



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

PHD CANDIDATE

- Thesis title: Genomic tools for detection of insect pests

Melbourne, Australia

2017-Present

Queensland University of Technology

BACHELOR OF SCIENCE (BIOLOGY)

- Biotechnology and Genetics Minor
- Chemistry Minor

Brisbane, Australia

2015

Research experience

La Trobe University

PHD CANDIDATE

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

Melbourne, Australia

2017-Present

Agriculture Victoria Research

RESEARCH SCIENTIST (PART TIME) - COMPUTATIONAL BIOLOGY

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

Melbourne, Australia

2017-Present

Agriculture Victoria Research

RESEARCH SCIENTIST - CHEMICAL ECOLOGY

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

Melbourne, Australia

2016-2017

Queensland University of Technology

LABORATORY ASSISTANT - MICROBIAL ECOLOGY

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

Brisbane, Australia

2015-2016

Queensland University of Technology

VACATION RESEARCH SCHOLAR — MICROBIOLOGY

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

Brisbane, Australia

2015

Queensland University of Technology

B.SC. CAPSTONE RESEARCH PROJECT — MOLECULAR ECOLOGY

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

Brisbane, Australia

2015

Queensland University of Technology

UNDERGRADUATE RESEARCH — PHYSIOLOGICAL GENOMICS

- Assisting a PhD student to validate transcriptomics results with qRT-PCR

Brisbane, Australia

2013-2014

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

AN UPDATED MOLECULAR TOOLBOX FOR BIOSECURITY

Tatura, Victoria

2019

AgriBio Science Conference

DETECTING THE UNEXPECTED, DNA METABARCODING FOR HIGH-THROUGHPUT INSECT SURVEILLANCE

Melbourne, Victoria

2018

Victorian DNA Barcoding Workshop

QUALITY CONTROL CONSIDERATIONS FOR METABARCODING

Melbourne, Victoria

2018

Australian Entomological Society Conference

DETECTING THE UNEXPECTED, DNA METABARCODING FOR HIGH-THROUGHPUT INSECT SURVEILLANCE

Alice Springs, Northern Territory

2018

iMapPESTS metabarcoding Workshop

QUALITY CONTROL CONSIDERATIONS FOR METABARCODING

Melbourne, Victoria

2018

SciPlant 17

THE IMPORTANCE OF YEASTS IN THE ECOLOGY AND CONTROL OF THE QUEENSLAND FRUIT FLY

Brisbane, Queensland

2017

Australian Entomological Society Conference

YEAST-INSECT INTERACTIONS IN THE QUEENSLAND FRUIT FLY (*BACTROCERA TRYONI*)

Terrigal, New South Wales

2017

Biology of Tephritid Fruit Flies Meeting IV

A MICROBIAL HYPOTHESIS FOR QUEENSLAND FRUIT FLY HOST SELECTION

Melbourne, Victoria

2016

Synergistic activities

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

References

- **Assoc Prof. Paul Cunningham**
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Agriculture Victoria Research
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Email: paul.cunningham@agriculture.vic.gov.au
- **Dr. Noel Cogan**
Senior Research Scientist
Agriculture Victoria Research
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