A PhD opportunity is available on a project investigating olfactory relationships between 
*Bactrocera* fruit flies and their natural enemies.

**Expressions of interest close at midnight on Friday 15 January 2016**

Natural enemies, such as predators and parasites, have a significant impact on the lives of *Bactrocera* fruit flies but little is known about how enemies locate flies, and how flies counter such threats. One defence mechanism is through detection and adaptive response to chemical cues (‘kairomones’) either emitted directly from enemies or deposited as enemies move through the environment. This project will entail detailed studies of behavioural responses of *Bactrocera* fruit flies to kairomones from natural enemies such as ants and spiders. Activities will include travel for the collection of natural enemies, bioassays to test olfactory responses of flies to enemies and associated substrates, qualitative analysis of putative kairomones (e.g., by GC-MS), synthesis and testing of each component, and bioassays to test for biological activity.

The successful candidate will carry out research jointly at Macquarie University in Sydney, Australia, and at New Zealand Institute for Plant & Food Research at Lincoln, New Zealand, and will spend substantial periods working at each institution. Supervision and support at Macquarie University will come from Dr Ian Jamie, A/Prof Joanne Jamie (Department of Chemistry and Biomolecular Sciences, http://cbms.mq.edu.au/), and A/Prof Phil Taylor (Department of Biological Sciences, http://bio.mq.edu.au/). Supervision and support at New Zealand Institute for Plant & Food Research will come principally from Dr Max Suckling. At each institution, there is ample opportunity for additional collaboration and support as needed for project components that might require additional specialist expertise.

Activities of this project are supported by the $3.7m Australian Research Council (ARC) *Industrial Transformation Training Centre for Fruit Fly Biosecurity Innovation* that has its hub at Macquarie University, and nodes at Queensland University of Technology and Western Sydney University. Other partners in the Centre include New Zealand Institute for Plant & Food Research (NZ PFR), New South Wales Department of Primary Industries (NSW DPI), Commonwealth Scientific and Industrial Research Organisation (CSIRO), Queensland Department of Agriculture Fisheries and Forestry (QDAFF), and Ecogrow Environmental Pty Ltd. Collectively, these institutions bring vast expertise and research capacity to this research program, and maintain a highly collaborative research culture. Accordingly, this project will be very well supported in terms of supervision, collaborative opportunities, facilities and funding.

The successful candidate will join a large community of actively engaged researchers working on diverse aspects of fruit fly behaviour, chemistry, physiology, ecology, genomics, molecular biology, and management.

Macquarie University is home to the *Biosecurity Futures Research Centre* that supports a wide diversity of terrestrial and aquatic biosecurity research. Macquarie University is set in a park-like campus just 20 minutes from the centre of Sydney, next to Lane Cove National Park.
A scholarship is available to eligible candidates to undertake either:

- Research Training Pathway (RTP/iRTP) Masters of Research (MRes) Year 2 followed by a 3 year PhD, for candidates with an Honours degree or a Masters degree that includes a minor research component. This is referred to as an MRes/PhD ‘bundle offer’.

OR

- Direct entry into a 3.5 year PhD program, for candidates with a Research Masters degree that includes a substantial research component.

The value and tenure of the scholarship is:

- The ARC ITTC stipend is $30,746 pa (2016 rate, subject to indexation, tax free) for up to four years for an MRes/PhD bundle offer or for 3.5 years for direct entry to PhD.
- International candidates successful for these scholarships are also awarded a tuition fee scholarship covering tuition fees at Macquarie University for up to four years.

To be eligible for a scholarship, applicants are expected to have a record of excellent academic performance and preferably additional relevant research experience and/or peer-reviewed research activity, awards and/or prizes in line with the University’s scholarship rating guidelines. Refer to the Rating Scholarship Applicants section for more information about these guidelines.

Students on scholarships are not obliged to contribute to teaching, but may do so to supplement their income if desired. In addition to substantial financial resources to draw on for research, several generous schemes are available to fund travel to visit overseas laboratories or to attend overseas conferences.

Enquiries are welcome, and interested applicants are encouraged to make initial informal contact before applying. Interested applicants should email a letter of interest, academic transcripts, curriculum vitae and the names and contact information of three referees to Dr Ian Jamie (Ian.Jamie@mq.edu.au).

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