

PROJECT-BASED GRADUATE RESEARCH STIPEND SCHOLARSHIP APPLICATION GUIDE

Interoperability and API Integration between
Ambulance Victoria and Emergency
Departments

Doctor of Philosophy ONLY

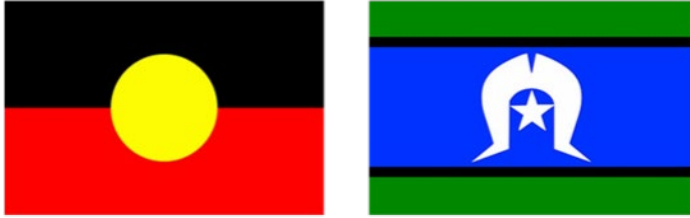
Newly commencing Australian residents (all domestic students including Australian citizens, Australian permanent residents, New Zealand citizens and holders of a permanent Australian humanitarian visa)

Newly commencing International students

09/12/2025

Version 1.0

Acknowledgement of Country



Victoria University acknowledges, recognises and respects the Ancestors, Elders and families of the Bunurong/Boonwurrung, Wadawurrung and Wurundjeri/Woiwurrung of the Kulin who are the traditional owners of University land in Victoria, the Gadigal and Guring-gai of the Eora Nation who are the traditional owners of University land in Sydney, and the Yulara/Yugarapul people and Turrbal people living in Meanjin (Brisbane).

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Key Details

This guide is for applicants interested in a graduate research scholarship commencing in **Research Period 1 or Research Period 2 2026** at Victoria University.

This scholarship is for the purpose of undertaking a graduate research degree related to the project outlined below and in [Table 1](#).

The Stipend Value and Included Benefits are outlined in [Table 2](#).

The Project

Project Description

This PhD project will focus on designing, implementing, and evaluating a secure interoperability framework between Ambulance Victoria's (AV) dispatch and operational systems and the Emergency Department (ED) management platforms of partner hospitals. The goal is to enable real-time, two-way data exchange through Application Programming Interfaces (APIs), creating a seamless, integrated information environment to support intelligent ambulance routing, hospital selection, and patient offload coordination.

The project will address current gaps in data visibility and coordination between pre-hospital and hospital care by integrating live ED loading, patient flow, and ramping status data into AV's decision-support ecosystem. This will involve designing API-driven microservices, defining data exchange standards, and developing an ontology-based data harmonisation layer that aligns heterogeneous ED and AV data sources. The research will also explore federated and privacy-preserving data sharing techniques to ensure compliance with Victorian and national health data governance frameworks.

This PhD forms part of the collaborative project ***Optimising Emergency Healthcare: A Data-Driven Approach to Ambulance Ramping and ED Efficiency***, jointly undertaken by Victoria University's Centre of Excellence in Paramedicine and Ambulance Victoria, with support from participating hospitals (e.g., Western Health).

Objectives

- Design and develop a secure, standards-based API architecture that enables real-time, bidirectional data exchange between AV and participating ED systems.
- Build a data harmonisation and mapping model to align ED live status data (e.g., patient load, waiting time, triage queue length, ramping status) with AV operational datasets.
- Develop and test intelligent algorithms that leverage real-time API data to recommend optimal ED destinations based on current capacity and forecasted demand.
- Explore and implement security, authentication, and interoperability protocols (e.g., FHIR, HL7, OAuth2) to ensure safe data transmission and compliance with privacy legislation.

- Evaluate the performance, reliability, and latency of the developed API framework under simulated and real-world conditions.
- Produce a governance and implementation framework outlining policies, responsibilities, and technical pathways for sustainable integration across the healthcare network.

Expected Outcomes

- A functional API-driven interoperability prototype connecting Ambulance Victoria and multiple Emergency Departments in real time.
- A data-sharing and harmonisation framework that enables consistent and secure exchange of operational information across systems.
- Demonstrated improvements in ramping delay prediction accuracy, offload coordination, and hospital destination optimisation.
- A documented reference architecture and governance model to guide statewide or national scale-up of the interoperability framework.
- Strengthened collaboration between AV, EDs, and Victoria University, providing a replicable model for digital health integration and data-driven healthcare transformation.

The Candidate

We are seeking a highly capable and motivated PhD candidate with strong technical aptitude and a deep interest in applying digital technologies to real-world healthcare challenges. The successful candidate will contribute to the design and development of a secure interoperability framework that supports real-time data exchange between Ambulance Victoria and partnering Emergency Departments.

The ideal candidate will demonstrate strong analytical and problem-solving skills, experience with software or systems development, and an interest in digital health transformation. They should be able to work both independently and collaboratively within a multidisciplinary team involving technical researchers, clinicians, health informaticians, and emergency care partners. A commitment to high-quality research, strong communication skills, and the ability to engage with industry stakeholders are essential.

Eligibility requirements

To be eligible, applicants must:

- Meet Victoria University's admission standards for entry into the Doctor of Philosophy (PhD) program.
- Be eligible to enrol full-time and undertake on-campus research engagement.
- Hold an Honours degree (First Class or equivalent), or a Master's degree by research or coursework with a substantial research component, in computer science,

software engineering, data science, information technology, health informatics, or a related discipline.

- Meet the English language proficiency requirements of the University (e.g., IELTS 6.5 overall with no band below 6.0, or equivalent).
- Demonstrate readiness for research through academic results, prior thesis work, publications, or industry project experience.

Desirable skills and experience

Applicants with the following skills and experience will be favourably considered:

- Experience with API development, system integration, or web service architectures, especially using RESTful, FHIR, or HL7 frameworks
- Strong programming skills in languages such as Python, Java, JavaScript/Node.js, or similar
- Familiarity with data engineering, including handling real-time or streaming data, ETL pipelines, or microservices
- Knowledge of health informatics, digital health systems, or hospital information systems
- Understanding of cybersecurity principles, authentication/authorisation methods (e.g., OAuth2), and secure data exchange
- Experience with machine learning or decision-support algorithms
- Demonstrated ability to work with large-scale operational datasets and manage data quality, harmonisation, and privacy constraints
- Ability to engage confidently with system architects, clinicians, and operational staff in healthcare settings
- Strong written and verbal communication skills, with the ability to prepare technical documentation and research publications

Application due date

a. Application Due Date	Open until filled
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Table 1: Project Outline

Item	Detail
a. Expected Commencement Date	16 February 2026
b. Project Title	Interoperability and API Integration between Ambulance Victoria and Emergency Departments
c. Funding Agency	Victoria University Centre of Excellence in Paramedicine and Ambulance Victoria
d. Chief Investigator	Dr Khandakar Ahmed
e. Associate Supervisor	Dr Assefa Teshome

Table 2: Stipend Value and Included Benefits

Item	Detail
a. Value of stipend per annum	A\$39,278 (2026 rate)
b. Fixed rate or incremented	Incremented
c. Fee offset included	RTP Fee Offset
d. PhD and/or Master Research Degrees available	PhD only
e. Part-Time Available	No
f. Overseas Student Health Cover	Included (Single)

Eligibility

Domestic Applicants

To be eligible for this scholarship, domestic applicants must:

- Be Australian residents (all domestic students including Australian citizens, Australian permanent residents, New Zealand citizens and holders of permanent Australian humanitarian visas)
- Meet the minimum academic entry and English language requirements for admission to the degree – see [website](#) for further details
- Not already have completed a research degree at the same or higher Australian Quality Framework (AQF) (or equivalent for overseas institutions)

International Applicants

To be eligible for this scholarship an international applicant must:

- Be a citizen of any country other than Australia or New Zealand.
- Meet the University's academic entrance requirements for enrolment into a research degree - see [website](#) for further details.
- Meet the University's English language proficiency requirements for enrolment in a research degree. Click [here](#) for further details.
- Enrol onshore (in person) as a full-time student.

You are **NOT ELIGIBLE** for if you:

- Have previously held an IPRS, VUIPRS or OPRS (unless it was for a Masters by Research degree, and you are applying for a scholarship to undertake PhD studies).
- Are currently studying, or have recently studied, on an AIDAB or AUSAID scholarship and are applying for an IPRS immediately following the AIDAB/AUSAID funded studies.

Priority will be given to:

- Applicants without an equivalent level degree.

Conditions and Benefits

Successful applicants will receive a full guide to the conditions and benefits of the Scholarships at the time of offer. The following is a summary of the main benefits and conditions.

Scholarship Value

Stipend Value

The annual value of the stipend is provided in Item (a) Value of Stipend per Annum in [Table 2](#) and are currently exempt from taxation.

If Item (b) of [Table 2](#) is marked as “Incremented” then stipend payments are indexed annually.

Fee Offset Value

Domestic Applicants

In 2026, the value of this the Fee Offset component of a Scholarship is \$14,000 - \$16,750 per research period depending on the course.

International Applicants

If Item (c) of **Table 2: Stipend Value and Included Benefits** is marked “Fee Offset” or “RTP Fee Offset” then international award holders will be granted a fee offset or Research Training Program fee-offset scholarship respectively, covering tuition fees for the duration of the course.

In 2026, the value of this component of the Award is between A\$17,500 and A\$20,700 per research period depending on the course.

If Item (d) of **Table 2: Stipend Value and Included Benefits** is marked “OSHC Included – Single” then International award holders of this project scholarship will be granted Overseas Student Health Cover (OSHC) for maximum duration of the degree in which they are enrolled and an additional two month of health cover.

Excluded Costs

The following costs are NOT included:

- travel costs
- the cost of English language testing
- the cost of bridging programs or English language programs

Additional awards, allowances and stipends

Holders of Scholarships may:

- Be in receipt of minor award, allowances or other earnings which are supplementary to a scholarship, or derived from part- time work within the policies of Victoria University

- a. student must not be receiving income from another source to support that student's general living costs while undertaking their course of study if that income is greater than 75 percent of that students VU HDR or RTP Stipend rate;
- b. income unrelated to the course of study or income received for the student's course of study but not for the purposes of supporting general living costs is not to be taken into account.

Period of Support

All candidates are expected to complete their study in the timely duration for their degree as per [Table 3](#).

Table 3: Stipend durations for full-time Higher Degrees by Research

	Stipend Duration	Timely Duration
Doctor of Philosophy	3.5 years	4 years

Periods of study already undertaken towards the degree prior to the commencement of the award will be deducted from the normal period of award tenure. Similarly, periods of study undertaken during suspension of the award, or undertaken during the tenure of a previous Research Training Program Stipend or Australian Postgraduate Award, will be deducted from the maximum period of tenure.

A Scholarship holder may be required to pay tuition fees for any period of enrolment in excess of the timely duration.

Employment

Stipend candidates are expected to normally study and research full-time (minimum of 36.75 hours per week) between the hours of 8.00am – 6.00pm Monday to Friday with Stipend candidates limited to a maximum of eight (8) hours paid employment per week during these hours. Please refer to the [Higher Degree by Research Scholarship Procedure](#). Employment must not interfere with the candidate's progress.

Commencement

No deferrals of the Scholarship will be considered. All successful applicants are expected to commence study by the Commencement Date advised in the Letter of Offer. The Commencement Date will normally be the Expected Commencement Date in Item (a) of [Table 2 Project Outline](#), however the University reserves the right to change the Commencement Date in the Letter of Offer when offering a scholarship.

If an applicant cannot start by the Commencement Date, the offer of the Scholarship may be withdrawn.

Scholarship Selection Procedures

Eligibility

All applications are assessed against the Domestic Applicants criteria for the scholarship scheme. Those applications deemed ineligible for a scholarship will not be processed any further and ineligible applicants will be notified of the result.

Ranking against the selection criteria

The Project Supervisor will rank eligible applications based on academic merit, relevant research experience, publications and relevant work experience. They may identify applications which are not for further consideration (NFFC).

The Project Supervisor may contact an applicant directly for more detail regarding their application.

Final Ranking

The Institute Associate Director will determine a final ranking of applications, identifying the preferred application.

Appeals

A request to review a scholarship decision must be lodged in writing dean.gradresearch@vu.edu.au within 10 University business days of the applicant being informed of the decision.

A review of a scholarship decision is available in circumstances where unsuccessful applicants believe there was a breach of process in the handling of their application;

The Dean, Graduate Research will undertake, or arrange a review if there is a conflict of interest, of the decision and a written outcome will be provided within 10 University business days of the date that the request was received by VU. If there are any delays to the timeline for any outcome, the Dean, Graduate Research will advise the applicant the reason for the delay and the date that they may receive an outcome of the review.

Application Submission

Please submit your CV and Cover Letter to Dr Khandakar Ahmed at Khandakar.Ahmed@vu.edu.au

Successful applicants will be required to submit a formal application through the Victoria University Admissions portal and meet all University requirements for admission and enrolment. Refer to the steps at [Apply For Graduate Research](#)

For more information

Please contact: Khandakar.Ahmed@vu.edu.au