

Investing in PhD candidates in Australia

How PhD candidates are
crucial to Australia's research
and innovation landscape.



Executive summary

PhD candidates are crucial to Australia's research and innovation landscape. These candidates contribute to a wide array of sectors such as government, education, healthcare and industry, fostering advancements that strengthen Australia's position as a global leader in research. PhD programs not only enhance Australia's academic reputation but also address workforce demands and skills shortages in essential fields. To sustain a strong research workforce and maintain competitive research standards, Australia must implement policies and resources that attract and support talented PhD candidates.

Current risks to Australia's research workforce

Despite an increase in domestic PhD completions by 41 per cent from 2000 to 2023, enrolment has declined by 8 per cent from 2018 to 2023, highlighting a concerning trend amid growing population demands. At the same time, there is a significant pool of potential PhD candidates due to a 195 per cent increase in Honours degree completions since 2003. Addressing these challenges requires targeted financial support and structural reforms to make PhD study more feasible for both domestic and international students.

The profile of Australia's PhD candidates in 2024

The typical PhD candidate in Australia is often older than expected, with an average commencement age of 34, bringing valuable work experience to their studies. Many candidates, especially women, pursue their studies part-time, balancing responsibilities that often extend beyond academia. This diversity in backgrounds and life stages enriches their research, but it also presents additional financial challenges, especially with limited access to government support.

Barriers to PhD study

A strong job market, inadequate financial support and insecure employment prospects in academia have deterred many domestic candidates from pursuing PhDs. Cost-of-living pressures, coupled with the low base stipend (\$32,192 in 2024, barely above the poverty line) are significant obstacles for potential candidates, particularly those with dependents or prior financial commitments. Additionally, PhD candidates are excluded from key government benefits like Parental Leave Pay, adding to the financial burden.

International PhD candidates' contributions and constraints

International PhD candidates are essential to Australia's research and development workforce, addressing critical shortages in fields such as engineering and information technology. However, the 10 per cent cap on international PhD candidates within the Research Training Program (RTP) limits the potential for more international students, particularly impacting regional universities that benefit from the population and cultural diversity brought by international students. The current model often requires universities to find alternate funding sources for these candidates – a challenge for smaller institutions.

Urgent reforms needed: increasing the stipend and adding flexibility

Universities Australia and the Australian Council of Graduate Research have long advocated for increasing PhD stipends — a need that has become urgent with the rising cost of living. Raising the RTP stipend would allow PhD candidates to focus on research and reduce financial barriers, thereby promoting equity and diversity in the PhD landscape. While universities can theoretically increase stipends, doing so without a larger RTP budget reduces the number of scholarships available.

Additionally, RTP indexing lags behind inflation, leaving current stipends inadequate. In response, Universities Australia has previously recommended increasing the base stipend to \$35,000 in 2025, along with an expanded RTP funding pool to maintain the number of scholarships. A more flexible RTP cap on international students would also allow universities to attract talent aligned with Australia's research priorities. Noting that this recommendation was not delivered in the 2024–25 Budget, we now recommend a 2026 base rate of \$36,000, estimating that this would cost the Government approximately \$300 million over four years (an increase of just 5.8 per cent over current program funding).

The need for Australian PhD graduates

Australia's PhD graduates are crucial for meeting research needs beyond academia, with many pursuing careers in industry, government and healthcare. The skills acquired through PhD programs — such as advanced research, problem-solving and analytical capabilities — are highly valuable across various sectors. PhD graduates are equipped to contribute to policy-making, enhance public services and address pressing challenges, reinforcing their relevance to Australia's workforce and economic growth.

Recommendations for reforms

To secure Australia's research future, we recommend:

1. Financial support and equity measures for domestic PhD candidates — \$300 million over four years¹

- increase the minimum stipend to a sustainable level aligned with the cost of living, with regular indexation.
- expand the RTP funding pool to cover the increased stipend while maintaining the number of domestic candidates.
- extend eligibility for government-funded parental leave to PhD candidates.
- remove taxation on part-time stipend scholarships to ease financial burdens.

2. Enhanced support for international PhD candidates

- raise the RTP funding cap for international students from 10 per cent to 20 per cent, especially for regions with critical workforce needs (no cost to Government).
- increase the RTP funding pool to support additional international candidates without compromising the number of domestic candidates. (up to approx. \$500 million over four years).

These reforms will create a more resilient research workforce by improving access to PhD programs for top domestic and international talent, supporting Australia's standing as a leader in research and contributing to national workforce and economic needs.

¹ Represents total cost to the existing RTP program of rebasing the stipend amount in 2026. Excludes any costs associated with parental leave or tax-treatment changes.

Current risks to Australia's future research workforce

Over the past two decades, domestic PhD completions have increased by 41 per cent, from 4,557 completions in 2000 to 6,447 in 2023, but this growth has not kept pace with the overall population growth of 41 per cent, or the 60 per cent growth in higher education enrolments. From 2018 to 2023, domestic PhD enrolments declined by 8 per cent (43,174 to 39,801²) even as the population grew by over 7 per cent. This decrease poses as a serious threat to Australia's research and development capacity.

At the same time, the number of Australian citizens or permanent residents eligible to commence a PhD is larger than ever before. There has been an 195 per cent increase in students completing Honours degrees (27,389 in 2021 compared to 9,297 in 2003), which are often a pathway to PhD programs. This indicates that there is a significant untapped pool of potential PhD candidates who could contribute to Australia's research efforts with the right incentives.

Who are Australia's PhD candidates in 2024?

 <p>Perception 1</p>	 <p>Perception 2</p>
<p>PhD candidates are young students continuing directly from undergraduate degrees, so a small stipend and waived course fees are adequate support.</p> <p>Reality: The average PhD candidate is 37 years old, often with significant work experience and financial responsibilities like families and mortgages.</p>	<p>PhD graduates have a narrow focus, making them employable only in their specific field of research.</p> <p>Reality: PhD programs develop well-rounded beyond research, including problem solving, critical thinking, project management and teamwork, making graduates highly versatile across many industries.</p>

² Department of Education, Student Enrolments Pivot Table, UA Members only. Postgraduate research students include HDR students and professional doctorates.

Contrary to common belief, PhD candidates are not all recent graduates in their 20s.

Many candidates already have considerable work experience which enriches their research.

In some disciplines, such as STEM, it is more common for students to follow the traditional path from undergraduate degrees directly into a PhD program. However, even in STEM, the average age of a person starting a PhD is 30, one third are over 30 years old.

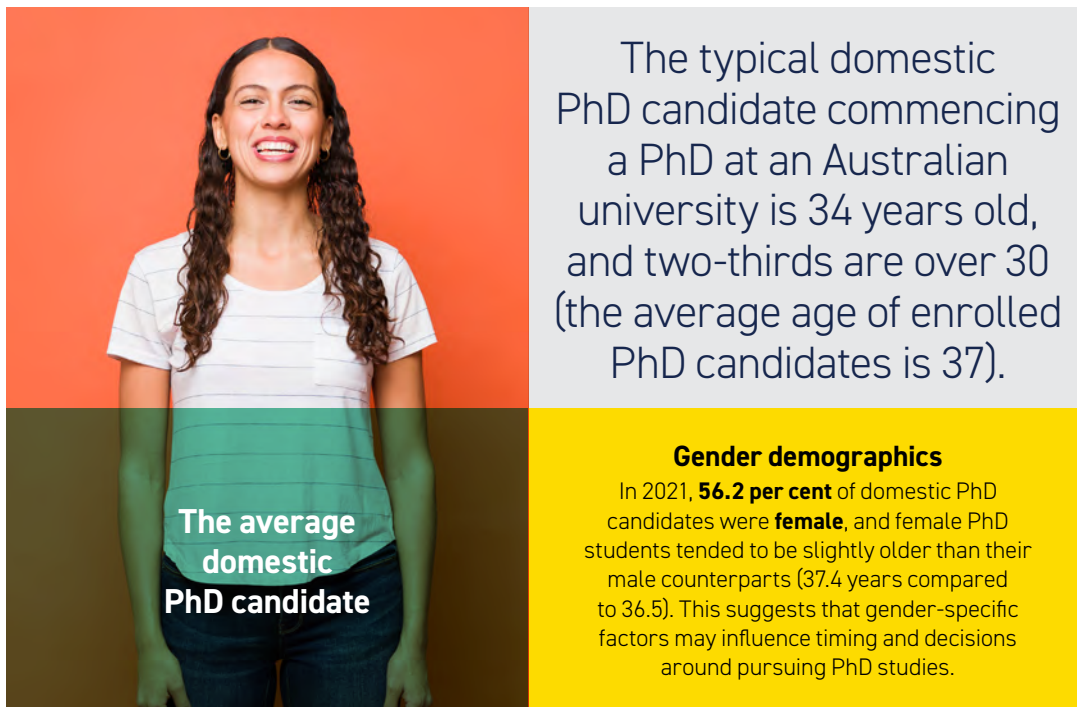


Figure 1: Load and enrolment of PhD students (by research), UA members. Source: Department of Education

Data	Sex	Age range	2011	2016	2021	Year change
Load per enrolment	Female	20+	0.71	0.7	0.68	-0.03
Enrol	Female	20+	25,217	29,112	29,612	17%
EFTSL load	Female	20+	17,938	20,256	20,153	12%
Load per enrolment	Male	20+	0.74	0.73	0.7	-0.03
Enrol	Male	20+	24,649	28,409	27,420	11%
EFTSL load	Male	20+	18,182	20,619	19,292	6%

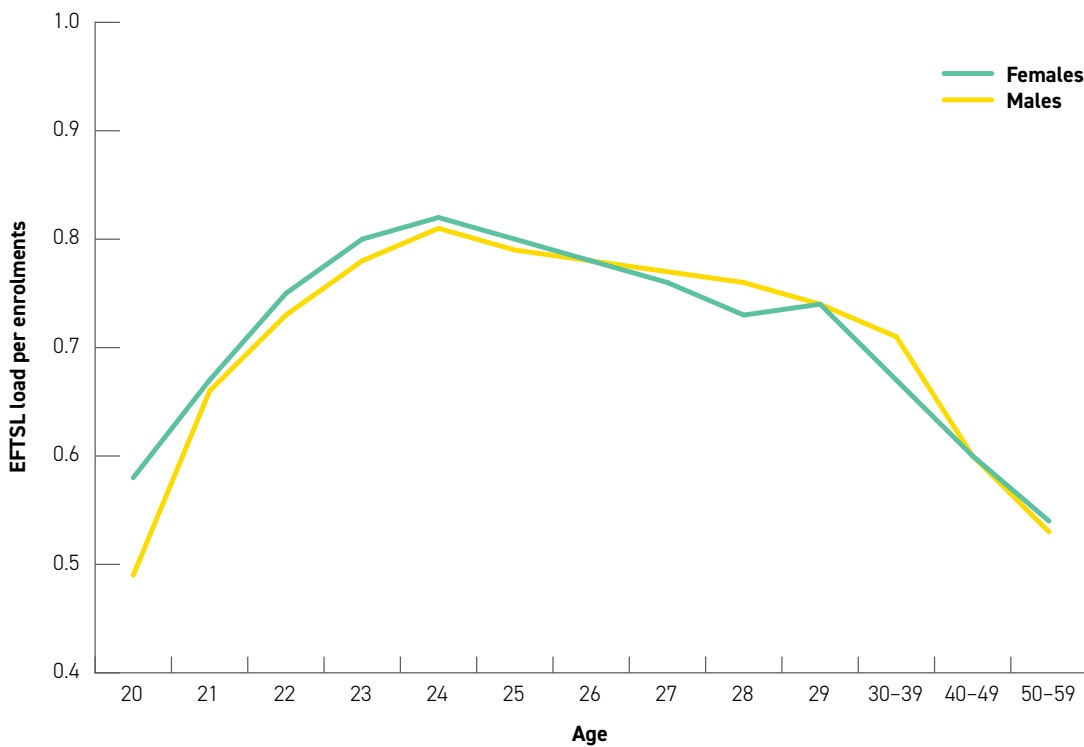
National data also shows a slight rise in the number of PhD candidates studying part-time in 2021 compared to previous years, as reflected in a decrease in student load per enrolment³. From 2011 to 2021, the load for women dropped from 0.71 to 0.68 and for men 0.74 to 0.70, indicating a shift toward part-time study. Women are also more likely than men to pursue their PhD on a part-time basis.

Candidate age is a key factor in determining whether PhD students are likely to study full- or part-time (Figure 2). PhD candidates in their early 20s and those over 40 are more likely to pursue their studies part-time compared to the average PhD student in their 30s.

³ Part-time is defined as anything less than full-time studying but it can vary. It is not possible to know from the data set what "part-time" equates to across the sector.

Figure 2: PhD study load per enrolment for males and females; Department of Education, 2021 data.

Please note that these data were reported in a binary format.



Why do Australians decide against a PhD?

Several factors contribute to the decline in domestic PhD candidates over the past five years. Key reasons include the strong job market for undergraduates, insufficient financial support during PhD programs and insecure employment prospects in academia after completion. There are also misconceptions about the value of PhD graduates in sectors outside academia, particularly in industry.

While education is often considered an investment in human capital, the return on investment for PhD studies may not be obvious to many. For those who struggle financially while enrolled and drop out before completion, it is unlikely that they will recover the lost income. Cost-of-living pressures further exacerbate this, making it challenging for many to even consider pursuing a PhD.

PhD candidates are paid below the poverty line

PhD candidates are often paid below the poverty line. In 2018, 35 per cent of commencing PhD candidates were supported by a government-funded RTP stipend, which most universities use as a benchmark for other scholarships.

In 2024, the base stipend is \$32,192 (tax exempt if taken full-time), equating to \$619.08 per week — just above the poverty line for a single individual (\$612.18). However, as outlined above, many PhD candidates do not follow a traditional career path and often have financial responsibilities before starting their PhD. As a result, the stipend is insufficient for many, especially those with families or dependents, and receiving a PhD often represents a significant reduction in income. This forces many people living as a couple or with dependents to live below the poverty line.

There is little doubt that the low level of the PhD stipend is a significant barrier for many potential candidates who would otherwise be interested. In particular, these individuals bring valuable real-world experience to their studies and are well-positioned to undertake the type of research that governments want to support — research that delivers tangible, real-world outcomes.

Recognising that the current RTP stipend rate forces students to live below the poverty line, many Australian universities offer a higher RTP stipends to their students. A recent Australian Council of Graduate Research survey found that RTP stipends ranged from \$32,192 to \$40,000, with the average stipend being \$34,244. However, universities offering more competitive stipends face a trade-off: by increasing stipends, they reduce the number of PhD candidates they can afford to support.^{4,5}

Additionally, most RTP stipend scholarships are limited to 3.5 years of full-time study⁶ for PhD candidates. However, many candidates take longer to complete their degree, often leaving them without any income during the final stages of their studies. As a result, they must rely on the support of others or the minimal amount of casual work they can manage during their studies. Students with caring responsibilities or disabilities face even greater challenges. If they are unable to study full-time, their stipends are reduced by half and become taxable, further penalising them financially.

PhD candidates are ineligible for government benefits

PhD candidates face the challenge of being ineligible for certain government benefits because they are classified as students, not university employees. This distinction can deter some from pursuing a PhD. While the status of PhD candidates is a debated issue, a few reasonable changes to eligibility rules could make a significant difference for this group.

For instance, PhD candidates are not eligible for the Government's Parental Leave Pay.⁷ Those receiving a RTP stipend are entitled to 60 working days of paid parental leave, which universities may supplement, but this is significantly less than if they received the Government's Parental Leave Pay.⁸ Additionally, PhD candidates on non-RTP stipends (such as those funded through ARC grants) do not have guaranteed parental leave through their scholarships and are also ineligible for the Government's Paid Parental Leave Pay.

The Greens and Independent MP Andrew Wilkie have proposed expanding eligibility for the Paid Parental Leave scheme to include PhD candidates.⁹ According to estimates from the Parliamentary Budget Office, this change would cost \$5 million annually, and we strongly support this proposal.¹⁰

International PhD candidates

Between 2003 and 2023, the number of international PhD completions in Australia grew significantly, from 877 to 4,870. Interest from international students in Australian PhD programs remains high, in part due to the improved international rankings of many Australian universities over this period. Currently, Australia provides a transformative research education to 26,227 international PhD candidates, making up 40 per cent of all PhD enrolments in 2023. This aligns with efforts by Australian universities to address the shortage of domestic PhD candidates, but it also reflects universities' social mandate to help upskill the workforce of lower- and middle-income countries in our region and beyond.

However, the number of international candidates undertaking Australian PhDs could be even higher if not for the 10 per cent cap on international students within the Department of Education's RTP. This cap is especially restrictive for regional universities, where international PhD students not only contribute to critical research but also support population growth, a skilled workforce and cultural diversity in their communities. Many international PhD candidates can only study in Australia because universities find alternative funding sources for their programs — an option that regional universities often struggle to provide.

International PhD candidates represent a valuable future talent pool for Australia, whether they stay and work locally or continue collaborating internationally. In areas where there are not enough domestic graduates to meet Australia's research needs, recruiting and educating international candidates is essential for the nation's future. Yet, despite these benefits, federal funding does not currently support their education in Australia.

4 Single person poverty line = \$612.18 per week (\$31,833 per annum after tax) compared to the 2023 base stipend of \$32,912. https://melbourneinstitute.unimelb.edu.au/__data/assets/pdf_file/0006/5148069/Poverty-Lines-Australia-June-2024.pdf

5 <https://mga.monash.edu/pageassets/voice/current-issues/MGA-HDR-Stipend-Report-2022.pdf>

6 3.5 equivalent full-time student load (EFTSL)

7 A small number of PhDs receive the Government's Parental Leave Pay as they meet the current work test (through work they undertake outside their studies).

8 Current payment for Parental Leave Pay is \$176.55 before tax for a maximum of 90 days (\$15,889.50 before tax).

A PhD student receiving RTP would receive \$6,891.50 tax free (at the current base rate of \$29,863) over a 60-day period.

9 <https://greens.org.au/news/speech/speech-paid-parental-leave>

10 <https://www.pbo.gov.au/publications-and-data/publications/costings/expanding-paid-parental-leave-eligibility-phd-candidates>



The average international PhD candidate

The typical international PhD candidate enrolled in an Australian university is **31 years old**, making them younger than their Australian counterparts.

The average age of these candidates has decreased slightly from 32.4 years in 2011 to 31.4 years. Currently, over half of international PhDs are under 30, with 40 per cent aged between 30 and 39. Overall, 90 per cent are under 40.

Gender demographics

International PhD candidates are predominantly **male**, with **55.3 per cent in 2021**.

This represents a slight decrease from 57.7 per cent in 2012.

Urgent reforms – lift the stipend and add flexibility

For many years, Universities Australia and the Australian Council of Graduate Research have advocated for a higher PhD stipend, but with today's cost-of-living crisis, this need is more urgent than ever. Raising the RTP stipend would enable PhD candidates to focus on research and skills development that benefits Australia. This adjustment would ensure pursuing a PhD is accessible to top candidates, not just those who can afford it, thus promoting equity and diversity in Australia's research landscape.

A common counterargument is that universities are already permitted to increase stipends to \$46,653. However, no Australian university has implemented this maximum rate due to budget constraints; raising stipends would reduce the total number of scholarships available unless the RTP budget itself is increased. As a result, increasing the base stipend without additional funding could lead to a decrease in the number of PhD graduates.

The calculation method for RTP funding also affects PhD candidates, as RTP is indexed in way that fails to keep up with cost-of-living increases – leaving the 2024 stipend only just catching up to inflation from 2022^{11,12}. In response to the Universities Accord Interim Report, Universities Australia had called for a modest increase in the base stipend to \$35,000 (alongside an increase in RTP funding to maintain the number of scholarships), as well as improved indexation.

This adjustment acknowledges that stipends have historically fallen short of a living wage, while also recognising that many PhD candidate have families or have left salaried positions to pursue research. While some universities may still need to supplement stipends to approach a living wage, a government backed increase would be a valuable middle ground.

11 RTP stipends have been indexed since 2017 using CPI annual movement to December from two years prior to the relevant academic year. For example, the 2023 base amount = 2022 stipend amount X (1 + December 2021 CPI).

12 <https://www.abs.gov.au/statistics/economy/price-indexes-and-inflation/consumer-price-index-australia/jun-quarter-2023>

In addition, we propose a modest relaxation of the RTP cap on international students, which would give universities more flexibility in managing their RTP funding. The proposed stipend increase, combined with added flexibility, would help alleviate financial barriers for PhD candidates and allow universities to recruit students in areas aligned with Australia's research priorities, especially where domestic demand may be lower.

Why the nation needs Australian PhD graduates

Although there is limited data on why individuals pursue a PhD and their desired job outcomes, studies show that less than half of PhD candidates aim for a career in academia¹³. Most enter research training with aspirations to apply their expertise in diverse fields like industry, government, education and health. However, there is a common misconception that PhD graduates, having specialised in a specific research area, are only employable within their narrow fields. Nothing could be further from the truth.

Contemporary PhD programs equip graduates not only with in-depth knowledge in a chosen field but also with advanced research, analytical and problem-solving skills. These competencies are highly valuable across a range of sectors. PhD graduates are uniquely prepared to leverage cutting-edge research to shape policy, develop procedures and enhance services that improve outcomes in areas as varied as healthcare, public policy and corporate strategy. While other qualifications may develop some of these skills, PhD graduates acquire them through years of managing complex research projects, supported by comprehensive development programs offered by universities.

While a PhD can be a pathway to an academic career, the skills acquired during a PhD are highly transferable across multiple industries. Universities are increasingly emphasising the versatility of these skills through researcher development programs, training in commercialisation and industry internships. It is crucial to raise awareness among potential candidates and the broader community of the wide-ranging and practical training PhD candidates receive, and the valuable contributions they can make across society.

Recommendations for higher degree research reforms

Recognising the importance of PhD candidates to Australia's future, proactive steps are essential to strengthen and secure the nation's research workforce. Offering adequate financial support to PhD students is crucial for attracting top talent to research training programs and ensuring a transformative development experience for researchers.

We recommend:

1. Enhanced financial support and equity measures addressing to improve the feasibility of PhD study in Australia:
 - a. increase the minimum stipend to meet a realistic cost-of-living benchmark, with indexing to maintain this standard,
 - b. expand the RTP funding pool to cover the increased minimum stipend while supporting the current number of domestic candidates,
 - c. extend eligibility for government-funded parental leave, and
 - d. remove taxation on part-time stipend scholarships.

Universities have a social responsibility to deliver exceptional research training experiences for international students, particularly those from lower- and middle-income countries in our region and beyond. These international candidates are invaluable for addressing skills shortages in critical fields, such as engineering and information technology, where domestic graduate numbers remain low. Reducing regulatory barriers in the recruitment and arrival process is essential to support these students.

We recommend:

2. Increased support for international PhD candidates to address industry and workforce needs:
 - a. raise the international cap on RTP funding from 10 per cent to 20 per cent to better support international students, and
 - b. increase the RTP funding pool to support additional international candidates without reducing the number of domestic candidates.

¹³ https://amsi.org.au/wp-content/uploads/2019/04/advancing_australias_knowledge_economy.pdf

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