

1) TWO PhD PROJECTS: SEXUAL CONFLICT & DNA METHYLATION IN SOCIAL INSECTS, MELBOURNE

Two PhD projects - commencing 2016 (typically February)

Luke Holman lab, School of Biosciences, University of Melbourne.

I am seeking one or two PhD students to join ongoing projects involving evolution, sex and sociality in insects, which are funded by the Australian Research Council and the University of Melbourne. I am particularly keen to recruit students interested in working with next generation sequencing data (both projects) or large-scale insect experiments (project 1).

Project 1: Genetics of sexual conflict in beetles

Sexual selection research commonly talks about good genes, but just who are these genes good for? There is evidence that alleles that produce a high-fitness female do not necessarily make a high-fitness female, and vice versa. This is termed intralocus sexual conflict, and it has far-reaching evolutionary consequences. Using experimental evolution experiments coupled with next-generation sequencing in *Tribolium* flour beetles, we will work out which traits are under strong intralocus conflict, which ecological and evolutionary factors determine the strength of the conflict, and which genes are contested territory in the battle of the sexes.

Project 2: DNA methylation in social insects

If the genome is like a printed instruction book for building an organism, DNA methylation is like pencil notes in the margins that allow for reversible modifications to the design. Social insects (bees, ants, wasps, termites) have two castes queens and workers and recent evidence suggests that caste (and other, more subtle differences, e.g. between different types of workers) is under the control of DNA methylation. Using experiments with ant and bee colonies as well as whole genome bisulphite sequencing, we will build on exciting new results from my lab, and study the interplay between pheromones and DNA methylation.

Requirements

Successful applicants will be assisted in applying for an Australian Postgraduate Award (for Australians) or an International Postgraduate Research Scholarship (for Internationals) through the University of Melbourne. To be competitive, a First-class Honours or Masters Degree (or international equivalent) or publication in international journals are essential. The APA and IPRS applications are short, but the deadline is soon: 31st October 2015. Thus, please send applications by 19th October or earlier.

To apply, please send A) A brief letter outlining your research interests; B) an academic CV; C) your academic transcript/grades; D) contact details of two referees (including a previous research supervisor).

For further information, and to submit applications, please contact Luke Holman directly.

Luke Holman

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2) POST-DOCTORAL RESEARCH ASSISTANT, VIRAL TRANSMISSION AMONG BEES, ROYAL HOLLOWAY

Location: Egham

Salary: £33,476 to £39,528 per annum - including London Allowance

Fixed Term

Closing Date: Thursday 05 November 2015

Interview Date: To be confirmed

Reference: 1015-298

Full time fixed term post for 36 months

Applications are invited for the post of Post-doctoral Research Assistant in the School of Biological Sciences

Emerging viral diseases pose a major threat to pollinator health, but we understand little of their epidemiology, or how this is affected by agri-environment interventions to support pollinator populations. This project - a collaboration between Professor Mark Brown (Royal Holloway), Dr Lena Wilfert (Exeter), and Dr Michelle Fountain (East Malling Research) - will use a combination of approaches to understand how viral diseases spread in the wild, and what the mechanisms behind this transmission are. This position will work to understand how floral complexity, at the level of individual flowers and field-scale plantings, determine the transmission of viral diseases among bees. It will work in close collaboration with a 2nd PDRA at the University of Exeter, supervised by Dr Lena Wilfert (see below).

The ideal candidate will hold a PhD in biological sciences, or equivalent, and have past post-doctoral experience. They will have worked with bumblebees or honey bees, and have experience in behavioural experiments and molecular ecology techniques. They will have a record of publishing in high-impact international peer-reviewed journals, and the ability to communicate their science to colleagues and the public. Attention to detail is a must. They must be able to work well as part of a team, both within Royal Holloway, and across the collaborative project.

This is a full time post, available from 4th January 2016 or as soon as possible thereafter for a fixed term period of 36 months. This post is based in Egham, Surrey where the College is situated in a beautiful, leafy campus near to Windsor Great Park and within commuting distance from London.

For an informal discussion about the post, please contact Professor Mark Brown on mark.brown@rhul.ac.uk or +44 (0)1784 276443.

To view further details of this post and to apply please visit <https://jobs.royalholloway.ac.uk> . The RHUL Recruitment Team can be contacted with queries by email at: recruitment@rhul.ac.uk or via telephone on: +44 (0)1784 41 4241

Please quote the reference: 1015-298

Closing Date: Midnight, 5th November 2015

Interview Date: To be confirmed

The College is committed to equality and diversity, and encourages applications from all sections of the community.

We particularly welcome female applicants as they are under-represented at this level in the School of Biological Sciences within Royal Holloway, University of London.

3) POST-DOCTORAL RESEARCH ASSISTANT, DISEASE TRANSMISSION AMONG POLLINATORS, EXETER

We would like to recruit a Research Fellow working on a project studying the impact of agri-environment schemes on emerging diseases in pollinators. This BBSRC funded post is available from the 4 of January 2016 for 30 months. The successful applicant will study disease transmission dynamics in wild pollinator communities under different agricultural management schemes, which are predicted to affect disease transmission opportunities.

This project is a collaboration between Dr. Lena Wilfert, Prof. Mark Brown (Royal Holloway University) and Dr. Michelle Fountain (East Malling Research) and offers the unique opportunity to study fundamental questions of disease ecology and evolution in multi-host pathogens by combining field-based genetic analysis with targeted experiments under controlled environments. By studying insects that provide crucial pollination services to agriculture and natural communities, this project can have direct impact on pollinator health. Within this grant, there is also the potential to experimentally test hypothesis derived from theory or model-based sequence analysis. A second post-doc is advertised at RHUL, working on the experimental

infection aspects of this research project.

The post will include population genetics, phylogenetic modelling and bioinformatics as well as field work and associated lab work focussing on RNA virus detection. Expert dedicated technical support is available for field and lab work. The successful applicant will be able to develop research objectives, projects and proposals; identify sources of research funding and contribute to the process of securing funds and make presentations at conferences and other events.

Applicants will possess a relevant PhD in a related field of study. The successful applicant will have expertise in the fields of phylodynamics, disease ecology or molecular ecology. The successful applicant will also be able to work collaboratively, supervise the work of others and act as team leader as required. Applicants should have expertise in population genetics, phylogenetics and/or bioinformatics. Ideally, the candidate will have experience in phylogenetic modelling of viral transmission and/or molecular ecology of RNA viruses. Experience in fieldwork and wet lab molecular ecology and evolution (especially quantitative PCR) would be advantageous.

The position will be based at the University of Exeter's Penryn Campus in Cornwall, with some fieldwork taking place in Southeast England and intensive collaboration with colleagues at Royal Holloway University London and East Malling Research. You will be able to profit from state-of-the-art lab and computing facilities. With the Centre for Ecology and Conservation and the Environmental Sustainability Institute, this campus is one of the leading hubs for evolutionary ecology, including experts in host-pathogen interactions (e.g. Prof. Angus Buckling, Prof. Mike Boots, Dr. Camille Bonneaud, Prof. Robbie MacDonald) and pollination ecology (Prof. Juliet Osborne, Dr. Frank van Veen). We also profit from Exeter's Wellcome Trust Bioinformatics hub.

For further information please contact Dr. Lena Wilfert , on e-mail lena.wilfert@ex.ac.uk

The starting salary will be from GBP 33,242 up to GBP 35,256 on Grade F, depending on qualifications and experience.

The closing date for completed applications is 09 November 2015.

To view the Job Description and Person Specification document please click here: <http://www.admin.ex.ac.uk/personnel/jobs/P50316.pdf>

The University of Exeter is an equal opportunity employer which is 'Positive about Disabled People'. Whilst all applicants will be judged on merit alone, we particularly welcome applications from groups currently underrepresented in the workforce.

The College is working towards department Silver Athena SWAN (<http://www.exeter.ac.uk/working/prospective/benefits/athenaswan/>) awards as a commitment to providing equality of opportunity and advancing the representation of women in STEM/M subjects: science, technology, engineering, mathematics and medicine.

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4) PhD FELLOWSHIPS AT THE UNIVERSITY OF LAUSANNE (SWITZERLAND)

NB. The Department of Ecology and Evolution at Lausanne has a thriving social evolution research program, particularly the groups of Michel Chapuisat, Christoph Grüter, Laurent Keller and Laurent Lehmann.

Each year the University of Lausanne offers competitive PhD fellowships in broadly defined biological sciences, including evolution and ecology. The winners can choose a supervisor among those participating in the program, including many group leaders at the Department of Ecology of Evolution (www.unil.ch/dee). The Department of Ecology and Evolution is one of the strongest centers in evolutionary biology in Europe. It consists of over 20 research groups including about 50 postocs and 70 PhD students; several of those PhD students are winners of the fellowship in previous years. The fellowships are for three years plus a fourth year funded by grants of the supervisor. A Master or an equivalent degree is a prerequisite of being admitted into a PhD program in Switzerland (but the candidates do not yet have to hold a master at the time of application).

Information about the fellowships, requirements and the application procedure can be found under

<http://www.unil.ch/eoledoctoralefbm/en/home/menuinst/phd-in-life-sciences/fellowships.html>

Note that to assure consideration, the application must be sent in paper form by mail and have arrived by October 26, 2015. Even though the above website mentions October 2016 as the starting date, an earlier starting date may be possible.

Lausanne is a medium-sized city on the shores of Lake Geneva, surrounded by a wine growing region (recognized as one of UNESCO Heritage sites) and within one hour of the Alps. It offers a great variety of cultural, recreational and outdoor opportunities.

5) GRADUATE STUDENTSHIPS, SOCIAL BEHAVIOUR OF BEES, UTAH STATE

The Kapheim Lab at Utah State University is seeking graduate students (MS or PhD) to join the Biology Department in Fall 2016.

Research in the Kapheim lab addresses the evolutionary processes responsible for the diversity and plasticity of complex traits. The primary focus of this research is the evolution of social behavior in bees. We seek to understand the developmental and sociogenomic mechanisms underlying behavior to better understand how it evolves. Our research is integrated across sub-disciplines of biology, including evolutionary biology, behavioral ecology, comparative genomics and transcriptomics, neuroscience, physiology, and metagenomics.

Graduate students will have the opportunity to develop research projects within the major research themes of the lab. This will likely involve a combination of field, lab, and computational work. Students who find this opportunity to be a good fit will have an interest in developing skills in a combination of these activities, as well as an interest in bees and integrative evolutionary biology. Graduate students will have the opportunity to conduct field work in Panama or in the U.S.

Institutional Support

The USU Department of Biology is home to a superb faculty with a diverse set of research interests that provides training in evolutionary biology, ecology, cell and molecular biology, neuroscience, and microbiology, among other topics. The Logan-based USDA Bee Biology and Systematics Laboratory is just down the road from campus, and offers opportunity for collaborative research with biologists studying a diverse set of questions related to bee biology. The Smithsonian Tropical Research Institute (STRI) in Panama, a potential location for field work, hosts world-class staff scientists, as well as thousands of international visiting researchers and provides several fellowship opportunities to graduate students.

Financial Support

Accepted full-time graduate students receive comprehensive funding packages that include stipends, tuition, and health benefits in the form of graduate research assistantships and teaching assistantships. Additional funding is available for research.

Life in Logan, UT

USU is located in northern Utah's Cache Valley. Situated between two mountain ranges and next to beautiful Logan Canyon, there are plenty of opportunities for field work, as well as outdoor recreation, in and around Logan.

Application Information

For more information about research in the Kapheim Lab, visit www.kapheimlab.com. Information about graduate studies at USU is available on the Department of Biology website (www.biology.usu.edu). Pre-applications are due December 15. Full applications are due January 15.

Interested candidates should contact Dr. Karen Kapheim (karen.kapheim@usu.edu) with a statement of research interests, CV, and contact information for references

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6) PhD GRADUATE STUDENT ASSISTANTSHIP, MIMETIC COLOR VARIATION IN HONEYBEES, PENN STATE

A PhD Graduate Student Research Assistantship is currently available in the Hines Lab at Pennsylvania State University to study the evolutionary genetics and developmental mechanisms underlying mimetic color variation in bumble bees. This project is highly integrative, including potential training in the areas of genetics, genomics, developmental biology, pigment chemistry, systematics, and entomology, and will likely involve bee rearing and field research. Additional research directions may be possible in other topics of interest in the lab, including study of mimicry, insect pigmentation, bee systematics, bee conservation, and bee behavior. Enrollment for this position can take place either through the Entomology (<http://ento.psu.edu/>), MCIBS (http://www.huck.psu.edu/content/graduate-programs/molecular_cellular_integrative_biosciences/about), or Biology (<http://bio.psu.edu/>) graduate programs. Desired start dates range from Spring 2016 through Fall 2016.

For more information on current research directions in the lab visit www.hineslab.org. Interested students should email Dr. Heather Hines (hmh19@psu.edu) with a statement of interest and a curriculum vitae that includes GPA and GRE scores.