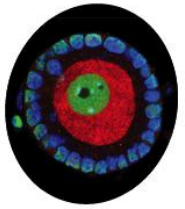
Building the UK capability in Industrial Biotechnology and Bioenergy (IBBE)



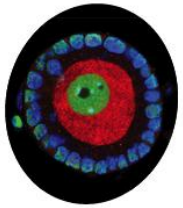
Dr Colin Miles
Head of Strategy, Industrial Biotechnology and Bioenergy

London, 21 February 2013

Today's Programme……

1. **Networks in Industrial Biotechnology and Bioenergy: a strategic overview**
   (Colin Miles, BBSRC)
2. **The application process and roles**
   (Michael Booth, BBSRC)
3. **Discussion of topic areas, practicalities and Network pitches**
   (open floor)
4. **AGRI-net – an Agri-science Chemical Biology Network**
   (Laura Barter, Imperial College London)

Networks in industrial biotechnology and bioenergy: a strategic overview



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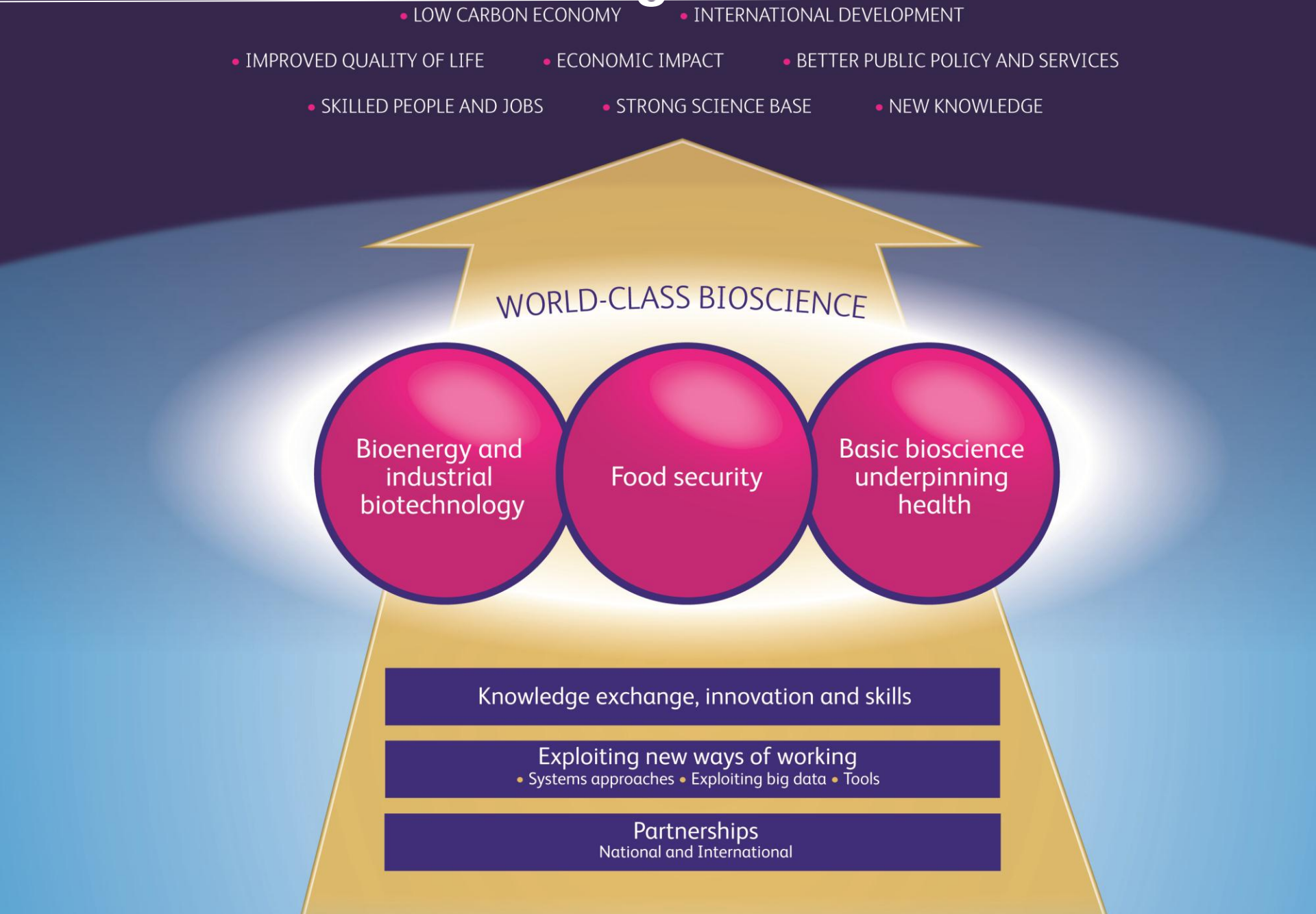
BBSRC Strategic Plan 2010-2015



Industrial Biotechnology

- Industrial biotechnology is the use of biological resources for producing and processing **materials**, **chemicals** and **energy.**

- The **resources** include plants, algae, marine life, fungi and micro-organisms.
- The **feedstocks** include renewable materials such as crop wastes, animal wastes, food and municipal wastes and perennial biomass.

- BBSRC has included the production of anti-microbial compounds and biopharmaceuticals in IBBE too.

Why is industrial biotechnology and bioenergy important?

Sustainability:

- Maintaining citizens' lifestyles in an era of increasing cost of 'fossil' hydrocarbon sources for both energy (eg petrol, diesel, aviation fuel) and feedstock chemicals (eg plastics).
- 80% reduction in greenhouse gas emissions by 2050.
- 15% of energy from renewable sources by 2020.

Value to the UK economy:

- Industrial biotechnology also has considerable value to the UK economy, estimated to be between £4B and £12B by 2025.

Health:

- Source of valuable products for improving healthcare (eg antibiotics, biopharmaceuticals)

How would BBSRC like to see IBBE in the UK (2015 and beyond) ?

- An active community deploying modern scientific approaches to IBBE with high levels of grant funding by national and international funding agencies in both research and training.
- UK becoming “partner of choice” in Europe, attracting inward investment [eg BASF].
- Key researchers engaged with business and actively involved in the translation of research leading to solutions for sustainability, energy security, jobs and economic growth in the UK.

What are the problems that prevent the realisation of this vision?

Experiences 2010-2012 have indicated that in the UK:

- The IBBE community is currently small and not optimally co-ordinated with constituent disciplines not operating in an integrated manner.
- The business supply/value chains are not properly formed.
- The range of opportunities in the IBBE area has not been fully explored.
- The community as whole lacks the resources to test new research ideas which could lead to more competitive grant proposals.

Who are we attempting to bring together using Networks ?

The academic research base:

- those with a direct interest in IBBE and those with relevant skills in bioscience, chemistry and engineering.
- Those with an interest in advising on policy, environmental, economic and social impacts of the research.

Businesses:

- with interests in understanding and using the biological processes being developed in the academic research base.
- with interest in the supply chains associated with the use of biological processes.

What subjects should the Networks address?

- BBSRC's interests are in the use of **biological processes** to bring about the conversion of feedstocks into products, integrated with appropriate engineering and physical science.
- Proposals for Networks should therefore focus on the biological processes with widespread utility.
- Specific feedstocks or products are not the primary aim of this call for Networks.

What are the benefits of Networks?

- Improved academic-business interactions: people from different disciplines and sectors meet each other regularly.
- Improved cross-disciplinary interactions and the sharing of expertise.
- Support for proof-of-concept funding to try out ideas and develop preliminary data.
- A mechanism to establish future collaborations and prepare proposals for national/international funding.
- Enhanced national/international standing of Network participants.

Proof-of-concept funding

- The resources allocated by BBSRC for Network researchers to test out ideas.
- Ideas may involve experimental, theoretical, economic or social studies on subjects relevant to the IBBE Network.
- Such studies place Network researchers in a better position to prepare proposals for future funding (eg RC responsive mode, sLOLA or equivalent, ERANets, the IB Catalyst).
- Funds are not intended for contract-type research
- **Your responsibility**: to describe the mechanism by which the proof of concept funds will be allocated

The IB Catalyst

- A fund designed to support the early translation of industrial biotechnology and bioenergy research.
- Only members of Networks will be able to apply.
- Proposals will be invited against particular science and technology challenges (to be determined).
- Funding will be awarded by a single RC-TSB Committee.
- Large scale proposals are expected to be the preferred option.
- IB Catalyst mechanism to be determined by late 2013: announcement of the competition will be made after the Network grants have been announced.

The approach in summary……..

- engage the excellent UK research base in high quality cross-disciplinary research activities relevant to IBBE;
- provide networking mechanisms that promote dialogue between the research base and business;
- provide the necessary resources through proof-of-concept funding for emerging ideas;
- provide access to appropriate project support in both basic and early translation of research through the IB Catalyst.