Alexander **Piper**

PhD Candidate

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Alexander Piper is a graduate student with Agriculture Victoria Research and La Trobe University whose research uses high-throughput sequencing and computational biology to improve detection and control of insect pests.

Education

La Trobe University — *Melbourne, Australia*

PhD Candidate — *2017-Present*

- Thesis title: Genomic tools for detection of insect pests

Queensland University of Technology — *Brisbane, Australia*

Bachelor of Science (Biology) — *2015*

- Biotechnology and Genetics Minor
- Chemistry Minor

Research experience

La Trobe University — *Melbourne, Australia*

PhD Candidate — *2017-Present*

- Developing a quantitative Metabarcoding pipeline for high-throughput identification of invasive insects within mixed trap samples
- Using population genomics to understand the historical demography and seasonal population dynamics of a pest fruit fly

Agriculture Victoria Research — *Melbourne, Australia*

Research Scientist (Part time) - Computational Biology — *2017-Present*

- Analytical support for the cross-industry iMapPESTS Metabarcoding surveillance program.

Agriculture Victoria Research — *Melbourne, Australia*

Research Scientist - Chemical Ecology — *2016-2017*

- Utilizing microbial symbionts of horticultural pests to develop novel insect attractants.

Queensland University of Technology — *Brisbane, Australia*

Laboratory Assistant - Microbial Ecology — *2015-2016*

- Isolation and physiological characterisation of environmental microbes from insects and host plants.

Queensland University of Technology — *Brisbane, Australia*

Vacation Research Scholar — Microbiology — *2015*

- Exploratory research into fungal symbionts of an agricultural pest insect funded by a university scholarship.

Queensland University of Technology — *Brisbane, Australia*

B.Sc. Capstone Research Project — Molecular Ecology — *2015*

- Developing an environmental DNA PCR assay for early detection of an invasive freshwater fish species.

Queensland University of Technology — *Brisbane, Australia*

Undergraduate Research — Physiological Genomics — *2013-2014*

- Assisting a PhD student mapping the transcriptome of cnidarian sea anemone.

Journal articles

1. Batovska, J, A Piper, I Valenzuela, J Cunningham, and M Blacket (2019). “Developing a non-destructive metabarcoding protocol for detection of Invasive insects in bulk trap catches”. (In Prep).
2. Piper, A, J Batovska, N Cogan, J Weiss, J Cunningham, B Rodoni, and ... (2019). Prospects and challenges of implementing DNA metabarcoding for high-throughput insect surveillance. *GigaScience*.
3. Piper, A, K Farnier, T Linder, R Speight, and J Cunningham (2017). Two gut-associated yeasts in a Tephritid fruit fly have contrasting effects on adult attraction and larval survival. *Journal of chemical ecology*.

Conference talks

Agriculture Victoria Regional Science Conference — *Tatura, Victoria*
An updated molecular toolbox for Biosecurity — *2019*

AgriBio Science Conference — *Melboure, Victoria*
Detecting the unexpected, DNA Metabarcoding for high-throughput insect surveillance — *2018*

Victorian DNA Barcoding Workshop — *Melbourne, Victoria*
Quality control considerations for Metabarcoding — *2018*

Australian Entomological Society Conference — *Alice Springs, Northern Territory*
Detecting the unexpected, DNA Metabarcoding for high-throughput insect surveillance — *2018*

iMapPESTS Metabarcoding Workshop — *Melbourne, Victoria*
Quality control considerations for Metabarcoding — *2018*

SciPlant 17 — *Brisbane, Queensland*
The importance of Yeasts in the ecology and control of Queensland Fruit Fly — *2017*

Australian Entomological Society Conference — *Terrigal, New South Wales*
Yeast-insect interactions in the Queensland fruit fly (Bactrocera tryoni) — *2017*

Biology of Tephritid Fruit Flies Meeting IV — *Melbourne, Victoria*
A microbial hypothesis for Queensland fruit fly host selection — *2016*

Synergistic activities

- Member of The Society for Molecular Biology and Evolution
- Member of The Australian Bioinformatics and Computational Biology Society
- Member of The Australain Entomological Society
- Participant in the Insect Genetic Technologies Research Coordination Network (IGTRCN)
- Reviewer for Journal of Economic Entomology

References

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  Agriculture Victoria Research
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- **Dr. Noel Cogan**
  Senior Research Scientist
  Agriculture Victoria Research
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