

Information on Postgraduate Research Scholarship - Ref: VCS-ES-02-19

Faculty: Engineering and Science

Department: Natural Resources Institute (NRI)

Lead Supervisor: Dr Gonçalo Silva

Project Title: Diversity and evolution of plant DNA viruses: implications of climate change for disease management

Project Description:

Badnaviruses are a highly diverse group of plant DNA viruses and have emerged as serious pathogens infecting a wide range of economically important tropical and temperate crop plants worldwide. Furthermore, DNA of some badnavirus species can be found hidden ('integrated') in the host plant genome further complicating the detection of true (episomal) virus.

The proposed PhD project aims to study diseases caused by globally emerging badnaviruses in a range of agricultural crops (yam, cocoa and grapevine) associated with different environmental contexts. This implies that the prospective student should be willing to do field sample collection in the UK and Africa.

Using high-throughput sequencing (HTS) approaches this project will determine the full extent of virus diversity in each crop. This will help 1) developing and optimizing fool-proof diagnostic methods, 2) to detect and distinguish between true virus infections and integrated badnaviruses and 3) studying recombination (i.e. the ability to generate new virus variants) in badnaviruses present in each crop that could lead to the evolution of strains of altered virulence. HTS analysis will also be used to understand the impact of specific environmental conditions associated with climate change on badnavirus infections.

Research activities will be supported by a Bill & Melinda Gates Foundation project granted to the NRI. Shortlisted candidates will be invited for an interview in person or via Skype video conference.

Duration:

3 years, Full-Time Study

Bursary available (subject to satisfactory performance):

Year 1: £15,009

Year 2: In line with RCUK rate

Year 3: In line with RCUK rate

In addition, the successful candidate will receive a contribution to tuition fees equivalent to the university's Home/EU rate, currently £4,327, for the duration of their scholarship. International applicants will need to pay the remainder tuition fee for the duration of their scholarship. This fee is subject to an annual increase.

Person Specification of Essential (E) or Desirable (D) requirements:	
Criteria:	E or D
Education and Training:	
<ul style="list-style-type: none"> 1st Class or Upper 2nd class Honours Bachelor's Degree or Master's degree (UK or UK equivalent) in a relevant discipline with a minimum average of 60% in all areas of assessment (UK or UK equivalent) in a relevant area to the proposed research project 	E
<ul style="list-style-type: none"> For those whose first language is not English and/or if from a country where English is not the majority spoken language (as recognised by the UKBA), a language proficiency score of at least IELTS 6.5 (in all elements of the test) or an equivalent UK VISA and Immigration secure English Language Test is required, unless the degree above was taught in English and obtained in a majority English speaking country, e.g. UK, USA, Australia, New Zealand, etc, as recognised by the UKBA. 	E
Experience & Skills:	
<ul style="list-style-type: none"> Previous experience of undertaking research (e.g. undergraduate or taught masters dissertation) 	D
<ul style="list-style-type: none"> Familiarity with molecular biology research methods 	D
<ul style="list-style-type: none"> Experience of using sequence analysis software to compare gene sequences 	D
<ul style="list-style-type: none"> Experience of working with plant pathogens 	D
Personal Attributes:	
<ul style="list-style-type: none"> Understands the fundamental differences between a taught degree and a research degree in terms of approach and personal discipline/motivation 	E
<ul style="list-style-type: none"> Able to, under guidance, complete independent work successfully 	E
Other Requirements:	
<ul style="list-style-type: none"> This scholarship may require Academic Technology Approval Scheme approval for the successful candidate if from outside of the EU/EEA 	E
<ul style="list-style-type: none"> Willingness and ability to do short-term field work in Africa 	D
<ul style="list-style-type: none"> An ability to travel internationally to scientific meetings 	D
<ul style="list-style-type: none"> Strong substantive knowledge related to the project 	D
<ul style="list-style-type: none"> The scholarship must commence on 3rd September 2019 	D

Closing date for applications: *midnight UTC on 15 August 2019*

For further information contact: Dr Gonalo Silva E-mail: g.silva@gre.ac.uk

Making an application:

Please read this information before making an application. Information on the application process is available at: <https://www.gre.ac.uk/research/study/apply/application-process>. Applications need to be made online via this link. **No other form of application will be considered.**

All applications **must include** the following information. **Applications not containing these documents will not be considered.**

- Select **PhD Agriculture, Health and Environment** for your submission
- **Scholarship Reference Number (Ref)**– included in the personal statement section together with your personal statement as to why you are applying
- **a research proposal no more than 500 words outlining the particular aspect of the project that interests you and what you think needs to be explored***
- **a CV including 2 referees ***
- **academic qualification certificates/transcripts and IELTS/English Language certificate if you are an international applicant or if English is not your first language or you are from a country where English is not the majority spoken language as defined by the UK Border Agency ***

**upload to the qualification section of the application form. Attachments must be a PDF format.*

Before submitting your application you are encouraged to liaise with the Lead Supervisor on the details above.