



Heads of University Biosciences

HUBS Winter Meeting 2013

UK Bioscience: Global Research Priorities

November 13th 2013

10:00 - 16:00

Charles Darwin House, London

Organised by Professor Judith Smith (University of Salford) and Zoë Martin (Society of Biology)

Speakers will discuss our global impact in research and the international agenda together with the national initiatives which underpin the competitiveness of UK research and training

10.00 – 10.30 Registration and Tea and Coffee

MORNING SESSION

10.30 – 10.35 *Welcome and introduction*

10.35 – 11.00 **Professor Jeremy Farrar**

Director, Wellcome Trust

Global Health Challenges

11.00 – 11.40 **Dr Sarah Perfect**

Global R & D Licensing and Collaborations Manager, Syngenta
Vice Chair, UK Plant Sciences Federation

Global Research Priorities: An Industrial Perspective

11: 40 – 12.15 **Dr David Adams**

Director of Science and Higher Education, Cogent

The Science Industry Partnership and Higher Education

A Special Interest Group of the Society of Biology, Charles Darwin House, 12 Roger Street, London, WC1N 2JU
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12.15 – 13:35 Lunch and networking

AFTERNOON SESSION

13:35 – 14.15 **Professor Melanie Welham**

Director of Science, BBSRC
University of Bath

Global Research Priorities and BBSRC: the opportunities and challenges for UK Bioscience

14.15 – 14.45 **Chris Warkup**

Director and Chief Executive, Biosciences KTN

Knowledge transfer in the biosciences - the role of KTNs

14.45 – 15.15 **Dr Kath Mackay**

Lead Technologist, Technology Strategy Board

Technology Strategy Board: Healthcare Research Priorities and the Catapult Programme

15: 15 – 15.25 *closing remarks*

15.25 – 16.00 Tea and Coffee

Meeting Close

Professor Jeremy Farrar

Director, Wellcome Trust

Global Health Challenges

Prof. Farrar introduced himself as the new Director of the Wellcome Trust having only been in post for six weeks. He succeeded Sir Mark Walport in October who was Director of the Trust for ten years before taking up the post of Government Chief Scientific Advisor.

Jeremy gave a brief overview of his background as a clinical scientist in the field of infectious diseases, working most recently in Vietnam. He then spoke about the Global Health Challenges ahead and the role the Trust can play in helping to combat these, and covered:

- The importance of International collaboration ahead of global crises
- The importance of accurate estimation of how effective our systems are at dealing with health challenges and adaption to the changing way societies are organising themselves
- Newer challenges including obesity
- The importance of adapting practices to fit with different regions
- The importance of research funders listening to their community of researchers

Jeremy finished by stressing the importance of research funders listening to their community and opened the floor to discussion and questions.

Discussion

- The role the Wellcome Trust could play in supporting smaller research groups was discussed due to concern about centres of excellence missing these smaller groups. The possibility of giving flexible grants was considered a desirable option but one that would not necessarily be easy to implement.
- Animal health and zoonotic disease was discussed as being within the Wellcome Trust remit but perhaps was not prioritised as much when compared with human health.
- The possible role of the trust in brokering relationships was considered and the importance of starting small was stressed.
- There was discussion about CDCs (Centres for Disease Control and Prevention)
- The role of the Wellcome Trust in the domains of personalised medicine and antimicrobial resistance was also discussed.
- It was considered that the Trust might be involved more in bilateral flows of ideas in the future and not just export Western health systems internationally
- The potential for the Wellcome Trust to focus more on environment and health was also considered

Dr Sarah Perfect

**Global R & D Licensing and Collaborations Manager, Syngenta
Vice Chair, UK Plant Sciences Federation**

Global Research Priorities: An Industrial Perspective

Dr Perfect introduced her role at Syngenta where she works in Research and Development, running technical teams to help scientists work and collaborate in the external environment. She outlined Syngenta's expertise in areas that include plant breeding, crop protection and seed care. Dr Perfect explained that projections indicate that by 2050 there will be 9 billion people in the world to feed and that Syngenta's ambition was to bring greater food security in an environmentally sustainable way to an increasing populous world by creating worldwide step-change in farm productivity.

Sarah summarised the drivers for change in agricultural practice including population growth, environmental stresses, and increasing crop price volatility, linking to climate change. She also spoke about the challenges facing farmers including achieving sustainability by linking technology, people and land. Dr Perfect then outlined the global research priorities of the grower which include protecting yield, increasing yield and improving yield quality. She spoke about research conducted to deal with these priority areas. Sarah also highlighted that non-bioscience research was important and that collaboration, including with the public sector was essential.

Dr Perfect then spoke about the work of the [UK Plant Sciences Federation](#), a Special Interest Group of the Society of Biology. She highlighted the Federation's upcoming report on the status of UK Plant Science, the UK PlantSci 2014 conference, and Fascination of Plants Day.

Discussion

- Technological solutions to reduce the energy demands of intensive agriculture were considered.
- The importance of increasing wheat yield in other countries to be more in line with UK yields (approximately 12 tonnes per hectare) was discussed.
- Ways of increasing the movement of researchers between academic and industry were discussed, including Royal Society Industry Fellowships and CASE studentships.
- The need to see an evidence, and risk based solution regarding genetically modified crops in Europe was also discussed.

Dr David Adams

Director of Science and Higher Education, Cogent

The Science Industry Partnership and Higher Education

Dr Adams gave an overview of Cogent, the Sector Skills Council before speaking specifically about the HE strand of the Science Industry Partnership (SIP). He explained that the SIP was a bid that was submitted by GSK and that the SIP vision was to provide a partnership of employers taking ownership of the skills needs to generate innovation and growth in the science industries. A decision regarding the bid would be announced in February 2014 and, if successful, the SIP project would commence in April 2014. He highlighted that it was an employer led initiative specific to England and the HE strand would include

- Industry Degrees
- Modular Masters (Formulation)
- Advanced Training Partnerships in Industrial Biotechnology (research).

David explained that there would be Industry Degrees in the Life Sciences comprised of 3 year intensive programmes for new entrants and 5 year part time programmes for existing employees. The degrees would stress integrated work-based learning which would include practical skills, applied maths/statistics, employability skills to focus on creativity, innovation and problem-solving. He gave a breakdown of the two different degrees which can be viewed in the slides.

David then explained that the Modular Masters would provide advanced level skills in Formulation. It would be a full masters, with individual modules and would include distance and e-learning with practical hands-on assignments.

Dr Adams gave the targets of 200 learners by September 2015 for the Industry Degrees and 200 module starts for the Modular Masters by January 2015. He also spoke about the possibility of a SIP Award/kitemark which could act as an employer-led degree accreditation. He stressed that it would need to take into account existing accreditation processes including the Society of Biology Degree Accreditation Programme.

Discussion

- There was discussion about whether the SIP might displace people from existing placements and whether the SIP might just provide an alternative degree model that was not necessarily be better or worse than existing models.

Professor Melanie Welham

**Director of Science, BBSRC
University of Bath**

[Global Research Priorities and BBSRC: the opportunities and challenges for UK Bioscience](#)

Professor Welham spoke about the three major strategic science priorities (Grand Challenges) for the BBSRC. These are:

- Food security
- Industrial Biotechnology and Bioenergy
- Basic Bioscience Underpinning Health

She also described the three crucial enabling themes of the BBSRC which are: KE Innovation and Skills; Exploiting New Ways of Working; and Partnerships. Melanie then showed the BBSRC's Spending Overview from 2011-2012 and an analysis of the research grants in the different strategic priority areas from 2012-2013 before talking about the priority areas in more detail.

She described some of the challenges to maintaining global excellence of UK Bioscience. This included the fiscal challenge of a real term decrease in funding of the Research Councils in the face of increased science investment from other nations like China, Brazil and India. Other challenges also included decreased business investment in R & D in some sectors, researcher mobility, REF as a driver of inter-institutional competition, perceived challenges of multidisciplinary research, and the need to work in a more integrated manner.

Professor Welham then outlined some solutions to maintaining this excellence and the ways the BBSRC was working to facilitate these solutions. This included making the best case for investment in bioscience to the Government, ensuring access to key infrastructure, supporting the training of the next generation of researchers, promoting new ways of working, recognising the value of partnerships, working with other research councils, and facilitating international collaboration. She then spoke about this work in more detail including the BBSRC Industry Collaboration Schemes, Joint Programmes with DFID and others, the Insect Pollinators and Tree Health and Plant Biosecurity Initiatives, Bioscience for Health Partnerships, the Agri-Tech and Industrial Biotechnology Catalysts, Partnering Awards, and the Wheat Yield Network. She then listed the current BBSRC calls related to global challenges, including any deadlines.

Discussion

- There was a discussion about how strategy might change post-REF, which was described to happen at the RCUK level. It was acknowledged that there might be some disconnect between RCUK and HEFCE.
- Negotiations between BBSRC and BIS about capital funding in 2015-16 were discussed as well as the importance of funding infrastructure

- Plans to actively solicit multidisciplinary approaches to problem solving were also considered, including in the areas of synthetic biology. BBSRC do facilitate this approach and often run workshops.
- The importance yet difficulty in measuring success and impact was spoken about.

Chris Warkup

Director and Chief Executive, Biosciences KTN

[Knowledge transfer in the biosciences - the role of KTNs](#)

Chris Warkup spoke about the activity of the Biosciences KTN, which is a not for profit company that operates as part of the Technology Strategy Board (TSB). He explained that the three essential features of knowledge transfer were money, scientific capability and a recognised need or benefit. He also stated that all of the KTN activity was driven by the question: “Will it help UK business bring new ideas and technologies to market?” and outlined the funding mechanisms of the KTN. Chris described the KTN objectives:

- To deliver improved business performance through innovation
- To drive knowledge transfer between the supply and demand side of technology-enabled markets
- To facilitate innovation and KT by providing UK businesses with the opportunity to meet and network
- To provide a forum for a coherent industry voice to government of its technology needs

He then described how the KTN works to achieve these objectives by: translating between the languages of business and science, organising knowledge exchange and networking events, operating Interest Groups, helping scope funding competitions, facilitating partnerships and consortia, mentoring funding applications and disseminating relevant information. Chris gave an overview of the KTN operating structure and spoke about the different Sector Groups: Animal Sector, Plant Sector, Industrial Biotechnology Sector and the Food Sector. He also spoke about some of the Special Interest Groups and their activity including the Algal Bioenergy and Synthetic Biology groups. Chris explained that the Bioscience KTN collaborated with other KTNs and worked with research councils. He also advised attendees to visit the [connect website](#) for further information.

Dr Kath Mackay

Lead Technologist, Technology Strategy Board

[Technology Strategy Board: Healthcare Research Priorities and the Catapult Programme](#)

Dr Mackay gave an introduction to the Technology Strategy Board (TSB) including the TSB portfolio and themes, how the TSB interacts with researchers, the TSB Healthcare Programme and the Catapult Programme.

She described how the TSB was set up in 2007 and had the role of helping UK business bring new ideas and technologies to market and has a 2013-14 budget of £440M. In its first six year the TSB launched over 2000 collaborative R & D Projects, working with almost 5000 companies and 150 research organisations, investing approximately £3bn in UK innovation projects.

She explained the TSB focus areas and themes, and the networks and Special Interest Groups the TSB operates. Kath gave an overview of where TSB funds are directed, highlighting that about 20% goes to academics. She described how the TSB works with and funds research based partners, including the BBSRC, NERC, and the MRC. She explained how the TSB Healthcare budget for 2013-14 was about £55m and spoke about the Stratified Medicine innovation Platform, Assisted Living Innovation Platform, Regeneration Medicine & Cell Therapy Programme and the Biomedical Catalyst.

Dr Mackay then spoke about the seven up and running Catapult Centres which had received £1bn of private and public investment. Catapult Centres as physical, business-focused centres that make world-leading technical capability available to business to solve their technical challenges. They aim to provide an important bridge between universities and Industry. She then showed all the catapult centre locations and stated that two new centres would be up and running from 2015/16. Kath then focused on the Cell Therapy Catapult that takes products into clinical trial, de-risking them for further investment. She explained the ways the Cell Therapy Catapult accelerated innovation and described the facilities in London. The Catapult had required an initial £70m grant from the TSB in 2012 and had additional £30m per annum investment from the TSB, other grants and industrial research. She then described the new Diagnostics for Stratified Medicine Catapult that would be fully functional by 2015.

Attendees

Name	Affiliation
Prof George Turner	Bangor University
Manisha Bolina	Bio one
James Lush	Biochemical Society
Ceri Margerison	British Ecological Society
Ruth Meyer	British Pharmacological Society
Dr Peter Watkins MSB	Cardiff Metropolitan University
Prof Ole Peterson	Cardiff University
Dr Graeme Reid	Department for Business, Innovation and Skills
Prof Gerry McKenna FSB	Heads of University Centres of Biomedical Science
Dr Alan Seddon MSB	Kingston University
Prof Yvonne Barnett FSB	Nottingham Trent University
Prof Peter Heathcote FSB	Queen Mary University of London
Prof Matthew Evans FSB	Queen Mary, University of London
Prof Alan Gange	Royal Holloway, University of London
Dr Susan Laird	Sheffield Hallam University
Prof Nicola Woodroffe	Sheffield Hallam University
Prof Mark Fielder	Society for Applied Microbiology
Dr Eva Sharpe MSB	Society of Biology
Dr Laura Bellingan FSB	Society of Biology
Prof Janey Henderson FSB	Teesside University
Dr Allan Sudlow	The British Library
Dr Astrid Wissenburg	The Open Univeristy
Dr Hilary MacQueen FSB	The Open University
Michelle Brook	The Physiological Society
Dr Arthur Nicholas	University of Bioscience Managers Association
Dr Jeremy Pritchard	University of Birmingham
Dr Anja Rott MSB	University of Brighton
Prof Antony D'Emanuele	University of Central Lancashire
Prof Andrew Lawrence	University of Chester
Prof Paul Lynch	University of Derby
Prof David Coates FSB	University of Dundee
Prof Dylan Edwards FSB	University of East Anglia
Dr Joanne Tocher FSB	University of East London

Prof Graeme Reid FSB	University of Edinburgh
Dr Maurice Gallagher	University of Edinburgh
Dr Dougie Clarke	University of Huddersfield
Prof Jon Scott FSB	University of Leicester
Prof Michael Begon	University of Liverpool
Prof Nancy Rothwell FSB	University of Manchester
Prof Martin Humphries FSB	University of Manchester
Dr Darren Mernagh FSB	University of Portsmouth
Prof Judith Smith FSB	University of Salford
David Owen	University of St Andrews
Prof Ian Kitchen FSB	University of Surrey
Prof Jane Lewis FSB	University of Westminster
Prof Taj Keshavarz	University of Westminster
Prof Deborah Smith FSB	University of York