Apply Now - $1,500 Fellowships for Bachelor students interested in a hands-on research role

Joss Family Fellowship for Future Researchers

August 2025

LA TROBE UNIVERSITY

Table of Contents

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Five research projects, under the supervision of Albury-Wodonga Campus researchers, are on offer, covering disciplines such as:

- Ecology Conservation, Biology
- Australian History, Military History, Gender History, History of Religion
- Psychology
- Environmental Science, Microbiology, Ecology
- Biomedical Science
- Environment and Genetics

Toward the end of the research period, the Fellows and their supervisors will present their research project at a campus Research Symposium in February 2026.

Details of the fellowships are as follows:

Fellowship	$250 per week (tax-free), $1,500 total
Tenure	Six weeks, weekly hours to be negotiated with supervisor. Supervisors will endeavour to design flexible research schedules that fit with part time work. This is designed to be a taste of research!
Commencement	Commencement and completion dates will be negotiated with the supervising academic staff member. All projects will be completed by 21 February 2025.
Selection	Project supervisors will make the final decision. Only one fellowship will be awarded per student.
Application	Students are required to submit their resume and the fellowship application form.
Eligibility:	Undergraduate students from La Trobe university with a minimum of 180 credit points are eligible to apply, however, preference will be given to students based at the Albury-Wodonga Campus. Designed to provide a taste of research experience to undergraduate students, this program will not be offered to Honours students who will be undertaking research as part of their Honours program.
Submission	Closes 11.59pm on 28 September 2025, by email to hoc.aw@latrobe.edu.au

The Joss Family Fellowship for Future Researchers, Award
The two most outstanding students (as determined by a selection committee including one senior independent researcher) will each receive an additional $2,000 funding to continue involvement in the research project.

La Trobe University thank the generosity of the Joss Family who sponsor this program.

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Project 1: Once bitten, twice shy: conditioning taste aversion in foxes to turtle eggs

Discipline area: Ecology, Conservation Biology

Academic Supervisors: Dr Ligia Pizzatto and Associate Professor James Van Dyke

Project Overview:

In the Murray River Basin, foxes destroy >90% of freshwater turtle nests, resulting in populations of aging adults and no juveniles. Increasing recruitment is paramount for species recovery. Lethal control of foxes is inefficient in protecting nests because one surviving fox can still decimate all nests within the turtle's breeding season and cannot be conducted in urban and peri-urban areas. This 2025-2026 spring/summer, in the Albury-Wodonga region, we are expanding on our autumn field experiments that trials a non-lethal method: conditioning taste aversion (CTA). In partnership with citizen scientists, we are offering foxes buried poultry eggs containing a nausea-inducing substance to create aversion to turtle nests. Apart from the preparation of experimental eggs in the lab, this is a field-based project. After deploying the eggs in several field sites, we do weekly visits to replace consumed (~2-3 full days of fieldwork each week). There also might be chance to participate in trapping and marking turtles for population monitoring in some of the sites.

Objectives:

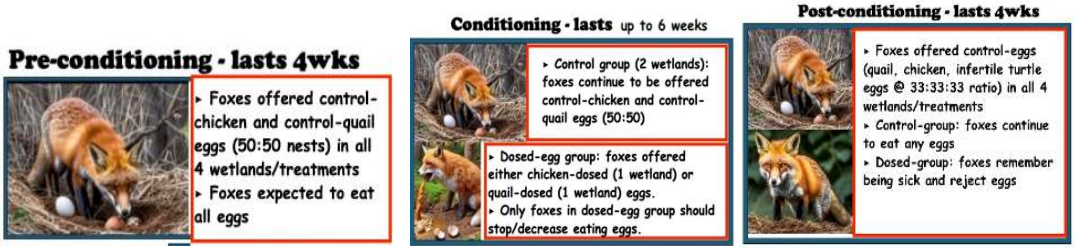
In this project, we will be testing if:

1. Conditioning foxes using one type of egg (quail or chicken) leads to taste aversion to any egg (quail, chicken, turtle);
2. Conditioned taste aversion (CTA) can be created in foxes to avoid turtle eggs.

Methods:

- CTA of foxes in a field setup
- Preparation of experimental eggs in the lab
- Deployment of eggs in artificial nests
- Monitoring fox densities and behaviour using wildlife cameras
- Survey for real turtle nests (mid-Oct to mid-Dec)
- Trapping and marking of turtles (opportunistically, Jan-Feb)

Taste aversion conditioning in this project has 3 phases, as described below (AI generated images). Depending on the student's availability, participation will be in any or all of the phases.



Project 2: Love in the Aftermath of War: A history of romance in a regional 'garrison' town

Discipline area: Australian History, Military History, Gender History, History of Religion

Academic Supervisors: Associate Professor Jennifer Jones

Project Overview:

This project will investigate the long-term impacts of Albury and Wodonga's status as 'garrison' towns through the lens of romance between local citizens and transient enlisted personnel. The project will focus upon a newly donated archive of 600 love letters (circa 1944-1947) the Burkitt-Kerr Letters, which provide significant insight into the WWII home front experience in Albury-Wodonga, from the perspective of long-term local residents and transient enlisted personnel. These border towns were of strategic importance to the military and the presence of the military was of significance for the local community, especially for local families who incorporated transient soldiers into their ranks through romance and marriage. Soldier-civilian romance and settlement in the early post-war period therefor provides a unique and as yet un-examined lens through which to understand the Army's ongoing status as a major stakeholder in the Albury-Wodonga district and other regional settings across Australia. The project will provide deeper understanding of the local impact of the armed forces and give opportunity to communicate the shared past to residents and current service personal, enhancing understanding of the local importance of the armed forces, boosting engagement with history and support for the local GLAM sector. The project can also contribute the military education of military members by shaping understanding of to the Army's impact on garrison communities.

Objectives:

The project will provide deeper understanding of the local impact of the armed forces and give opportunity to communicate the shared past to residents and current service personal, enhancing understanding of the local importance of the armed forces, boosting engagement with history. The project can also contribute the military education of military members by shaping understanding of to the Army's impact on garrison communities.

Methods:

1. Assisting the researcher to identifying key events and themes that emerge from the letters
2. Transcribing selected letters
3. Accompanying the researcher to conduct oral history interviews and transcribing the interviews
4. Liaising with industry partners
5. Preparing a literature review

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Project 3: Optimising Research Translation and Understand a Stepped-Care Model of Treatment: A Pilot and Feasibility Clinical Trial for Mild to Moderate Eating Disorders

Discipline area: Psychology

Academic Supervisors: Professor Leah Brennan

Project Overview:

Eating disorders (EDs) are complex psychiatric conditions associated with significant psychological distress, physical health complications, and functional impairment (Treasure et al., 2020). While there is growing awareness of the burden of EDs, individuals with mild to moderate presentations remain underrepresented in research despite comprising a substantial portion of those affected (Hay et al., 2017). Available research indicates that timely, low-intensity interventions can mitigate illness progression, reduce chronicity, and ease pressure on overstretched specialist services, yet these interventions are rarely available.

Stepped-care models are increasingly being proposed as a scalable solution to early intervention, offering lower-intensity treatments first, with the option to "step up" as needed based on clinical response (Fairburn & Cooper, 2011). However, empirical evaluation of such models in the context of EDs is under-researched. We conducted a pilot stepped-care intervention, targeting individuals with mild to moderate ED symptoms. Over 100 participants were offered access to best-practice, evidence-based assessment and treatment for eating disorders, and preliminary analyses suggests positive treatment effects. This pilot study has allowed for the development and refinement of referral, treatment, and discharge processes, providing critical insight into the feasibility of stepped-care implementation within real-world service contexts.

The primary outcome measure, the Eating Disorder Examination (EDE; Fairburn et al., 2008), a clinician-led clinical assessment interview, was administered by trained clinicians. The administration is complete, and we are now seeking a Joss Family Fellowship for Future Researchers student to assist with EDE scoring, data preparation, and dissemination. This will enable the timely completion of this important dataset, publication and dissemination of results, and improved care pathways for people with EDs. This opportunity would be best suited to a third-year psychology student with an interest in clinical psychology or research.

Objectives:

1. To complete the scoring of approximately 174 clinician-administered Eating Disorder Examination (EDE) interviews completed pre- and post-interventions as part of a stepped-care pilot trial for mild to moderate eating disorders.
2. To prepare a complete and useable outcome dataset that accurately reflects participant treatment progress, enabling robust evaluation of treatment effects.
3. To contribute to at least one peer-reviewed publication and support dissemination activities targeting clinical, academic, and policy stakeholders.

Methods:

The funded research assistant will:

- Score EDE interviews according to standardised procedures, under supervision from senior staff.

- Assist with data entry, cleaning, and preliminary descriptive analysis.
- Contribute to manuscript drafting and preparation.
- Participate in dissemination activities, including conference abstract preparation and stakeholder reporting.

Significance

Despite growing interest in scalable interventions for eating disorders, few studies have evaluated stepped-care approaches in real-world settings. The successful completion and publication of this trial will address a critical evidence gap and inform future models of care for individuals with early-stage EDs. By investing in this final stage of research activity, the proposed funding will yield high translational value and ensure the integrity of a large, rigorously conducted clinical dataset.

References

Fairburn, C. G., & Cooper, Z. (2011). *Stepped care for eating disorders: A rational and realistic approach to service provision*. *International Journal of Eating Disorders*, 44(4), 301–307.

Fairburn, C. G., Cooper, Z., & O'Connor, M. E. (2008). *Eating Disorder Examination (16.0D)*. In C. G. Fairburn (Ed.), *Cognitive behavior therapy and eating disorders*. Guilford Press.

Hay, P., Mitchison, D., Collado, A. E. L., González-Chica, D. A., Stocks, N., & Touyz, S. (2017). Burden and health-related quality of life of eating disorders, including binge eating disorder, in the Australian population. *Journal of Eating Disorders*, 5(1), 21.

Treasure, J., Stein, D., & Maguire, S. (2020). Has the time come for a staging model to map the course of eating disorders from high risk to severe enduring illness? *Anorexia Nervosa: The Wish to Change and the Wish to Stay the Same*. *BMC Psychiatry*, 20, 1–9.

van Straten, A., Hill, J., Richards, D. A., & Cuijpers, P. (2015). Stepped care treatment delivery for depression: a systematic review and meta-analysis. *Psychological Medicine*, 45(2), 231–246.

Project 4: Investigating the onset of liver cancer in vitamin A signalling deficient mice

Discipline area: Biomedical Science

Academic Supervisor: Dr Cathryn Hogarth

Project Overview:

Vitamin A is essential for many different cellular processes in the human body. Inhibition of vitamin A activity causes significant defects in normal development and function, including embryonic errors, deregulation of immune function, impacts on metabolism, and blocking reproduction. However, the effect of blocking vitamin A activity on disease processes is less understood. It is especially difficult to study the effects of inhibiting vitamin A activity following birth given that vitamin A is essential for fetal development. Vitamin A is usually sourced via the diet and can be stored for very long periods by the liver. This makes creating vitamin A deficient animals a time-consuming and expensive process. As a result, genetic modification technology has become the preferred technique for investigating how vitamin A affects cell function following birth.

My laboratory has very recently observed that preventing vitamin A signalling within the liver using a genetically modified mouse line results in these animals developing signs of hepatocellular cancer, or cancerous changes in their liver cells. These cancerous changes are also being detected very early in life, by approximately 28 days of age, so unusually fast for this type of cancer. Changes to vitamin A metabolism have previously been thought to have anti-cancer effects and drugs containing chemicals with structures similar to Vitamin A, i.e. retinoids, have been tested as chemotherapies, indicating that further investigation of vitamin A regulation of cancer is warranted.

Objectives:

Assess the early protein and genetic changes in liver cells in mice with a genetic modification that prevents vitamin A activity.

Methods:

Analysis of genetically modified mouse liver tissue, RNA extraction, quantitative RT-PCR analysis for effect on the expression of genes associated with cancer. Livers from genetically modified mice will also be analysed by immunohistochemistry and ELIZA for expression of proteins known to cause cancer.

Project 5: Understanding Client Outcomes following a Stepped-Care Model of Treatment: A Pilot and Feasibility Clinical Trial for Mild to Moderate Eating Disorders

Discipline area: Psychology

Academic Supervisors: Professor Leah Brennan (project lead) and Dr Rachael Cronin

Project Overview:

Eating disorders are complex psychological disorders that are associated with significant mental and physical health complications, poor quality of life and functional impairment (Hamilton et al., 2022). Despite empirically supported treatments being available, access to these treatments is limited (Hart et al., 2011). This is particularly the case for individuals presenting with mild to moderate presentations who remain underrepresented in research despite comprising a substantial portion of those affected (Hay et al., 2017).

Stepped-care models are increasingly being proposed as a scalable solution to fill the gap in accessible and effective treatment for eating disorders. The stepped-care model proposes that lower-intensity treatments are first offered, and individuals are then "stepped up" to more intensive treatments based on clinical response (Fairburn & Cooper, 2011). However, there is a need to empirically evaluate such models in the context of eating disorders to determine their feasibility and efficacy, particularly regarding client progression through such an approach and attrition (Stein et al., 2011).

To address these gaps in the literature, we conducted a pilot, stepped-care intervention that targeted individuals with mild to moderate eating disorder symptoms. Over 100 participants were offered access to best-practice, evidence-based assessment and treatment for eating disorders, and preliminary analyses suggests positive treatment effects. This pilot study has allowed for the development and refinement of referral, treatment, and discharge processes, providing critical insight into the feasibility of stepped-care implementation within real-world service contexts. Participants were assessed on mood, anxiety, eating and quality of life pre-treatment, mid-way through treatment, and post-treatment. In addition, psychological distress and eating behaviours were assessed weekly during treatment. Data collection for the pilot study is now complete, and we are seeking a Joss Family Fellowship for Future Researchers student to assist with data preparation and dissemination. This will enable the timely completion of this important dataset to enhance understanding of how clients progress through stepped-care treatment and the impact of attrition. Publication and dissemination of results could lead to improved care pathways for people with eating disorders and guide larger implementation of a stepped-care approach. This opportunity would be best suited to a third-year psychology student with an interest in clinical psychology or research.

Objectives:

- To prepare a complete and useable outcome dataset that accurately reflects participant progress and attrition, enabling robust evaluation of treatment effects and trial feasibility.
- To contribute to at least one peer-reviewed publication and support dissemination activities targeting clinical, academic, and policy stakeholders.

Methods:

The Joss Family Fellowship for Future Researchers student will:

- Assist with data entry, cleaning, and preliminary descriptive analyses
- Contribute to manuscript drafting and preparation
- Participate in dissemination activities, including conference abstract preparation and stakeholder reporting.

Significance:
Despite growing interest in scalable interventions for eating disorders, few studies have evaluated stepped-care approaches in real-world settings. Understanding how clients progress through this treatment and the predictors and impact of attrition is an essential step in ensuring both scientifically valid studies and enhanced clinical outcomes. The successful completion and publication of this trial will address a critical evidence gap and inform future models of care for individuals with early-stage EDs. By investing in this final stage of research activity, the proposed funding will yield high translational value and ensure the integrity of a large, rigorously conducted clinical dataset.

References:

Fairburn, C. G., & Cooper, Z. (2011). *Stepped care for eating disorders: A rational and realistic approach to service provision*. *International Journal of Eating Disorders*, 44(4), 301–307.

Hamilton, A., Mitchison, D., Basten, C., Byrne, S., Goldstein, M., Hay, P., ... & Touyz, S. (2022). Understanding treatment delay: perceived barriers preventing treatment-seeking for eating disorders. *Australian & New Zealand Journal of Psychiatry*, *56*(3), 248-259.

Hart, L. M., Granillo, M. T., Jorm, A. F., & Paxton, S. J. (2011). Unmet need for treatment in the eating disorders: a systematic review of eating disorder specific treatment seeking among community cases. *Clinical psychology review*, *31*(5), 727-735.

Hay, P., Mitchison, D., Collado, A. E. L., González-Chica, D. A., Stocks, N., & Touyz, S. (2017). Burden and health-related quality of life of eating disorders, including binge eating disorder, in the Australian population. *Journal of Eating Disorders*, 5(1), 21.

Stein, K. F., Wing, J., Lewis, A., & Raghunathan, T. (2011). An eating disorder randomized clinical trial and attrition: profiles and determinants of dropout. *International Journal of Eating Disorders*, *44*(4), 356-368.

Project 6: Microbial impacts on legacy mercury and arsenic contamination in Victorian rivers

Discipline area: Environmental Science, Microbiology, Ecology

Academic Supervisor: Dr Caitlin Gionfriddo

Project Overview:

Gold mining has left a legacy of mercury and arsenic contamination in Victorian waterways[1-3]. We will explore how microorganisms affect the persistence and bioavailability of these contaminants in sediments, exploring a link between microbial mercury and arsenic transformations and their possible co-evolution, improving our ability to predict mercury bioavailability in waterways. When microbes methylate mercury, they produce a more toxic and bioavailable form of mercury, methylmercury. Methylmercury is of public and environmental health concern as a neurotoxin, and the impacts of contamination on human health and the environment cost the Australian economy ~$52.7 million a year[4]. A major challenge in efforts to reduce the environmental impact of methylmercury is a lack of comprehensive understanding of the processes that control its production by microbes. Dr. Gionfriddo recently discovered that production of methylmercury by some bacteria is controlled by mechanisms that encode for arsenic resistance[5]. This indicates that a microbe's ability to produce methylmercury may be controlled by its exposure to arsenic. Building off this finding, we will explore whether arsenic drives production of methylmercury in gold-mine impacted river sediments, where both metal(loid)s co-occur.

Objectives:

1. Determine if arsenic concentrations in gold-mine impacted river samples predict prevalence of arsenic resistant microbes
2. Determine if arsenic concentration and/or prevalence of arsenic resistant microbes predict presence of mercury methylating bacteria

Methods:

We will use molecular microbiology techniques to look for microbial genes that encode for arsenic and mercury transformations.

1. extract DNA from contaminated river sediments[3] across an arsenic concentration gradient
2. quantitative PCR to quantify the members of the microbiome that are resistant to arsenic and can methylate mercury.

References

[1] EPA Vic (2017) Gov. Report epa.vic.gov.au/about-epa/publications/1637-1 [2] Maher et al. (2020) Elementa:Science of the Anthropocene doi:10.1525/elementa.425 [3] Colombi et al. (2024) Environmental Geochemistry and Health doi:10.1007/s10653-024-02003-5 [4] DAWE (2020) RIS oia.pmc.gov.au/published-impactanalyses-and-reports/ratifying-minamata-convention-mercury [5] Gionfriddo et al. (2023) AEM doi:10.1128/aem.01768-22

Project 7: Microbiome of flathead in Port Phillip Bay

Discipline area: Environment and Genetics

Academic Supervisor: Dr Aleicia Holland, Professor Ewen Silvester, Dr Caitlin Gionfriddo and Dr Michael Shackleton

Project Overview:

Fish microbiomes play an important role in the function and health of fishes, with changes in microbiota linked to changes in growth, reproduction, and vulnerability of the host fish to diseases and pollutants. Microbiota in skin mucous and in gill arches form the first line of defence in protecting fish from disease and pollutants and respond rapidly to events even before changes to growth, reproduction, survival are shown. Fish populations within Port Phillip Bay are declining and under threat from natural and anthropogenic pressures. Currently however, little is known about the microbiome of native Australian fish and studies are needed to understand the contribution of each factor in determining microbiomes in and on different fish species and possible ecological implications. The microbiome of fish may represent an important non-invasive management tool in assessing "health" of fishes. It is therefore important to firstly determine what microbes live in and on fish but also how this changes in response stressors such as pollutants. This project aims to determine what lives in and on fish. The proposed Joss Family Fellowship for Future Researchers project will focus on working with recreational fishers to collect samples and test whether microbiome can be used as a screening tool to assess the health of fish.

Objectives:

- Determine microbiome associated with skin and gills of Australian native fish
- Develop tools to work with recreational fishers to aid in surveying wild fish

Methods:

- Collect swab samples from fish such as flathead
- Extract DNA
- Develop sampling packs for recreational fishers and aid in holding fishing competitions