ended; and
- the financial statements have been properly prepared in accordance with the Science and Technology Act 1965 and Secretary of State directions issued thereunder.

Opinion on other matters

In my opinion:

- the part of the Remuneration Report to be audited has been properly prepared in accordance with Secretary of State directions made under the Science and Technology Act 1965; and
- the information given in describe the part of the Annual Report which contains the elements described in section 5.2.5 of the FReM for the financial year for which the financial statements are prepared is consistent with the financial statements.

Matters on which I report by exception

I have nothing to report in respect of the following matters which I report to you if, in my opinion:

- adequate accounting records have not been kept or returns adequate for my audit have not been received from branches not visited by my staff; or
- the financial statements and the part of the Remuneration Report to be audited are not in agreement with the accounting records and returns; or
- I have not received all of the information and explanations I require for my audit; or
- the Governance Statement does not reflect compliance with HM Treasury's guidance.

Report

I have no observations to make on these financial statements.

Sir Amyas C E Morse
Comptroller and Auditor General

Date: 24th June 2015

National Audit Office
157-197 Buckingham Palace Road
Victoria
London
SW1W 9SP

Statement of Comprehensive Net Expenditure for the year ended 31 March 2015

	NOTES	2014-15 £000	2013-14 £000
Administration Costs			
Research and Capital Grants	2	854	5,642
Training Awards and Fellowships	2	-	-
Staff Costs	3	7,887	7,708
Other Operating Costs	6a	7,912	5,928
Research Institute Staff Restructuring	8	1,473	-
Depreciation and Amortisation	12, 14	392	180
Profit/Loss on Disposals and Demolition of Non-Current Assets	10	25	-
Other Operating Income	7a	(1,036)	(535)
Other Recoveries	7b	(69)	(71)
VAT recovered		(61)	6
Other Grant Income	7c	(138)	74
Net Administration Costs		17,239	18,932
Programme Costs			
Research and Capital Grants	2	458,358	426,708
Training Awards and Fellowships	2	50,508	52,307
Staff Costs	3	4,534	3,907
Other Operating Costs	6b	679	1,086
Provisions provided in year	9	1,500	-
Research Institute Staff Restructuring	8	(651)	2,132
Depreciation and Amortisation	12, 14	9,611	7,724
Profit/Loss on Disposals and Demolition of Non-Current Assets	10	(66)	(2)
Impairment	13	2,462	5,608
Loss/Profit on Joint Ventures and Associates	11	(397)	(548)
Other Operating Income	7a	(711)	(951)
VAT recovered		(42)	-
Other Grant Income	7c	(17,465)	(14,089)
Net Programme Costs		508,320	483,882
NET EXPENDITURE before notional UK SBS service charges		525,559	502,814
Notional UK SBS service charges		4,146	4,146
Net Expenditure		529,705	506,960
Other Comprehensive Expenditure			
Net (gain)/loss on Revaluation of Property, Plant and Equipment		(30,363)	(45,483)
Net gain/(loss) on Revaluation of Assets held for sale		-	163
		(30,363)	(45,320)
Total Comprehensive Expenditure for the period ended 31 March 2015		499,342	461,640

All activities are regarded as continuing.
The notes on pages 55 to 75 form part of these accounts.

Statement of Financial Position as at 31 March 2015

	NOTES	31 March 2015 £000	31 March 2014 £000
NON-CURRENT ASSETS			
Property, Plant and Equipment	12	402,557	384,195
Intangible Assets	14	19	36
Financial Assets	11	8,200	7,803
Non-Current Receivables	16	572	980
TOTAL NON-CURRENT ASSETS		411,348	393,014
CURRENT ASSETS			
Assets Classified as Held for Sale	15	-	570
Trade and Other Receivables	16	24,823	24,216
Cash and Cash Equivalents	19	1,762	8,167
TOTAL CURRENT ASSETS		26,585	32,953
TOTAL ASSETS		437,933	425,967
CURRENT LIABILITIES			
Trade and Other Payables	17	(44,126)	(49,041)
Provisions	9	(1,398)	(1,175)
TOTAL CURRENT LIABILITIES		(45,524)	(50,216)
NON-CURRENT ASSETS LESS CURRENT LIABILITIES		392,409	375,751
NON-CURRENT LIABILITIES			
Provisions	9	(3,309)	(3,873)
TOTAL NON-CURRENT LIABILITIES		(3,309)	(3,873)
ASSETS LESS LIABILITIES		389,100	371,878
TAXPAYERS' EQUITY			
Revaluation Reserve		391,222	369,362
General Reserve		(4,585)	96
Gates Reserve		2,463	2,420
TOTAL TAXPAYERS EQUITY		389,100	371,878

Professor Jackie Hunter
Chief Executive and Accounting Officer

Date: 23 June 2015

The notes on pages 55 to 75 form part of these accounts

Statement of Cash Flows for the period ended 31 March 2015

	NOTE	31 March 2015		31 March 2014	
		£'000	£'000	£'000	£'000
CASH FLOWS FROM OPERATING ACTIVITIES					
Net Expenditure for Year		(529,705)		(506,960)	
Adjustment for Depreciation and Amortisation		10,002		7,904	
Adjustment for Impairment Charge		2,462		5,608	
Adjustment for Loss on Joint Venture		(397)		(548)	
Adjustment for notional SBS charge		4,146		4,146	
Adjustment for Loss on Disposal and Demolition of Property, Plant and Equipment		(41)		(2)	
Decrease in Provision for Liabilities and Charges		(341)		(1,733)	
Decrease in Trade and Other Receivables Excluding those for Property, Plant and Equipment		(199)		15,652	
(Decrease)/Increase in Trade and Other Payables Excluding those for Property, Plant and Equipment		(4,915)		(13,220)	
Decrease in inventories				-	
NET CASH OUT FLOW FROM OPERATING ACTIVITIES			(518,988)		(489,153)
CASH FLOWS FROM INVESTING ACTIVITIES					
Payments to Acquire Property, Plant and Equipment	12,14	(2,540)		(30)	
Purchase of Financial Assets	11	-		(5,790)	
Disposal of Financial Assets	11			-	
Receipts from Sale of Property, Plant and Equipment	10	2,705		3,202	
Movement on Currency Hedge funds	25			(70)	
NET CASH OUTFLOW FROM INVESTING ACTIVITIES			165		(2,688)
NET CASH OUTFLOW BEFORE FINANCING			(518,823)		(491,841)
CASH FLOWS FROM FINANCING ACTIVITIES					
Capital Grants from BIS		134,400		111,900	
Revenue Grants from BIS	18	378,108		331,158	
Other movements		(90)		-	
NET CASH INFLOW FROM FINANCING ACTIVITIES			512,418		443,058
(DECREASE)/ INCREASE IN CASH AND CASH EQUIVALENTS IN THE PERIOD			(6,405)		(48,783)
CASH AND CASH EQUIVALENTS AT THE BEGINNING OF THE PERIOD			8,167		56,950
CASH AND CASH EQUIVALENTS AT THE END OF THE PERIOD			1,762		8,167

The notes on pages 55 to 75 form part of these accounts

Statement of Changes in Taxpayers' equity for the period ended 31 March 2015

		Revaluation Reserve £'000	General Reserve £'000	Gates Reserve £'000	Total Reserves £'000
	NOTE				
Balance at 1 April 2014		369,362	96	2,420	371,878
Comprehensive Expenditure for the Year		-	(529,705)	-	(529,705)
Grants from BIS	18	-	512,508	-	512,508
Valuation Additions		23,378	-	-	23,378
Transfers between Reserves		-	(43)	43	-
Transfers between Reserves-movements on fixed assets		(8,503)	8,503	-	-
Gains/Losses Recognised in the Statement of Comprehensive Expenditure		6,985	-	-	6,985
Notional UK SBS service charges		-	4,146	-	4,146
Movement on reserves		-	(90)	-	(90)
At 31 March 2015		391,222	(4,585)	2,463	389,100

		Revaluation Reserve £'000	General Reserve £'000	Gates Reserve £'000	Total Reserves £'000
	NOTE				
Balance at 1 April 2013		330,471	53,890	2,024	386,385
Comprehensive Expenditure for the Year		-	(506,960)	-	(506,960)
Grants from BIS	18	-	443,058	-	443,058
Valuation Additions		39,742	-	-	39,742
Transfers between Reserves		-	(396)	396	-
Transfers between Reserves-movements on fixed assets		(6,428)	6,428	-	-
Gains/Losses Recognised in the Statement of Comprehensive Expenditure		5,577	-	-	5,577
Notional UK SBS service charges		-	4,146	-	4,146
Movement on Financial Instruments	25	-	(70)	-	(70)
At 31 March 2014		369,362	96	2,420	371,878

The notes on pages 55 to 75 form part of these accounts

The sum of the valuation additions and the gains/losses recognised in the Statement of Comprehensive Net Expenditure is shown in the Statement of Comprehensive Net Expenditure as the net gain/loss on revaluation of Property, Plant and Equipment and net gain/loss on revaluation of Assets Held for Sale.

Notes to the Financial Statements

1. STATEMENT OF ACCOUNTING POLICIES

a) Basis of Accounting

- i) These financial statements have been prepared in accordance with the Accounts Direction issued by the Secretary of State for the Department for Business, Innovation, and Skills (BIS), pursuant to Section 2(2) of the Science and Technology Act 1965.

These financial statements have been prepared in accordance with the 2014-15 Government Financial Reporting Manual (FRoM). The accounting policies contained in the FRoM apply International Financial Reporting Standards (IFRS) as adapted or interpreted for the public sector context.

Where the FRoM permits a choice in accounting policy, the accounting policy judged to be the most appropriate to the particular circumstances of BBSRC for the purpose of giving a true and fair view have been selected. The particular policies adopted by BBSRC are described below. They have been applied consistently in dealing with items that are considered material to the accounts.

As required by Section 393(1) of the Companies Act 2006, the Accounting Officer has provided assurance that these statements give a true and fair view of the assets, liabilities, financial position and the comprehensive net expenditure of BBSRC.

ii) Going Concern

BBSRC is dependent on funding from BIS to meet liabilities falling due within future years. Funding for 2015-16 has been agreed, with the exception of administration budgets which are still to be confirmed.

BBSRC has no reason to believe that future funding from BIS will not be forthcoming after this spending review period, and therefore the accounts are produced on a going-concern basis.

iii) Adoption of new or amended standards effective in 2014-15

The following revised standards and interpretations have been applied by the Council from 1 April 2014

IFRS 11	Joint Arrangements
IFRS 12	Disclosures of interests in other entities

b) Measurement Convention

These financial statements have been prepared under the historical cost convention modified to account for the revaluation of land, buildings and other fixed assets. Non-current assets held for sale are stated at the lower of previous carrying amount and fair value less costs to sell.

The financial statements are presented in pounds sterling, BBSRC's functional currency, and all amounts have been rounded to the nearest thousand unless otherwise stated.

c Non-Current Assets

i) Intangible assets

Intangible Assets comprise purchased and developed specialist computer software and the BBSRC website, and are carried at fair value. Intangibles are given definite useful lives and are amortised on a straight line basis over the useful life of the asset from the date of use, based on nil residual value. The average expected useful life is 5 years for software and 3 years for website costs.

Intangible assets are reviewed for impairment whenever events or circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised in the Statement of Changes in Net Expenditure based on the amount by which the carrying amount exceeds the recoverable amount.

ii) Land and Buildings

Land and buildings are carried at valuation at the reporting date. The basis of valuation for specialised scientific buildings is depreciated replacement cost and at open market value for non-specialised buildings. Valuations are adjusted annually at the reporting date by using the appropriate published indices and statistics. A full revaluation of land and buildings is carried out at least every five years, except for buildings under construction or sites being prepared for sale.

Some buildings with similar remaining lives have been grouped together for valuation and depreciation purposes.

The Council owns land and buildings which are leased to a number of funded institutes, all of whom are constituted as companies limited by guarantee and as registered charities and who prepare separate audited accounts. Additions to these assets may be funded wholly or in part from sources other than BBSRC.

Where funded institutes carry out development funded by sources other than BBSRC that results in a material change in the value of the Council's owned assets, this is disclosed as a fixed asset valuation addition within the Property, Plant and Equipment note, with the contra to Reserves.

Any capital funding provided by BBSRC to funded institutes in the form of capital grants is included within Research Grants in the Statement of Comprehensive Net Expenditure. Where these contributions result in a change in value of BBSRC's owned assets, this is also disclosed as a fixed asset valuation addition in the Property, Plant and Equipment note based on the construction costs during the year up to the Statement of Financial Position date, with the contra to Reserves.

iii) Information Technology, Plant and equipment

Capital expenditure includes purchases valued at £10,000 or more. Assets are included in the Statement of Financial Position at depreciated historical cost which approximates to fair value.

iv) Revaluation

Increases in valuation are credited to the revaluation reserve.

Losses on revaluation are debited to the revaluation reserve to the extent of the gains previously recorded and then to the Statement of Comprehensive Net Expenditure.

In the opinion of BBSRC, there is no material difference between the historic cost of equipment, fixtures and fittings and their current cost. Accordingly these assets have not been revalued and this position is kept under review.

v) Depreciation

Provision is made for depreciation on all non-current assets at rates calculated to write off the valuation of each asset (or group of assets) to its estimated residual value evenly over its expected useful life from the date the asset is brought into use. An expected useful life is assessed at each location by the valuer.

Expected useful lives are as follows:

Freehold land	-	not depreciated
Depreciated replacement cost buildings	-	up to 60 years
Agriculture buildings	-	up to 60 years
Dwellings	-	up to 60 years
Office and computing equipment	-	3 to 5 years
System Software	-	5 years
BBSRC website	-	3 years
Motor vehicles	-	up to 4 years
Assets under construction	-	not depreciated until available for use

Increased depreciation charges arising from revaluation are matched by annual transfers from the revaluation reserve to the general reserve. On disposal of a revalued asset, that element of the revaluation reserve that becomes realised as a result is also transferred to the general reserve.

d) Financial Assets

Investments are financial assets and are carried at cost less provision for any impairment in value, where there is no material difference between cost and fair value or where value information is not available.

e) Joint Ventures and Associates

Those investments that are held as Joint Ventures and those that are held as Associates are accounted for under the equity method in accordance with IFRS 11.

f) Investment Properties

Properties that BBSRC subleases to other Councils are not deemed to be investment properties. In its capacity as host of the Joint Building and Office Services unit (JBOS), BBSRC leases buildings for administration space on behalf of the Research Councils and recovers the full cost from them.

Assets leased to BBSRC strategically funded institutes are deemed not to be investment properties as the assets are provided to fulfil the BBSRC business principle to further science. If the assets were not provided to the institutes, BBSRC would incur additional grant expenditure to fund the institutes' rent of properties commercially. Accordingly the asset is held for the business of sponsoring research rather than for capital appreciation.

Impairment

The carrying amounts of the Council's assets are reviewed at each statement of financial position date to determine whether there is any indication of impairment; an asset is considered to be impaired if objective evidence indicates that one or more events have had a negative effect on the estimated future cash flows of that asset. If any such indication exists, the asset's recoverable amount is estimated.

An impairment loss is recognised whenever the carrying amount of an asset or its cash-generating unit exceeds its recoverable amount. Impairment losses are recognised in the Statement of Comprehensive Net Expenditure.

g) Non-Current Assets Held for Sale

Where a non-current asset's carrying amount will be recovered principally through a sales transaction rather than through continuing use, it is available for immediate sale in its present condition and its sale is highly probable, then the asset is classified as held for sale.

A sale is highly probable where there is evidence of management commitment to sell, there is an activity programme to locate a buyer, the asset is actively marketed for sale at a reasonable price, and the sale will be completed within 12 months from the date of classification.

The asset is measured at the lower of carrying amount and fair value less costs to sell, unless the asset is outside the measurement provisions of IFRS 5 Non Current Assets Held for Sale and Discontinued Operations.

Depreciation, revaluation and indexation ceases on assets classified as held for sale from the date the re-classification is made.

h) Derivatives and Financial Instruments

As the cash requirements of BBSRC are met through grant-in-aid provided by BIS, financial instruments play a more limited role in creating and managing risk than would apply to a non-public sector body. The majority of financial instruments relate to contracts to buy non-financial items in line with BBSRC's expected purchase and usage requirements and BBSRC is therefore exposed to little credit, liquidity or market risk.

Trade receivables

Trade receivables are not interest bearing and are carried at original invoice amount less allowance for impairment. Provision for impairment is established when there is objective evidence that the Council will not be able to collect all amounts due according to the original terms of the receivable. The amount of provision is the difference between the carrying amount and recoverable amount and is recognised in the Statement of Comprehensive Income.

Trade and other payables

Trade and other payables are recognised in the period in which related money, goods or services are received or when a legally enforceable claim against the Council is established or when the corresponding assets or expenses are recognised.

i) Cash and Cash Equivalents

Cash and cash equivalents comprise cash balances and call deposits.

j) Employee Benefits

Under IAS 19 Employee Benefits, an entity is required to recognise short-term employee benefits when an employee has rendered service in exchange for those benefits. Included in the financial statements under other accruals is an accrual for the outstanding employee holiday and flexitime entitlement at the year end on an undiscounted basis.

k) Pension Scheme and Retirement Costs

The employees of the Council are members of the Research Councils' Pension Scheme (RCPS) which is a defined benefit scheme funded from annual grant-in-aid on a pay-as-you-go basis. The benefits are by analogy to the Principal Civil Service Pension Scheme, except that while the schemes provide retirement and related benefits based on final emoluments, redundancy and injury benefits are administered and funded by the Council. As permitted by paragraph 31 of IAS 19, the Company has recorded the pension contributions payable for the period as its charge to the Statement of Changes in Net Expenditure.

l) Provisions

Provisions are recognised when: the Council has a present legal or constructive obligation as a result of past events; it is more likely than not that an outflow of resources will be required to settle the obligation; and the amount can be reliably estimated.

When BBSRC has taken a decision to fund a programme of redundancies, then the associated costs are provided for. The provision for the ongoing Annual Compensation Payments is transferred from the Major Institute Restructuring provision and any remaining balance released once the redundancies are complete.

Where the time value of money is material, the amount of the provision will be the present value of the expenditures expected to be required to settle the obligation.

Provisions are reviewed at the end of each reporting period and adjusted to reflect the current best estimate. The discount rate used for post-employment benefits is 1.3% and 2.2% for other provisions which is the real rate set by HM Treasury.

m) Contingent Liabilities

Contingent liabilities, including letters of comfort and financial guarantees, where obligations due cannot be measured reliably are not recognised as liabilities in the Financial Statements but are disclosed by way of a note in accordance with IAS 37.

n) Leases

Operating lease rental payments are charged to the Operating Cost Statement on a straight line basis over the term of the lease.

Operating lease receipts are posted to the Operating Cost Statement on a straight line basis over the term of the leases. BBSRC also has leases with sponsored institutes where peppercorn receipts are due.

BBSRC holds no finance leases.

o) Foreign Currencies

Transactions in foreign currencies are translated at the foreign exchange rate ruling at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies at the balance sheet date are translated at the foreign exchange rate ruling at that date. Foreign exchange differences arising on translation are recognised in the Statement of Changes in Net Expenditure, except where a hedging relationship is designated and where it qualifies for hedge accounting under IAS 39.

Non-monetary assets and liabilities that are measured in terms of historical cost in a foreign currency are translated using the exchange rate at the date of the transaction. Non-monetary assets and liabilities denominated in foreign currencies that are stated at fair value are translated at foreign exchange rates ruling at the dates the fair value was determined.

p) Value Added Tax

As the Council is partially exempt for VAT purposes, all expenditure and fixed asset additions are shown inclusive of VAT where applicable. Residual input tax reclaimable by the application of the partial exemption formula is taken to the Operating Cost Statement as Other Operating Income. Income is shown net of VAT.

The BBSRC is a member of a VAT Group along with the other Research Councils. By registering as a group there is a single VAT registration covering all of the members. All supplies made by or to group members are deemed to be made by or to the representative member. Supplies made between group members are disregarded for VAT. There is, therefore, no VAT payable on supplies made between group members, representing a saving in administration costs.

From February 2013, UK SBS Ltd is acting as a Cost Sharing Group (CSG). This allows UK SBS Ltd to provide services to the VAT group members exempt of VAT. Members of this group comprise the seven Research Councils, BIS, Higher Education Funding Council for England and Innovate UK.

q) Ownership of Equipment Purchased with BBSRC Research Grants

Equipment purchased by an institution with research grant funds supplied by the Council belongs to the institution and is not therefore the equipment of the Council.

r) Grant-in-Aid

Grant-in-aid for revenue purposes is recognised as a financing flow and thus credited to the General Reserve.

s) Research Grants

Subject to the terms and conditions under which research grants are awarded, BBSRC makes payments for grants on the basis of pre-determined quarterly profiles. Profiles are arranged, in overall terms, to reflect the rate and incidence of expenditure at the grant-holding organisation. Payments are normally made in the period to which they relate, although BBSRC retains some latitude in timing. Grant expenditure is charged to the Statement of Comprehensive Net Expenditure on an accruals basis.

t) Deferred Income

The Council receives funding for collaborative projects to support BBSRC's research. The majority of this funding is received from the UK public sector. Some of the funding may involve payment for the collaboration a number of years in advance of the accounting period to which it relates. Where there is a variance between work done in the accounting period and received funding, income will be deferred if the contract or agreement includes key conditions relating to the repayment of surplus funds.

u) Income Recognition

Monies from other Research Councils for co-financing of various grant programmes are recognised as income when goods or services are delivered and titles have passed and charged to the Statement of Comprehensive Net Expenditure in the accounting period in which the goods or services are rendered.

v) Insurance

In line with Government policy, BBSRC carries its own risk in respect of employment of staff, buildings and equipment, except where there is a statutory requirement to insure.

w) Critical Accounting Estimates and Judgements

The Council makes estimates and assumptions that affect the reported amounts of assets and liabilities in the next financial year. Estimates and judgements are continually evaluated and based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances at the reporting date. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amount of assets and liabilities within the next financial year are discussed below.

Estimates

The useful life of each of the Council's items of property, plant and equipment and intangibles is estimated based on the period over which the asset is expected to be available for use. Such estimation is based on experiences with similar assets and practices of similar businesses. The estimated useful life of each asset is reviewed periodically and updated if expectations differ from previous estimates due to physical wear and tear, technical or commercial obsolescence or legal or other limits on the use of an asset. An increase in the estimated useful life of any item of property, plant and equipment and intangibles would decrease the recorded operating expenses and increase non-current assets.

Judgements

IFRS requires that an asset impairment review be performed when certain impairment indicators are present. Property, plant and equipment, intangible assets and financial assets are subject to an annual impairment test or whenever there is a strong indication that the asset will be impaired. Management is required to make estimates and assumptions to determine the future cash flows to be generated from the continued use and ultimate disposal of these assets in order to determine the value of the assets. While the Council believes that the assumptions used are reasonable and appropriate, these estimates and assumptions can materially affect the financial statements. Future adverse events may cause the management to conclude that the assets are impaired and may have a material impact on the financial condition and results of operations of the Council.

x) Capital and Reserves

The Council has three reserves: the General Reserve, the Revaluation Reserve and the Gates Reserve. The General Reserve is used to account for accumulated surpluses. The Revaluation Reserve is a specific reserve used only to reflect the unrealised balance of cumulative indexation and revaluation adjustments to fixed assets. Increases in valuation are credited to the revaluation reserve. Losses on revaluation are debited to the Revaluation Reserve to the extent of the gains previously recorded and then to the Statement of Comprehensive Net Expenditure. The Gates Reserve is a restricted reserve created for funds from the Bill & Melinda Gates Foundation. This reserve is ring-fenced for use on specific grant applications from 2012 to 2019.

y) BBSRC-Sponsored Institutes

BBSRC's scientific remit requires research that is most appropriately delivered at mission-orientated institutes with specialist facilities, alongside that conducted in university research departments, and new multidisciplinary and 'virtual' centres.

z) Administration Costs and Programme Costs

BBSRC analyses the total of other administration costs and programme costs as shown in the Statement of Comprehensive Net Expenditure in a separate note to the financial statements. This disclosure includes the individual components of non-cash items and an analysis of other significant expenditure items. The classification of expenditure and income as administration or programme follows the definition of administration costs as set out in the HM Treasury Consolidated Budgeting Guidance 2014-15.

zi) Currency Risk

BBSRC mitigates the risk of foreign exchange rate movements on its foreign currency transactions through the use of forward contracts. The agreed cost of the contracts is fair valued using the mid-market rate ruling at the period end and the difference is credited to the reserves.

2. ANALYSIS OF RESEARCH GRANTS AND TRAINING AWARDS BY BUSINESS SEGMENT

The primary format used for segmental reporting is grant expenditure, where the key funding data is split between research funding, training, administration, and other, which reflects BBSRC's internal management structure and reporting. BBSRC's assets and liabilities are shared across all the operating segments, and therefore it is not possible to separately identify which segment they relate to.

Research

BBSRC funds, promotes and supports high quality basic, strategic and applied research relating to the understanding and exploitation of biological systems. To advance knowledge and technology (including the promotion and support of the exploitation of research outcomes) which meets the needs of users and beneficiaries (including the agriculture, bioprocessing, chemical, food, healthcare, pharmaceutical and other biotechnological related industries), thereby contributing to the economic competitiveness of the United Kingdom and the quality of life.

In March 2011, the Research Councils UK (RCUK) published a report detailing plans to drive efficiency in research funding, in response to the Wakeham Review conducted by Sir William Wakeham and published in June 2010. All savings made in research funding remain within the ring-fence and are reinvested within science and research. The savings achieved to date are therefore included within the Research figures below. These are also reported within the Annual Report at the front of this document. Further details, including the RCUK report, can be found on the Research Councils UK website.

Training

BBSRC supports postgraduate training to help ensure the flow of highly qualified people into research careers and seeks to optimise the quality, volume and style of postgraduate and postdoctoral training to the needs of academia and industry and other user communities.

Office

The costs for the administration of the BBSRC office. In previous years, this included BBSRC's share of the costs associated with the UK SBS. For 2013-14 onwards, BIS covers BBSRC's share of the UK SBS costs and BBSRC's administration budget has been reduced accordingly.

Office costs do not equate to BBSRC's administration budget, as there are some office costs which are divided between programme and administration budgets (e.g. staff costs, which are classified on the basis of the role of the team).

At 31 March 2015	Research £'000	Training £'000	Office £'000	Other £'000	Total £'000
Research Grants	320,382	-	-	-	320,382
Capital Grants	138,830	-	-	-	138,830
Postgraduate Awards	-	43,843	-	-	43,843
Fellowships	-	6,665	-	-	6,665
Staff Costs	-	-	12,421	-	12,421
Other Operating Costs	-	-	8,591	-	8,591
Staff Restructuring	-	-	-	2,322	2,322
Depreciation	-	-	-	10,003	10,003
Impairment and Other	-	-	-	2,065	2,065
Total Operating Expenditure	459,212	50,508	21,012	14,390	545,122

At 31 March 2014	Research £'000	Training £'000	Office £'000	Other £'000	Total £'000
Research Grants	312,888	-	-	-	312,888
Capital Grants	119,462	-	-	-	119,462
Postgraduate Awards	-	44,461	-	-	44,461
Fellowships	-	7,846	-	-	7,846
Staff Costs	-	-	11,615	-	11,615
Other Operating Costs	-	-	7,014	-	7,014
Staff Restructuring	-	-	-	2,132	2,132
Depreciation	-	-	-	7,904	7,904
Impairment and Other	-	-	-	5,058	5,058
Total Operating Expenditure	432,350	52,307	18,629	15,094	518,380

3. STAFF NUMBERS AND RELATED COSTS

BBSRC hosts a number of Joint Service Units (JSUs) on behalf of all of the Research Councils. The costs of these JSUs are recharged to all of the Research Councils, including BBSRC. Figures below show both BBSRC Office and the JSUs hosted by BBSRC.

	2014-15	2013-14
	£000	£000
Salaries and Wages	11,467	11,013
Social Security Costs	898	861
Other Pension Costs	2,694	2,574
Other Fees and Honoria	348	351
	15,407	14,799
Less UK paid Joint Service Staff	(2,874)	(3,163)
Less Overseas paid Joint Service Staff	(189)	(88)
Administrative and BITS Staff on Payroll	12,344	11,548
Temporary Administration and BITS Agency Staff	77	67
Total	12,421	11,615

AVERAGE NUMBERS OF PERSONS EMPLOYED

	2014-15	2013-14
Administrative	244.00	247.6
UK Paid Joint Services staff	75.33	77.8
Overseas Paid Staff	4.0	4.0
Staff on Payroll	323.3	329.4
Temporary Agency Staff	6.0	1.0
	329.3	330.4

JSUs include: the Audit and Assurance Services Group, the Joint Business Office Services, the Joint Superannuation Services and the UK Research Office.

No staff costs have been capitalised in 2014-15 or 2013-14

4. SUPERANNUATION

The employees of the Council are members of the Research Councils' Pension Schemes (RCPS) which are defined benefit schemes funded from annual grant-in-aid on a pay-as-you-go basis. The benefits are by analogy to the Principal Civil Service Pension Scheme, except that, while the schemes provide retirement and related benefits based on final or average emoluments, redundancy and injury benefits are administered and funded by the Council. The scheme is administered by the Research Councils' Joint Superannuation Service with the associated grant-in-aid managed by BBSRC. The schemes' accounts are prepared by BBSRC, on behalf of the BBSRC Chief Executive as the Accounting Officer for the RCPS. Separate accounts are published for the Pension Schemes. Employees' contributions vary between 1.5% and 8.85%. The employer's contribution is agreed by the RCPS Board of Management on the recommendation of the Government Actuary's Department (GAD) and is set at 25.6% of pensionable pay. Employer contributions are reviewed every four years following a full scheme valuation by GAD. The contribution rates reflect benefits as they are accrued, not when the costs are actually incurred, and reflect past experience of the scheme.

For 2014-15 employers' contributions of £2,694K were payable to the RCPS (2013-14: £2,574K) at 25.6% (2013-14: 25.6%) of pensionable pay, based on the salary bands.

The last actuarial valuation undertaken for RCPS was at 31 March 2006 and was completed in 2008-09. HM Treasury have issued GAD (Government Actuarial Department), the RCPS actuary, with directions for calculating public service pension scheme valuations as at 31 March 2012 with changes likely to apply 2015-16 onwards.

Further details about the Research Councils pension scheme arrangements can be found at www.jsspensions.org.uk

5. REPORTING OF CIVIL SERVICE AND OTHER COMPENSATION SCHEMES - EXIT PACKAGES

Exit package cost band	Number of compulsory redundancies	Number of other departures agreed	Total number of exit packages by cost band
<£10,000	0 (0)	2 (3)	2 (3)
£10,000 - £25,000	0 (7)	14 (14)	14 (21)
£25,000 - £50,000	0 (4)	15 (11)	15 (15)
£50,000 - £100,000	0 (0)	9 (1)	9 (1)
£100,000-£150,000	0 (0)	0 (0)	0 (0)
£150,000-£200,000	0 (0)	0 (0)	0 (0)
Total number of exit packages by type	0 (11)	40 (29)	40 (40)
Total resource cost £ for 2014-15	0	1,423,389	1,423,389
Total resource cost £ for 2013-14	(322,160)	(721,458)	1,043,618

Comparative figures for 2013-14 are in brackets

Redundancies and other departure costs have been paid in accordance with the provisions of the Research Councils Compensation Scheme which is in analogy to the Civil Service Compensation Scheme. Exit costs are accounted for in full in the year in which departure is agreed. Where the BBSRC has agreed early retirements, the additional costs are met by BBSRC and not by the Research Councils Compensation Scheme. Ill-health retirement costs are met by the pension scheme and are not included in the table.

6a. OTHER ADMIN EXPENDITURE

	2014-15 £000	2013-14 £000
Additional UK SBS Operating Costs	106	686
Professional Fees and Management Consultancy	1,080	1,144
Computing Expenses	1,248	585
Travel, Subsistence and Hospitality	850	605
Other	1,987	1,240
Office Supplies	290	215
Rent, Rates and Insurance	42	7
Maintenance, Repairs and Cleaning	1,456	768
Internal Audit	285	303
Staff Training	483	434
External Audit	85	85
Total	7,912	6,072

6b. OTHER PROGRAMME EXPENDITURE

	2014-15 £000	2013-14 £000
Professional Fees and Management Consultancy	-	88
Travel, Subsistence and Hospitality	632	586
Other	13	243
Office Supplies	33	24
Total	678	941

Ownership of UK SBS transferred from the research councils to BIS on 6 March 2013. From 1 April 2013, the cost of UK SBS's services to BBSRC ceased to be a monthly charge and instead was deducted from BBSRC's allocation. In order to accurately reflect the cost of using UK SBS's services in the annual accounts, the charge has been shown as a notional cost on the Statement of Comprehensive Net Expenditure and has been written back to the General reserve.

7a. OTHER OPERATING INCOME

	2014-15 £000	2013-14 £000
Property rentals	533	535
Other	1,281	951
	1,814	1,486

7b. OTHER RECOVERIES

	2014-15 £000	2013-14 £000
Recovery of hosting Joint Service Units (JSUs)	69	71
	69	71

7c. NET FUNDING FROM OTHER BODIES

	2014-15 £000	2013-14 £000
From Other Research Councils	8,696	5,773
From Other Government Departments	7,067	5,735
From Other Bodies	1,516	1,808
From EU	324	699
Net Funding	17,603	14,015

8. STAFF RESTRUCTURING

	2014-15 £000	2013-14 £000
Annual Compensation Payments (ACP)	527	1,187
Redundancy Payments**	3,068	4,241
Early Retirement Lump Sums (ERLS)*	-	-
	<u>3,595</u>	<u>5,428</u>
Recoverable ACP and redundancy payments	(254)	(448)
Recoverable ERLS	(678)	(1,115)
Provided for (note 10)	<u>(1,368)</u>	<u>(1,269)</u>
	1,295	2,596
Increase provision for ACP and restructuring cost (note 9)	-	1,969
Release from existing restructuring provisions (note 9)	(473)	(2,433)
Net cost	<u><u>822</u></u>	<u><u>2,132</u></u>

The total number of redundancies during 2014-15 was 54 (2013-14: 41).

Please see note 5 'Reporting of Civil Service and other compensation schemes - exit packages' for details on compensations agreed in 2014-15.

9. PROVISIONS FOR LIABILITIES AND CHARGES

PROVISIONS

	Annual Compensation Payments £000	Major Institute Restructuring £000	Other Provisions £000	Total 31 March 2015 £000
At 1 April 2014	2,946	2,102	-	5,048
Amount provided in year	-	-	1,500	1,500
Amount released in year	-	(473)	-	(473)
Amount expended in year	(876)	(492)	-	(1,368)
Total Provisions At 31 March 2015	<u><u>2,070</u></u>	<u><u>1,137</u></u>	<u><u>1,500</u></u>	<u><u>4,707</u></u>

PROVISIONS

	Annual Compensation Payments £000	Major Institute Restructuring £000	Total 31 March 2014 £000
At 1 April 2013	4,198	2,583	6,781
Amount provided in year	195	1,774	1,969
Amount released in year	(258)	(2,175)	(2,433)
Amount expended in year	(1,189)	(80)	(1,269)
Total Provisions At 31 March 2014	<u><u>2,946</u></u>	<u><u>2,102</u></u>	<u><u>5,048</u></u>

Annual Compensation Payments (ACP) are payments to early retirees in advance of their pension entitlements under the Research Councils' Pension Schemes.

Major Institute Restructuring comprises provisions for HR Legal cases.

Following the payment of the final compensation lump sum, provision for on-going annual compensation payments (ACP) associated with the specific institute restructuring programme is transferred from the major restructuring provision to the ACP provision.

Other provisions are for clean up costs at BBSRC sites.

TOTAL PROVISIONS FOR YEAR	2014-15 £000	2013-14 £000
Restructuring	4,707	5,048
	<u>4,707</u>	<u>5,048</u>
Split as follows:		
Current Provision	1,398	1,175
Non-current provision	3,309	3,873
	<u>4,707</u>	<u>5,048</u>

ANALYSIS OF EXPECTED TIMING OF CASH FLOWS

	Annual Compensation Payments £000	Major Institute Restructuring £000	Other Provision £000	Total £000
Within one year	261	1,137	-	1,398
Between 2017 and 2022	1,809	-	1,500	3,309
Between 2022 and 2026	-	-	-	-
	<u>2,070</u>	<u>1,137</u>	<u>1,500</u>	<u>4,707</u>

10. PROFIT/LOSS ON DISPOSAL/DEMOLITION OF PROPERTY, PLANT AND EQUIPMENT

	2014-15 £000	2013-14 £000
Receipts on disposals of property, plant and equipment	2,705	3,202
Less: Net Book Value of assets sold/demolished	(2,664)	(3,200)
Profit on disposal/demolition of fixed assets	<u>41</u>	<u>2</u>

In June 2013 a dwelling surplus to requirements, which was classified as an asset held for sale at 31 March 2013, was sold with a loss on disposal of £8k. In addition a building and associated land at Pirbright that were surplus to requirements were sold with a profit on disposal of £10k. In 2014-15 several dwellings that were surplus to requirements and were held as assets held for sale at 1 April 2014, have been sold with a loss on disposal of £30K. In addition part of a sponsored institute site became an asset held for sale during 2014-15 consisting of dwellings, land and buildings and was sold with a profit on disposal of £71K.

11. FINANCIAL ASSETS

	PBL	NRP LLP	BBT	RBL	Total
	£'000				£'000
Valuation/cost at 1 April 2014	879	833	6,101	(10)	7,803
Additions	-	-	-	-	0
Disposal	-	-	-	-	0
Profit/(loss) at 31 March 2015	(11)		415	(7)	397
Net Book Value at 31 March 2015	868	833	6,516	(17)	8,200

In addition to the above investments, BBSRC also has an interest in the Rainbow Seed Fund (RSF) and an interest in the UK Shared Business Services (UK SBS) as detailed below.

Plant Bioscience Ltd (PBL)

110 ordinary shares at 10p each, representing one third of the issued share capital of Plant Bioscience Ltd. Plant Bioscience Ltd is incorporated in England and Wales. www.pbltechnology.com

Norwich Research Partners Limited Liability Partnership (NRP LLP)

"BBSRC's investment of £833k in the NRP LLP is an equal share of a £2.5M capital investment made by the three landowners of the Norwich Research Park (NRP) in 2011-12, i.e. BBSRC, John Innes Foundation, and the University of East Anglia. The NRP LLP was formed between the NRP Partners – which consists of the three landowners, together with the Norfolk and Norwich University Hospital, the John Innes centre, the Sainsbury Laboratories, and the Genome Analysis Centre – to formally collaborate in delivering and leveraging on the economic benefits that will be derived from the government's £26M capital investment in the facilities and infrastructure on the Park through:

- transforming the NRP into a world-leading centre for research and innovation in life and environmental sciences, creating 5000 new jobs in the Norwich area within the next ten years; and
- contributing to the Government's growth agenda, particularly in the area of bio-economy which is essential in creating economic growth and formulating effective responses to pressing global challenges."

Babraham Bioscience Technologies Ltd (BBT)

During 2013-14 BBSRC acquired a £5.8M equity investment in the Babraham Bioscience Technologies Limited (BBT), giving BBSRC 25% of ordinary shares in the company with the remaining 75% shares being retained by the Babraham Institute. In 2014-15 the government approved a £12m business case for the further development of facilities & infrastructure at the Babraham Research Campus, of which government will contribute £7.7m and the Babraham Institute and BBT the remaining £4.3m. As the Babraham Institute's contribution to this project, of £2.3m, has had to be made through an increase in its ordinary shareholdings in BBT, this has meant that BBSRC has had to increase its own shareholdings through a conversion of £766k of the £7.7m capital grant funding spent in 2014-15 into ordinary shares in order that BBSRC can maintain its percentage shareholding at 25%.

BBSRC's equity stake in BBT will ensure that this and the £44m government investments in the facilities and infrastructure at the Babraham Research Campus, as well as any future developments of the Campus, will deliver economic benefits (i.e. economic growth and job creation) in line with expectations, and will:

- increase the impact of bioscience in the UK for the widest possible economic and societal benefit to the UK, enabling the UK economy and society to benefit from public investment in bioscience research; and
- create a vibrant and sustainable Campus that attracts the best people and companies, and delivers the best possible impact from bioscience for the UK, by bringing together leading bioscience research, life-science-based businesses, and a variety of research-led and other facilities that will enable the commercialisation of research and the achievement of academic excellence.

Roslin BioCentre Ltd (RBL)

49 Ordinary Shares at 100p each representing 49 per cent of the issued share capital of Roslin BioCentre Ltd fully paid. Roslin BioCentre Ltd is incorporated in Scotland. www.roslinbiocentre.co.uk

Rainbow Seed Fund (RSF)

Partner's capital fund investment of £92. The Rainbow Seed Fund is an independently managed evergreen venture capital fund established in 2001 by the Office of Science and Innovation (the predecessor to BIS) to invest in technologies developed from publicly funded research (www.rainbowseedfund.com). In 2013-14 BBSRC provided a capital grant of £10M and a further £1M in 2014-15 to support investment in the commercialisation of technology and services from publicly funded research, and ultimately support the Government's agenda for economic growth.

UK Shared Business Services Ltd (UK SBS)

BBSRC has one Non Government Department (NGD) share in UK SBS with an initial cost of £1 being the nominal value of the NGD share. BIS holds one Government Department (GD) share carrying 51% of the votes, UK SBS holds one share carrying 5% of the votes, and all other stakeholders, including BBSRC, each own one NGD share with the combined voting value of all the NGD shares being 44%.

12. PROPERTY, PLANT AND EQUIPMENT

	Completed Land excluding Dwellings £'000	Completed Buildings excluding Dwellings £'000	Dwellings £'000	Buildings Under Construction £'000	Information Technology £'000	Plant & Equipment £'000	Fixtures & Fittings £'000	TOTAL £'000
Cost or Valuation								
At 1 April 2014	52,658	216,900	32,493	172,369	261	102	11	474,794
Additions	-	2,540	-	-	-	-	-	2,540
Valuation additions*	1,072	1,420	713	20,173	-	-	-	23,378
Impairment	-	(2,377)	(85)	-	-	-	-	(2,462)
Reclassification	5,134	155,733	(719)	(162,242)	-	-	-	(2,094)
Disposals	-	-	-	-	(29)	-	-	(29)
Revaluation	5,832	(1,043)	2,946	-	-	-	-	7,735
At 31 March 2015	64,696	373,173	35,348	30,300	232	102	11	503,862
Depreciation and Impairment								
At 1 April 2014	1	90,350	29	-	142	66	11	90,599
Provided during the year	-	9,602	340	-	32	11	-	9,985
Impairment	-	-	-	-	-	-	-	-
Reclassification	-	-	-	-	-	-	-	-
Disposals	-	-	-	-	(29)	-	-	(29)
Revaluation	-	1,090	(340)	-	-	-	-	750
At 31 March 2015	1	101,042	29	0	145	77	11	101,305
Net Book Value								
At 31 March 2015	64,695	272,131	35,319	30,300	87	25	0	402,557
At 1 April 2014	52,657	126,550	32,464	172,369	119	36	0	384,195
	Completed Land excluding Dwellings £'000	Completed Buildings excluding Dwellings £'000	Dwellings £'000	Buildings Under Construction £'000	Information Technology £'000	Plant & Equipment £'000	Fixtures & Fittings £'000	TOTAL £'000
Cost or Valuation								
At 1 April 2013	53,571	207,286	31,673	146,328	277	122	11	439,268
Additions	-	-	-	-	30	-	-	30
Valuation additions*	-	9,873	-	29,869	-	-	-	39,742
Impairment	-	(7,250)	-	-	-	-	-	(7,250)
Reclassification	(268)	5,190	(1,094)	(3,828)	-	-	-	-
Disposals	-	-	-	-	(46)	(20)	-	(66)
Revaluation	(645)	1,801	1,914	-	-	-	-	3,070
At 31 March 2014	52,058	216,900	32,493	172,369	261	102	11	474,794
Depreciation and Impairment								
At 1 April 2013	1	86,564	294	-	162	75	11	87,107
Provided during the year	-	7,781	53	-	26	11	-	7,871
Impairment	-	(1,642)	-	-	-	-	-	(1,642)
Reclassification	-	-	-	-	-	-	-	-
Disposals	-	-	-	-	(46)	(20)	-	(66)
Revaluation	-	(2,353)	(318)	-	-	-	-	(2,671)
At 31 March 2014	1	90,350	29	-	142	66	11	90,599
Net Book Value								
At 31 March 2014	52,657	126,550	32,464	172,369	119	36	-	384,195
At 1 April 2013	53,571	120,722	31,379	146,328	115	47	-	352,162

*Where Institutes carry out development that results in a material change in value of the Council's owned assets, this is disclosed as a fixed asset valuation addition.

The land and buildings were professionally valued as at 31 March 2011 by external valuers, Powis Hughes Chartered Surveyors, in accordance with SAVP and RICS guidance notes. In between formal professional valuations, management have used appropriate indices to revalue the land and buildings. In addition to this valuation, Polaris House was revalued as at 31 March 2010 by Powis Hughes, as part of a valuation carried out by NERC.

All assets are owned.

13. IMPAIRMENT

During the year to 31 March 2015 there were impairments amounting to £2.46M (£5.16M in 2013-14). The impairments relate to properties on the Roslin site.

In accordance with the FReM, impairments are taken through the Statement of Comprehensive Net Expenditure.

14. INTANGIBLE ASSETS

	Website £'000	Computer Software £'000	Total £'000
Cost or Valuation			
At 1 April 2014	126	113	239
Additions	-	-	-
Valuation additions	-	-	-
Reclassification	-	-	-
Disposals	-	-	-
Revaluation	-	-	-
At 31 March 2015	<u>126</u>	<u>113</u>	<u>239</u>
Amortisation			
At 1 April 2014	102	101	203
Provided during the year	6	11	17
Disposals	-	-	-
Revaluation	-	-	-
Reclassification	-	-	-
At 31 March 2015	<u>108</u>	<u>112</u>	<u>220</u>
Net Book Value			
At 31 March 2015	<u>18</u>	<u>1</u>	<u>19</u>
At 1 April 2014	<u>24</u>	<u>12</u>	<u>36</u>
	Website £'000	Computer Software £'000	Total £'000
Cost or Valuation			
At 1 April 2013	126	113	239
Additions	-	-	0
Valuation additions	-	-	-
Reclassification	-	-	-
Disposals	-	-	-
Revaluation	-	-	-
At 31 March 2014	<u>126</u>	<u>113</u>	<u>239</u>
Amortisation			
At 1 April 2013	96	74	170
Provided during the year	6	27	33
Disposals	-	-	-
Revaluation	-	-	-
Reclassification	-	-	-
At 31 March 2014	<u>102</u>	<u>101</u>	<u>203</u>
Net Book Value			
At 31 March 2014	<u>24</u>	<u>12</u>	<u>36</u>
At 1 April 2013	<u>30</u>	<u>39</u>	<u>69</u>

No element of intangible assets is internally generated or acquired as part of a business acquisition.

15. ASSETS CLASSIFIED AS HELD FOR SALE

	2014-15 £000	2013-14 £000
1 April 2014	570	3,933
Additions and capital improvement	-	-
Revaluation		(163)
Reclassification	2,094	-
Disposal	(2,664)	(3,200)
At 31 March 2015	-	570

The assets held for sale as at 1 April 2013 include a site that became surplus to requirements during 2012-13. The site was valued at £3.1M and was sold in January 2014. In addition, the 2013-14 opening balance includes several buildings at Skedsbush and one building at Compton that are surplus to requirements. The building at Compton was sold in October 2013 and the buildings dwellings at Skedsbush remained assets held for sale at 31 March 2014.

During 2014-15 the dwellings at Skedsbush were sold along with several other buildings at Skedsbush which were classified as assets held for sale during 2014-15 and the sale site valued at £2.0M. In addition, several dwellings at Compton and one dwelling at North Wyke were classified as assets held for sale and sold during 2014-15. At 31 March 2015 there are no assets held for sale.

16. TRADE RECEIVABLES AND OTHER CURRENT ASSETS

	2014-15 £000	2013-14 £000
Amounts falling due within one year		
Trade Receivables	6,840	2,653
Other Receivables	108	4,670
Repayment of Early Retirement Lump Sums*	375	678
	7,323	8,001
Prepayments and Accrued Income		
Training Awards	10,319	10,537
Other	7,181	5,678
	17,500	16,215
	24,823	24,216
Amounts falling due after one year		
Repayment of Early Retirement Lump Sums*	572	980
	572	980
Total Receivables	25,395	25,196

* Cash received from the Research Councils' Pension Schemes (RCPS) in 2014-15 in repayment of Early Retirement Lump Sums (ERLS) was £678k (2013-14: £1,115K)

16a. TRADE RECEIVABLES AND OTHER CURRENT ASSETS BY SOURCE

	2014-15 £000	2013-14 £000
i) Amounts falling due within one year:		
Other Central Government Bodies	9,592	6,843
Bodies External to Government	15,231	17,373
Total	24,823	24,216
ii) Amounts falling due after one year:	572	-
Other Central Government Bodies	-	980
Bodies External to Government	572	0
Total	572	980

17. TRADE AND OTHER PAYABLES AND OTHER CURRENT LIABILITIES

	31 March 2015 £000	31 March 2014 £000
Amounts falling due within one year		
Trade Payables	10,530	11,998
Deferred Income	4,840	5,251
Other Payables	649	585
	16,018	17,834
Accruals:		
Research Grants	15,088	21,215
Other	13,019	9,992
	28,108	31,207
	44,126	49,041

17a. TRADE AND OTHER PAYABLES BY SOURCE

	31 March 2015 £000	31 March 2014 £000
Current:		
Other Central Government Bodies	2,384	10,122
Bodies External to Government	41,742	38,919
Total	44,126	49,041

18. NET PARLIAMENTARY FUNDING

	2014-15 £000	2013-14 £000
Amount provided by BIS - Capital Funding	134,400	111,900
Amount provided by BIS - Revenue Funding	378,108	331,033
Animal Licences Provided by BIS	-	125
Net Parliamentary Funding	512,508	443,058

Funding in 2014-15 has increased significantly from 2013-14 in response to the increases in research commitments as detailed in Note 20. Animal Licences provided by BIS are now included in programme income from other bodies note 7c.

19. NOTES TO THE CASHFLOW STATEMENT

	31 March 2015 £000	31 March 2014 £000
Reconciliation of movement in cash to movement in net funds		
Cash as at 1 April 2014	8,167	56,950
(Decrease)/Increase in cash in the year	(6,405)	(48,783)
Cash as at 31 March 2015	1,762	8,167
	31 March 2015 £000	31 March 2014 £000
Breakdown of Balances		
Central Government Banks	(696)	5,747
Commercial Banks	2,458	2,420
	1,762	8,167

20. FORWARD COMMITMENTS ON APPROVED RESEARCH GRANTS

	31 March 2015 £M	31 March 2014 £M	31 March 2013 £M
2013-14	-	-	240.1
2014-15	260.1	250.3	178.3
2015-16	202.9	181.5	100.3
2016-17	128.8	104.3	58.0
After 2016-17	143.9	55.4	0.0
	735.7	591.5	576.7

21. CAPITAL COMMITMENTS

The majority of capital expenditure funded by BBSRC is on contracts let by BBSRC-funded institutes. Capital commitments as at 31 March 2014, for which no provision has been made, are as follows:

	2014-15	2013-14
	£000	£000
Authorised for contracts to be let, subject to full business case	181,282	190,227
Funding approved in principle:		
- BBSRC contribution to capital equipment for strategically funded institutes	2,748	3,000
- BBSRC contribution to backlog maintenance and dilapidations on BBSRC estate	-	2,000
	184,030	195,227

Capital commitments for 2014-15 are £11M lower than in 2013-14 for two reasons: (i) several of BBSRC's major capital investment programmes are ending in 2014-15; and (ii) BBSRC has not yet received capital allocations beyond 2015-16, as these will be determined as part of the next comprehensive spending review.

22. OPERATING LEASE COMMITMENTS

BBSRC has one annual operating lease commitment under non-cancellable agreements as shown below.

	2014-15	2013-14
	£000	£000
Within 1 year	46	46
Between 2 and 5 years	58	92
After 5 years	-	-
	104	138

This is a lease held by UK Research Offices (UKRO) in Brussels as office accommodation. The lease is a 9 year lease, commencing 1 June 2011 with a break clause every 3 years. The rental amount is €55k per annum.

As at 31 March 2015, BBSRC has entered into an 'agreement for lease' with Imperial College of Science, Technology and Medicine for a 99 year lease of undeveloped land on the Babraham Research Campus. The granting of this lease will be subject to Imperial College receiving planning consent for the construction of a 50k sq ft facility to support spin-out and scale-up companies and maximise the impact of research from universities. In accordance with the provisions of IAS 17 this lease will be classified as an operating lease and will form part of BBSRC's land and buildings valuations.

23. CONTINGENT LIABILITIES

The former BBSRC-sponsored Roslin institute transferred to the University of Edinburgh on 13 May 2008. Should the university experience a fall in programme grant income between the transfer date and May 2015, BBSRC agreed to contribute to the cost of any redundancies that arise as a direct result of the transfer. The level of BBSRC's contribution is dependent upon both the size and year of income reduction. BBSRC also agreed to provide indemnity for any potential costs that arise as a result of past actions of the institute and indemnity for any fall in grant income of the Neuropathogenesis Unit as a result of the transfer. The proportion of settlement BBSRC will fund declines on an annual basis and is limited to claims up to May 2023.

As part of the transfer of the former BBSRC-sponsored IGER institute to the University of Aberystwyth, certain key staff from IGER moved to Nottingham University. BBSRC agreed to underwrite a sum of £340K over a 5-year period starting in 2011-12, in case the newly formed Research Group fails to win additional grant funding in this time. BBSRC has encouraged this strategic link between Nottingham University and IBERS at the University of Aberystwyth to maximise the potential synergies, particularly between work on wheat, grasses and roots.

As part of a Sale Agreement relating to a previous BBSRC site, BBSRC agreed to indemnify the purchaser against contamination resulting from dangerous substances. The indemnity was over a 10-year period commencing in 2013-14 and was capped at £3M.

24. RELATED PARTY TRANSACTIONS

The BBSRC is a Non-Departmental Public Body sponsored by the Department for Business, Innovation and Skills (BIS).

For the purposes of IAS 8, BIS and its partner organisations are regarded as related parties. During the year, the BBSRC has had various material transactions with BIS and entities for which BIS is regarded as the parent department, including: Arts and Humanities Research Council, Economic and Social Research Council, Engineering and Physical Sciences Research Council, Medical Research Council, Natural Environment Research Council, Science Technology and Facilities Council, Innovate UK, UK Space Agency, the Higher Education Funding Council of England.

BBSRC also had a number of related transactions with the UK Shared Business Services Ltd (UK SBS), as set out in the notes to these accounts.

The accounts provide disclosure of all material transactions with those who are recognised as key management personnel as per IAS 24 'Related Parties'. This is taken to be those members of staff who are included under Executive Directors' remuneration in the Remuneration Report and all Council members.

During the year BBSRC did not undertake any material transactions with any Directors; however, during the year, the following material payments with Council members' organisations took place in respect of research and training grants funded by the BBSRC:

	Awards	£
Professor Sir David Baulcombe	2	4,274,622
Professor Richard Cogdell	2	232,971
Professor Carole Goble	3	238,914
Professor Sarah Gurr	1	102,623
Professor David Richardson	1	61,458
Professor Helen Sang	1	115,721

The following Council members held positions on the Governing Bodies of sponsored research institutes and other related party organisations as follows:

Professor Sir David Baulcombe	Rothamsted Research
Professor Margaret Dallman	The Pirbright Institute
Mr David Gregory	Roslin Institute
Professor Carole Goble	Elixir
Professor David Richardson	Norwich Research LLP
Professor David Richardson	John Innes Institute

The following Council members related parties held positions at organisations which receive funding from BBSRC

Council member	Relationship	Organisation
Professor Sir Tom Blundell	Wife	Cambridge University
Professor Richard Cogdell	Wife	Glasgow University

Registers of interest for Council, Boards and Committees can be found on BBSRC's website at www.bbsrc.ac.uk

The following BBSRC staff held positions on the Governing Bodies or Boards of related institutes and centres

Dr Celia Caulcott	Plant Bioscience Ltd
Mr Paul Gemmill	The Pirbright Institute until November 2014
Ms Janet Juillerat	The Pirbright Institute from December 2014
Mr David Parfrey	Colney Innovations Ltd
Mr David Parfrey	BBT Limited
Mr Steve Visscher	Norwich Research Partners LLP

In addition, Professor Jackie Hunter, Chief Executive of BBSRC, is a member of the University of Hertfordshire's Governing Board and during the year the university received funding of £166k from BBSRC and Professor Tim Benton, BBSRC Global Food Champion, is also an employee of the University of Leeds but he received no grant funding for his research in 2014-15 but the university received funding of £5.66M.

BBSRC sponsors six research institutes, which conduct long-term, mission-orientated research using specialist facilities that are in line with BBSRC's priorities. BBSRC provides Strategic Programme Grants to the institutes to fund specific research programmes. The sponsored institutes have separate charitable status and an independent governing body oversees the institutes' activities.

	Grants		Receivables (Including loans)		Payables		Major Provision in Year	
	14-15 £M	13-14 £M	14-15 £M	13-14 £M	14-15 £M	13-14 £M	14-15 £M	13-14 £M
Transactions with BBSRC-Sponsored Institutes:								
Babraham Institute*	20.40	28.80	0.12	0.03	0.54	0.90	-	-
The Pirbright Institute *	43.00	44.30	0.60	0.07	6.93	5.23	1.50	-
Institute of Food Research*	20.70	17.90	0.36	0.14	0.15	0.48	-	-
John Innes Centre	38.20	33.30	0.32	1.39	2.80	0.87	-	-
Rothamsted Research	35.50	32.90	0.27	0.22	2.95	1.44	-	-
The Genome Analysis Centre	12.10	7.40	0.11	-	1.07	0.13	-	-
	169.90	164.60	1.78	1.85	14.44	9.05	1.50	-
Transactions with former BBSRC-Sponsored Institutes:								
Institute of Grassland and Environmental Research	7.20	10.50	-	-	0.60	3.71	-	-
Roslin Institute	14.00	8.70	-	-	-	-	-	-
	21.20	19.20	-	-	0.60	3.71	-	-
Transactions with other related parties:								
Babraham Bioscience Technologies Ltd	6.90	16.80	-	-	0.58	0.26	-	-
Norwich Research Partners Limited Liability Partnership	4.23	16.40	-	-	0.34	2.40	-	-
Rainbow Seed Fund	1.00	-	-	-	-	-	-	-
UK SBS	-	-	0.10	0.14	0.03	0.36	-	-
	12.13	33.20	0.10	0.14	0.95	3.02	-	-
Total	203.23	217.00	1.88	2.13	15.99	15.78	1.50	-

*Institutes occupying BBSRC-owned estate at peppercorn rents.

	Receivables		Payables	
	14-15 £M	13-14 £M	14-15 £M	13-14 £M
	(see Note 17)		(see Note 18)	
Non-Institute:				
Within the WGA Boundary:				
Other Research Councils	5.10	1.30	0.70	1.46
Other Government Organisations	3.38	1.13	1.62	2.92
Research Councils' Pensions Schemes	1.60	5.18	-	0.15
Non-WGA:				
Other Debtors (including Universities)	13.44	15.59	25.81	28.74
	23.52	23.20	28.13	33.27
BBSRC-sponsored institutes & other related parties	1.88	1.99	15.99	15.78
	25.40	25.19	44.12	49.05

25. DERIVATIVES AND OTHER FINANCIAL INSTRUMENTS

As the cash requirements of BBSRC are met through Grant-in-Aid provided by BIS, financial instruments play a more limited role in creating and managing risk than would apply to a non-public sector body. The majority of financial instruments relate to contracts to buy non-financial items in line with BBSRC's expected purchase and usage requirements and BBSRC is therefore exposed to little credit, liquidity or market risk.

Currency risk

The Council's exposure to foreign currency risk was not significant during the year.

Through the use of forward contracts, the Council seeks to mitigate its risk of foreign exchange rate movements on its foreign currency transactions.

On 24 May 2014 a contract set up on 24 November 2011 with an agreed cost of £1,275,104 matured. There are no other forward contracts.

26. EVENTS AFTER REPORTING PERIOD

There have been no material events between the Statement of Financial Position date and the date the accounts were authorised for issue requiring an adjustment to the financial statements. The date the accounts were authorised for issue is interpreted as the date of the Certificate and Report of the Comptroller and Auditor General.

Acronyms

AHRC	Arts and Humanities Research Council	IWYP	International Wheat Yield Partnership
AMR	Antimicrobial Resistance	JIC	John Innes Centre
ARC	Animal Health Research Club	MRC	Medical Research Council
BBSRC	Biotechnology and Biological Sciences Research Council	NC3Rs	The National Centre for the Replacement, Refinement and Reduction of Animals in Research
BBT Ltd	Babraham Bioscience Technologies Ltd	NERC	Natural Environment Research Council
BI	Babraham Institute	NFU	National Farmers Union
BIS	Department for Business, Innovation and Skills	NNFCC	National Non-Food Crops Centre
bTB	Bovine Tuberculosis	NRP	Norwich Research Park
CASE	Campaign for Science and Engineering	PI	Pirbright Institute
CIMMYT	International Maize and Wheat Improvement Center	RCUK	Research Councils UK
Defra	Department for Environment, Food and Rural Affairs	RI	Roslin Institute
DfID	Department for International Development	RRES	Rothamsted Research
DRINC	Diet and Health Research Industry Club	SAGARPA	Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food
DSTL	Defence Science and Technology Laboratory	SARIC	Sustainable Agriculture Research & Innovation Club
EBIC	Easter Bush Innovation Centre	SARISA	Soil and Rhizosphere Interactions for Sustainable Agriecosystems
ESRC	Economic and Social Research Council	SCRI	Scottish Crop Research Initiative
EPSRC	Engineering and Physical Sciences Research Council	SFX	Serial Femtosecond Crystallography
FHEI	Higher Education Institution	sLoLas	Strategic Longer Larger grants
HSBS	Health, Safety Biosafety and Security	SOEG	Swindon Office Employment Group
HSE	Health and Safety Executive	STFC	Science and Technology Facilities Council
IBBE	Industrial Biotechnology & Bioenergy	TGAC	The Genome Analysis Centre
IBERS	Institute of Biological, Environmental and Rural Sciences	UK SBS	UK Shared Business Services Ltd
IFR	Institute of Food Research	USAID	U.S. Agency for International Development
INRA	Institut National de la Recherche Agronomique	WT	Wellcome Trust
		XFEL	X-ray Free Electron Lasers
		ZELS	Zoonoses and Emerging Livestock Systems

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