

# REFRESHING BBSRC'S STRATEGIC PLAN... HAVE YOUR SAY

## Introduction

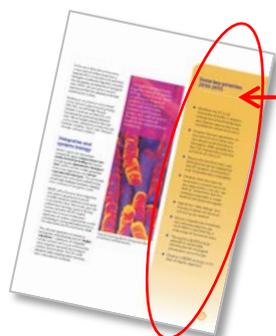
Between now and the end of May 2013 BBSRC will be conducting a 'light touch' refresh of its long-term Strategic Plan. We would welcome your input and views on how our strategic priorities should continue to develop.

Our move to refresh our Strategic Plan does not signal a change of direction by the Council, in fact we have had overwhelming endorsement and support for the strategic vision - *The Age of Bioscience* - as set out in the current Plan ([www.bbsrc.ac.uk/strategy](http://www.bbsrc.ac.uk/strategy)). However, it was originally launched in 2010, and so it is timely to consider progress and to update our aims to make sure we seize emerging opportunities and remain at the cutting edge of bioscience.



**BBSRC's Strategic Plan  
'The Age of Bioscience'**

The following sections set out some of our early thoughts on what might need to be done to update the Strategic Plan. It is based on an initial consultation with BBSRC's strategy advisory network and Council, and in parts is informed by public dialogue. We pose a few questions throughout, but please do not feel constrained by these; comments on all aspects of our Strategic Plan are welcome.



In particular, we would welcome your views on the **'key priorities'** identified in each section of the Strategic Plan. How might these be updated to reflect the most important challenges and opportunities facing BBSRC and UK bioscience? Please think in terms of outcomes rather than inputs.

Please send your comments to: [strategic.plan@bbsrc.ac.uk](mailto:strategic.plan@bbsrc.ac.uk)

The deadline for comments is **5pm on Wednesday 20 March 2013**.

## REFRESHING BBSRC'S STRATEGIC PLAN: THE AGE OF BIOSCIENCE

For convenience we consider the Strategic Plan in seven interrelated sections:

### (i) World-class Bioscience

<http://www.bbsrc.ac.uk/publications/planning/strategy/world-class-bioscience.aspx>

An emphasis on excellent bioscience, across the breadth of our remit, is the lifeblood of discovery and innovation, and continues to be central to BBSRC's vision. The high priority we have attached to researcher-led basic bioscience has seen grant success rates rise over recent years, and we remain committed to supporting the high-quality research, people and institutions that are the bedrock of the UK's world-leading bioscience base.

*Questions: How can BBSRC best continue to support UK bioscience and derive the widest possible benefit from our investment of public funding?*

*What are the main threats to the UK's world-class bioscience research base and how might we address them?*

As well as our strong commitment to funding excellent bioscience across a broad base, the Strategic Plan highlights three research priority areas for particular focus, where we can have the most impact in helping to provide solutions to major 'grand challenges' facing the world:

### (ii) Strategic research priority 1: Food security

<http://www.bbsrc.ac.uk/publications/planning/strategy/priority-food-security.aspx>

The security of global food supplies is even more relevant today than it was in 2010 when BBSRC's current Strategic Plan was published. Recent food price spikes have again underlined the vulnerability and volatility of food supplies.

Since 2010 we have established the multi-funder Global Food Security ([GFS](#)) programme, announced a [£250M strategic investment in Institutes](#) (most of which conduct research that underpins food security), and launched a number of major initiatives in partnership with other funders, such as the £16M programme on Sustainable Crop Production Research for International Development ([SCPRID](#)), and with industry through the [Crop Improvement](#) and [Animal Health](#) Research Clubs. We have also made significant investments in national facilities for food security and related research, including state-of-the-art animal disease containment facilities at [The Pirbright Institute](#), the [National Plant Phenomics Centre](#) at Aberystwyth University's IBERS, and a globally unique experimental '[farm platform](#)' at Rothamsted Research North Wyke.

Looking ahead, we recognise that agricultural research motivated by concerns about food security should not be focused solely on productivity; yields must be increased *sustainably*, while also producing food that is safe, nutritious and of appropriate quality. We are therefore likely to put extra strategic focus on gaining a deeper understanding of the concept of 'sustainable intensification' in agriculture, and related research in areas such as agri-ecosystems, resource use efficiency, pest and disease control, and the challenges

associated with reducing waste in the food chain. Research on the relationships between diet, nutrition and health is also likely to be a particular priority.

Animal health also remains a key part of our food security strategic priority. Protecting livestock health and welfare is clearly critical to achieving food security globally, as well as having huge economic implications for the UK agri-food industry. BBSRC proposes to place additional emphasis on ‘vaccinology’ as an area where there is an opportunity for bioscience to have a real impact, building on the strengths of the UK research base in immunology and infectious animal diseases, the opportunities arising from taking a ‘one health’ approach, and on our investments in The [Pirbright](#) and [Roslin](#) Institutes.

*Question: Food security is a broad and multidisciplinary challenge. BBSRC cannot do everything, so where should we place the most emphasis so that our funding can have the greatest benefit to society and the economy?*

When considering this section you might find it useful to refer to this GFS-led public attitudes work: <http://foodsecurity.ac.uk/assets/pdfs/gfs-exploring-public-views.pdf> and <http://foodsecurity.ac.uk/assets/pdfs/gfs-survey-public-attitudes.pdf>

### **(iii) Strategic Research Priority 2: Bioenergy and industrial biotechnology**

<http://www.bbsrc.ac.uk/publications/planning/strategy/priority-bioenergy.aspx>

Industrial biotechnology, including bioenergy, offers enormous potential for growth underpinning a new and sustainable bio-based economy. The application of bioscience in processes is capable of transforming many industrial activities such as the provision of liquid fuels for long distance transport, extracting value from municipal and other waste, and the production of biopharmaceuticals and other important products and intermediates from cells. In addition, how we can move away from dependence, in so many areas, on fossil hydrocarbons is a challenge that faces every society. The nations that are best able to exploit bioscience for renewable energy, chemicals, industrial raw materials, and high value biomolecules and biopharmaceuticals will be those that dominate in the future global bioeconomy. BBSRC’s Strategic Plan recognises that, with its strong research base, the UK is well-placed to be a world-leader in the biotechnology revolution, which could add £12bn to the UK economy by 2025<sup>1</sup>.

BBSRC has already [invested substantially in bioenergy research](#), and will continue to build on this investment, whilst also recognising that this is just one of many applications of industrial biotechnology. We plan to put an even greater emphasis on the broader applications of industrial biotechnology, which span a huge diversity of business sectors such as chemicals, waste, energy, health and the environment.

BBSRC’s plans focus on leading the development of a cohesive Industrial Biotechnology research community in the UK, that is integrated with other relevant disciplines in applied and social sciences, delivering the translation of research into valued products and processes. We will encourage researchers across a range of relevant disciplines in which

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<sup>1</sup> IB 2025: Maximising UK opportunities from Industrial Biotechnology in a Low Carbon Economy; a report to government by the Industrial Biotechnology Innovation and Growth Team, May 2009

the UK already has great strength to come together to address some of the most significant challenges and to help business move away from petroleum-based systems towards bio-based sources. As part of this strategy, working with the Technology Strategy Board and others, we intend to make significantly [more funding available](#) to take excellent research and ideas closer to application.

The tools of genomics, systems and synthetic biology are particularly relevant in the context of Industrial Biotechnology, and BBSRC will continue to support research that explores the potential of this emerging set of technologies. See *section on 'exploiting new ways of working'* for further information on synthetic biology.

*Questions: How can BBSRC best help to ensure that the UK becomes a global leader in industrial biotechnology?*

*What are the barriers that might prevent UK bioscience from achieving its potential in this area, and how can they be overcome?*

#### **(iv) Strategic Research Priority 3: Basic bioscience underpinning health**

<http://www.bbsrc.ac.uk/publications/planning/strategy/priority-health.aspx>

A significant proportion of BBSRC's investment supports fundamental bioscience research that helps to advance our understanding of normal growth and development over the life-course of animals and people. Whilst continuing to support this broad spectrum of important 'health-related' research, the Basic Bioscience Underpinning Health (BBUH) priority area aims to focus on where BBSRC-funded bioscience can make a real impact in helping to address a major societal 'grand challenge'. Maintaining health across the life-course and helping people to sustain health and independence further into old age is one such challenge, at a time when the proportion of older people in the population is increasing in many developed and affluent societies. Understanding the role of developmental processes, diet and physical activity in maintaining health throughout the life-course will remain a key goal, as will research that reveals the biological mechanisms underlying the normal ageing process. We also recognise the importance of understanding the influence of stress on wellbeing, and the relationship between biorhythms and health.

*Questions: Basic bioscience that informs and underpins health is a key part of our strategy where we work at the interface with other major funders such as MRC, the Wellcome Trust and third sector funders. Given this complex mix, where can BBSRC's funding have the greatest impact and value for money?*

*Where or how might this priority be strengthened through supporting a 'one biology, one health' approach?*

When considering this section you might find it useful to refer to the recent BBSRC public dialogue on this topic: <http://www.bbsrc.ac.uk/society/dialogue/activities/bbuh-public-workshop.aspx>

## **(v) Enabling Theme 1: Knowledge exchange, innovation and skills**

<http://www.bbsrc.ac.uk/publications/planning/strategy/theme-knowledge.aspx>

Since the publication of its Strategic Plan in 2010, BBSRC has continued to establish new and innovative ways to drive impact from the high-quality research and people that we fund. We have successfully implemented some major changes, including the introduction of [Doctoral Training Partnerships](#) as a new model to support the highest quality PhD training, the development of a number of [prestigious competitions to recognise and reward impact](#) in universities and institutes, and a significant rationalisation of our [fellowship schemes](#) to enable the bioscience leaders of tomorrow to maximise the benefits of their science within and outside academia.

We intend to put particular emphasis on ensuring that our researchers are supported throughout all career stages, in particular looking at ways to improve career development at the early post-doctoral stage. Encouraging and enabling the movement of people between different disciplines and sectors will also continue to be a high priority.

Biosciences research underpins a wide range of business sectors in the UK. We have put in place a [range of mechanisms](#) to enable engagement between the researchers we fund and bioscience-based industries to ensure industry can benefit from our investments in the research base. We also encourage industry to engage with us and to contribute to our strategy and decision making processes (alongside other stakeholders), to ensure the research we support provides new avenues for innovation in business.

We intend to continue to identify new opportunities for engagement and collaboration between the research base and industry, and will look for opportunities to disseminate research projects more widely to industry. We will also work with a range of partners, in particular the Technology Strategy Board and [Knowledge Transfer Networks](#), to ensure a coordinated approach to the translation of research to application.

The development of UK Research and Innovation Campuses, such as the [Norwich Research Park](#) and [Babraham Research Campus](#), is a key component of our plans for the future. UK Research and Innovation Campuses represent an important part of the national innovation ecosystem. They typically have substantial business and commercial presence alongside significant, long-term Research Council investment. This mix creates an enterprising community to support start-ups as well as the incubation and growth of innovative, knowledge-based companies.

<p><i>Question: How can BBSRC continue to enable the widest possible benefit from the high quality research and skilled people that we fund?</i></p>
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## **(vi) Enabling Theme 2: Exploiting new ways of working**

<http://www.bbsrc.ac.uk/publications/planning/strategy/theme-working.aspx>

Our Strategic Plan recognises that in order to remain competitive, UK bioscience must exploit fully (and indeed develop) the most modern ways of doing research. Our strategy is to recognise and develop new and emerging technologies and approaches, and to nurture these to a point that they become embedded in UK bioscience. One such example is

BBSRC's investments in Systems Biology over the last 8 years, which have supported the development and uptake of systems approaches in bioscience, to the point where the focus is now on exploiting the UK's world leading position in this field.

Since the Plan was published, BBSRC has continued to support the development of new tools and capabilities through dedicated funding for technology development. BBSRC has also supported the adoption of new ways of working through investment in underpinning bioinformatics and biological resources, and major national capabilities such as The Genome Analysis Centre ([TGAC](#)), and support for the [ELIXIR](#) project to establish a sustainable infrastructure for biological information in Europe.

Looking ahead, positioning the UK as a leading nation in data-intensive bioscience and in e-science more generally remains a high priority. Rapid advances in modern (and often high-throughput) technologies, including next generation sequencing and biological imaging, are resulting in unprecedented quantities of data becoming available to researchers. BBSRC will help to ensure that the UK research base has access to the infrastructure and skills needed to be able to generate new biological understanding and knowledge from the huge volume and diversity of data available.

Our future plans also recognise the importance of Synthetic Biology as a key enabling technology. BBSRC will work in partnership with other funders nationally and internationally, to support the emergence and application of this new multidisciplinary area scientifically, and with due consideration to the potential social, ethical, legal and philosophical issues it raises by building on the work of the BBSRC and EPSRC [Synthetic Biology Dialogue](#).

*Questions: What are the key challenges in ensuring that we are able to exploit fully new ways of working in a field such as bioscience, that is adopting and developing new technical capabilities at an ever increasing rate?*

*What are likely to be the 'next generation' of technological breakthroughs that will revolutionise bioscience?*

*What should be BBSRC's role in developing e-science for the solution of biological problems?*

### **(vii) Enabling Theme 3: Partnerships**

<http://www.bbsrc.ac.uk/publications/planning/strategy/theme-partnerships.aspx>

Partnerships remain essential to BBSRC's vision for bioscience. The Strategic Plan sets out how BBSRC will work with a range of partners - nationally and internationally - to co-fund research and training, support interdisciplinary and multidisciplinary science, enable impact, engage with society, and build international links.

Cross-Council and multi-funder partnerships are becoming increasingly important in providing a more holistic approach to global and UK grand challenges such as food security, climate change, health and future energy supplies. BBSRC's intention is to make even greater use of opportunities to co-fund research and training around shared priorities with a range of partners including business, government departments, third sector and international funders.

We will put additional emphasis on our relationship with our research community, in Institutes and universities, through greater engagement at all levels. We will also continue to build on our programme of public engagement, and will look for new ways for wider societal views to help shape our future strategic direction and goals.

*Questions: How can BBSRC make even better use of partnerships in delivering its vision for UK bioscience?*

*Question: Are there any UK or international partnerships that BBSRC should prioritise, or that require particular attention?*

**Any other comments?**

*Question: Is there anything else that BBSRC should consider in refreshing its Strategic Plan?*