

# PhD Opportunity

## Fruit fly Pheromone Functions

A PhD opportunity is available on a project investigating the functions of pheromones used for sexual communication by *Bactrocera* fruit flies.

Expressions of interest close at midnight on **Saturday 04 February 2017.**

Pheromones are central in the mating decisions of *Bactrocera* fruit flies, providing important cues for species identity, mate location and mate choice. This project will entail functional studies of pheromone-mediated behaviour in *Bactrocera* fruit flies. Activities will include use of GC-coupled electroantennogram, bioassays (e.g., wind tunnel) and field trials to test for biological activity of pheromone components isolated from *Bactrocera* fruit flies. Questions addressed will include the functional role of each pheromone component, and overall blend, in determining attraction of females to males and also mate preferences of females. Additional activities may include exploring developmental and environmental effects on pheromone production and composition, such as from diet, age or local conditions, and the consequences of such variation for pheromone function.

The successful candidate will be based primarily at Macquarie University in Sydney, Australia and will also carry out some research at New Zealand Institute of Plant & Food Research in Lincoln, New Zealand. Supervision and support at Macquarie University will come from Prof Phil Taylor (Department of Biological Sciences, <http://bio.mq.edu.au/>), Dr Ian Jamie, and A/Prof Joanne Jamie (Department of Chemistry and Biomolecular Sciences, <http://cbms.mq.edu.au/>). Supervision and support at New Zealand Institute for Plant & Food Research will come principally from Dr Ashraf El Sayed and Dr Kye Chung Park. The supervision team has deep experience in diverse aspects of fruit fly biology, chemical ecology, natural products chemistry, analytical chemistry, synthetic chemistry and atmospheric chemistry. At each institution, there is also ample opportunity for additional collaboration and support as needed for project components that might require additional specialist expertise.

This project is supported by the \$3.7m Australian Research Council *Centre for Fruit Fly Biosecurity Innovation* ([www.fruitflyittc.com](http://www.fruitflyittc.com)) that has its hub at Macquarie University, and academic 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.

## Scholarship details:

A scholarship is available to eligible candidates to undertake either:

- One-year Research Training Pathway (RTP/iRTP) Masters of Research (MRes) followed by a three-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 Prof Phil Taylor (Phil.Taylor@mq.edu.au).

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