**BIOSCIENCE FOR INDUSTRY STRATEGY PANEL**

**MEETING: 9 NOVEMBER 2009**

**SUBJECT: UPDATE ON KNOWLEDGE TRANSFER AND INDUSTRIAL COLLABORATION ACTIVITIES**

## SUMMARY

BBSRC activities to support knowledge transfer and innovation can be divided into four main areas: collaborative research; collaborative training; people and information exchange; and commercialisation and development. This paper provides an update on key progress, since the last meeting, in KT and collaborative activities not covered elsewhere in the meeting papers.

## ACTION

The Panel is invited to **NOTE** progress with KT and industrial collaboration activities.

## ANNEXES

Annex 1 BBSRC Knowledge Transfer schemes
Annex 2 Number and value of funded BBSRC Industrial Partnership Awards
Annex 3 Success rates of IPA applications by committee or initiative panel

**Innovation and Skills Group**
**November 2009**

**UPDATE ON KNOWLEDGE TRANSFER AND INDUSTRIAL COLLABORATION ACTIVITIES**

1. The following paragraphs summarise progress with BBSRC knowledge transfer schemes. More detailed information on individual schemes can be found in **Annex 1**.

**Collaborative Research**

2. A detailed update on collaborative research activities with industry is provided in **BSI 21-09**.

3. During the period 2005-2008 the total number of IPAs funded was 73, with a combined total value of £33M. The number of IPAs awarded per year has decreased from a high of 24 in 2005 to 13 in 2008, with the total value of IPAs awarded per year, apart from 2006, of between £5M - £7M. Further details of the numbers and values of IPAs submitted by Industrial partners can be found at **Annex 2**.

4. The total number of applications for IPAs from 2005-2008 was 195, of which 73 were funded, with a success rate of 37%. The success rates for IPAs have been declining from 42% in 2005 to 30% in 2008. Further details of success rates of IPAs by committee or initiative panel can be found at **Annex 3**.

**Collaborative Training**

5. Two new awards were made under the **Modular Training for Industry** (MTI) Programme in May 2009:

   - Modular histotechnology course – The Royal Veterinary College (Professor A Williams)
   - Masters-level training programme in animal welfare and livestock production – University of Oxford (Professor M S Dawkins)

   Two applications were received in the Autumn round and these are currently undergoing assessment.

**People and Information Exchange**

6. Two new awards were made under the **Industry Interchange Programme** (IIP) Programme in May 2009:

   - University College, London – Pfizer Inc
   - The University of Manchester – Imagen-Biotech Ltd

   Five applications were received for the autumn call and are currently undergoing assessment.

7. The **Parliamentary Fellowships** programme has been renamed Policy Placements to reflect the wider range of public bodies and learned societies who are now on board. The programme will enable BBSRC-funded PhD students to take a three month secondment to the Parliamentary Office of Science and Technology, the Members Research Service (at WAG), Scottish Parliament Information Centre or The Royal Society Policy Centre.

   The 2009 call for applications closed in September with the receipt of approximately 35 applications. Short listing and interviewing will take place this

autumn/winter and successful candidates will be expected to take up their placements between February and May 2009

8. The **BBSRC Industrial Impact Fellowships:** is a new scheme that seeks to enable highly skilled research and technology leaders from industry to transfer their skills and experience into an academic setting. One award was made under the first call:

   - Mark Christie – King's College London

   The second call is now open with a closing for applications of 11 November 2009.

9. **The Industry Fellowship Scheme:** Two awards were made under the first call for 2009:

   - Professor Mathie, University of Kent – Pfizer Global R&D
   - Dr Elgar, Scientifica Ltd – University College London

**Commercialisation and Development**

10. The **Biotechnology Young Entrepreneurs Scheme:** the 2009 competition closed with a record number of entries. The regional workshops are currently underway, including for the first time, an "East of England" workshop (11-13 November 2009), supported by the East of England Development Agency and Eastern Region Biotechnology Initiative (ERBI Ltd). The final is scheduled to take place in London on 14 December 2009.

11. Five **BBSRC/RSE Enterprise Fellowships** were awarded in the spring call:
    - Dr Burçak Alp, University College, London
    - Dr Simon Baker, University of York
    - Dr Nir Grossman, Imperial College, London
    - Dr Matthew Wilcox, Newcastle University
    - Dr Liisa Van Vliet, University of Cambridge

    The autumn call closed on 13 October 2009 with five applications which are currently under assessment.

12. The second call of 2009 for applications under the **Follow-on Funding** scheme closed in June with the receipt of 19 applications, 7 of which were funded with a total value of £790k.

13. Since the last update, a total of 27 awards have now been made under the **Follow-on Funding Pathfinder** Scheme, with a total value of £257k.

**BBSRC Incentive Schemes**

14. The second Innovator of the Year competition is now open with a closing date of 16 December 2009. This year, awards will be made under three categories**:**
    - Commercial innovator
    - Social innovator
    - Most promising innovator

    A prize of £5,000 will be made directly to the winner of each category, with the overall Innovator of the Year receiving a further £5,000.

## ANNEX 1: BBSRC KNOWLEDGE TRANSFER SCHEMES

**Industrial Partnership Awards** are science-base led research grants that have a 10% cash contribution from an industrial partner. IPA projects judged to be of appropriate quality would normally be funded in preference to a standard grant of equivalent scientific merit, due to the significant user interest demonstrated by the industrial contribution to the cost of the project. Further information can be found at: http://www.bbsrc.ac.uk/business/collaborative_research/industrial_partnership_awards.html

The **LINK Scheme** is aimed at promoting academic/industrial research collaboration in a pre-competitive research area. The initiative stimulates collaboration between partners from industry and the research community by providing up to 50% of the funding for joint projects in key scientific areas, the remaining 50% of the project costs coming from the industrial partner. BBSRC can support LINK projects in any area of BBSRC's remit. Further information can be found at: http://www.bbsrc.ac.uk/business/collaborative_research/link/index.html

**Research and Technology Clubs** support a research portfolio of strategic importance to industry. The research is funded through the combined investment of BBSRC, member companies, and in some cases, other Research Councils.

- THE **BIOPROCESSING RESEARCH INDUSTRY CLUB (BRIC),** A £14M, 5-YEAR PARTNERSHIP BETWEEN BBSRC, EPSRC AND A CONSORTIUM OF LEADING COMPANIES (£1M) SUPPORTS INNOVATIVE BIOPROCESSING-RELATED RESEARCH, INCLUDING THAT NEEDED FOR THE MANUFACTURE OF COMPLEX BIOPHARMACEUTICALS. FURTHER INFORMATION CAN BE FOUND AT:

  HTTP://WWW.BBSRC.AC.UK/BUSINESS/COLLABORATIVE_RESEARCH/INDUSTRY_CLUBS/BRIC/INDEX.HTML

- The **Diet and Health Research Industry Club (DRINC),** a £10M, 5-year partnership between BBSRC and a consortium of leading companies, supports high quality research into diet and health to obtain underpinning knowledge that will, enable in the longer term, the UK food industry to develop and deliver new foods of benefit to the consumer. Further information can be found at: http://www.bbsrc.ac.uk/business/collaborative_research/industry_clubs/drinc/index.html

- The **Integrated Biorefinery Technologies Initiative Research and Technology Club (IBTI Club),** is a £5M, 5-year partnership between BBSRC, a consortium of leading companies and the Bioscience for Business Knowledge Transfer Network. The Club aims to support high quality research into the development of biological processes for the production of chemicals, materials and polymers to replace petro-chemical derived sources and thereby reduce our current dependence on fossil fuels. Further information can be found at: http://www.bbsrc.ac.uk/business/collaborative_research/industry_clubs/ibti/index.html

The **Modular Training for Industry Programme** enables the provision of industrially-relevant training for graduates working in industry. Evidence of a clear

industrial need for the training is a key requirement of funding. Further information can be found at:
http://www.bbsrc.ac.uk/business/training/modular_training.html

**Industrial CASE Studentship Awards** are PhD studentships made to the company collaborator rather than the academic giving the company more freedom to select a research topic relevant to its own priorities, and choose the academic partner. Companies involved in the scheme gain closer control of their portfolio of university-based research as well as gaining new collaborations and direct experience of potential company recruits. Further information can be found at:
http://www.bbsrc.ac.uk/business/training/industrial_case.html

The **Biotechnology Young Entrepreneurs Scheme** aims to raise awareness of the commercialisation of bioscience research amongst postgraduate and postdoctoral researchers. Participants compete in teams to develop a hypothetical business idea with the help of expert mentors from the biotechnology sector. Workshops are held throughout the UK, feeding into a National Final with a prize of £1000 for the winning team. Further information can be found at:
http://www.bbsrc.ac.uk/business/commercialisation/biotechnology_yes.html

The **Research Councils Business Plan Competition** aims to help researchers turn great research into great business. Researchers provide the idea, and the Research Councils provide the skills, knowledge and support needed to develop a business plan. This is provided through expert trainers, coaches and mentors. In addition, there is an opportunity to win funds to help with the development of the business idea. The competition is open to researchers based in UK Higher Education Institutions or Public Sector Research Establishments. Further information can be found at:
http://www.bbsrc.ac.uk/business/commercialisation/business_plan.html

To encourage awareness of Intellectual Property (IP) and commercialisation issues within the research community, BBSRC provides support for **IP Workshops** organised by Technology Transfer Offices in Universities and Institutes. The workshops inform existing and potential BBSRC-funded scientists of issues surrounding the identification, protection and exploitation of IP and can cover any aspect of the commercialisation process. Further information can be found at:
http://www.bbsrc.ac.uk/business/commercialisation/ip_workshops.html

**The Royal Society of Edinburgh Enterprise Fellowships** support researchers employed by a UK Higher Education Establishment or BBSRC-sponsored Institute, who want to be actively involved in commercialising their own research. The business idea may be in any area of BBSRCs remit provided most of the original research was funded by BBSRC. Fellowships include business training to help Fellows develop their business plan, a year's salary to allow Fellows to concentrate on developing the commercial potential of their research, and access to mentors, business experts and professional advisors. Further information can be found at:
http://www.bbsrc.ac.uk/business/commercialisation/enterprise_fellowships.html

The **Follow-on Funding Scheme** is designed to help demonstrate the commercial potential of ideas arising from Research Council-funded research. It provides financial support at the very early or pre-seed stage of turning research outputs into a commercial proposition. Further information can be found at:
http://www.bbsrc.ac.uk/business/commercialisation/follow_on.html The **Follow-on Funding Pathfinder Scheme** enables potential follow-on funding applicants to secure small amounts of funding to carry out preliminary commercial activities. These activities will help to develop a clearer understanding of the commercial potential of

the outputs of a research grant and assist with the development of a full follow-on funding application. Further information can be found at: http://www.bbsrc.ac.uk/business/commercialisation/follow_on_pathfinder.html

The **Industry Fellowship Scheme** promotes collaboration between the UK science base and industry by supporting the exchange of mid-career researchers either from the science base to industry or vice-versa. The Fellowships are administered by the Royal Society and co-sponsored by the BBSRC. Further information can be found at: http://www.bbsrc.ac.uk/business/people_information/industry_fellowship_scheme.html

**Knowledge Transfer Partnerships** serve as a mechanism to transfer knowledge and to develop personnel for industrial careers. Postgraduates and Postdocs are recruited to innovative projects within industry and are jointly supervised by the participating industrial and academic partners. Government support is delivered through a grant to the academic partner. In addition, a contribution from the participating company fully covers an HEI's costs of participation in the scheme. Further information can be found at: http://www.bbsrc.ac.uk/business/people_information/knowledge_transfer_partnerships.html

A **Knowledge Transfer Network** is a single national over-arching network in a specific field of technology or business application. They bring together organisations such as universities, businesses, research and technology organisations and the finance community to enable the exchange of knowledge and stimulate innovation. Further information can be found at: http://www.bbsrc.ac.uk/business/people_information/knowledge_transfer_networks.html

The **Industry Interchange Programme** supports the short-term exchange, in either direction, of researchers between the science base and industry. The objective of the Programme is to support interchanges that provide strategic advantage to the UK science base and industry arising from reciprocal access to facilities, expertise and/or knowledge, and an increased understanding of scientific issues of common concern. Individual awards are likely to be in the range of £10,000 - £30,000 and unlikely to exceed £50,000. Further information can be found at: http://www.bbsrc.ac.uk/business/people_information/industry_interchange.html

**Policy Placements** enable BBSRC-funded PhD students to undertake a 3-month secondment to the Parliamentary Office of Science and Technology (POST). During his/her time in Parliament, the Fellow will work on an area of science policy by: producing a POSTnote; or contributing to a longer report; or assisting a select committee in a current inquiry; and/or related activities. The Fellowship is open to all BBSRC-funded postgraduate students registered for a PhD, who are currently engaged in their penultimate or final year of study at the time of application. Fellows will receive an extension to their PhD in addition to continued stipend payments during the secondment. Further information can be found at: http://www.bbsrc.ac.uk/business/people_information/parliamentary_fellowships.html

**Industrial Impact Fellowships** aim to enhance the impact of BBSRC funded research by enabling highly skilled research and technology leaders from industry to bring their industrial skills, management, and commercial experience to enhance collaboration and partnership between the academic and industrial sectors. Fellows would be expected to demonstrate how their industrial background and research will benefit the work of a BBSRC-funded centre, institute, or academic department with significant BBSRC-fund research programme. Further information can be found at:

http://www.bbsrc.ac.uk/business/people_information/industrial_impact_fellowships.html

The **Innovator of the Year** is an annual competition aimed at celebrating the successes of BBSRC-supported scientists in delivering economic and/or social impact from their research. Scientists (either individuals or a team) will be required to submit an application detailing their activities that have resulted in Economic and / or Social impact. The best applications will be selected to go forward and participate in the Final. Further information can be found at:
http://www.bbsrc.ac.uk/business/impact_incentive/innovator.html

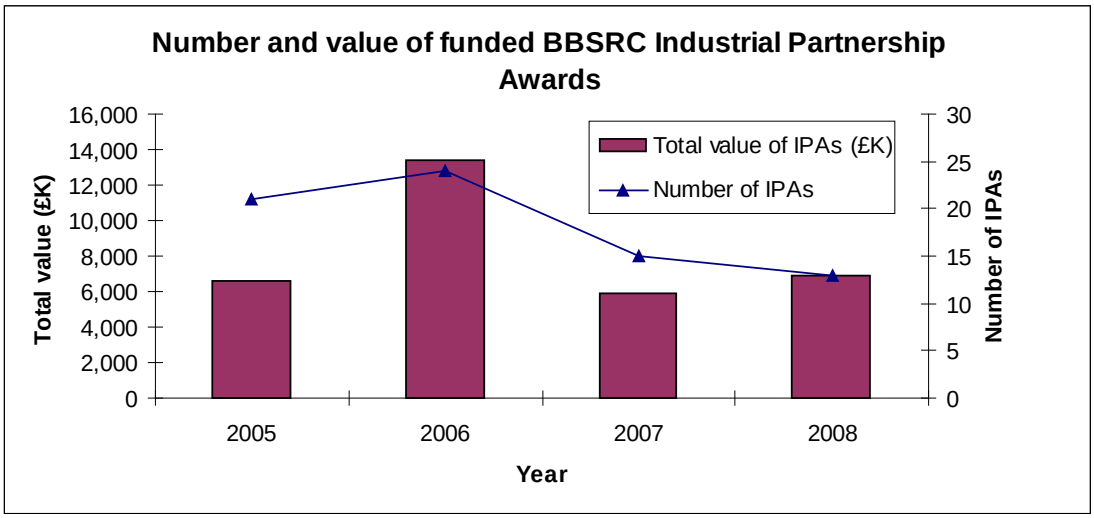
The **Excellence with Impact Awards** will provide reward and esteem to those University Departments which, over the next two years, are most active in embedding a culture that recognises the importance of "impact" - both economic and social - alongside research excellence. The competition will run from December 2008 to December 2010. Departments are invited to submit an Expression of Interest form describing how it plans to introduce a culture within the Department that recognises the importance of economic and / or social impact alongside excellence in research. At the end of the competition, Departments will be invited to submit a Final Report describing the progress in embedding an 'Impact Culture' and summarising the outcomes. Further information can be found at:
http://www.bbsrc.ac.uk/business/impact_incentive/excellence_impact.html

## ANNEX 2: Number and value of funded BBSRC Industrial Partnership Awards

### Table of the number and value of funded BBSRC IPAs from 2005-2008

| Year of IPA award | Number of IPAs | Total value of IPAs (£K) |
|---|---|---|
| 2005 | 21 | 6,596 |
| 2006 | 24 | 13,421 |
| 2007 | 15 | 5,928 |
| 2008 | 13 | 6,852 |
| **Grand Total** | **73** | **32,797** |

### Figure of the number and value of funded BBSRC IPAs from 2005-2008




### IPA Industrial Partners by year

| Year | Industrial Partner | Number of IPAs | Total value of IPAs (£K) |
|---|---|---|---|
| 2005 | Archimedes Pharma Limited | 1 | 255 |
| | Bioniqs Ltd | 1 | 209 |
| | Cambridge Antibody Technology Plc | 1 | 236 |
| | Cytokinetics Inc | 1 | 299 |
| | EWOS Ltd | 1 | 350 |
| | GE Healthcare Biosciences | 1 | 348 |
| | Genus Plc | 1 | 331 |
| | GlaxoSmithKline | 3 | 1,284 |
| | Lonza Biologics plc | 1 | 288 |
| | MedImmune Ltd | 1 | 236 |
| | Multiple Partners | 3 | 1,193 |
| | Pfizer | 2 | 526 |
| | Shimadzu Corporation | 1 | 246 |
| | Syngenta | 1 | 282 |
| | Unilever | 2 | 513 |
| 2006 | Akubio | 1 | 351 |
| | AstraZeneca | 1 | 608 |
| | BASF AG | 2 | 919 |
| | CIMMYT | 1 | 650 |

| | | | |
|---|---|---|---|
| | C-Tech Innovation Ltd | 1 | 278 |
| | GlaxoSmithKline | 1 | 344 |
| | Inpharmatica Ltd | 1 | 260 |
| | Multiple Partners | 7 | 3,255 |
| | TMO Renewables | 1 | 644 |
| | Pfizer | 3 | 3,262 |
| | Syngenta | 2 | 874 |
| | TMO-Biotech Ltd | 1 | 338 |
| | Unilever | 2 | 1,638 |
| 2007 | Eli Lilly and Company Limited | 1 | 192 |
| | Intervet UK Limited (Walton Manor) | 1 | 436 |
| | Mantelum Ltd | 1 | 299 |
| | Masterfoods Ltd | 1 | 388 |
| | Multiple Partners | 1 | 358 |
| | Merial Animal Health | 1 | 356 |
| | Novartis UK Ltd | 1 | 433 |
| | Novoplant GmbH | 1 | 423 |
| | Pfizer | 5 | 2,197 |
| | SABMiller plc | 1 | 506 |
| | Unilever | 1 | 340 |
| 2008 | AstraZeneca | 1 | 277 |
| | British Potato Council | 1 | 323 |
| | Cobb Vantress Inc | 1 | 312 |
| | DSM Research | 1 | 320 |
| | GlaxoSmithKline | 1 | 591 |
| | Multiple Partners | 3 | 2,033 |
| | Noble Foods Ltd | 1 | 581 |
| | Syngenta | 3 | 1,258 |
| | Yara UK Ltd | 1 | 1,157 |
| **Grand Total** | | **73** | **32,797** |

## IPAs by BBSRC Committee

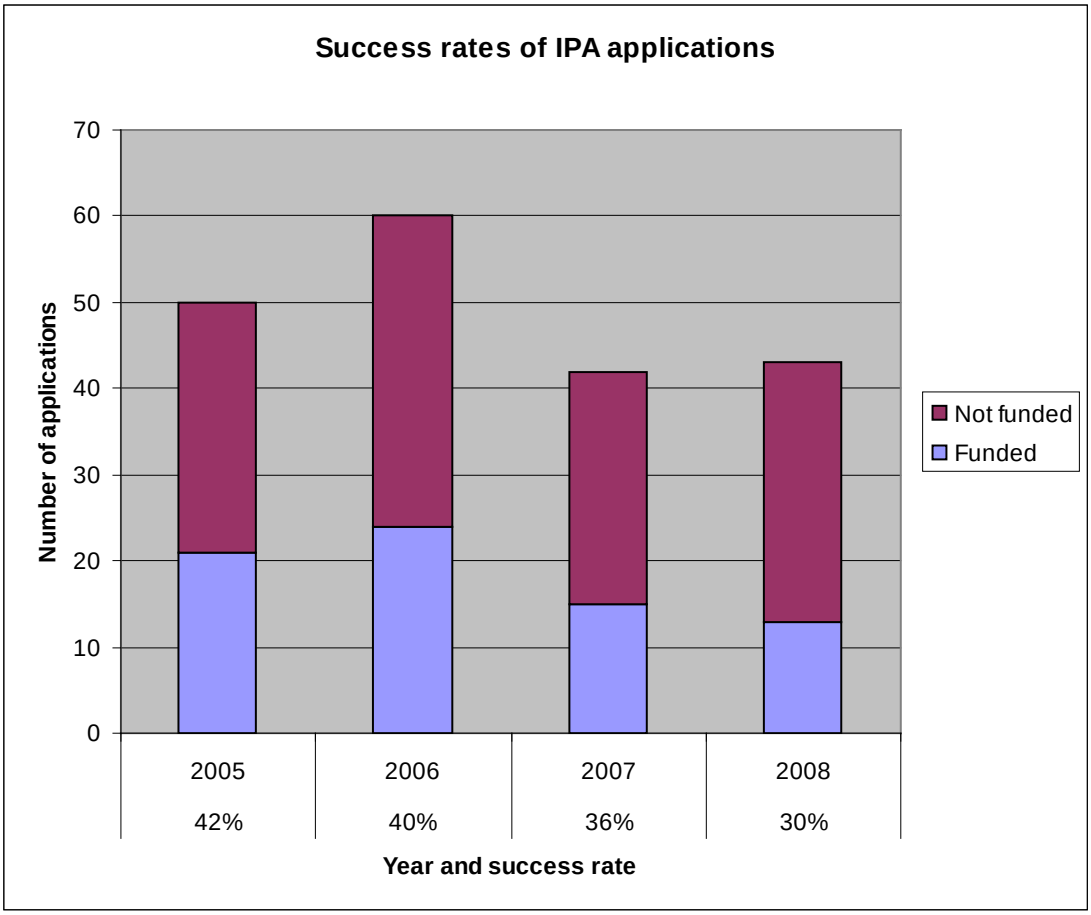
| **Committee (IPAs awarded 2005-2008)** | **Number of IPAs** | **Total value of IPAs (£K)** |
|---|---|---|
| Agri-food | 19 | 9,084 |
| Animal Sciences | 19 | 6,695 |
| Biochemsitry & Cell Biology | 7 | 2,599 |
| Biomolecular Sciences | 0 | 0 |
| Engineering & Biological Systems | 10 | 3,523 |
| Genomics & Developmental Biology | 2 | 578 |
| Plants & Microbial Sciences | 9 | 4,910 |
| **Total** | **66** | **27,389** |

## ANNEX 3: Success rates of IPA applications by committee or initiative panel

### Table of the success rates of IPA applications, 2005-2008

| Year | | Number of IPAs applied for/funded | Success Rate (%) |
|---|---|---|---|
| 2005 | Applied for | 50 | 42 |
| | Funded | 21 | |
| 2006 | Applied for | 60 | 40 |
| | Funded | 24 | |
| 2007 | Applied for | 42 | 36 |
| | Funded | 15 | |
| 2008 | Applied for | 43 | 30 |
| | Funded | 13 | |
| **Total 2005-08** | **Applied for** | **195** | **37** |
| | **Funded** | **73** | |

### Figure of the success rates of IPA applications, 2005-2008




### Distribution of IPA applications and awards by committee or initiative panel (2005-2008)

| Committee/Panel | Year | Decision | Number of IPAs | Total value of IPAs (£K) |
|---|---|---|---|---|
| Agri-food | 2005 | Funded | 5 | 1,549 |
| | | Not funded | 13 | |
| | 2006 | Funded | 6 | 1,732 |
| | | Not funded | 7 | |
| | 2007 | Funded | 2 | 789 |
| | | Not funded | 7 | |
| | 2008 | Funded | 6 | 5,014 |
| | | Not funded | 5 | |
| Animal Sciences | 2005 | Funded | 5 | 1,810 |
| | | Not funded | 4 | |
| | 2006 | Funded | 4 | 1,090 |
| | | Not funded | 6 | |
| | 2007 | Funded | 9 | 3,489 |
| | | Not funded | 5 | |
| | 2008 | Funded | 1 | 306 |
| | | Not funded | 7 | |
| Biochemistry & Cell Biology | 2005 | Funded | 3 | 647 |
| | | Not funded | 1 | |
| | 2006 | Funded | 2 | 958 |
| | | Not funded | 0 | |
| | 2007 | Funded | 1 | 400 |
| | | Not funded | 1 | |
| | 2008 | Funded | 1 | 594 |
| | | Not funded | 3 | |
| Bioenergy Initiative | 2008 | Funded | 4 | 11,075 |
| | | Not funded | 1 | |
| Biomolecular Sciences | 2005 | Funded | 0 | |
| | | Not funded | 1 | |
| | 2006 | Funded | 0 | |
| | | Not funded | 1 | |
| | 2007 | Funded | 0 | |
| | | Not funded | 3 | |
| | 2008 | Funded | 0 | |
| | | Not funded | 3 | |
| Combating Endemic Diseases of Farmed Animals | 2006 | Funded | 3 | 4,782 |
| | | Not funded | 6 | |
| Crop Science Initiative | 2006 | Funded | 4 | 1,896 |
| | | Not funded | 2 | |
| Engineering & Biological Systems | 2005 | Funded | 5 | 988 |
| | | Not funded | 9 | |
| | 2006 | Funded | 2 | 1,566 |
| | | Not funded | 7 | |
| | 2007 | Funded | 1 | 340 |
| | | Not funded | 4 | |
| | 2008 | Funded | 2 | 629 |
| | | Not funded | 2 | |
| Genes & Developmental Biology | 2005 | Funded | 2 | 578 |
| | | Not funded | 1 | |
| | 2006 | Funded | 0 | |
| | | Not funded | 3 | |
| | 2007 | Funded | 0 | |

| | | | | |
|---|---|---|---|---|
| | | Not funded | 2 | |
| | 2008 | Funded | 0 | |
| | | Not funded | 4 | |
| Plant & Microbial Sciences | 2005 | Funded | 1 | 240 |
| | | Not funded | 0 | |
| | 2006 | Funded | 3 | 1,408 |
| | | Not funded | 4 | |
| | 2007 | Funded | 2 | 926 |
| | | Not funded | 5 | |
| | 2008 | Funded | 3 | 2,336 |
| | | Not funded | 1 | |