



THE POST

College:	College of Life and Environmental Sciences
Post:	Postdoctoral Research Fellow
Reference No:	P64679
Grade:	F
HERA:	RFEL
Reporting To:	Ben Raymond
Responsible For:	Experimental and molecular work on BBSRC Industrial Partnership Award

The above full-time post is available from 1st of January 2019 until the 31st December 2021 at the College of Life Science, in our Penryn campus in Cornwall.

Job Description

We require an experienced postdoctoral researcher with a background in Evolutionary Biology and / or Microbiology to run a selection and experimental evolution project with the insect pathogen *Bacillus thuringiensis*. The successful applicant will have significant expertise in Evolutionary Biology and or Microbiology, with a track record of successful publications, and possess sufficient specialist knowledge in the discipline to develop research programmes and methodologies. The successful applicant will also be able to work collaboratively, supervise the work of others and act as team leader as required. Applicants will be able to manage complex selection experiments under aseptic conditions; carry out and analyse bioassays; and should be competent molecular biologists. Experience of experimental evolution; insect rearing; invertebrate pathology or simple bacterial genomics would be desirable. The successful applicant will be able to develop research objectives, projects and proposals; contribute to the process of securing further funds and make presentations at conferences and other events.

Main purpose of the job:

The College wishes to recruit a Postdoctoral Research Fellow to participate in a research project that will apply social evolution theory to improve biological pesticides for the fall armyworm, *Spodoptera frugiperda*. Building on previous research on social virulence in the insect pathogen *Bacillus thuringiensis* (van Leeuwen et al. 2015, ISME J; Zhou et al 2014 Current Biology; Raymond et al 2012, Science) we have developed protocols that can increase the killing power of insect pathogens against problematic pests via artificial selection. Fall armyworm is major tropical pest of maize and other key staple crops, and is a recent invasive pest in Africa. This species has a history of rapid evolution of resistance to chemical and biological pesticides and poses a significant threat to global food security. This project seeks to identify new strains, proteins or protein variants that could be used to target this pest. The appointee will be part of a collaborative partnership involving biochemists from University of Sussex (Dr Neil Crickmore and an additional PDRF); bioinformaticians from the University of Liverpool's Centre for Genomic (including Dr Alistair Darby), in addition to significant support from our industrial partner, DowDuPont.

Main duties and accountabilities:

1. To undertake research as appropriate to the field of study. The responsibilities may include all or some of the following:
 - Acting as principal investigator on research projects;
 - Developing research objectives, projects and proposals;
 - Conducting individual or collaborative research projects;

- Identifying sources of funding and contributing to the process of securing funds;
 - Extending, transforming and applying knowledge acquired from scholarship to research and appropriate external activities;
 - Writing or contributing to publications or disseminating research findings using media appropriate to the discipline;
 - Making presentations at conferences or exhibiting work in other appropriate events;
 - Assessing, interpreting and evaluating outcomes of research;
 - Developing new concepts and ideas to extend intellectual understanding;
 - Resolving problems of meeting research objectives and deadlines;
 - Developing ideas for generating income and promoting research area;
 - Developing ideas for application of research outcomes;
 - Deciding on /following research programmes and methodologies, often in collaboration with colleagues and sometimes subject to the approval of the head of the research programme on fundamental issues.
2. To contribute to teaching and learning programmes in the School and to supervise postgraduate research students.
3. To act as research team leader including:
- Mentoring colleagues with less experience and advising on their professional development;
 - Coaching and supporting colleagues in developing their research techniques;
 - Supervising the work of others, for example in research teams or projects;
 - Developing productive working relationships with other members of staff;
 - Co-ordinating the work of colleagues to ensure equitable access to resources and facilities;
 - Dealing with standard problems and help colleagues to resolve their concerns about progress in research.
 - Managing the Lepidoptera insectary
4. To routinely communicate complex and conceptual ideas to those with limited knowledge as well as to peers using high level skills and a range of media and to present the results of scientific research to sponsors and at conferences.
5. As determined by the nature of the project and at the direction of the PI, to plan, co-ordinate and implement research programme activity including:
- Managing the use of research resources and ensuring that effective use is made of them;
 - Monitoring and reporting on the use of research budgets;
 - Helping to plan and implement commercial and consultancy activities;
 - Where appropriate, to plan and manage own consultancy assignments.

This job description summarises the main duties and accountabilities of the post and is not comprehensive: the post-holder may be required to undertake other duties of similar level and responsibility. Please visit the Human Resources website to view the Research Fellow role profiles.

Person Specification

Competency	Essential	Desirable
Attainments/Qualifications	PhD or equivalent qualification/experience in a related field of study.	Be a nationally recognised authority in the subject area.
Skills and Understanding	Possess sufficient specialist knowledge in the discipline to develop/follow research programmes and methodologies, particularly in microbiology or evolutionary biology; statistical computing and molecular biology.	Experience of insect rearing; insect bioassays; invertebrate pathology; bacterial genomics; experimental evolution

Prior Experience	Experience of managing research projects and research teams. Record of research output in high quality publications.	Experience of undergraduate /postgraduate teaching and supervision. Experience of acting as principal investigator on research projects.
Behavioural Characteristics	Excellent written and verbal communication skills. Able to communicate complex and conceptual ideas to a range of groups. Evidence of the ability to collaborate actively within the Institution and externally to complete research projects and advance thinking. Able to participate in and develop external networks. Able to balance the pressures of research, administrative demands and competing deadlines.	Able to identify sources of funding, generate income, obtain consultancy projects, or build relationships for future activities.
Circumstances		

Informal Enquiries

Before submitting an application you may wish to discuss the post further by contacting Dr Ben Raymond, Associate Professor in Microbiology and Entomology, telephone (/01326 259085) or email b.raymond@exeter.ac.uk. Enquiries relating to the separate biochemist postdoctoral position (to be announced shortly may also be directed to Dr Neil Crickmore at the University of Sussex n.crickmore@sussex.ac.uk).

Terms & Conditions

Our Terms and Conditions of Employment can be viewed [here](#).

Further Information

Please see our [website](#) for further information on working at the University of Exeter.