

## **THE RUSSELL R. GEIGER PROFESSORSHIP OF CROP SCIENCE**

### **DEPARTMENT OF PLANT SCIENCES/CAMBRIDGE CENTRE FOR CROP SCIENCE**

## **1 The Professorship**

### **Background**

The Russell R. Geiger Professorship of Crop Science is a newly established Professorship in the University. The Professor will be a member of the Department of Plant Sciences in the School of Biological Sciences and they will have a research laboratory in a new Crop Sciences Building on the National Institute for Agricultural Botany (NIAB) Huntingdon Road HQ site. The Professorship is linked to the Cambridge Centre for Crop Science (3CS) – a partnership to take advantage of the complementary strengths of the University in fundamental research and of NIAB in applied science related to crops.

### **Selection criteria**

#### **The successful candidate will:**

- work within the field of translational crop science,
- have an outstanding research record and an international reputation,
- further the subject by research and other activities that enhance its growth as a field of scholarship. This includes the fostering of work by colleagues in the University and outside of it, and
- be able and willing to make a general contribution to the academic work of the University and, in particular, to teaching and research in the Department of Plant Sciences.
- play a leadership role in the 3CS partnership between the University and NIAB

Further details about 3CS and the Crop Science Professorship are in the APPENDIX to this text.

## **2 The Department and relevant research in the University**

The Department of Plant Sciences is one of the few remaining academic departments in the UK dedicated solely to research and teaching of plant and microbial biology. The Department currently comprises 20 Group Leaders, 4 Research Fellows, 5 Senior Research Associates, 57 Research Associates, 48

Support Staff and approximately 90 postgraduate students. The Department also hosts academic visitors from many countries.

The Department's main building is on the University's Downing Site, in close proximity to the Departments of Zoology, Genetics, Biochemistry, and Physiology, Development & Neuroscience, among others. The building has undergone extensive refurbishment over the past few years and provides modern laboratory and office space, and a state-of-the-art, accessible Teaching Laboratory. A purpose-built Plant Growth Facility is located at the Botanic Garden. The Department has strong links with the Botanic Garden, the Sainsbury Laboratory and NIAB, amongst others.

The Botanic Garden is formally a sub-department of the Department of Plant Sciences, located about 1 km from the Downing Site. The Garden provides important research facilities in addition to its major role as a public amenity of great educational and recreational value.

Several members of the Department whose work is focused on ecology and conservation are housed in the David Attenborough Building on the New Museums Site, home of the Cambridge Conservation Initiative (CCI) and the Museum of Zoology.

The Crop Science Building on the site of the NIAB HQ is a new 1132m<sup>2</sup> laboratory with controlled environment and glasshouse facilities for growth of plants. There is access to the NIAB field experimentation. It is expected that this building will house the Geiger Professor's research group and other University and NIAB researchers engaged in crop science research.

Other plant scientists in the University including those with interest in crops are in the Biochemistry Department and in the Sainsbury Laboratory in the Botanic Garden.

### **National Institute of Agricultural Botany**

The National Institute of Agricultural Botany (NIAB) was founded in 1919 by Deed of Trust, and became an independent not-for-profit organisation in 1996. NIAB is a charitable company limited by guarantee, with commercial activity generating a surplus which supports its charitable objectives. NIAB's headquarters are on Huntingdon Road in Cambridge, linked to the site of its experimental farm. It is the largest field trials operator in the UK with sites located throughout the arable growing area. In addition, NIAB carries out fruit research at East Malling in Kent, UK.

With a focus on adaptive and translational research, NIAB provides applied research and information to the agricultural and horticultural crop sectors, working to improve the yield, efficiency and resilience of crops, and supporting national and global policy priorities on food security, climate change and sustainable development.

NIAB has a number of departments devoted to the provision of services such as field and glasshouse trialling, variety evaluation, genetic transformation, and crop modelling across all major arable and fruit crops.

NIAB employs around 400 people, which includes 15 principal investigator-led research groups, and provides research, scientific services and technical advice to a diverse customer base which includes Government departments, research councils, levy bodies, charitable trusts and the agri-food industry. It has close relationships

with the grower community including subscribers to the NIAB TAG Network for arable farmers and CUPGRA, the Cambridge University Potato Growers Research Association.

### **Relevant University staff and their research interests**

The research undertaken within the Department covers many aspects of plant and microbial biology and the interests of current staff are listed below. The research is supported by grants from a variety of sources including BBSRC, NERC, the EU, the Gatsby Charitable Foundation, DEFRA, and industry, with a portfolio in 2017/2018 of £10.5M

### **Professors**

Professor Sir David Baulcombe FRS - RNA Silencing and Disease Resistance  
Professor John Carr - Virology & Molecular Plant Pathology  
Professor David Coomes - Forest Ecology and Conservation  
Professor Chris Gilligan - Epidemiology and Modelling  
Professor Beverley Glover (Director of the Botanic Garden) - Evolution and Development  
Professor Howard Griffiths - Physiological Ecology  
Professor Jim Haseloff - Synthetic Biology and Reprogramming of Plant Systems  
Professor Julian Hibberd - Molecular Physiology  
Professor Alison Smith - Plant Metabolism and Biotechnology  
Professor Alex Webb Circadian - Signal Transduction

### **Readers**

Dr Julia Davies - Ion Transport  
Dr Ian Henderson - Genetic and Epigenetic Inheritance in Plants  
Dr Uta Paszkowski - Cereal Symbiosis

### **Senior Lecturers**

Dr Nik Cunliffe - Theoretical and Computational Epidemiology

### **Lecturers**

Dr Sebastien Andreuzza - Development and Reproduction  
Dr Sam Brockington - Evolution and Diversity  
Dr Johannes Kromdijk - Environmental Plant Physiology  
Dr Andrew Tanentzap - Ecosystems and Global Change  
Dr Gita Yadav – Machine-Learning and Complex Networks

### **Research Fellows**

Dr Sebastien Eves-van den Akker – Plant-parasite/pathogen interactions  
Broodbank Fellows: Dr Katie Wilkins; Dr Nataliya Elina; Dr Sara Lopez-Gomollon and Dr Gonzalo Mendoza-Ochoa (starting in 2019)  
Shuttleworth Foundation Fellow: Dr Jennifer Molloy

## **Staff in other Departments**

Professor Paul Dupree (Biochemistry) – Cell Walls in Plants

Professor Yrjö Helariutta ( Sainsbury Laboratory) – Vascular Development in Plants

Professor Dame Ottoline Leyser FRS (Sainsbury Laboratory) – Developmental Biology

Dr Giles Oldroyd (Sainsbury Laboratory) - Nitrogen Fixing Symbiosis

Dr Sebastian Schornack (Sainsbury Laboratory) - Plant Microbe Interactions

There are many other University Staff in various Departments including Pathology, Applied Mathematics and Theoretical Physics, Genetics, the Judge Business School and others with interests related to plant science and its applications. These diverse interests relevant to crops and food are coordinated through the Interdisciplinary Research Centre in Global Food Security (<https://www.globalfood.cam.ac.uk> ).

## **NIAB staff**

Dr Alison Bentley – Prebreeding

Dr Jane Thomas – Disease Resistance

Dr Lydia Smith – Novel and Non-food Crops

Professor Mario Caccamo – Genomics and Bioinformatics

Dr Mark Else – Environmental Physiology

Professor Xianming Xu – Pest and Pathogen Ecology

Dr Richard Harrison – Genetics and Genomics of Horticultural Crops

Dr David Firman – Potato Physiology

Details of NIAB research are at <http://www.niab.com>

## **3 Duties of the Professor**

The Russell R. Geiger Professor of Crop Science will be a high-profile scientist able to provide leadership in the field of translational crop science in the Department of Plant Sciences, the University of Cambridge, NIAB and outside. The Professor will be expected to develop a vigorous research programme through successful grant applications to research councils and other funding sources.

The Professor will be expected to show leadership in planning undergraduate and postgraduate teaching initiatives in participate in the teaching activities of the Department, by giving lectures, seminars or organising practicals. In Cambridge, the supervision of undergraduates is the responsibility of the Colleges of the University. A Professor may undertake such supervision up to a maximum of six hours per week.

The Professor will be expected to contribute to the administration of the Department. Historically, the Professor of Botany held the position of Head of Department, but the two positions are no longer inextricably linked and the Head of Department is appointed by the General Board after consultation with the academic staff of the Department, for a 5-year period. Currently, Professor Alison Smith is Head of Department. Other administrative tasks are shared among the academic staff of the Department, with support from the Departmental Administrator and the Principal Technician. Academic members of the Department, including Professors, are expected to represent the Department on Faculty and School committees dealing

with such matters as academic and other appointments, admission of graduate students, research and teaching assessments, the libraries and computing arrangements. They are also encouraged to accept appointment to University Committees.

#### **4 The Colleges**

The University (the Faculties and Departments) and the Colleges are linked in a complicated historical relationship that is mutually beneficial but not simple. Students (both graduate and undergraduate) are admitted by one of the 31 Colleges, although in the case of graduate students the Faculties/Departments determine admissions before the Colleges are involved. Almost all undergraduates, and many graduate students, live in a College. The teaching of undergraduate students is shared between the Colleges and the Faculties and Departments, with the Colleges arranging small group teaching ("supervision") and the Departments providing lecturing, laboratory classes, and advanced supervisions. Most academic staff will also be invited to join a College as a teaching or professorial fellow. College teaching is remunerated separately from the University teaching, and appointment to a College is a separate matter from a University appointment. Membership of a College adds an important social and intellectual dimension for many academic staff. The Chair of the Faculty/Head of Department or senior colleagues can give more advice.

The Scheme for newly-appointed University Officers seeking a College Fellowship is set out at: <https://www.ois.cam.ac.uk/uto-scheme/guidance-for-applicants/view>

#### **5 Procedure for Appointment**

The appointment will be made by a Board of Electors, chaired by the Vice-Chancellor or his deputy, with representation from the Department of Plant Sciences and the School of Biological Sciences, along with external experts.

All applications will be acknowledged on receipt, and two written references will be sought at this stage.

The Board of Electors will decide how they wish to proceed towards making an election, which may include interviews and/or presentations. Short-listed candidates may be invited to visit the Department to give a seminar on their work and meet prospective colleagues, prior to a meeting of the Board.

Candidates will be informed of the progress of their applications as agreed by the Electors.

It is anticipated that the successful candidate will take up the appointment by 1 January 2020.

## 5 Enquiries and Applications

Informal enquiries may be made to Prof Alison Smith, Head of Department of Plant Sciences, telephone: +44 (0)1223 333900, email: [as25@cam.ac.uk](mailto:as25@cam.ac.uk) or to Sir David Baulcombe, Regius Professor of Botany, email: [dcb40@cam.ac.uk](mailto:dcb40@cam.ac.uk)

Further information on the University is available at [www.cam.ac.uk](http://www.cam.ac.uk)  
Further information on the Department of Plant Sciences is available at [www.plantsci.cam.ac.uk](http://www.plantsci.cam.ac.uk)

Applications, consisting of a letter of application together with a statement of current and future research plans, a curriculum vitae and a publications list, together with details of three referees should be made online no later than **20 March 2019**.

If you are unable to apply online, please contact the Human Resources, University Offices, The Old Schools, Cambridge, CB2 1TT (email [ibise@admin.cam.ac.uk](mailto:ibise@admin.cam.ac.uk)).

## **GENERAL INFORMATION**

All appointments to University Offices are subject to the Statutes and Ordinances of the University.

### **A Salary**

Salary on appointment will be determined by the Vice-Chancellor at the appropriate point on the University's salary spine for grade 12, taking into account the criteria for the respective contribution band. Professorial salaries are reviewed periodically, on the basis of research, teaching and general contribution, by the Vice-Chancellor with the assistance of a small Advisory Committee.

There is a normal sabbatical entitlement of one term in seven on full pay, subject to the University regulations.

### **B Headship of the Department**

Should a Professor be appointed to the Headship of a Department, a pensionable payment in addition to salary is made.

### **C Recruitment Incentive**

The University has a scheme whereby a single recruitment incentive payment may be made on appointment at the Vice-Chancellor's discretion.

### **D Removal Expenses**

If the person appointed is not resident in Cambridge, a contribution from University funds towards expenditure incurred in removal to Cambridge to take up a University office will be made.

### **E Consultancy Work**

The University's policy on consultancy work is that consultancy arrangements must be entered into privately between the employee and the organisation concerned. The consultancy work must not interfere with the duties required of the officer under the officer's contract of employment with the University. Consultancy work is not covered by the University's insurances, even when the University has knowledge that such work is being done. The University must not be regarded as being directly or indirectly involved in any consultancy arrangement through the use of University letterheads, advice given or work done in the individual's capacity as an employee of the University. Individuals undertaking private or consultancy work are advised to take out personal insurance.

Alternatively, professional indemnity cover may be obtained by channelling private work through the University company Cambridge Enterprise Ltd. Anyone wishing to do so should, in the first instance, contact Cambridge Enterprise at [www.enterprise.cam.ac.uk](http://www.enterprise.cam.ac.uk).

## **F Professorial Fellowships**

The great majority of Professors at Cambridge hold a professorial fellowship of a college. Although election to a fellowship is a matter for an individual college, the University takes active steps to draw to the attention of Heads of House the names of those Professors eligible for election. The Scheme for newly-appointed University Officers seeking a College Fellowship is set out at: <https://www.ois.cam.ac.uk/uto-scheme/guidance-for-applicants/view>

In seeking the views of referees, their permission will be sought for the release of their comments on the successful candidate if it were to be requested by the professorial fellowship electors of a college.

## **G Health screening on appointment to University Office and in the case of University Officers undertaking a change of duties**

Offers of appointment made to prospective University officers whose work will fall within certain categories are conditional on the completion of a medical questionnaire and, if necessary, on a satisfactory health check by the Occupational Health Service.

Only the person elected will be asked to complete the questionnaire at the time of election.

## **H Family friendly policies and benefits**

The University has a range of family friendly policies to aid employee's work-life balance including maternity, paternity and parental leave, flexible working and career break schemes. In addition, childcare vouchers, access to two nurseries and a holiday play scheme are available through the Childcare Office to help support University employees with childcare responsibilities. Further information can be found at: <http://www.admin.cam.ac.uk/offices/hr/staff/benefits/family.html>

## **I Eligibility to work and reside in the UK**

UK immigration procedures stipulate that an employer may not consider the appointment of any person unless they have seen evidence of their immigration status. Accordingly, shortlisted candidates, whatever their nationality, will be asked to provide such evidence at an appropriate stage in the recruitment procedure.

## **J Equal Opportunities Information**

The University of Cambridge appoints solely on merit. No applicant for an appointment in the University, or member of staff once appointed, will be treated less favourably than another on the grounds of sex (including gender reassignment), marital or parental status, race, ethnic or national origin, colour, disability (including HIV status), sexual orientation, religion, age or socio-economic factors.

## **K Information if you have a Disability**

The University welcomes applications from individuals with disabilities. Our recruitment and selection procedures follow best practice and comply with disability legislation.



The University is committed to ensuring that applicants with disabilities receive fair treatment throughout the recruitment process. Adjustments will be made, wherever reasonable to do so, to enable applicants to compete to the best of their ability and, if successful, to assist them during their employment. We encourage applicants to declare their disabilities in order that any special arrangements, particularly for the selection process, can be accommodated. Applicants or employees can declare a disability at any time.

Applicants wishing to discuss with or inform the University of any special arrangements connected with their disability can, at any point in the recruitment process, contact, Dr Gosia Wloszycka, who is responsible for the administration of the recruitment process for this position, by email on [mw425@admin.cam.ac.uk](mailto:mw425@admin.cam.ac.uk)

## **APPENDIX**

### **The Cambridge Centre for Crop Science -3CS**

The University has chosen to establish capacity in crop science through the 3CS partnership with NIAB. With its origins as a government-funded institution delivering crop evaluation and seed certification, NIAB provides crop science based research and services to a broad range of clients and stakeholders.

3CS aims to facilitate and promote translational research and teaching in crop sciences through the activity of NIAB and University staff including the Russell R. Geiger Professor of Crop Science. The Professor will be based in the Cambridge University Crop Science Building (see below) on the NIAB Cambridge campus and it will encompass research at the University of Cambridge, NIAB and other partners. A 3CS Roadmapping workshop is described in a detailed report that can be found [here](#).

3CS brings together excellence from the University of Cambridge and the National Institute for Agricultural Botany (NIAB). The partnership combines the diversity of the University with the NIAB pipeline connecting research to the end-users of innovation in farming and agri-tech, the food industry, and applied research and extension services. The partnership provides an opportunity for translational research in crops that combines the excellence of the University and NIAB. It is intended that the 3CS research will be multidisciplinary and linked closely to an agricultural industry user base.

The University has been awarded £16.9M from UKRPIF to house 3CS in a state-of-the-art research laboratory on NIAB's Bingham campus in Cambridge. This Crop Science Building will have three storeys with undercroft parking and it will be linked to the existing NIAB building via a glazed link. The Crop Science Building will benefit from glasshouse and service facilities built alongside NIAB's current and planned facilities at Park Farm, Histon. The building will occupy 1132m<sup>2</sup> over three floors and there will be up to 432m<sup>2</sup> glasshouse space. The Geiger Professor will have a role in setting up and equipping the Crop Science Building. There are funds for a senior postdoctoral researcher on a five year contract and the Professor will have a role selecting the appointee, together with representatives of Trinity College.

#### **The Russell R. Geiger Professor of Crop Science**

3CS will involve a newly-appointed Russell R. Geiger Professor of Crop Science together with other researchers from the Department of Plant Sciences and other University departments, NIAB, other UK and international research institutes, and industrial partners. The Professor will play a prominent leadership role in the 3CS partnership.

The Professor will be a world-leading scientist bringing cutting-edge research to the University. The funding for this post has been raised via philanthropic donations. The professor will have access to state-of-the-art research facilities including growth chambers and glasshouses for growing plants and a well equipped laboratory space.

The Professor's research interests will be in one or more of the following areas:

- agronomy
- agroecology
- breeding and breeding and pre-breeding technologies
- crop health management
- crop modelling, ideotypes and crop physiology
- post-harvest biology and supply chain sustainability
- sustainable environment, climate change and agronomy, forecasting and weather
- genetics, germplasm and traits
- precision agriculture
- nutritional security
- soil health and inputs, and
- translation from model organisms

Examples of how the research could be applied include (but are not restricted to):

- innovations in crop breeding that will accelerate the development of new varieties of existing crops and allow orphan crop improvement so that agriculture can be diversified for greater sustainability and profitability
  - new crop protection chemicals that will prevent damage from disease and environmental stress without environmental damage
  - crop management strategies that exploit beneficial interactions in companion cropping and with microbes
  - integration of crop husbandry with advances in engineering, material science and computing.
- To ensure impact of their research the Geiger Professor will engage in one or more of the following:
- establish joint ventures with governmental and non governmental organisations with interests in the application of crop science in the developing world
  - engage with spin out companies to develop products based on the research output
  - build strategic partnerships with industry
  - generate license revenue from technology developed as part of their research programme
  - contribute new learning opportunities and training for undergraduate and graduate students.