



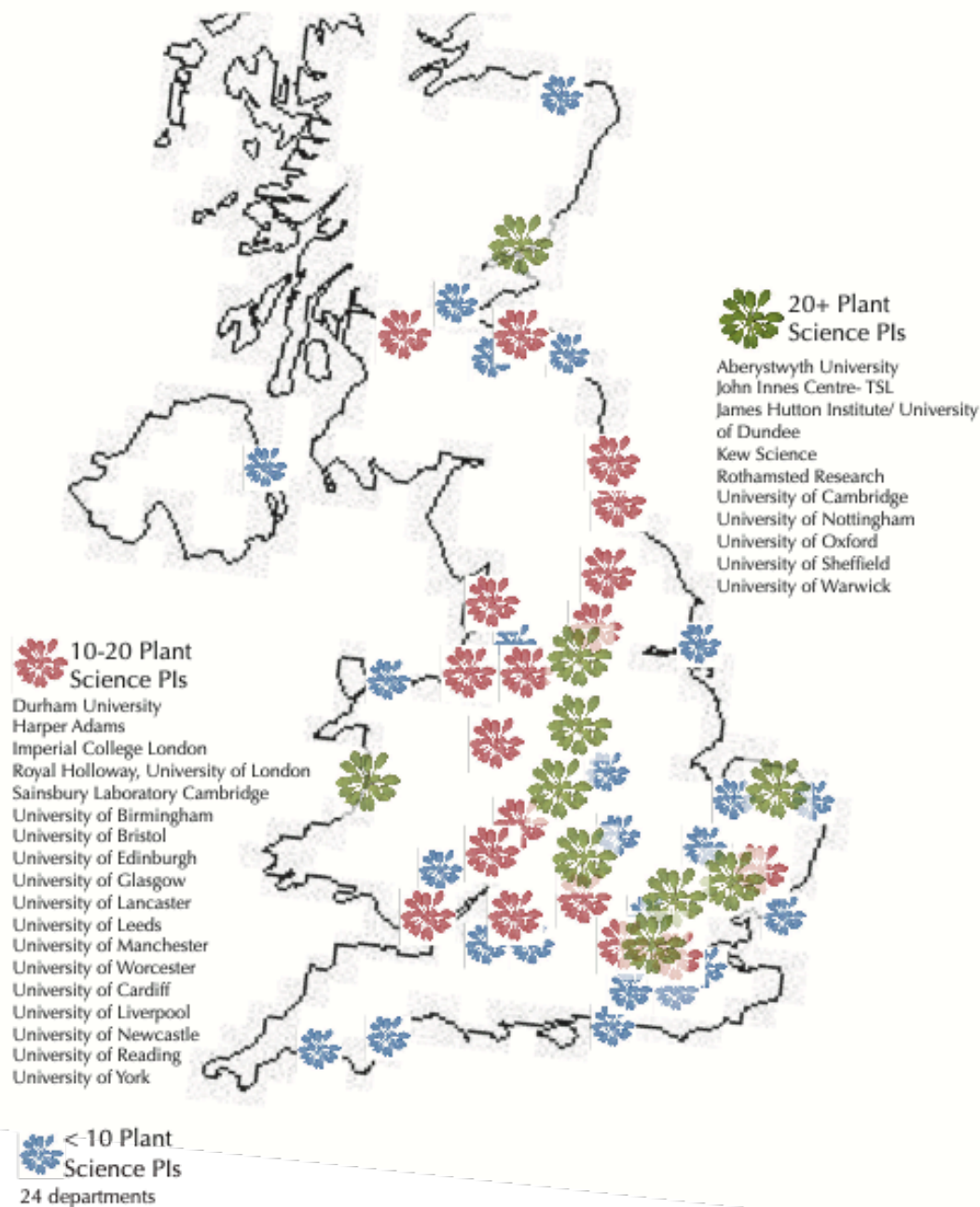
# **Developing Plant Science Collaborations between the United Kingdom and China.**

ICAR2019 Workshop  
June 17<sup>th</sup> 2019





# Plant Science Research in the UK





# UK Plant Science funding



<https://bbsrc.ukri.org/research/briefings/plant-science/>

## > Institutional Support

- *John Innes Centre*
- *IBERS*
- *Rothamsted Research*
- *Earlham Institute*

- **Responsive mode postdoctoral grants (~£500K)**
- **Doctoral Training Programs for PhD students**
- **Special funding schemes**
  - *Designing Future Wheat*
  - *Bacterial Plant Diseases*
  - <https://bbsrc.ukri.org/funding/>





# UK Plant Science funding



<https://www.newtonfund.ac.uk/>

Overseas opportunities



<https://www.gatsby.org.uk/plant-science>

Institutional Support

PhD studentships

Plant science education



<https://nerc.ukri.org/>

Similar opportunities to those available at BBSRC  
but focused on the Environment



<https://www.leverhulme.ac.uk/>

Research Fellowships





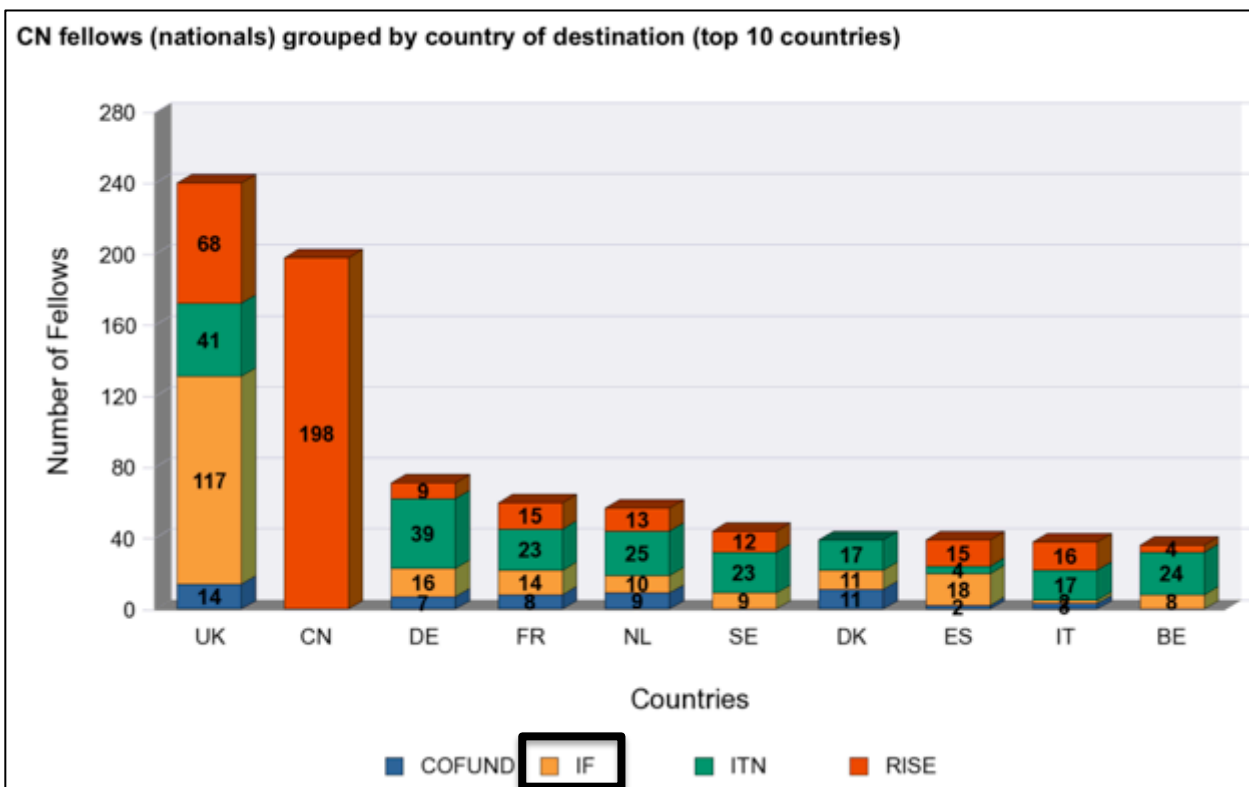
# European Opportunities for Chinese Researchers



## Marie Curie Individual Fellowships

<https://cdn1.euraxess.org/worldwide/china/marie-curie-individual-fellowships-call-open-2019>

The call is now open and will close on **11 September 2019**.





# Major UK Plant Science Departments



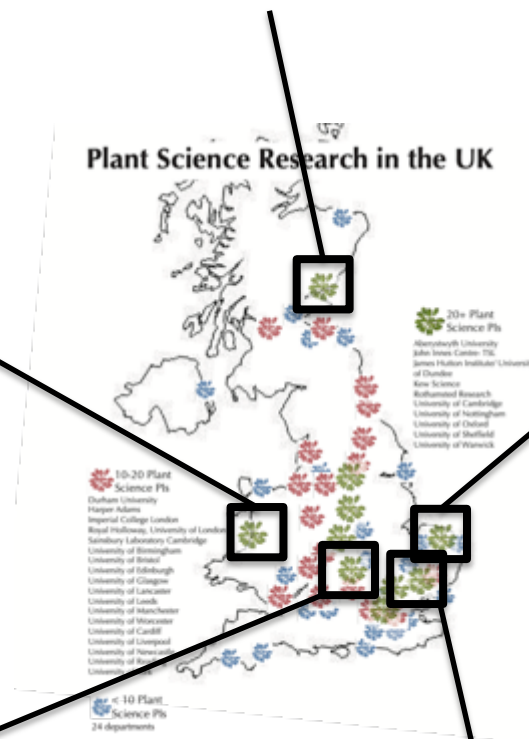
The James  
**Hutton**  
Institute

<https://www.hutton.ac.uk/>



<https://www.aber.ac.uk/en/ibers/>

## Plant Science Research in the UK



**John Innes Centre**

Unlocking Nature's Diversity

<https://www.jic.ac.uk/>



<https://www.plants.ox.ac.uk/>



<https://www.plantsci.cam.ac.uk/>





# Major UK Plant Science Departments



The  
University  
Of  
Sheffield.

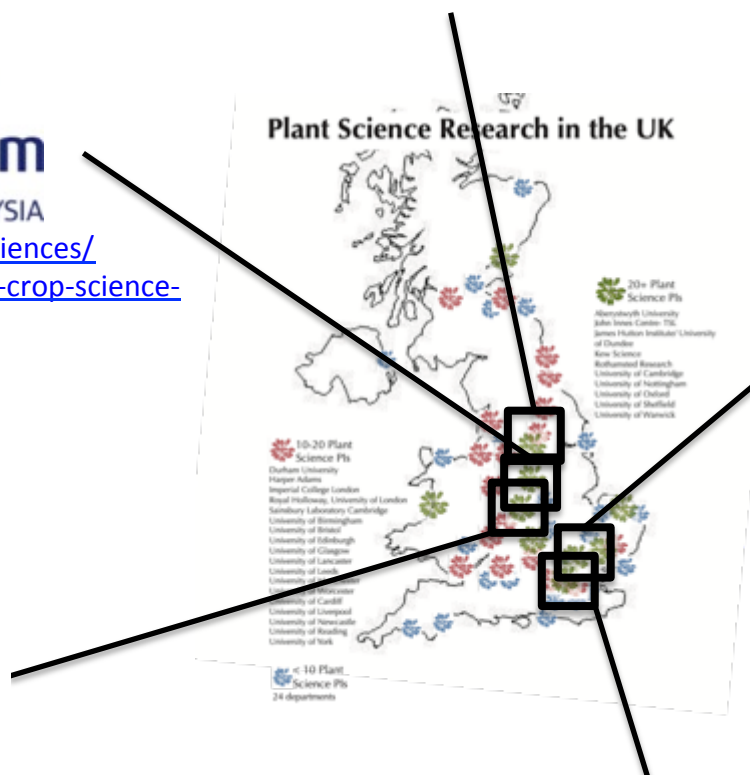
<http://p3.sheffield.ac.uk/research/>



University of  
Nottingham

UK | CHINA | MALAYSIA

<https://www.nottingham.ac.uk/biosciences/research/research-themes/plant-and-crop-science-research.aspx>



ROTHAMSTED  
RESEARCH

<https://www.rothamsted.ac.uk/>



WARWICK  
THE UNIVERSITY OF WARWICK

<https://warwick.ac.uk/fac/sci/lifesci/research/plantcropsci/>

Royal Botanic Gardens  
**Kew**

<https://www.kew.org/science>







# Detailed information about UK Plant Science departments



1. Bristol
2. Cardiff
3. Greenwich
4. Oxford Brookes
5. Southampton
6. Royal Holloway
7. Leeds
8. The N8 group
9. Imperial College
10. Dundee
11. Glasgow



## Plant Science Research in the UK







University of  
**BRISTOL**

## Plant and Agricultural Science

- World class strengths in fundamental plant science

These include genetics, genomics, cell biology, developmental biology, abiotic interactions, biotic interactions and evolution

[www.bristol.ac.uk/biology/research/plant/](http://www.bristol.ac.uk/biology/research/plant/)

- Home to Bristol Wheat Hub and genomics facility

- Home to Bristol Centre for Agricultural Innovation

[www.bristol.ac.uk/biology/bcai/](http://www.bristol.ac.uk/biology/bcai/)

- Established China Scholarships Council partnership

[www.bristol.ac.uk/fees-funding/awards/china-scholarship-council/](http://www.bristol.ac.uk/fees-funding/awards/china-scholarship-council/)

Contact: Dr Helen Harper ([Helen.Harper@bristol.ac.uk](mailto:Helen.Harper@bristol.ac.uk))

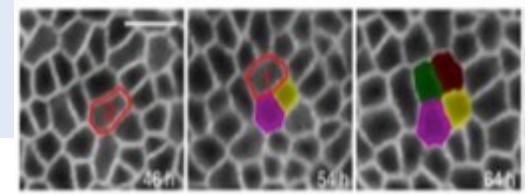


# Plant Science at the Cardiff University School of Biosciences

CARDIFF  
UNIVERSITY

PRIFYSGOL  
CAERDYDD

- Developmental regulation of **plant meristems** using Arabidopsis and modelling growth patterns.
- Gene regulation of leaf and flower **senescence** and stress responses,
- Communication between pollen and pistil during **plant reproduction**
- How **plant lipids** are synthesized and factors regulating their formation.



- How plants interact with their environment, with a focus on **reproductive fitness**.
- Changes in gene expression and **volatile organic compounds** during post-harvest senescence
- Use of **aromatic species** against insect vectors of human disease,
- Understanding how **algae** can be used to improve nutrition and as biofuels.



## PhD studentships –

- **China Scholarship Council (CSC)**: Cardiff University offers a few scholarships each year - tuition fee waivers for successful CSC students. check website for 2020 opportunities

<https://www.cardiff.ac.uk/study/international/funding-and-fees/international-scholarships/phd-research-scholarships>

## Visiting Scholarships/Exchanges for Postdoctoral scientists -

- funded via the **China Scholarship Council (CSC)**
- Offer funding for 3-12 month visits
- **Royal Society** – International Exchanges
- **Newton Fund** calls

## Plant and Crop Sciences in several departments:

- School of Science
- Agriculture, Health and Environment
- Food and Markets
- Livelihoods and Institutions
- NRI is a world-leading research institute
- Researchers work across the globe
- Unique expertise in integration of biophysical, social and economic sciences
- Existing collaborations with CATAS, Zhejiang and Hunan Universities
- Annual Vice Chancellors PhD studentship competition
- Visiting researchers are welcome to get in touch

See groups and contact details at

<https://www.gre.ac.uk/>

<https://www.gre.ac.uk/engsci/research>

<https://www.nri.org/>

For Arabidopsis at Gre: [e.thompson@greenwich.ac.uk](mailto:e.thompson@greenwich.ac.uk)



# Oxford Brookes University

## Plant Cell Biology and Bioimaging



Dr Katja Graumann

Plant nuclear envelope  
proteome and the Linker of  
Cytoskeleton and  
Nucleoskeleton (LINC) Complex

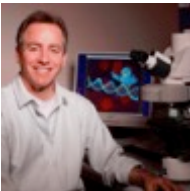


Professor David Evans



Dr Verena Kriechbaumer

Plant endomembrane system; ER  
dynamics topology and Golgi  
apparatus interface; protein  
modification



Professor John Runions

Cytoskeleton, plasma  
membrane and organellar  
interactions at the cell surface



Contacts: [deevans@brookes.ac.uk](mailto:deevans@brookes.ac.uk)

Web: <https://www.brookes.ac.uk/bms/research/groups>



# Joint programmes for engagement with Chinese Scholars

1. Newton Fund
2. University of Southampton CSC scholarships
3. British Council / GREAT scholarship scheme
4. Worldwide Universities Network (WUN) in partnership with:
  - Chinese University of Hong Kong
  - Renmin University of China
  - Zhejiang University



## Research areas – Plants and Food Security

- *Plant function using model plants*
- *Crop molecular biology*
- *Underutilised crops*
- *Plant ecology and plant-soil interactions*
- *Crop pests and pollinators*



Contact: Professor Matthew Terry ([mjt@soton.ac.uk](mailto:mjt@soton.ac.uk))  
School of Biological Sciences

**Centre for Plant Molecular Sciences  
School of Biological Sciences  
Royal Holloway**



**ROYAL  
HOLLOWAY  
UNIVERSITY  
OF LONDON**

**The research:**

- Metabolomics and synthetic biology, carotenoids and other valuable compounds
- Plant growth and stress. Cell cycle and signalling pathways. Jasmonic acid. Pharmacophytochemicals. Chloroplast biology.
- Seed biology
- Phytopathogenic fungi. Plants and phyllosphere. Mycorrhizae.

**The environment:**

- Funding: joint UK/US, EU, Bill & Melinda Gates -subgrantee-, breeding and food industry
- State of the art mass spectrometry (metabolomics, proteomics) facilities.
- Top-ranked UK university for international outlook
- Voted most beautiful UK campus!

**The opportunities:**

- Multiple scientific visitors registered at overseas labs or universities
- Newton fellowships (UK government)
- Royal Holloway PhD studentships (advertised December 2019, many open to non-UK residents)
- Matched Royal Holloway PhD funding for overseas scholars (on a case-by-case basis)

**<https://www.royalholloway.ac.uk/research-and-teaching/research/>**



## ***Thirteen research groups***

Alison **Baker**: Membrane transport processes

Yoselin **Benitez-Alfonso**: Intercellular communication & plasmodesmata

Tom **Bennett** : Systemic regulation of development

Andrew **Cuming**: Desiccation tolerance, early land plants

Brendan **Davies**: Plant development & gene regulation

Jurgen **Denecke**: Cell biology, Golgi, ER

Katie **Field**: Plant-soil processes, mycorrhizal symbiosis

Stefan **Kepinski**: Auxin & growth tropisms

Paul **Knox**: Plant cell walls, plant secretions, soils

Peter **Meyer**: Epigenetics & gene regulation

Peter **Urwin**: Plant nematology

Chris **West**: DNA repair & recombination

Laura **Dixon**: Future Wheat, genes in the environment

# **Centre for Plant Sciences - CPS**

**A Research Centre of Excellence in Molecular, Cellular & Physiological Plant Sciences at the University of Leeds**

[www.plants.leeds.ac.uk](http://www.plants.leeds.ac.uk)

**Future Crops initiative**

<http://www.plants.leeds.ac.uk/futurecrops>

## **Opportunities:**

### **The Gosden PhD Studentship**

Legacy to support students studying plant science

**For other opportunities check also**

<https://biologicalsciences.leeds.ac.uk/research-degrees>



**@plantscileeds**



# **N8 AgriFood - China collaboration in crop and soil science**

## **MoU:**

- Institute of Vegetable Crops, Jiangsu Academy of Agricultural Sciences (JAAS)
- Institute of Farm Product Processing, Jiangsu Academy of Agricultural Sciences (JAAS)
- Participated in MOU between Innovate UK and China Rural Technology Development Center (CRTDC)

## **Partnerships with:**

- China Agricultural University (CAU)
- Institute of Crop Sciences, Chinese Academy of Agricultural Sciences (CAAS)
- Institute of Vegetables and Flowers (CAAS)
- Zhejiang Academy of Agricultural Sciences (ZAAS)
- Beijing Vegetable Research Center



**Technology and knowledge transfer platform, researcher exchanges,  
direct collaborations, commercialisation of technologies**



**n8agrifood.ac.uk**

**international@n8agrifood.ac.uk**



# **Opportunities in Plant Sciences Research**

**[www.imperial.ac.uk/life-sciences](http://www.imperial.ac.uk/life-sciences)**

## **Training**

- Suite of MSc and MRes programs
- MRes Molecular Plant & Microbial Sciences, 1 year full time
  - Entry: Upper 2<sup>nd</sup> Class Honours first degree or equivalent

## **PhD Funding**

- Imperial President's Scholarships
- China Scholarship Council – Imperial co-funded
- Lee Family Scholarships

## **Imperial Fellowships**

- Annual competition, 4 year awards

## **Collaboration Opportunities**

- Strong theme in Molecular Plant & Microbial Systems
  - Open to new international ventures
- Collaborative funding paths
  - BBSRC China & Other Partnering Awards, for workshops and exchanges
  - (Future) InnovateUK, Newton Fund, wide list of cooperating countries

## Plant Science Research – 科研

Circadian clock, cold response, RNA-seq

Home of the 3D RNA-seq app

Post-translational modifications – ubiquitination, S-acylation, proteomics

Crop Genomics – potato and barley genome sequences

Developmental Biology – genetic control of barley traits

Pathology – aphids, blight - *Phytophthora*

Biofuel - lignin metabolism and regulation, saccharification

Soil Microbiota







# Plant Science Group University of Glasgow, Scotland, UK

## Opportunities for collaborations:

- UoG - CSC PhD studentships
- BBSRC UK-China partnership awards

## Principal Investigators

Amtmann Blatt



Christie



Cogdell



Jenkins



Jones



Kaiserli



Karnik



Milner



Nimmo



## Research Themes

- Photobiology & UV tolerance
- Photosynthesis
- Chronobiology
- Transcriptional regulation & epigenetics
- Membrane protein trafficking
- Ion transport & electrophysiology
- Plant-virus interactions
- Plant pathogenesis & regulation of trafficking proteins
- Protein structure & function
- Next Generation Sequencing

[www.gla.ac.uk/researchinstitutes/biology/research/plantscience/](http://www.gla.ac.uk/researchinstitutes/biology/research/plantscience/)

