

2023-24 PRE-BUDGET SUBMISSION

JANUARY 2023



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AUSTRALIA

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CONTENTS

Contents	3
1 Executive summary	4
2 Summary of recommendations	5
3 Opportunities for university education	6
3.1 Demand-driven funding for Indigenous students	8
3.2 Funding to support student access	9
3.3 Supporting lifelong learning	10
3.4 Demand for university places forecast to increase	11
4 Addressing national skill shortages	14
4.1 Pipeline of health workforce	14
5 University research underpins national prosperity	16
5.1 Research fuels prosperity	16
5.2 What research do universities do?	16
5.3 Industry/university collaboration	17
5.4 What's the budgetary problem?	17
5.5 What are the budgetary solutions?	18
5.6 What should support for industry R&D look like?	19
6 International education	20
6.1 The Endeavour Leadership Program	20
7 Partnership in national security	21
7.1 Boosting investment to counter foreign interference	21

1 EXECUTIVE SUMMARY

Australia is at a critical juncture. Skill shortages, economic uncertainty, geopolitical tensions and a new industrial revolution are changing the domestic and global landscapes in which we operate.

In forging a path forward, we must harness the institutions that have helped turn Australia into the safe, successful and prosperous nation we are today. Universities, working with government and industry, are chief among them and must continue to lead the way, as they have always done.

For centuries, our universities have generated and transmitted knowledge and skills that have transformed societies for the better, producing the pipeline of skilled workers who power almost every sector of our economy. Australian researchers and scientists, meanwhile, have produced some of our most important innovations – from medical marvels to technological breakthroughs we can't live without.

In 2021, nearly a third of Australians aged between 15 and 74 had a university degree – up from just one per cent of the population in the late 1960s – thanks to our high-quality, publicly funded education system. Australia's economy has performed strongly over this period, with 28 consecutive years of economic growth prior to COVID-19 and a world-leading economic recovery on the other side of the pandemic.

University-educated workers make our economy \$185 billion larger than it otherwise would be, while for every \$1 invested in research – of which the majority is undertaken in our universities – \$5 is returned to the economy. That is serious bang for buck. Future investment in universities would pay for itself with the extra economic activity they help generate.

Today, Australia is a leading global economy and democracy. Universities have helped deliver that, but we cannot take this status for granted. We must use these valuable national assets, our universities, to maintain and grow our competitive advantage, to tackle the great challenges before us and to make the most of new opportunities that will take us forward – bolder, stronger and better prepared for the future. After all, more than half of all the new jobs expected to be created in the coming years will require a university degree.

Universities are ready to work closely with government, through the 2023-24 budget and the current review of the higher education sector (the O'Kane review), to ensure our institutions can continue to best serve Australia's interests. Getting the policy settings right will support our universities in the vitally important endeavours they undertake on behalf of our nation.

Universities acknowledge the significant challenges the budget faces, including increasing consumer prices, energy costs and interest rates, a severe labour shortage and other significant global challenges. The 2021 Intergenerational Report showed that productivity growth and a carefully designed and managed migration system are effective ways of dealing with these challenges. These strategies are effective because they involve making better use of our existing resources, plus carefully adding new resources, skills and talents to our economy. Universities stand as crucial partners with the government as it pursues these strategies.

As history has shown us, universities are the builders of our future. They are just as important now as ever.

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2 SUMMARY OF RECOMMENDATIONS

This section summarises Universities Australia's recommendations for funding in the 2023-24 budget.

Recommendation 1:

Ensure the funding framework for government-subsidised university places is adequate to meet future student demand due to changes in population and the labour market.

Recommendation 2:

Extend the Transition Fund Loading for at least another year or until new, long-term funding arrangements are introduced.

Recommendation 3:

Extend demand-driven places to all Aboriginal and Torres Strait Islander students, not just those from regional and remote areas.

Recommendation 4:

Extend eligibility for the Higher Education Loan Program (HELP) to Australians undertaking non-award microcredentials.

Recommendation 5:

Support sustainable clinical education and placement capacity.

- Expand clinical placement capacity including in non-traditional settings.
- Grow and support technology-assisted clinical training.

Better harness health professional students in the workforce through support for paid final year assistant roles and degree-apprenticeship models.

Recommendation 6:

Increase funding for university research to at least the OECD average to drive innovation and boost productivity.

Recommendation 7:

Government works with universities to realise the full potential of the National Reconstruction Fund and ensure that the program boosts industry's capacity to innovate.

Recommendation 8:

Redirect Research and Development Tax Incentive (RDTI) funds towards targeted, direct-funding programs.

Recommendation 9:

Re-establish the Endeavour Leadership Program.

Recommendation 10:

Raise investment in activities that counter foreign interference in universities to levels in similar jurisdictions such as Canada.

3 OPPORTUNITIES FOR UNIVERSITY EDUCATION

Recommendation 1:

Ensure the funding framework for government-subsidised university places is adequate to meet future student demand due to changes in population and the labour market.

Recommendation 2:

Extend the Transition Fund Loading for at least another year or until new, long-term funding arrangements are introduced.

Recommendation 3:

Extend demand-driven places to all Aboriginal and Torres Strait Islander peoples, not just those from regional and remote areas.

Recommendation 4:

Extend eligibility for the Higher Education Loan Program (HELP) to Australians undertaking non-award microcredentials.

University education has clear benefits for individuals and to the broader economy.

Australia's universities play a pivotal role in addressing the nation's skill shortages. Government policy and funding settings should support universities to prepare the next generation of Australians to meet the workforce needs of the nation – now and in the future.

University-qualified workers enjoy higher wages, better employment outcomes and improved health and wellbeing. The benefits to the wider community and economy are even greater: each new university graduate delivers an average of \$891,000 in benefits to the broader economy over their lifetime. This includes higher tax contributions, the creation of new jobs and higher wages for non-graduate workers, and increased investment.¹

Each percentage point increase in higher education attainment – equivalent to about 50,000 additional graduates in the workforce – is associated with an increase in gross domestic product (GDP) of 0.09 per cent per year. This is equivalent to \$1.8 billion, compared to 2018 GDP.²

Australian Bureau of Statistics (ABS) data consistently shows that graduates perform better in the labour market. Unemployment rates of graduates have been consistently below the national unemployment rate, by around two percentage points since 2007. In May 2021, while Australia's overall unemployment rate was five per cent, the unemployment rate for those with a bachelor's degree or higher was lower at 3.1 per cent.

Universities Australia (UA) acknowledges and welcomes the government's commitment to meeting demand for higher education through its provision of 20,000 additional university places in the 2022-23 budget.³ Yet, there is further demand. According to the Centre for Population, there will be around 70,000 more 18-year-olds by 2030, compared to 2021. The 18-year-old population is projected to increase from 289,076 in 2021 (reported by the ABS) to 359,500 in 2030 (projected by the Centre for Population, see Figure 1). It is also evident that there will be a significant jump in 18-year-olds in 2024 and 2025 (the so-called 'Costello babies'), with annual growth increasing from around 9,000 to 11,000 to more than 15,000 in each of those years.

Demographic growth in the youth population and changes to skills in demand means that many more people – both school leavers and others – will want to study in coming years. According to the *Longitudinal Survey*

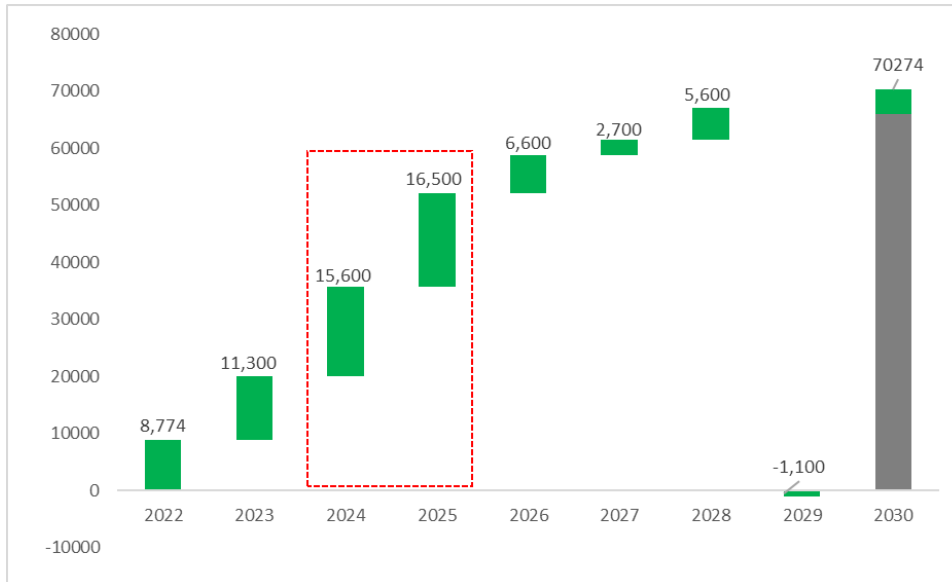
¹ Deloitte Access Economics 2020, *The importance of universities to Australia's prosperity*, A report to Universities Australia, Canberra.

² Ibid.

³ Budget Paper No. 2, October 2022-23 Budget, page 95.

of *Australian Youth*, 59 per cent of school leavers plan to go to university when they finish Year 12.⁴ To equip Australians with the skills needed to drive economic growth and prosperity, the supply of university places must keep pace with the increasing student demand, especially in the middle of this decade. Government and universities need to prepare now for this increase in demand, to ensure that these young Australians have the same opportunities to go to university as recent previous cohorts and to help meet the nation's skills needs.

Figure 1: Projected growth in 18-year-old population to 2030, compared to 2021



Source: Australian Bureau of Statistics 2022, *National State and Territory Population: June 2022*; Centre for Population 2023, *Population Statement 2022: National projections*.

We note that total per-student funding for teaching will fall under the Job-ready Graduates (JRG) package – by 5.8 per cent per place on average – when fully implemented in 2024. This is in a context of significant reductions in universities' revenues for some health and STEM disciplines that the government seeks to encourage.

The JRG package featured transitional arrangements including a Transition Fund Loading (TFL) which compensates universities for any net negative impacts of changes to cluster funding. The TFL effectively means that universities are funded at pre-JRG rates in those courses where the new JRG funding rates would leave them worse off.

The TFL is scheduled to cease at the end of 2023. The O'Kane review, which will drive the development of the Australian Universities Accord, includes a review of JRG. Stakeholders both inside and outside the university sector have expressed major concerns about the JRG funding changes. It is likely that the expert panel undertaking the O'Kane review will recommend significant changes to cluster funding when it hands its final report to government. Any changes to funding are therefore likely to be included in the 2024-25 federal budget. This means that they will not be implemented until the 2025 academic year.

This schedule of funding changes would leave universities dealing with two major sets of changes – or two different funding systems – in as many years: the end of the TFL and full implementation of JRG cluster funding in 2024, and any changes recommended through the O'Kane review in 2025.

This would cause unnecessary difficulty for universities and students. Universities would face an unreasonable administrative burden in having to adjust their systems – as well as their institutional budgets – twice. There is little point proceeding with the full implementation of JRG in the knowledge that a review will take place at the same time and that the O'Kane review will likely recommend significant changes. This policy and administrative churn are counter-productive and is the opposite of the stable policy environment that the government is seeking to establish for the higher education sector.

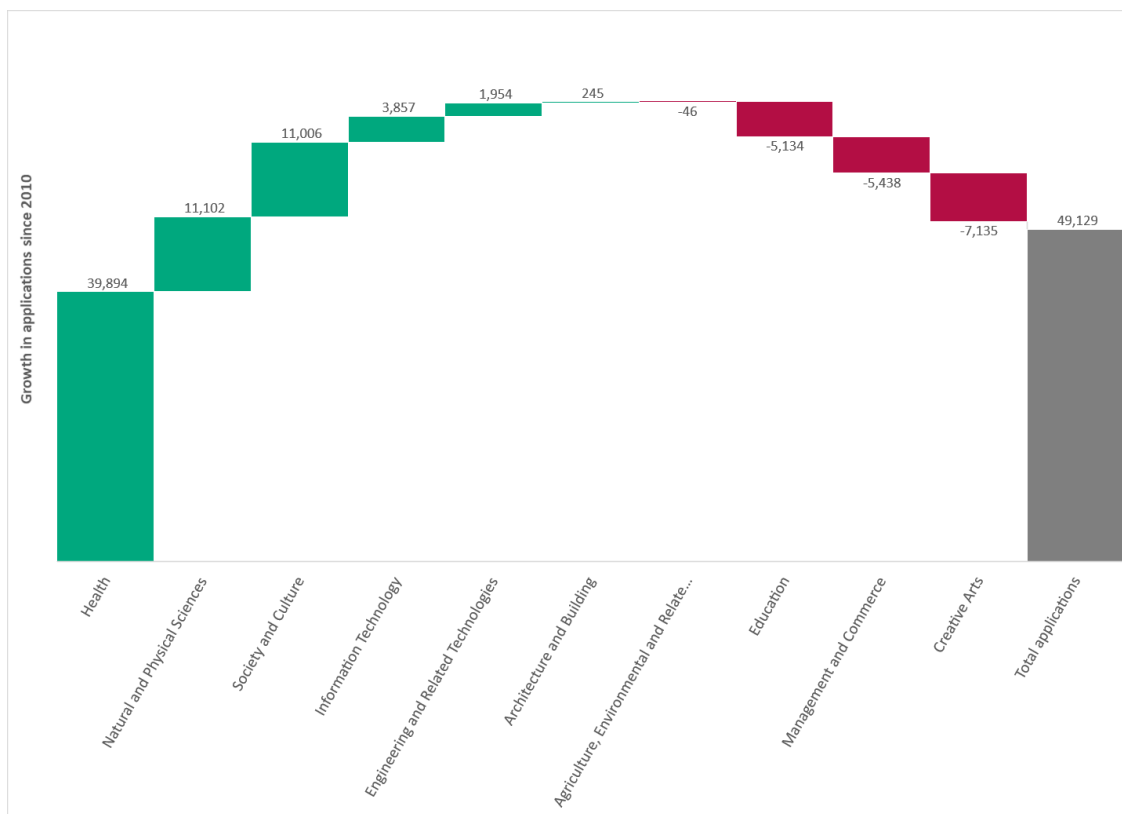
⁴ National Centre for Vocational Education and Research 2019, *Generation Z: Leaving School*, Longitudinal Survey of Australian Youth Infographic, Adelaide.

UA recommends that the TFL be extended for another year to the end of 2024, subject to the implementation of new, long-term funding arrangements taking effect from 2025. Should any longer-term funding settings recommended through the O’Kane review not commence until later, the TFL could be extended until such arrangements come into place.

Student demand (i.e., undergraduate applications) for health and STEM disciplines has increased significantly in the last decade (see Figure 2). Since 2010, undergraduate applications to study health have increased by 39,894 applications (or 66.4 per cent) – from 60,064 to 99,958 in 2021 – followed by natural and physical science with applications increasing by 11,102 (or 51.7 per cent) from 21,493 to 32,595 applications in 2021, while student demand to study creative arts (-23.8 per cent), education (-16 per cent) and management and commerce (-13.6 per cent) has declined significantly.

The JRG package reduced student contributions in STEM, health and some other disciplines in an effort to incentivise student demand. In some of these disciplines, JRG also reduced overall resourcing (Commonwealth plus student contributions) per place. UA is concerned that universities may experience difficulties in seeking to meet the increasing student demand for health and STEM disciplines – the disciplines that the JRG package seeks to encourage – given the significant reduction in resourcing per student for these fields.

Figure 2: Growth in undergraduate applications by broad disciplines to 2021, compared to 2010



Source: Department of Education, Skills and Employment 2021, *Undergraduate applications, offers and acceptance 2021*.

3.1 DEMAND-DRIVEN FUNDING FOR INDIGENOUS STUDENTS

Government should expand guaranteed Commonwealth supported places (CSPs) to all Aboriginal and Torres Strait Islander peoples, not just those from regional and remote areas, to ensure that any Indigenous person who wants to pursue a university education can.

Currently, Indigenous students living in regional or remote areas are guaranteed a CSP to study at university. However, most Indigenous students live in metropolitan areas (75 per cent, according to ABS data) and do not qualify for an uncapped place. While Indigenous people in major cities are more likely to have a degree than those from regional areas, they are much less likely to have a degree than non-

Indigenous people in the cities. The attainment rate for Indigenous peoples aged 20–64 in urban areas is only 13.7 per cent – one third of the figure for the non-Indigenous population (41.1 per cent).

Aboriginal and Torres Strait Islander peoples are still under-represented in the student population (1.9 per cent in 2019) compared to their share of the total population (3.1 per cent), yet their employment prospects are strong. In 2021, 76.8 per cent of Indigenous undergraduates were in full-time employment four months after completion, outperforming non-Indigenous undergraduates (68.8 per cent). Uncapping university places for all Indigenous people could set them on a path to a fulfilling career while further helping address Australia’s skills needs.

Figure 33: Attainment of bachelor degree or higher, by Indigenous status and regionality, 20 to 64 years old, 2021 census



Source: Australian Bureau of Statistics, 2021 *Census of Housing and Population*, TableBuilder.

Note: ‘Regional & rural areas’ captures: ‘other urban’, ‘bounded localities’ and ‘rural areas’.

As reports on the *Closing the Gap* initiative have consistently shown, higher education is a major contributor to the advancement of Aboriginal and Torres Strait Islander peoples. Enrolments and completions are trending up, and for those who have a degree, there is effectively no gap in employment. The 2016 census found that both Indigenous and non-Indigenous graduates had employment rates of 83 per cent. For all Indigenous people aged 15–64, employment rates are around 47 per cent – well below the non-Indigenous rate (72 per cent).⁵ Annual government surveys on graduate employment outcomes consistently show that Indigenous graduates’ outcomes are comparable to – or better than – those of non-Indigenous graduates.

3.2 FUNDING TO SUPPORT STUDENT ACCESS

In addition to ensuring that there are enough university places overall, policy settings should work to make access to university fairer – both as a matter of social justice and to draw on the talents of all Australians, regardless of their background.

UA would like to see enough CSPs available to meet growing demand for higher education. When demand for university places significantly exceeds supply, it is students from non-traditional backgrounds that are most likely to miss out. Therefore, we urge government to maintain an adequate supply of places over the rest of the decade as demand increases due to demographic growth and changes in the labour market.

In addition to the importance of adequate supply, targeted policy initiatives can better promote access to higher education. UA acknowledges the government’s commitment to supporting access to university for students from under-represented groups by allocating an additional 20,000 places. Under the Higher Education Participation and Partnerships Program (HEPPP), students from low-socioeconomic status

⁵ Australian Institute of Health and Welfare 2019, *Indigenous employment*, <https://www.aihw.gov.au/reports/australias-welfare/indigenous-employment>

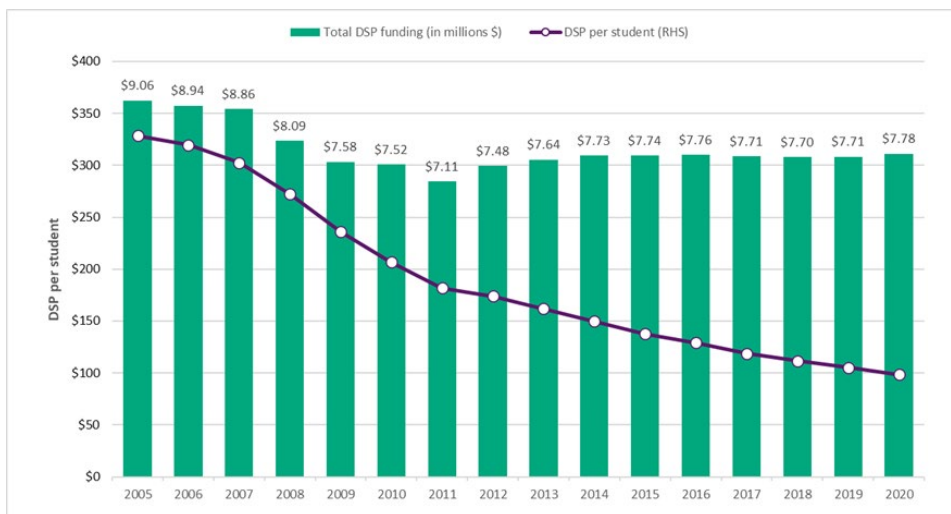
backgrounds and regional and remote Australia, as well as Indigenous persons, have had greater access to and support in higher education. However, the program has struggled to achieve its full potential, with budget cuts since 2010 limiting the program’s impact. To achieve the aspiration of a more equitable higher education sector, it is necessary to restore HEPPP funding to pre-2016-17 budget levels to ensure the program can deliver both outreach and student support.

A continued priority for UA through the O’Kane review will be to improve universities’ support for the increasing numbers of students with disability. Universities can do more for these students to enhance learning and teaching and the student experience. However, universities require adequate resources to achieve this. UA calls on the government to increase funding to universities under the Disability Support Program (DSP).

While the funding for the DSP grew 22 per cent in nominal terms between 2008 and 2020, funding has declined by 3.8 per cent over the period in real terms. Significant growth (166 per cent) in students with disability means that DSP funding per student has declined by 63.9 per cent in real terms, from \$272 in 2008 to \$98 in 2020.

There is an increasingly wide range of disabilities reported by students and consequently a wide range of needs. Not every student with a disability needs the same level of funding support. Nevertheless, current levels of average DSP funding are inadequate. UA urges government to immediately raise aggregate DSP funding to its real 2005 level (or \$9 million in today’s money) or at least by 10 per cent. Looking forward, government should guarantee at least this level of per student funding in the future by increasing aggregate funding in line with future enrolment growth. Further, government should review the adequacy and impact of DSP and other dedicated Commonwealth support for students with disability, in collaboration with universities, with a view to developing options for sustainable and effective support initiatives.

Figure 4: Funding for Disability Support Program – total and per student – in 2020 dollars



Source: UA analysis based on Department of Education, Skills and Employment’s administrative data and HESA Determinations as of 27 April 2022.

3.3 SUPPORTING LIFELONG LEARNING

To help drive productivity, policy settings could do more to support upskilling and reskilling, primarily through microcredentials. Existing financial incentives do not support workers who face time constraints to pursue formal qualifications or workers transitioning to new occupations. Prospective students currently must pay upfront for non-award microcredentials. If they have enrolled in microcredentials that do not relate to their current occupations, they are not able to claim the course fees as self-education expense tax deductions.

Recent ABS data has shown that people in the lowest two quintiles of weekly household income were more than twice as likely to report financial reasons as their main barrier to participating in non-formal learning as those in the highest quintile – 24.2 per cent and 28.5 per cent respectively, compared with 10 per cent.

A key advantage of the income-contingent loan system is that it does not discriminate based on age or employment status. Eligibility is extended to the employed and unemployed, inactive workers, and the self-employed.

The review of University-Industry Collaboration in Teaching and Learning by professors Martin Bean and Peter Dawkins recommended that students participating in industry-focussed microcredentials should be able to access the Higher Education Loan Program through FEE-HELP. UA supports this proposal, noting however that there has been no costing of this recommendation undertaken as far as we are aware.

UA would also support a model of FEE-HELP covering microcredentials targeted at areas of key skills shortages identified by government. We welcome the government's extension to the pilot of FEE-HELP for microcredentials. This pilot includes \$18.5 million from 2022-2026 and will help to cover the cost of design and delivery of microcredentials. The pilot will help to build the case for microcredentials and will trial practical initiatives to strengthen government support and participation by students and universities.

3.4 DEMAND FOR UNIVERSITY PLACES FORECAST TO INCREASE

Australia is facing critical skill shortages as the nation emerges from the COVID-19 pandemic.

The ABS June 2022 *Business Conditions and Sentiments Survey* showed almost a third of employing businesses were having difficulty finding suitable staff, including industries seeking university graduates.⁶ This includes education and training (47 per cent), information media and telecommunications (27 per cent) and health care and social assistance (26 per cent).

While some of this is due to uncertain economic conditions (24 per cent), the most significant factors impacting the ability for businesses to find suitable staff are a lack of job applicants (79 per cent) and job applicants not having the required skills or qualifications (59 per cent).

Australian universities play a pivotal role in addressing the nation's skill shortages. Government policy and funding settings should support universities to prepare the next generation of Australians to meet the future workforce needs of the nation. With the projected growth in population, we will have more people looking for work and pipeline of people coming a high need for skills. We have an opportunity right now to gear up and get enough places funded to solve the skills problem.

Changes in Australia's economic conditions and advances in science and technology will continue to reshape how Australians work. The extent to which individuals, businesses and the nation can benefit from these changes depends significantly on the readiness of Australia's education and training systems to help individuals build and maintain relevant knowledge and skills over their working careers.

Government projections show that more than a million new jobs will be created over the coming years. More than half of these will require a university degree, and almost all will require some form of post-secondary education. Government must ensure that there are enough university places to meet increasing student demand because of population growth, especially in workforce growth areas such as health, aged care, disability services and teaching.

If there is a shortage of places, the economy will lack the skilled workers it needs. Young Australians will miss out on the opportunities a university education brings, and not enough older Australians will have the chance to retrain for jobs in demand.

UA acknowledges some measures that have been taken to meet the increase in demand for higher education places, namely the additional 20,000 places in the 2022-23 budget. However, overall funding⁷ has plateaued over the last decade and the share of this funding paid by government has declined over time, from 77.8 per cent in 1989 to 57.6 per cent in 2020.

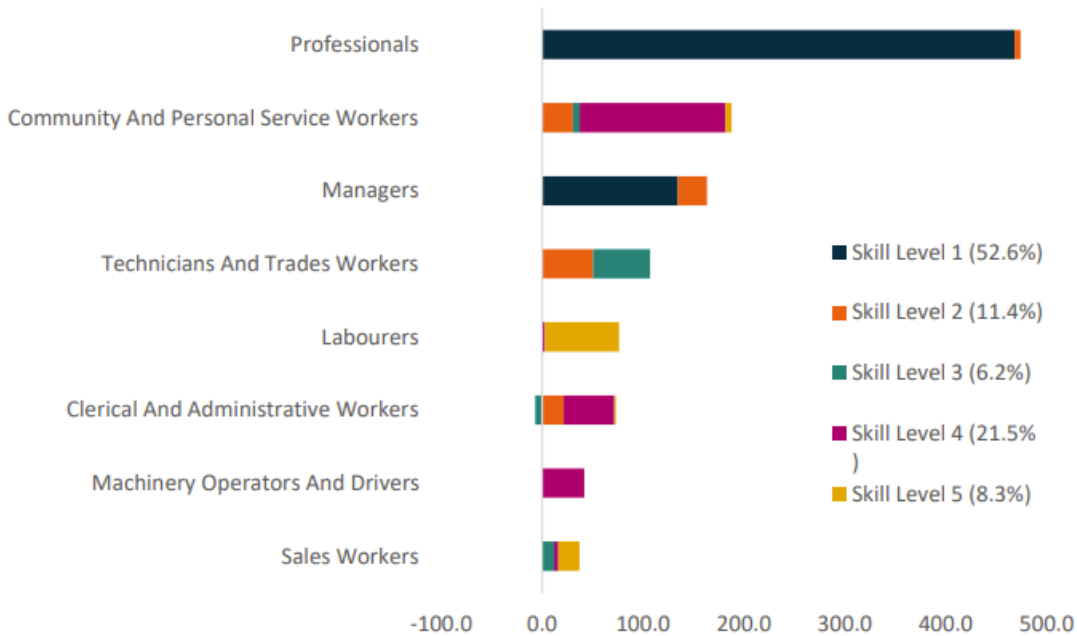
Importantly, record low unemployment and the large number of available jobs has led to softer demand for university places. While soft demand is expected to continue in 2023-24, growth in the youth population and changes in skills in demand mean that many more people – both school leavers and others – could consider

⁶ Australian Bureau of Statistics 2022, *Business Conditions and Sentiments, June 2022*, Canberra.

⁷ The total amount of Commonwealth Grant Scheme funding combined with student contribution amounts.

studying at university in the coming years. Universities and government must be ready to meet this demand which must be approached with a medium-term outlook.

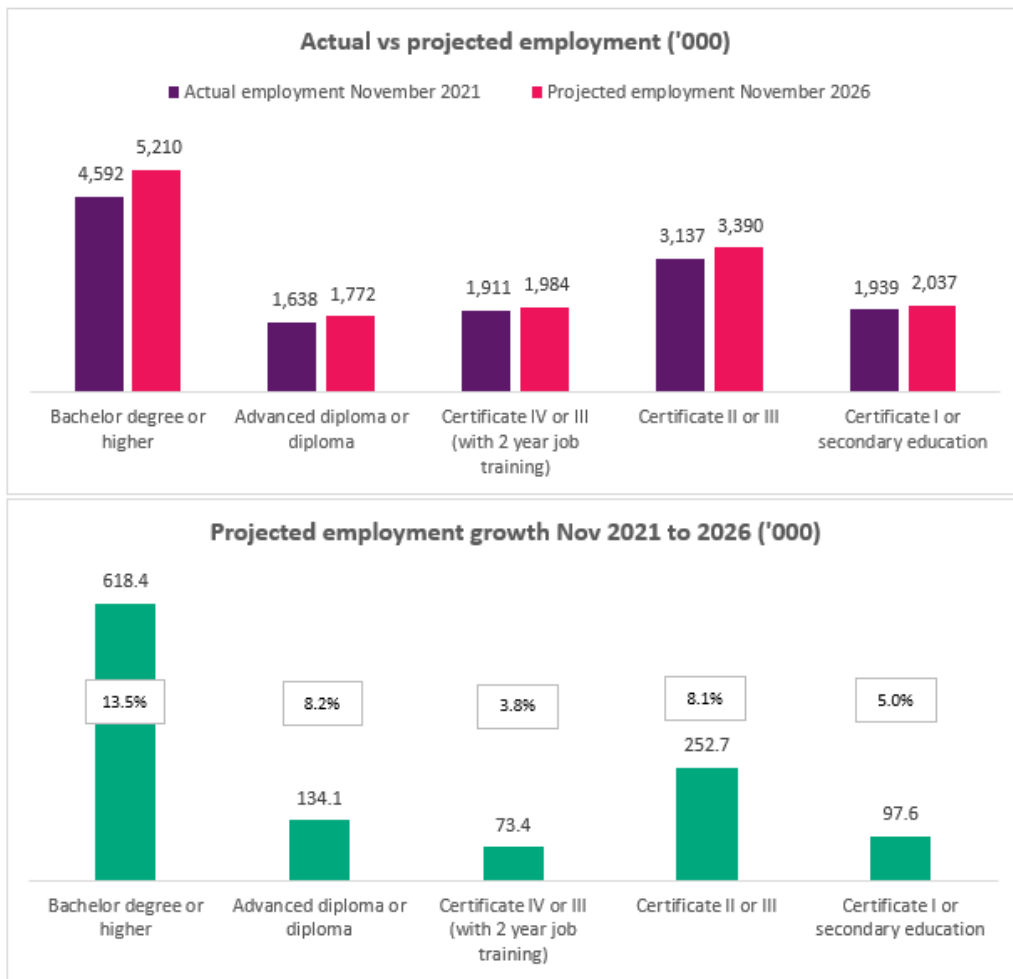
Figure 5: Projected employment growth to November 2026 ('000s) by major occupational group and skill level⁸



Source: National Skills Commission 2022, *Employment Outlook (five years to November 2026)*, p.6.

⁸ The ABS classifies occupations according to five skill levels commensurate with the following qualifications(s) or where relevant work experience with training may be a substitute for formal qualifications: Skill level 1: Bachelor degree or higher qualification; Skill level 2: Advanced Diploma or Diploma; Skill level 3: Certificate IV or Certificate III with at least two years on-the-job training; Skill level 4: Certificate II or III; Skill level 5: Certificate I or secondary education

Figure 6: Actual and projected employment by skill levels, November 2021 vs November 2026



Source: National Skills Commission, *Employment projections data*, viewed 06 December 2022, <https://www.nationalskillscommission.gov.au/topics/employment-projections>.

Note: The percentages in the square brackets are growth in projected employments between November 2021 and November 2026.

4 ADDRESSING NATIONAL SKILL SHORTAGES

Recommendation 5:

Support sustainable clinical education and placement capacity:

- Expand clinical placement capacity including in non-traditional settings, and
- Grow and support technology-assisted clinical training.

Better harness health professional students in the workforce through support for paid final year assistant roles and degree-apprenticeship models.

4.1 PIPELINE OF HEALTH WORKFORCE

Supporting sustainable clinical education and placement capacity

Ensuring a sufficient and capable workforce is a key part of an effective health system. Healthcare is an area of projected jobs and skills growth. Key areas such as aged, disability, primary and mental health care have well-identified workforce needs. COVID has added to workforce requirements due to loss of frontline staff and increased service needs from Long COVID and catch-up care.

Universities make a significant contribution to Australia's health workforce supply. They educate and train virtually all new-entry health professionals in Australia across all disciplines. They also upskill and develop already qualified domestic and overseas-trained health personnel. While extra places have been granted to universities to support Australia's skills and workforce growth, this alone will be insufficient if not also accompanied by quality clinical placement growth. Building sufficient, sustainable placement capacity is an urgent need that requires a joint approach between universities, governments, professions and health services.

Sufficient clinical education and placement is a critical - and compulsory - part of health professions education and training. Placements embed theoretical knowledge and enable students to gain requisite skills and professionalism. Quality and type of placements have a known influence on students' future choice of work domain and skill development. This affects workforce distribution (to setting and location) and job readiness.

Placement challenges are not new: universities organise and are responsible for delivery of clinical placements. Yet placements occur - and rely on capacity - in health and care services. Multiple placement arrangements exist, variable by jurisdiction, discipline and institutions involved. At its core, however, placements require universities to deliver an outcome through services over which they have no jurisdiction. This precarious placement operating environment has been exacerbated by COVID-19. Despite joint efforts from education and health stakeholders, we now face several pressing placement and clinical education issues which threaten Australia's health workforce supply:

- The urgent need to expand placements into service areas of identified, growing, yet unmet health workforce and skills need, especially in aged, disability, primary and mental health care settings. (Most placements still occur in hospitals despite known health workforce needs in other areas. Lack of placements in non-traditional settings means students are less likely to choose to work in these areas on graduation and have had less exposure to the skills required if they do choose to.)
- Clinical placement backlogs arising from COVID-19. These are variable across disciplines and jurisdictions but remain significant in some places and disciplines. Difficulties in providing quality, timely placements can lead to delays in graduation and entry into the workforce. Ensuring our domestic health workforce supply remains essential even as migration expands.
- The need to leverage new/existing technologies to augment clinical education and support workforce pipeline continuity where access to face-to-face learning is restricted. Technology-assisted clinical training can provide as good as or, in some cases, better experiences than face-to-face placements for certain components of clinical education and training. However:

- this technology is often expensive²² and needs technical support/training for staff and students to use it effectively.
- each university's needs will differ with the mix and volume of health courses offered as well as the availability of equipment and workforce within jurisdictional health services. This is highly variable.
- extended use of simulation, even where equipment exists, must be approved by professional and accrediting bodies.

Universities Australia recommends the following to address placement issues:

Expand clinical placement capacity including in non-traditional settings

- Undertake a scoping study to identify clinical placement gaps linked to workforce need.
- Build on the scoping study results to grow placement capacity where needed in non-traditional settings.
 - Time-limited funding for collaborative university-health service partnerships is recommended. Such approaches support health services and universities to work together to build effective, sustainable, clinical education/placement models that bring benefits to clients, service providers and students/future health professionals.

Grow and support technology-assisted clinical training

- undertake a national scoping study to identify where extended use of simulation could take pressure off face-to-face placements and where additional simulation equipment is needed;
- bring relevant health and education stakeholders together to determine the acceptable use of technology-assisted approaches to clinical education.
 - meetings could occur through augmenting existing committees such as Ahpra's independently chaired Accreditation Committee or the Commonwealth Department of Health and Aged Care's education and training Committees.
- develop a costed proposal to state and federal governments to jointly fund university-delivered clinical training approaches through simulation based on identified needs.

Better harness health professional students in the workforce

In addition to addressing placements, there are more immediate ways that universities and health professional students can support workforce growth while still undertaking quality educational experiences. Options include models such as:

- paid final year health student roles - as implemented through Assistant in Medicine (AIM) and Registered Undergraduate Student of Nursing (RUSON) models. These models effectively combine workforce contribution from advanced health students with clinical learning experiences. However, they are not widely taken up across Australia.
- developing degree apprenticeships for emerging or existing health roles, as a mechanism for guaranteeing clinical experience and workforce input. Similar models have been successfully trialled in the United Kingdom. These models work as three-way partnerships between education providers, employers and apprentices, with students spending 80 per cent of their time in the workplace and the remainder at university.

Universities Australia recommends working with universities, health stakeholders and the jurisdictions to:

- Fund initial pilots of these models in a number of jurisdictions/settings across a range of health disciplines (including medical, nursing allied health, pharmacy and dental); then
- develop a national partnership agreement to incentivise expansion and uptake of these models across Australia.

5 UNIVERSITY RESEARCH UNDERPINS NATIONAL PROSPERITY

Recommendation 6:

Increase funding for university research to at least the OECD average to drive innovation and boost productivity.

Recommendation 7:

Government works with universities to realise the full potential of the National Reconstruction Fund and ensure that the program boosts industry's capacity to innovate.

Recommendation 8:

Redirect Research and Development Tax Incentive (RDTI) funds towards targeted, direct-funding programs.

5.1 RESEARCH FUELS PROSPERITY

Australia's university system has evolved to fulfil a range of functions, which individually and collectively help to drive social progress and national prosperity. University research is a vital endeavour in this respect. Research is also fundamental to what a university is. This was reaffirmed by the recommendations of the *2019 Review of the Higher Education Provider Category Standards*.

Our universities house Australian capability in every field: economics, agriculture, manufacturing, medicine, health, languages, information technology, as well as social, cultural and communication expertise that help governments deliver their messages to the community. For a thriving ecosystem of research translation, it is necessary to find the right balance across the research pipeline – from basic research through to commercialisation.

Basic research provides the new knowledge that leads to all the other results. It does not always fit easily into accepted short-term incentive frameworks, yet history has repeatedly reinforced the central part that basic, curiosity-driven research plays in driving prosperity and progress. Breakthroughs in basic research can have unpredictable impacts over time.

UA supports a balanced approach to research funding which also fosters the critical role of discovery research, and the role that only government can play in providing the funding that such research requires. This approach gives Australia the best chance of developing new and unique sovereign capability across priority fields of research, and across the basic, applied and translation pipeline.

UA looks forward to the outcomes of current review of the *Australian Research Council Act*, and the potential for further investment in research grants programs that are so crucial to Australia's economic and social prosperity.

5.2 WHAT RESEARCH DO UNIVERSITIES DO?

Universities make the largest contribution to Australia's national research effort. They undertake 36 per cent of all research in Australia (eighth in the OECD), perform 45 per cent of all applied research (more than industry's 39 per cent), and close to 90 per cent of all discovery (basic) research.

Universities provide a standing army of experts, ensuring Australia is prepared for challenges and ready to seize opportunities. Never has this been clearer than in the face of the pandemic, when Australians turned to university researchers for timely and accurate information to help them navigate the disruption and

uncertainty caused by COVID-19. They were relied on for advice on everything from the efficacy of mask wearing and vaccines to the mathematics of social distancing and the dynamics of panic buying.

Experts in such a wide range of fields are only found inside universities. Researchers from the private sector, government and specialised research institutes help to make up a healthy research mix, typical in advanced economies, and make valuable contributions. However, the vast majority of Australia's public good research is done in universities.

The scale and diversity of research capability in Australian universities significantly enhances the potential for Australia to develop sovereign capability in areas of national significance, including high value-added products and services.

Universities employ researchers who create new knowledge, technology and practices that allow improvements in economic prosperity and social and community wellbeing, and ultimately improve the quality of life for all Australians.

5.3 INDUSTRY/UNIVERSITY COLLABORATION

Universities around the world engage with industry, which provides a portion of R&D revenue into institutions. Australian universities sourced 5.5 per cent of their funding for R&D from industry, placing them 14th in the OECD. This compares to the United States at 5.40 per cent, the United Kingdom at 3.99 per cent, Canada at 7.96 per cent and Israel at 5.62 per cent. Countries with strong manufacturing sectors generally have a higher share, with South Korea at 13.78 per cent (first) and Germany at 12.94 per cent (second).⁹ It should be noted that this measure is not a complete measure of industry collaboration as it is relative to success in other sources of funding (e.g., international student income).

As the government noted in its assessment of the Australian innovation system in 2017, Australian firms tend to specialise in modifying innovations introduced by other Australian firms. In 2014–15, most Australian innovators across all business sizes were domestic modifiers, and this has been the case since at least 2008–09.

This strategy requires firms to seek out existing innovations, absorb them and make the required modifications before deploying them commercially. The ability of so many Australian firms to successfully execute this relatively simple strategy is arguably a strength of Australia's innovation system.¹⁰

However, care needs to be taken not to overemphasise adoption and adaptation at the expense of invention. Invention and new ideas are a critical supply mechanism. Both adoption and invention are required. An exclusive or excessive focus on domestic modification may adversely affect Australia's international competitiveness since domestic modification involves a lower degree of novelty than other strategies.

New-to-market innovation – that is, new to both international and domestic markets – is generally more valuable since it involves a higher degree of novelty, which in turn reflects a higher degree of competence, sophistication and knowledge. In Australia, the estimated proportion of firms undertaking new-to-market product innovation is relatively low, ranking Australia 26th out of all OECD countries in 2021.¹¹

However, Australian industry has reduced its R&D investment consistently over the last 10 years from a peak of 1.37 per cent of GDP in 2008 to 0.92 per cent in 2019–2020 (latest ABS figures). Since 1995, Australia has fallen in ranking in the economic complexity index from 55th (out of 133) place, to 91st place in 2020, just below Kenya and above Namibia.¹²

5.4 WHAT'S THE BUDGETARY PROBLEM?

Australia's total investment in R&D has fallen behind international competitors. At 1.79 per cent of GDP, Australia lags its competitors and was well below the OECD average of 2.67 per cent in 2020. Australia's

⁹ OECD 2022, Main Science and Technology Indicators database.

¹⁰ Australian Government 2017, *Australian Innovation System Report 2017*.

¹¹ OECD 2021, Business innovation statistics and indicators.

¹² [The Atlas of Economic Complexity](#). Accessed 8 Dec 2022.

investment has been declining for over a decade, down from 2.25 per cent of GDP in 2008, and there is no sign of stabilisation. This contrasts with a small but steady increase in the OECD average over the same period, from 2.24 per cent to 2.67 percent.¹³

The decline has been driven primarily by business reducing its R&D expenditure, but government expenditure on R&D (GOVERD) has also fallen. Business expenditure on R&D (BERD) as a share of GDP declined by 33 per cent from a peak of 1.37 per cent of GDP in 2008 to 0.92 per cent in 2019–20.¹⁴ Government expenditure on R&D has declined by a similar percentage.

Universities play a pivotal role in Australia's R&D effort, with their share of total research in Australia (36 per cent) being the eighth highest in the OECD (in 2019). In comparison, levels of university research as a share of national research are lower in peer nations, including Singapore (28 per cent), New Zealand (25 per cent), the UK (24 per cent), France (21 per cent), Germany (18 per cent), USA (13 per cent), Japan (12 per cent) and South Korea (eight per cent). An example of a peer nation with similarly high rates is Canada (42 per cent).

As business and government spending declines, universities are carrying an ever-greater share of Australia's R&D effort. Universities' share of Australia's total R&D expenditure has increased by 12 percentage points since 2008, when it was 24 per cent of gross expenditure. However, the amount of university expenditure on R&D supported by dedicated research grants from the Australian Government has declined from 40 per cent in 2008 to 34 per cent in 2018.

5.5 WHAT ARE THE BUDGETARY SOLUTIONS?

Key Australian research developments and sovereign capability address the challenges of the future. Breakthroughs from treating severe asthma and curbing tuberculosis¹⁵ to the evidence and expert-driven response to a global pandemic are all the result of a robust research pipeline. It is the result of essential investment at each stage of the research journey, from invention to adoption, adaptation, and eventual impact. The economic and societal gains of research translation have led to an increased government focus on commercialisation and collaboration initiatives. However, Australia must first maintain its high-quality research output – so that there will be research to translate.

For a thriving ecosystem of research translation, balance across all aspects of the research pipeline – from basic research through to commercialisation – is necessary. This pipeline does not come with pre-determined timelines. For example, ongoing key developments in neurodegenerative disease research, and subsequent translation and commercialisation activities conducted by the Florey Institute of Neuroscience and Mental Health at the University of Melbourne, began with a NHMRC Postgraduate Scholarship in 1989.¹⁶ Similarly, with a project commencement-to-commercialisation period spanning 1998 to 2014, irrigation technology research advanced and implemented by researchers from the University of Southern Queensland, has now resulted in significant efficiencies, water saving and economic gain for the Australian cotton industry.¹⁷

As well as fostering the research necessary for translation and impact, universities, with government support, provide the expertise to effectively adapt and adopt research, and to respond to Australia's most pressing challenges. This expertise is not developed overnight, but instead through persistent investment in the development of Australia's national capabilities and workforce.

¹³ OECD 2021, Main Science and Technology Indicators database.

¹⁴ OECD 2021, Main Science and Technology Indicators database and Australian Bureau of Statistics 2021, *Research and Experimental Development, Businesses, Australia, 2019–20*.

¹⁵ See 'Aridol and Bronchitol' (2018), 'Severe Asthma: Mepolizumab' (2019), 'Tuberculosis control in the South-East Asian region' (2020) and 'History of tuberculosis control in Australia' (2020), Impact Case Studies, NHMRC. [Http://www.nhmrc.gov.au/about-us/resources/impact-case-studies](http://www.nhmrc.gov.au/about-us/resources/impact-case-studies).

¹⁶ See 'Neurodegenerative disease and metals' (2019), Impact Case Studies, NHMRC. [nhmrc.gov.au/about-us/resources/impact-case-studies](http://www.nhmrc.gov.au/about-us/resources/impact-case-studies).

¹⁷ University of Southern Queensland, 'Optimising surface irrigation leads to increased productivity in the Australian cotton industry', Engagement and Impact 2018, Australian Research Council.

Universities continue to discuss issues of research funding across all disciplines with the government and seek further dialogue on long-term sustainable funding models for all university research, including basic research.

5.6 WHAT SHOULD SUPPORT FOR INDUSTRY R&D LOOK LIKE?

Australia is an international outlier in the proportion of support for business R&D that is delivered through indirect funding. Eighty-two per cent of Australia's total innovation investment flows through the RDTI. This is the highest level of indirect support for R&D in the OECD.¹⁸

Expenditure on the RDTI rose sharply from \$1,895 billion in 2010-11 to \$2,919 billion (budget estimate) in 2021-22. Business investment as a share of GDP has been declining from an all-time peak of 1.37 per cent in 2008 to the present (0.92 per cent in 2019).

In other words, a cumulative investment of \$35.552 billion by taxpayers since 2008 into business R&D has led to a decline in business R&D investment. The total R&D performed (GERD) in 2019-20 was \$35.602 billion. It is essential that the government examine its business R&D investment along sound policy principles of additionality, efficacy and whether it induced absorptive capacity.

Direct funding of R&D offers a mechanism for better aligned incentives for university-industry collaboration, from small to medium enterprises to large business. Direct funding of R&D also provides flexibility in policy objectives, ensures that investment is well targeted and guarantees additionality. In contrast, indirect policy measures – such as the RDTI – suffer from persistent questions on whether the R&D activity would have been undertaken irrespective of the incentive. Further administrative costs of indirect incentives are considerable.

In the *2016 Review of the R&D Tax Incentive*, the program administration cost was estimated to be \$437 million in 2014–15, of which \$199 million (or 46 per cent) comprised fees to consultants¹⁹. The burden of the cost does not fall evenly on business. Compliance costs were estimated to account for 23 per cent of benefits for small businesses, compared to eight per cent for large businesses. Of the compliance cost, small businesses spent 41 per cent on consulting fees, compared to 54 per cent for large businesses.

¹⁸OECD (2021). "R&D Tax Incentives: Australia, 2021", www.oecd.org/sti/rd-tax-statsaustralia.pdf, Directorate for Science, Technology and Innovation, December 2021.

¹⁹ Ferris, B., Finkel, A. and Fraser, J. 2016, *Review of the R&D Tax Incentive*, p. 25.

6 INTERNATIONAL EDUCATION

Recommendation 9:

Re-establish the Endeavour Leadership Program.

6.1 THE ENDEAVOUR LEADERSHIP PROGRAM

The Endeavour Leadership Program (ELP) provided opportunities for students and mid-career researchers to undertake a global mobility experience within their study, research or professional field. The program was aimed at developing greater linkages between partner countries. The ELP was terminated in April 2019. Prior to its termination, the ELP received \$118.9 million over four years.

Australia's international education sector should not concentrate solely on educating international students from other countries – international exposure is an increasingly important part of Australian students' learning experience.

Within the university context, 19 per cent of undergraduate students undertake a student mobility opportunity, and international contact is a common feature throughout postgraduate research experience. Universities appreciate how highly students value these experiences and should be supported to enhance their capacity to provide for their students.

Re-establishment of the Endeavour Program or a similar initiative would provide significant benefits to Australia's domestic cohort and broaden the reach of Australia's education networks.

7 PARTNERSHIP IN NATIONAL SECURITY

Recommendation 10:

Raise investment in activities that counter foreign interference in universities to levels in similar jurisdictions such as Canada.

7.1 BOOSTING INVESTMENT TO COUNTER FOREIGN INTERFERENCE

Universities and government have shown that working together through the University Foreign Interference Taskforce (UFIT) helps build a stronger, safer Australia. University expertise has a critical role to play in ensuring we have the best possible information to craft our relations with our neighbours, bolstering our soft power efforts in the region.

UA is proud that UFIT and the *Guidelines to Counter Foreign Interference in the Australian University Sector* have influenced the development of similar strategies in countries such as the United Kingdom and Canada. Relationships with such partner countries are continuing, and valuable in understanding common challenges and approaches.

However, Australian universities have been implementing the guidelines for the past three years without any specific financial support from government. There are increasing expectations from government about universities having professional competency in identifying and mitigating foreign interference in a range of operational areas, but building this expertise and workforce is costly.

Universities have responded positively and actively to the request from government to increase their capacity to countering foreign interference. Universities are requesting that government recognise the financial implications for the sector of doing so, as counterpart governments have done.

For example, in April 2022 the Canadian Government acknowledged these costs by establishing the Research Support Fund for direct support into universities to build capacity on research security. That Government is providing CAN\$125 million over five years, and CAN\$25 million annually thereafter into the fund.

UA would welcome an equivalent level of investment in supporting Australian universities to counter foreign interference.