

CV

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May 2020

Research interests: Taxonomy and biology of ticks (Ixodida), Ecology, One Health, Parasitology, Wildlife Biology, Molecular Biology, Infectious Disease, Bioinformatics, Epidemiology.

Education

Doctor of Philosophy *Murdoch University* | 2018-2021

- Ecology of ticks and tick-borne diseases in Australia: A One Health approach
- Supervisors: Dr. Charlotte Oskam, Prof. Peter Irwin, Prof. Una Ryan, and Prof. Peter Banks.

Paid Internship *Pawsey Supercomputing Centre/CSIRO* | Summer 2017-2018

- Meta-analysis of Australian tick microbiomes
- Supercomputing internship program sponsored by Pawsey and CSIRO

Bachelor of Science Honours *Murdoch University* | 2017

- Major in molecular biology First class
- Profiling the microbiome of ticks parasitising Australian bandicoots
- Supervisors: Dr. Charlotte Oskam and Prof. Peter Irwin
- Application of next generation sequencing to characterise the bacterial composition of tick (Acari: Ixodida) and tissues samples

Bachelor of Science *Murdoch University* | 2014 - 2016

- Double major in Animal Health and Conservation & Wildlife Biology
- Distinction average
- Independent study contract in final semester – Small mammal camera trapping in Dryandra woodlands. Supervised by A/Prof Peter Spencer (Murdoch University) and Mark Cowan (Department of Parks and Wildlife WA).

Grants & Awards

Holsworth Wildlife Research Endowment awarded July 2019
Australian Society for Parasitology Conference Travel Grant awarded July 2019
Australian Society for Parasitology Conference Travel Grant awarded September 2018
Holsworth Wildlife Research Endowment awarded June 2018
Research Training Program (RTP) Scholarship 2018-2021
Best poster design 2017 at the Combined Biological Sciences Meeting.
Myrtle AB Lamb Honours Scholarship awarded March 2017

Publications

Articles

Egan, S., Taylor, C., Austen, J., Banks, P., Alhstrom, L., Ryan, M., Irwin, P., and Oskam C. 2020. Molecular identification of the *Trypanosoma (Herpetosoma) lewisi* clade in black rats (*Rattus rattus*) from Australia. *Parasitology Research*. DOI 10.1007/s00436-020-06653-z

Egan, S., Loh, S-M., Banks, P., Gillet, A., Alhstrom, L., Ryan, U., Irwin, P., and Oskam C. 2020. Bacterial community profiling highlights complex diversity and novel organisms in wildlife ticks. *Ticks and Tick-Borne Diseases* 11(3). DOI 10.1016/j.ttbdis.2020.101407

Evans, M., **Egan, S.**, Irwin, P., and Oskam, C. 2019. Automatic Barcode Gap Discovery reveals large COI intraspecific divergence in Australian Ixodidae. *Zootaxa* 4652(2). DOI 10.11646/zootaxa.4656.2.13

Irwin, P., **Egan, S.**, Greay, T., and Oskam C. 2018. Bacterial tick-associated infections in Australia: Current studies and future directions. *Microbiology Australia* 39(4): 200-202. DOI 10.1071/MA18063

Siew-May, L., **Egan, S.**, Gillet, A., Banks, P. B., Ryan U. M., Irwin, P. J., and Oskam, C. L. 2018. Molecular surveillance of piroplasms in ticks from small and medium-sized urban and peri-urban mammals in Australia. *International Journal of Parasitology: Parasites and Wildlife* 7(2). DOI 10.1016/j.ijppaw.2018.05.005

Conference presentations

Egan, S., Fontaine, J., Veber, W., Ruthof, K., Ryan, U., Irwin, P., and Oskam, C. 2019. The ecology of *Amblyomma triguttatum* in Western Australia. *Australian Society for Parasitology Annual Conference*, Adelaide, South Australia.

Egan, S., Evans, M., Irwin, P., and Oskam, C. 2019. Molecular barcoding of Australian hard ticks (Ixodidae). *Australian Society for Parasitology Annual Conference*, Adelaide, South Australia. DOI 10.13140/RG.2.2.26208.02565

Egan, S., Siew-May, L., Gillet, A., Banks, P., Ryan U., Irwin, P., and Oskam, C. 2018. Ticks parasitizing Australian wildlife and surveillance of potential tick-borne pathogens. *Australian Society for Parasitology Annual Conference*, Melbourne, Victoria. DOI 10.13140/RG.2.2.29305.31841

Poster presentations

Egan, S., Greay, T., Gofton, A., Ryan U., Irwin, P., and Oskam, C. 2018. What's in a tick? Meta-analysis of microbial diversity in Australian ticks. *Global Microbiome II 2018 (West Coast Microbiome Network)*, Perth, Western Australia. DOI 10.13140/RG.2.2.34595.71200

Egan, S., Siew-May, L., Gofton, A., Greay, T., Banks, P., Irwin, P., and Oskam, C. 2017. Are bandicoot ticks a reservoir for novel bacteria? *Combined Biological Sciences Meeting*, Perth, Western Australia. DOI 10.13140/RG.2.2.34524.49285

Employment

2017 - Present | Casual demonstrator

Murdoch University

Veterinary Parasitology, Veterinary Microbiology, Forensic DNA Analysis

2018 | Research Assistant (casual)

Project CI: Dr Peter Adams (Murdoch University)

Dietary analysis of feral pigs using Next Generation Sequencing

Service

Student Chapter Committee | June 2018-Present Wildlife Disease Association Australiasia

Murdoch University Open Day | July 2019 Parasitology display

Perth Royal Show | September 2017 Parasitology Life Undercover Display

Field & Lab Assistant | December 2014-July 2016 Murdoch University, Parasitology Department

Secretary | July 2014-July 2016 Western Australia Wildlife Rehabilitation Council Inc.

Animal attendant | March 2014-July 2015 Little Paws Rescue

Training & Skills

Short courses

A selection of relevant short courses and workshops

- Concepts in Parasitology | November-December 2019
 - Held at the Australian National University, Canberra & Kioloa, Australia.
 - Coordinated by the Australian Society for Parasitology.
 - Awarded Bayer Sponsorship for course fees
- ASMI BioInfoSummer | December 2018
 - Held at the University of Western Australia, Perth, Australia.
 - Coordinated by the Australian Mathematical Sciences Institute (AMSI).
- 5th National Postgraduate Training Workshop in Systematics | July 2018
 - Held at The University of Adelaide, Adelaide, Australia.
 - Coordinated by the Australian Centre for Evolutionary Biology & Biodiversity.
- Scientific use of animals | March 2018
 - Held at Murdoch University, Perth, Australia.
 - Coordinated by the Animal Ethics Committee, Murdoch University, Perth, Australia.
- Supercomputing and cloud resources | June 2017

- Held at Murdoch University, Perth, Australia.
- Coordinated by the Pawsey Supercomputing Centre.

Certificates & training courses

- Safety in research training 2017 (Murdoch University)
- Chemical safety training 2017 (ChemWatch)
- Introduction to working with animals in research and teaching (UWA/Murdoch University)
- Animal handling training (Department of Parks and Wildlife – DPaW)
- Various wildlife workshops facilitated by DPaW and Wildlife Centres

Technical skills

- RStudio - intermediate-advanced knowledge
- Biology and Ecology modelling programs – PRIMER, SOCPROG
- Molecular laboratory techniques – inc. Next Generation Sequencing, Sanger Sequencing, qPCR
- Microscopy techniques
- Computational Biology – Unix platform
- Bioinformatics and phylogenetic analysis (programs include MEGA, Geneious, MEGAN)
- Coding languages – Bash (intermediate-advanced), python (intermediate)
- Wildlife camera trapping