

Food and agriculture post-Brexit: the post graduate research environment

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Presentation to the 2017 AFCP Annual Forum:

The role of charities in post-Brexit UK food and farming

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University of Hertfordshire, The Oval, College Lane Campus,
Hatfield, AL10 9AB

Centre for Agriculture, Food and Environmental Management



Partnership with
Royal Veterinary College, Rothamsted Research & Oaklands College,

“to develop research and learning in agriculture and food”

Look at:

- **Context** for current **post graduate research**
- **Agri-Food Research funding environment in UK** in recent years
- **Innovation** and research **funding**
- Illustrate with **examples** from our work at **UH**
- What this tells us about **needs and future for post graduate learning & research**

The bigger picture...

- **Feeding the 9+ billion:** future of food & food supply agenda
- **UN Sustainable Development Goals (SDGs)** e.g.
 - SDG 2 = End hunger
 - SDG 12 = Sustainable consumption and production
- What will be **Post Brexit farming & food priorities & policies** post CAP?
- **New research agendas** to fit new Policy goals?
- But research is national & global = **international collaboration** is still vital

British State funding of agriculture

- 2000s seen as “mature science” (Defra)
- Post 2007-8; Period of “**austerity**” – impact upon funded research
- But **mini-renaissance** of agriculture as research area for Government funding – policy led by:
 - **Agri-tech**
 - **Food security**
- UK international economic competitiveness & export potential = driver
 - Global Challenges Research Fund
- **Multidisciplinary** character
 - always but increasing?

Undergraduate & Postgraduate agriculture students

- In 2015 (UCAS data)
- **Undergraduate acceptances** on UK agriculture courses = **1015 students** (950 home)
- **Post graduates** are coming from a variety of undergraduate subjects & disciplines e.g. biological sciences; engineering etc.

Agri-tech strategy goals

- **Medium term**

- Centres for Agricultural **Innovation** helping bring **new technologies to market**
- New **partnerships** developing with emerging and developing **economies**
- UK and **overseas private sector investment in R&D and commercialisation** increasing
- UK **agri-tech export** performance is improving



Industrial Strategy: government and industry in partnership



A UK Strategy for Agricultural Technologies

July 2013

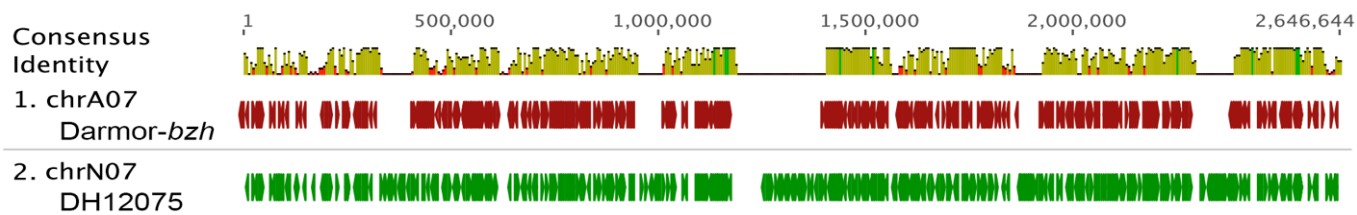


- Reflects **cross RCUK** & Government Department funding: **BBSRC led**
- *Resilience of the UK Food System in a Global Context* programme
 - 10 projects funded
 - **Food systems** thinking coming to the fore
 - Still lacking enough **consumption** focus?

BBSRC Strategic framework for agriculture and food security: 6 priorities



Applying Genomics to breeding plant resistance: Oil Seed Rape and fungal pathogens



Defra funded *Oil Seed Rape Improvement Network (OREGIN)*



About OREGIN

› Project outline

› Links

Information

Linkage map

Trait data

Pathogen Collection

Functional Genotypes

Contact OREGIN

Home > About OREGIN

About OREGIN

Welcome to OREGIN

Providing a pre-breeding pipeline, to integrate sustainability traits into Oilseed Rape cultivars.

The Oilseed Rape Genetic Improvement Network (OREGIN) has been successful in achieving initial objectives of providing a focus for the UK Oilseed Rape genetic improvement R&D and stakeholder communities, and a mechanism for prioritising research requirements.



The principal activities of the OREGIN project are the generation, gathering, collation and dissemination of information and genetic resources for the benefit of the stakeholders. Ongoing discussions amongst the R&D and breeder communities have identified the highest priority requirements in the context of Defra strategic objectives. It is recognised that other trait areas such as pest resistance may be of increasing commercial priority and affect the long-term sustainability of the crop.

The components of the OREGIN pre-breeding platform will also provide a foundation

Contact OREGIN

Get in touch with us and find out the latest developments

Autonomous Pathogen Detection system for food security developed at University of Hertfordshire



Contact

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29 June 2016

The University of Hertfordshire's MEMS Group recently showcased their latest biodetection system on the Fera Science stand at the leading technical event for the UK arable industry, 'Cereals 2016'.

The prototype crop-disease warning system has been developed as part of a joint *BBSRC* and *Innovate UK* funded consortium and has been in development for the last 18 months. Working closely with their consortium partners *Optisense Ltd*, *Fera Science Ltd* and *Bayer CropScience*, the University of Hertfordshire MEMS Group

Innovation new wave of funded research?

Strategic Innovation Audits

East of England Science and Innovation Audit

Summary

A Science and Innovation Audit Report
sponsored by the Department for Business,
Energy and Industrial Strategy

21st September 2017

*East of England Science and Innovation Audit
Appendix 2 – Agri-tech*



The Norwich Biosciences DTP is one of 14 across the UK and supports over 600 PhD projects across the Norwich Research Park over a three year period. The John Innes Centre is coordinating the programme, which also involves the University of East Anglia, The Sainsbury Laboratory, The Quadram Institute Bioscience (formerly the Institute of Food Research) and The Earlham Institute (formerly The Genome Analysis Centre).

- Hertfordshire Science Partnership will fund 30 PhD researchers in agri-technology and drug development on a new four-year programme towards a 'PhD with Industrial Experience' degree. The funding has been secured by the University of Hertfordshire, including £2.5m from the Hertfordshire Growth Deal via the Hertfordshire Local Enterprise Partnership and £1.5m of ERDF funding
- The Centre for Agriculture, Food and Environmental Management (CAFEM) is a partnership established in 2015 between the University of Hertfordshire, Royal Veterinary College, Rothamsted Research and Oaklands College. It is a virtual Centre with a focus on collaborative research between the partners and delivery of undergraduate and post graduate education.



Hertfordshire
Local Enterprise Partnership

NEWANGLIA
Local Enterprise Partnership
for Norfolk and Suffolk



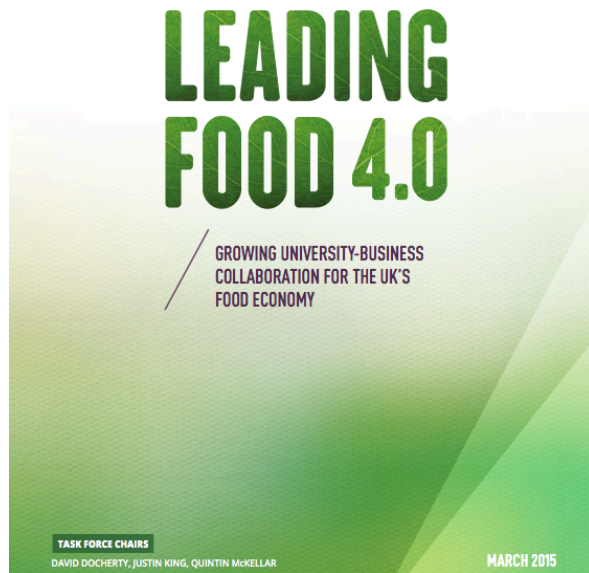
Sponsored by:



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Universities & Business Strategy: Food 4.0



- *The Food 4.0 revolution is likely to be **knowledge-intensive, collaborative and integrative**. It may be built on **big data, nano-technologies, genomics, and communications technologies**.*
- *.... **renewables, ecological policies, better consumer education and environmental literacy**.*
- *However it emerges, the **UK's food sector** wants to be a leader in this new world. To lead, **firms must benefit from highly talented graduates** as well as from **world class science and inventiveness**.*

UH Food Research Theme



Food is essential for human existence and provides a **touchstone for research that promotes human and societal progress**, while ensuring the **sustainability of the earth's natural resources and ecosystems**.

The **economy and society** face grand challenges in terms of **securing food productivity and resilience**, while delivering positive impacts upon the **environment, public health, and social relations**.

Our research applies **science and technology**, and **social and cultural investigation** to food **consumption and production**, forging **cross disciplinary collaborations** between our different areas of expertise in order to inform and support industry, policy makers, the professions and civil society to meet these challenges.

UH Food Research funding...

Key projects



Retailers have role in obesity crisis

Food retailers have a major role to play to encourage healthier food choices, as pupils travel further afield to buy foods high in fat and sugar...

[Read more about retailers have role in obesity crisis](#)



Securing future food production

Understanding how plants defend themselves against pathogens that cause crop diseases can help scientists breed new, more successful disease-resistant crops...

[Read more about securing future food production](#)



Protecting the world's crops

Research is looking to identify and develop novel environmentally-sustainable strategies to control plant pests to ensure global food production and security...

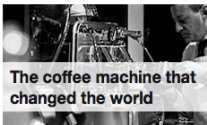
[Read more about protecting the world's crops](#)



Eating beyond the school gate

More than three quarters of young people buy food or drink beyond the school gate at least twice a week...

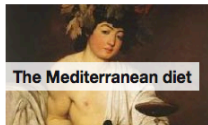
[Read more about eating beyond the school gate](#)



The coffee machine that changed the world

The evolution of the E61 and its impact upon Italian coffee culture, using materials from the Faema archives...

[Read more about the coffee machine that changed the world](#)



The Mediterranean diet

Many foods in the Mediterranean diet including vegetables, pulses, whole grains and olive oil contain protective substances that help counter alcohol's effects...

[Read more about the mediterranean diet](#)

•Charitable Trusts and Foundations:

Felix Cobbold Agricultural Trust

Morley Foundation

Chadacre Agricultural Trust

Perry Foundation

Salisbury Pool

John Oldacre Foundation

•UK Biological and Biotechnological Research Councils (**BBSRC**)

Innovate UK

Agri-Tech programme

European Research Area Coordinated Action Plant Science

•UK Economic and Social Research Council (**ESRC**)

•UK Agriculture and Horticulture Development Board (**AHDB**)

•UK Department for Food, Environment & Rural Affairs (**Defra**)

•British Council UK India Education Research Initiative

•European Union **Horizon 2020** programme

•European Commission's **Joint Research Centre**

Food systems perspective



Food Systems Dynamics

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The goal of the VALUMICS project is to provide decision makers throughout food value chains with a comprehensive suite of approaches and tools that will enable them to evaluate the impact of strategic and operational policies to enhance the resilience, integrity and sustainability of food value chains for European countries.

EU Horizon 2020: sustainable food security theme funded

<http://valumics.eu/>

To sum up...

- UK food and farming **policy priorities** post-Brexit
 - **some funding to follow** food and farming policies
 - **BUT change may not be** great in terms of funding priorities
 - will be part of **international research efforts** – global & local still true
- Post graduate research will address **contribution to the food economy & the bio-economy**
- **Agricultural & food research** address **societies' food consumption** needs
 - **food nutrients and essential minerals** as outputs of agricultural crop improvements
- Creative **combinations of funding streams**
- **Charities** will have a **key role** as **co-funder** with **BBSRC projects etc.**