



# High achievers: A plan for unleashing the huge potential of Sydney's universities

October 2022



Committee  
for  
Sydney

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# The path to Australia's future prosperity

The success of the university sector, and tertiary education more broadly, is vital to Australia's long-term prosperity.

Highly educated and highly skilled people improve our country's productivity and move us forward in many ways, and a successful university sector benefits all Australians by creating a more inclusive society and raising our standard of living.

University education increases people's life-time earnings, with the average bachelor graduate earning an additional \$142,000 after-tax over their lifetime, compared to the average person with no post-school qualification.<sup>1</sup>

People with university qualifications also tend to have better health and longevity, greater social tolerance, and stable social environments. These profound outcomes, and the transformational power of education, are why education should be available to all.

The individual benefits of university education culminate into a wider benefit for society.

Higher incomes and productivity create a higher tax base that can be spent on public services and infrastructure.

It is estimated that for every \$1 of public expenditure on higher education there is a return of around \$3 to government,<sup>2</sup> and that every 50,000 university graduates generate an additional \$1.8 billion in economic activity annually.<sup>3</sup>

1. [Deloitte Access Economics](#)
2. [Deloitte Access Economics](#)
3. [Universities Australia](#)

University graduates and researchers are the most important source of knowledge and ideas that will power the future economy and improve our quality of life.

A culture of innovation, new ideas and new ways of doing things, many of which we cannot know about in advance, will shape Australia's future trajectory and job market.

## Australia's universities perform very well in global rankings

Top 100 universities in Australia, UK, Canada and USA

Country	Number of unis in top 100 (2012)	Number of unis in top 100 (2021)	Change (2012-2021)	Population (m) (2021)	Number of unis in top 100 / population (2021)
Australia	6	7	+1	25.7	0.27
United Kingdom	11	13	+2	68.2	0.19
Canada	6	5	-1	38.0	0.13
United States	43	37	-6	332.9	0.11
<b>Total four countries</b>	<b>66</b>	<b>62</b>	<b>-4</b>	<b>464.8</b>	<b>0.13</b>

Source: [UNSW Aggregate Ranking of Top Universities](#)



## I. Educating Australians

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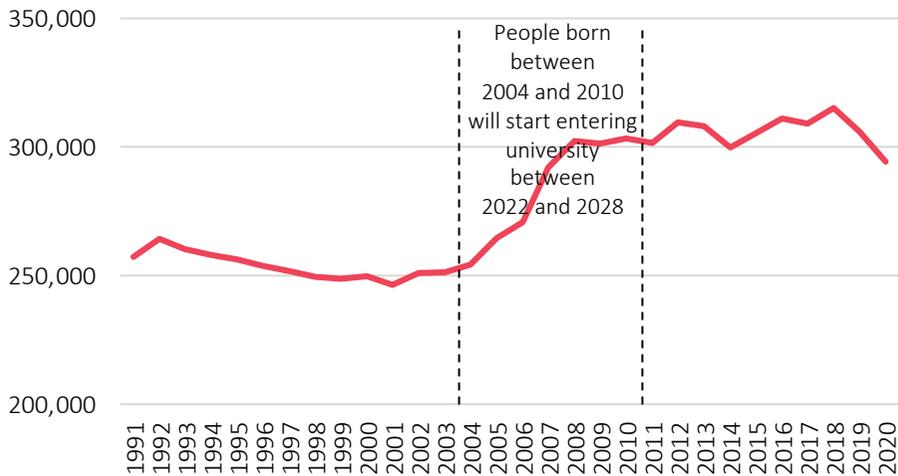
### The goal of access and affordability

Since the end of World War II, access to university education in Australia has expanded consistently, which has been one of the central underpinnings of Australia's prosperity.

But more work will need to be done to continue to expand access, while keeping it affordable for students, providers and taxpayers.

This issue needs immediate attention as Australia's 2004-2010 baby boom will see demand for university and TAFE, places spike from 2022 onwards.

#### Demand for domestic university student places is about to boom Total persons born – Australia



Source: [ABS](#)



## I. Educating Australians

The introduction of the Higher Education Contribution Scheme (HECS) in Australia from 1989 allowed the Australian Government to expand access to university while containing the cost of doing so.

HECS was renamed the Higher Education Loan Program (HELP) in 2005, as part of reforms to the Higher Education Support Act 2003.

As with HECS, HELP allows students to defer the cost of their study.

Once a student's taxable income reaches a certain threshold – currently \$48,361 a year – their employer then uses the PAYG withholding system to cover their compulsory repayments.

In part as a result of HECS-HELP, more than 60% of Australians aged 20-29 hold a bachelor's degree or higher, compared to roughly 40% 20 years ago.

Australia's approach of higher education loans enabled this growth by ensuring students do not face upfront financial barriers to university (at least for their tuition fees).

In 2021, the Australian Government passed the Job-Ready Graduates Package to steer students into courses favoured by the government of the time by lowering their costs relative to less favoured courses (see appendix for detail).

There is however no evidence the intended outcomes will materialise.

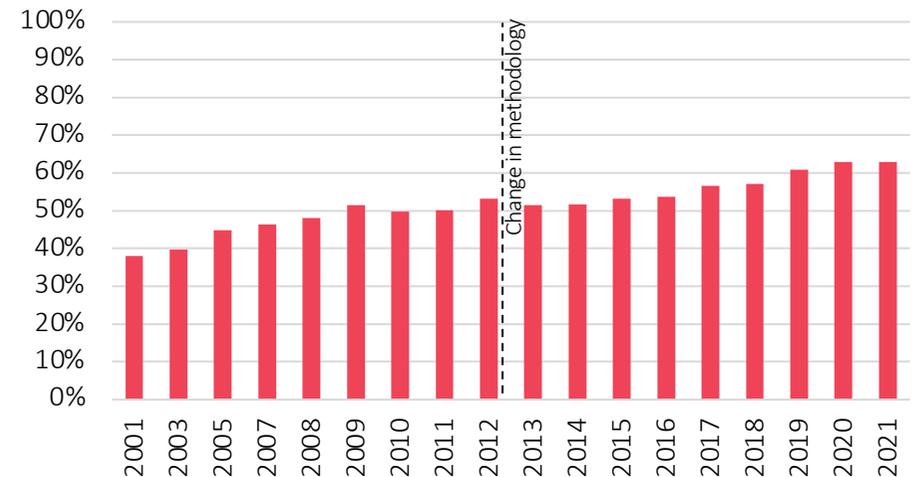
Students appear to be relatively insensitive to prices, but universities, which do respond to incentives, now have a strong pressure to increase offerings in precisely those programs the government wished to downplay.

We would suggest that trying to micro-manage course selection is a bad idea.

There is no way governments can know which courses will be most helpful in the future.

Instead, student demand should guide funding arrangements and university course offerings – as recommended in the Bradley Review of Higher Education in 2008.

### The percentage of Australians with a degree is increasing Proportion of young people\* with a Bachelor's Degree or above



Data source: [ABS](#). 2001-2012 data is for persons aged 20-34  
2013-2021 data is for persons aged 20-29.



## Bradley Review of Higher Education, 2008

The landmark Bradley Review of Higher Education was initiated by the federal government in 2008 to examine the future direction of higher education, its fitness for purpose, and options for reform.

The review concluded that, while the system has great strengths, it faces significant threats, which require action. To address these challenges, the review put forward 46 recommendations for major reforms to higher education.

Some recommendations were actioned, many were not. We would like to see the following revisited and actioned:

- Provide students with increased opportunities to decide for themselves what and where they will study through an entitlement
- Maintain the existing income-contingent loan schemes that overcome up-front barriers to study
- Allocate government funding through an approach driven by student demand (largely formula-based, with fewer separate small components of funding)
- Provide adequate levels of funding for each of the core activities of teaching and research
- Commission an independent triennial review of base funding levels for learning and teaching in higher education to ensure funding levels remain internationally competitive and appropriate for the sector
- Introduce a demand-driven entitlement system for domestic higher education students, in which recognised providers are free to enroll as many eligible students as they wish in eligible higher education courses and receive corresponding government subsidies for those students – with no time or dollar limit on the entitlement (meaning all students can study as much as they like with a Commonwealth-supported place).

## I. Educating Australians

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### Recommendations

#### 1. Increase, and then uncap the Maximum Basic Grant Amount

Public universities receive a Maximum Basic Grant Amount (MBGA) for Commonwealth-supported places. They may enroll as many (non-medical) students as they like, in any combination of courses, up to the MBGA – meaning it is up to universities to determine how many Commonwealth-supported places are funded each year.

To begin with, it makes sense to increase the cap for priority fields of study or for priority populations. In the short run, we recommend extending demand-driven funding available to Aboriginal and Torres Strait Islander students from regional and remote areas to be available for people living in areas where less than 22% of the population has a university degree, which is below the national average (see appendix).

But the goal should be to uncap the Maximum Basic Grant Amount, essentially uncapping the number of Commonwealth-supported places, so everyone in Australia who has the ability and desire to attend university is able to do so.

In the longer run, government should negotiate with the states and territories to develop a student demand-driven ‘tertiary entitlement’ funding model that can be applied consistently to vocational and higher education providers, offering courses recognised and accredited under the Australian Qualifications Framework.



Image source: Macquarie University

# I. Educating Australians

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## 2. Increase funding per Commonwealth-supported student

Government should undertake an independent review of the 'Transparency in Higher Education Expenditure' exercise, as the basis for determining total per-student funding rates for all higher education providers. To provide adequate funding, government needs to understand what it costs to teach each student.

Successive Australian governments have expanded access to university for domestic students by progressively transferring more of the total cost to them and requiring providers to do more with less funding overall per student.

The Morrison Government's Job-Ready Graduates changes, which commenced in 2021, are the latest example, reducing the average funding providers receive for each Commonwealth-supported student by around 6%.

The Transparency in Higher Education Expenditure report – published in 2019, before the Job-Ready graduates funding changes – shows it costs universities much more to teach domestic students in certain fields of study than they receive for these students. This has been exacerbated by Job-Ready Graduates, which further decreased Commonwealth contributions for already underfunded fields such as management and commerce, society and culture, and food and hospitality.

Universities sustain loss-making fields by cutting costs as much as possible and by cross-subsidising with revenues from other discretionary sources, including full fees paid by domestic and international students in other programs. Funding for Australian students should be increased and linked to the actual costs of quality delivery in each discipline to enable universities to do their core job better.

## 3. Remove price differences based on politically favoured fields of study

Government should consider removing existing price distortions by replacing the four Job-Ready Graduates' student contribution bands with a single annual fee that all Commonwealth-supported students pay, regardless of their disciplines of study.

If a single student fee is not feasible because of budget constraints, we would suggest narrowing the range between the lowest and highest student contribution amounts.

There is great value in the humanities, just as there is in STEM subjects. The idea of nudging students to study things the economy will require is likely illusory: our guesses about the future economy are just guesses, and society is changing constantly.

Every student is unique – some have an aptitude for STEM subjects others simply do not, and no amount of incentive will push them into a STEM course. We need students with the ability to learn many things and keep learning over their lives.

# I. Educating Australians

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## 4. Review the student income support system

Students from low socioeconomic backgrounds continue to be under-represented at university. One factor is the challenges students face covering basic living costs, especially if they must move away from home to study.

In 2020, the Senate Community Affairs Reference Committee published a report, which noted with concern evidence about high rates of student poverty in Australia, cost of living pressures, and the fact that the student income support system had not been independently reviewed since 2011.

The Reference Committee recommended the Australian Government commission an independent review of the student income support system and its administration in 2021, which has not occurred.

The report also recommended the Australian Government immediately undertake a review of Austudy (financial assistance for low-income full-time students who are 25+ years old) and ABSTUDY (financial assistance for Aboriginal and Torres Strait Islander students) to examine the adequacy of eligibility criteria and determine if the rates of payment ensure people do not live in poverty. This review also has not occurred.

With the cost-of-living rising rapidly because of inflationary pressures, new thinking is urgently needed to ensure Australians pursuing tertiary education are not living in poverty.





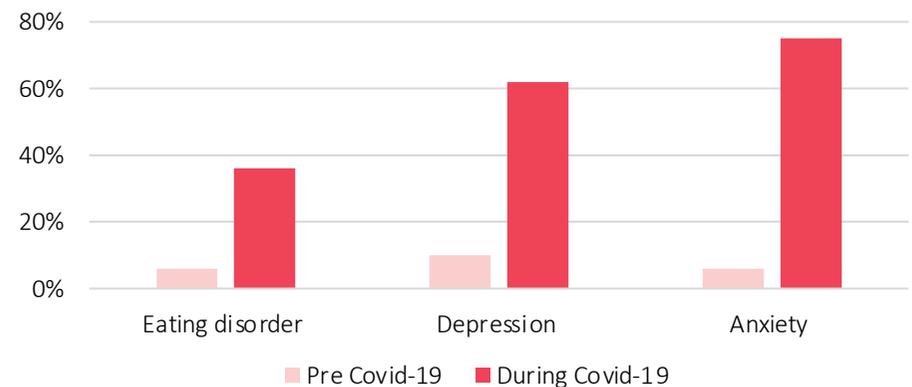
## 5. Repeal 'low completion rate' penalties

In January 2022, the former federal government introduced a 'Low Completion Rate' measure, which means students lose their Commonwealth-supported place if they fail more than half their units.

This measure should be repealed immediately, because of the risk it poses to student mental wellbeing and the disproportionate impact the measure is likely to have on students from disadvantaged backgrounds, who are more likely to fail due to circumstances that are often out of their control.

The low completion rate measure risks adding unnecessary pressure and anxiety for an already vulnerable cohort of students. The pandemic has drastically increased the number of young people experiencing poor mental health.

**Mental health of 16–24-year-olds before and during Covid-19**  
Percentage of survey respondents who personally experienced any of the following



Source: [SMH Resolve Political Monitor](#)

## I. Educating Australians

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### 6. Make all personal education expenses tax deductible

Currently, you can only claim tax deductions on personal education expenses if the subject area relates to your current work. This makes it hard for people to make a career change or a lateral career move.

In 2020, federal treasury put forward a proposal to make any personal education expenses tax deductible as part of their Education and training expense deductions for individuals discussion paper. We suggest this is adopted to encourage and enable life-long education.

We are in a time in history when Australians can expect continual change over the course of their working lives: new industries will emerge, new skills will be required, and all of us will need to be ready to treat our learning as a lifelong commitment.

### 7. Experiment with hybrid models of higher education

Previous attempts to combine university education with vocational education and training have had mixed success. Different funding and regulatory models, as well as differences in assessment and curriculum, have made it hard to combine the two.

Government should consider making the funding and regulatory model of VET and higher education more consistent.

Hybrid models should be pursued to establish greater educational opportunities for Australians. The distinctions between VET and university education have become less clear in recent years, at least for certain subjects, as the VET sector responds to the market, producing more highly skilled workers. As the quality and brand perception of TAFE offerings improves, hybrid models should work even better.





## II. Educating international students

## II. Educating international students

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### The connector to the world

The strong reputation of universities in Sydney and the broader Sandstone Megaregion attracts people from all over the world to study.

These connections underpin the cosmopolitan nature of the city, and add to the rich social and cultural diversity that makes Sydney such a great place to live.

Students from abroad choose to study in Australia for more reasons than our quality higher education system. Our safe and welcoming society is also a strong factor in people's decision to study here.<sup>5</sup> We should foster this reputation so Australia remains a top choice for international students.

International students who choose to stay in Australia on a post-study visa, and who may later gain permanent residency, deepen Sydney's connection to the world. Universities also strengthen Australia's relationship to other Asia-Pacific countries through partnerships and collaborations between universities, government and industry.

Future leaders and business owners who have studied abroad in Australia are more likely to view the country as a favourable destination to invest, trade and visit.

We need to make sure international students continue to have a good experience when they're here, so Australia receives reputational gains once students return home.

5. [Quality Indicators for Learning and Teaching](#)



Image source: Macquarie University



## Universities in the Sandstone Megaregion attract many international students

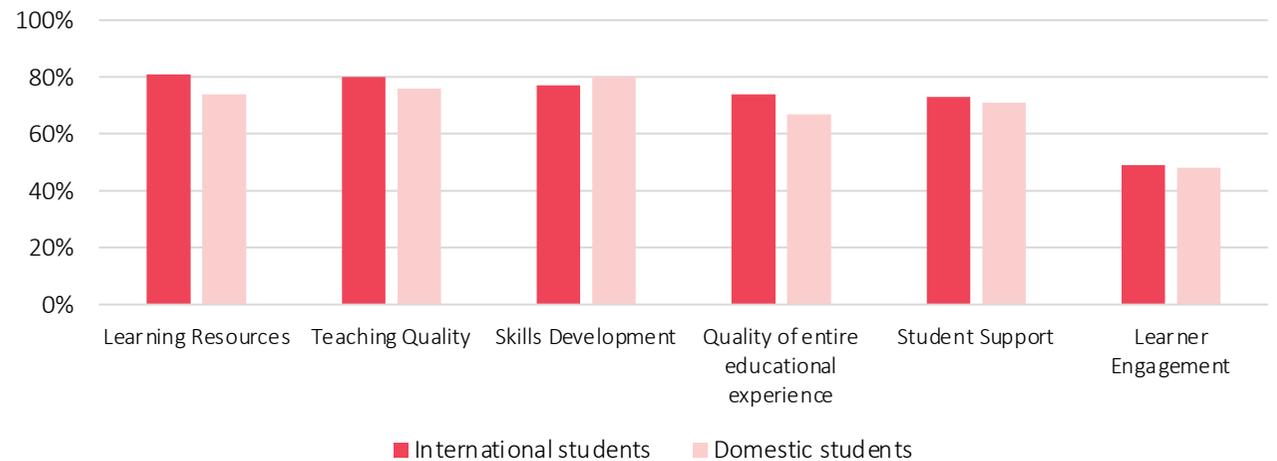
Student make up of universities in the Sandstone Megaregion

	Macquarie University	University of Newcastle	University of Sydney	University of New South Wales	University of Technology Sydney	University of Wollongong	Western Sydney University
<b>Total students</b>	45k	37k	73k	63k	46k	33k	49k
<b>Domestic students</b>	76%	85%	56%	63%	70%	59%	84%
<b>International students</b>	24%	15%	44%	37%	30%	41%	16%

Sources: [Aggregate Ranking of Top Universities](#) and the [Australian Government Department of Education](#)

## International and domestic undergraduate student experiences are comparable

Percentage of positive ratings for different student experiences – 2021



Source: [Quality Indicators for Learning and Teaching](#)

## II. Educating international students

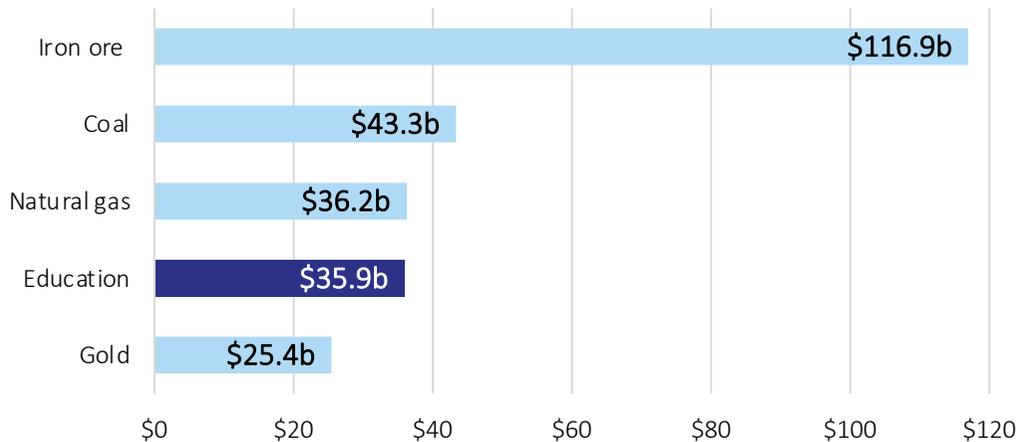
### One of Australia's great economic success stories

University education is Australia's fourth largest export – and may soon become our third largest export as we divest from coal. The export of higher education contributes more than \$11 billion annually to NSW, and more than \$35 billion annually to Australia. These figures likely understate the true economic contribution of international students, as they do not account for the economic contribution of students who work while studying.

Universities receive a significant portion of their revenue from international students. The loss of international students during Covid-19 had huge financial implications for universities, revealing the importance of international students to propping up our university system, as well as inadequacies in government funding.

#### Education is Australia's fourth largest export

Australia's top five exports (\$billion) – 2020



Source: [Australian Government Department of Foreign Affairs and Trade](#)



## II. Educating international students

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### Recommendations

#### 8. Extend the Temporary Graduate Visa to four years

To continue to encourage international students to come to Australia, we need a better offer.

We suggest that every international student who completes a bachelor's degree or above in Australia should get access to a four-year post-study visa. This would attract more students to study here and stay a while, contributing to our workforce.

At the Australian Government's Jobs and Skills Summit in 2022, Home Affairs Minister Clare O'Neil announced post-study visas would be extended for degrees in areas of verified skilled shortages – with different extensions based on level of qualification:

- Two to four years for select bachelor's degrees
- Three to five years for select master's degrees
- Four to six years for select PhDs.

In our view, as we explain in recommendation 11, occupation or skills lists unintentionally limit the diversity of skills migrants bring to Australia and go out of date quickly.

Therefore, we recommend the Temporary Graduate Visa is extended to four years for all graduates, not just those in areas of verified skilled shortages.





## 9. Speed up visa processing times

Currently, it takes anywhere from five to 17 months for a Temporary Graduate Visa to be processed:

- 90% of applications for the Graduate Work Stream of visa 485 take 17 months to process. This stream is designed for international students who have recently graduated, with skills and qualifications that are relevant to specific occupations Australia needs.
- 90% of applications for the Post Study Stream of visa 485 take 11 months to process. This stream is designed for international students who have recently graduated with a degree from an Australian institution.

The goal should be to process these visas within a month.

Slow visa processing times make it difficult, if not impossible, for graduate international students to stay in Australia, as they cannot work full-time while their visa is being processed.

Speeding up visa processing times, as committed to in the short-term by the Australian Government at the 2022 Jobs and Skills Summit, will help attract more people to study and work in Australia. This needs to be a long-term commitment.

## II. Educating international students

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### 10. Create a clearer pathway to permanent residency

People who maintain work during their four-year Temporary Graduate Visa should have a clear pathway to becoming permanent residents of Australia. This would help revitalise the international education sector and address the skilled worker shortage in Australia.

We recommend the Australian Government creates a 'Permanent Graduate Visa.' The eligibility requirements of this visa should be simple and there should only be one stream. We suggest applicants must:

- Currently be on a Temporary Graduate Visa
- Meet a salary threshold (to be determined by government)
- Have graduated from their studies at the same university in Australia they started at.

Australia's migration cap is 160,000 people under the Migration Program planning levels. At the Australian Government's 2022 Jobs and Skills Summit, Home Affairs Minister Clare O'Neil announced the cap would increase to 195,000 people for financial year 2022-2023 to address labour shortages. We suggest making this increase permanent and assigning additional places to Temporary Graduate Visa holders.

Existing pathways for international students to become permanent residents are complex and restrictive – four different pathways, each with several streams. Applicants must either submit an expression of interest – and then be invited to apply – or be nominated by an employer or an Australian state or territory government agency. All visas also require applicants to have an occupation on the relevant Skilled Occupations List.

It is important that employers are aware of any new pathway to permanent residency for graduate students on a post-study visa, so they know they can retain the employee once the visa expires.



## II. Educating international students

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### 11. Use a salary threshold instead of occupation lists

We recommend implementing a salary-threshold test for our recommended Permanent Graduate Visa, instead of creating another occupation list. Occupation lists unintentionally limit the diversity of skills migrants bring to Australia.

Occupation lists go out of date quickly. While certain skills are in chronically short supply in Australia, many of the jobs in innovative sectors change too rapidly to ever make it onto a government list. A salary threshold would be much better at determining jobs in high demand compared to occupation lists.<sup>6</sup>

A salary threshold would create a clearer pathway for potential migrants and increase their bargaining power – as they do not have to stick in certain jobs or risk losing their visa. The threshold would also be easier for employers to understand, giving them more confidence to employ international students. Finally, it would speed up and simplify the process for application and approval.

### 12. Allow students to study in Australia with the intention of migrating

Currently, Australia requires all international students to submit a written personal statement saying they're only coming to Australia temporarily to gain a quality education.

The Genuine Temporary Entrant Requirement essentially requires many international students to lie on entry, as they may indeed wish to later apply for a post-study visa and then permanent residency. This is a legitimate and legal option for international students.

The requirement should be repealed so students don't have to lie upon entry and to encourage more students to stay and work in Australia post-study.

6. [Grattan Institute](#)





## III. Research

### III. Research

## Australia's universities produce world-leading research

Universities account for around one third of the nation's research and development activity and investment.<sup>7</sup> Many Australian inventions that changed the world are attributed to university-led research, including WiFi, the PERC solar cell, green steel, electronic pacemakers, Cochlear implants, an HPV vaccine, spray-on skin and many more.

Australia's reputation for quality research is excellent, with 85% of our research rated at world standard or above.<sup>8</sup> We also punch above our weight in terms of output, producing 2.7% of the world's scientific research despite making up only 0.34% of the world's population.<sup>9</sup>

Research has a seismic impact on economic growth and diversification. Innovative new products, services and jobs trigger productivity gains that underlie our future prosperity. Research also equips us with the knowledge to address critical challenges that pose a threat to our prosperity, such as Covid-19 and climate change.

Countries that spend more on higher education research and development tend to have higher levels of GDP per capita.<sup>10</sup> In Australia, on average every dollar invested in research generates a return between \$3.50 and \$5 to the economy.<sup>11,12</sup> This constitutes a 10% return on investment annually, which is greater than the average 7% return on 10-year government bonds and equal to private equity market returns.<sup>13</sup>

7. [Australian Government Department of Education](#)

8. [Australian Government Department of Education](#)

9. [Australian Government Department of Education](#)

10. [Deloitte Access Economics](#)

11. [CSIRO](#)

12. [Deloitte Access Economics](#)

13. [CSIRO](#)



### III. Research

But while Australia produces a large volume of high-quality research, we underperform in terms of research translation – meaning much of our knowledge creation isn't translated into new products. For example, Australia's world ranking is:

- 7th for university academia
- 9th for highly cited publications
- 32nd for the proportion of firms cooperating on innovation activities
- 23rd for percentage of Patent Cooperation Treaty applications with collaboration
- 25th for percentage of firms that introduced new-to-market product innovation.<sup>14</sup>

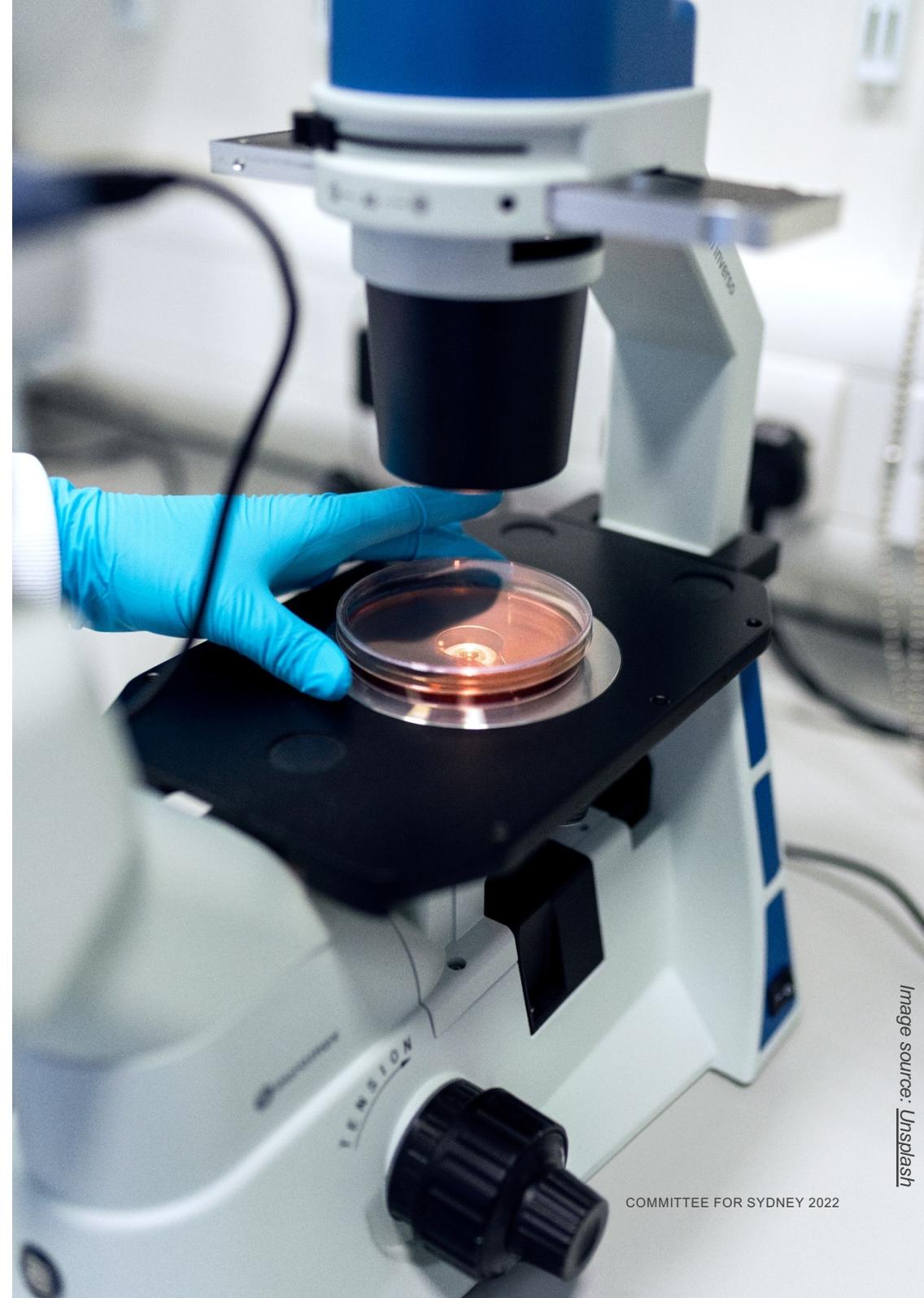
Closing the gap between our research performance and commercialisation presents a significant opportunity to get more economic benefit from Australian research.

#### Universities make a significant contribution to Australian R&D R&D expenditure of universities in the Sandstone Megaregion

University	R&D expenditure 2018
Macquarie University	\$0.39b
The University of Newcastle	\$0.22b
The University of Sydney	\$1.23b
University of New South Wales	\$1.03b
University of Technology Sydney	\$0.26b
University of Wollongong	\$0.22b
Western Sydney University	\$0.19b

Source: [Australian Government Department of Education](#)

14. [Australian Government Department of Education](#)



### III. Research

## Australia under-invests in research compared to other OECD countries

Spending on research is an investment in nation-building.

But Australia's gross domestic spend on research and development as a proportion of GDP has been in decline since 2008 and is now well below the OECD average.

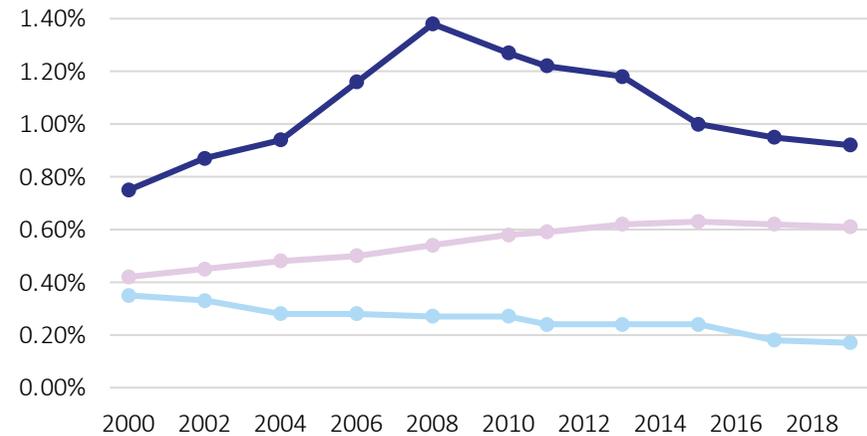
The good news is the high return on investment in research means if we spend more money on research, we will make more money in the economy and improve research outcomes.

The drop in Australia's expenditure is due to a decline in spending from business and government.

One way or another, it's going to be important to bring research and development investment in Australia to at least match what peer countries are doing.

### Higher education expenditure on R&D has steadily increased while business and government expenditure has declined

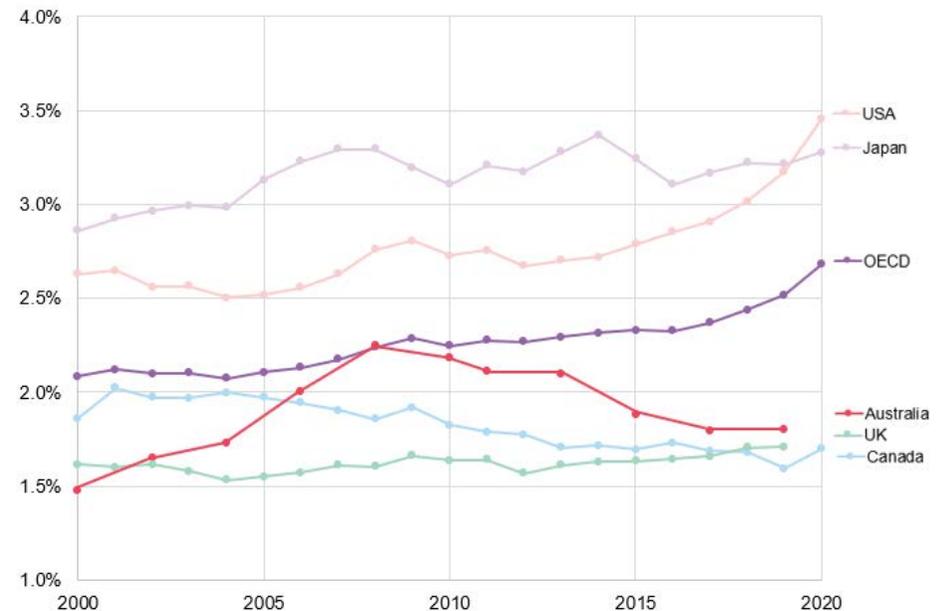
Gross spend on R&D as a percentage of GDP by source



Source: [OECD](#)

### Australia's R&D intensity has been in decline since 2008

Gross domestic expenditure on R&D as a percentage of GDP



Source: [OECD](#)

COMMITTEE FOR SYDNEY 2022

## Recommendations

### 13. Set a target to increase R&D intensity to match the OECD average

R&D intensity refers to the gross domestic expenditure on R&D as a percentage of GDP. In 2019, Australia's R&D intensity was 1.8%, while the OECD average sat at 2.5%. Gross domestic expenditure on R&D comes from three sectors government, higher education (which also includes Commonwealth funding), and business.

Setting a target to increase R&D intensity to match the OECD average by 2030 should focus strategies to increase funding from these sectors. Increasing Australia's R&D intensity will boost investment in university research, as well as investment in collaborative research between universities, business and government.

### 14. Create better incentives for industry to invest in R&D

Business expenditure on R&D as a percentage of GDP is only 0.92% in Australia, compared to an OECD average of 1.92% and 2.60% in the United States.

To incentivise greater business investment in R&D we recommend revisiting the [2016 Review of the R&D Tax Incentive](#). In particular, federal government should introduce a collaboration premium of up to 20% for the non-refundable tax offset to provide support for expenditures undertaken with publicly funded research organisations.

Governments should also expand existing programs that incentivise industry investment in R&D, such as the Australian Government's [Trailblazer Universities Program](#) and the NSW Government's [Boosting Business Innovation Program](#).

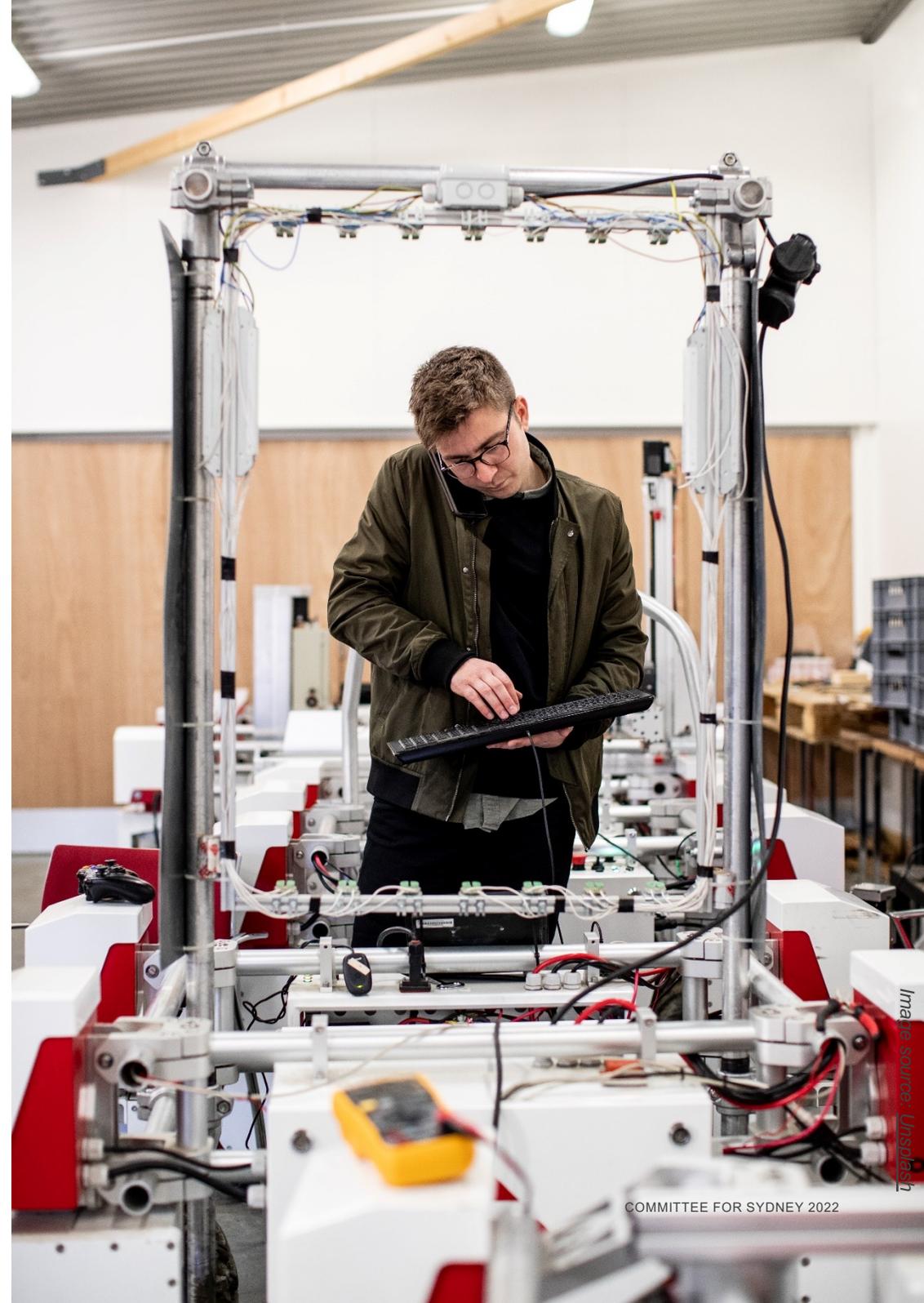




Image source: Unsplash

High achievers: A plan for unleashing the huge potential of Sydney's universities. #PG26

Trailblazer constitutes a \$242.7 million investment to support universities to boost prioritised research and development and drive commercialisation. With \$50 million per successful bid, the program facilitates partnerships and provides matched funding for participating universities, industry and CSIRO.

The Boosting Business Innovation Program constitutes an \$18 million investment to give small to medium enterprises (SMEs) access to research organisations – helping them scale up, innovate and access high-tech equipment and technical expertise. The program is delivered in partnership with the NSW Government, all 11 NSW universities and CSIRO.

### **15. Increase funding for the overhead costs of research**

The Australian Government should increase Research Block Grants to cover overhead costs of research and ensure that universities are not limited in how much research they can contribute.

Research Block Grants provide funding to eligible Australian higher education providers for research and training. Grants are allocated on a calendar year basis. Funding recipients use their discretion to allocate funds across different research projects or equipment and other infrastructure.

However, Research Block Grant funding does not go far enough for universities to be able to cover the overhead costs of research – including the cost of library services, laboratories and support staff. For example, to cover the full costs of its research, the University of Sydney estimates it spends around \$1.50 for every \$1 of research income it earns from governments, industry or philanthropy to deliver research projects – equivalent to around \$750 million each year.

Inadequate Research Block Grant funding has led universities to cross-subsidise research from other revenue sources – such as international student fees and teaching income. The pandemic has shown these revenue streams can be volatile and should not be relied upon.

### III. Research

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#### 16. Fund new NSW-based R&D missions

In the 2021 report, Turning ideas into jobs, the Accelerating R&D in NSW Advisory Council recommended the NSW Government launch R&D Missions aimed at solving governments long-term strategic challenges through R&D translation.

So far, the Bushfire Response R&D Mission is the first and only NSW-based R&D mission. Building off this success, the NSW Government should now propose and fund new R&D missions.

Potential R&D missions could be based on the 'transformative forces creating challenges and opportunities' identified in the NSW Government's Securing future innovation and global competitiveness in NSW Green Paper, 2022:

- Shifting to an increasingly digital economy
- Capitalising on growing consumer markets in Asia
- Transition to net zero emissions by 2050
- Building a circular economy
- Harnessing new opportunities and managing risks in global value chains.





Image source: Unsplash

## 17. Strengthen supports for commercialisation of research

The successful translation of research into real-world applications is often viewed through the lens of commercialisation, meaning success is measured in traditional economic terms and assumes downstream innovations will develop in market.

From this approach, Australia ranks poorly in the world for research translation despite ranking highly for research quality and output.

Where new research fails to translate into new products or services, this is often referred to as ‘the valley of death’.

This concept is useful to help understand the gap between innovation and commercialisation, however, it tends to create a linear perception of research, innovation and commercialisation, when in fact this process is more often than not iterative and non-linear.

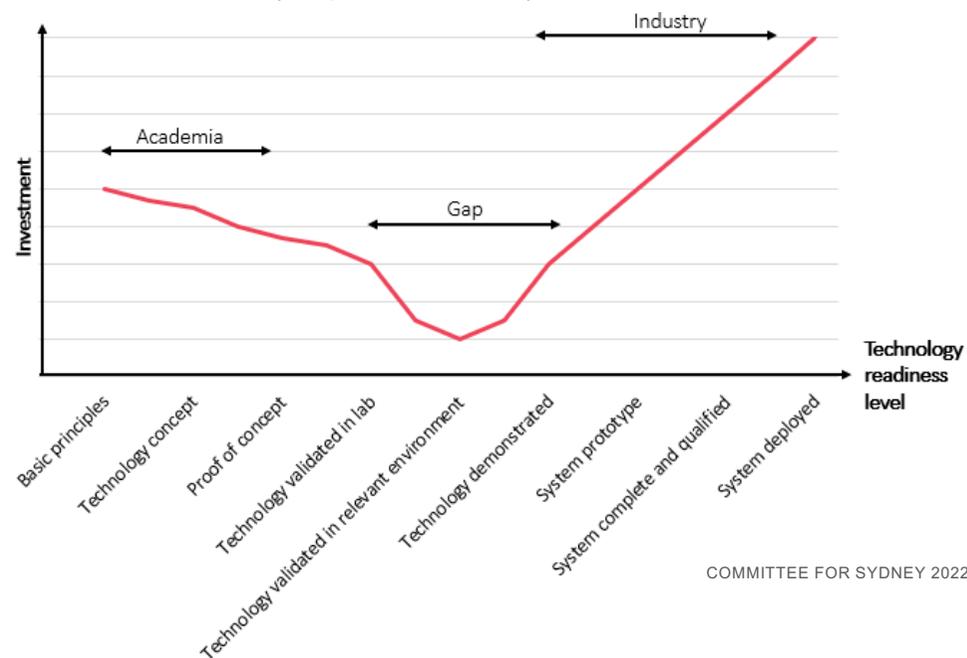
To better support the commercialisation of Australian research innovation, and avoid the ‘valley of death’, the Australian Government should create a new fund, like the highly successful Medical Research Future Fund, for all fields of research.

The Medical Research Future Fund was set up by the Australian Government in 2015 to pay for health and medical research projects – such as the Australian Brain Cancer Mission, the Cardiovascular Health Mission, the Clinical Trials Activity initiative, and many more. Government contributed savings from the health budget into the fund, which is now at the government’s goal of \$20 billion. The funds are then invested to provide a steady stream of income from interest.

This model could be used to create another fund to support commercialisation and translation of research in other fields. Science and Technology Australia has recommended creation of a \$2.4 billion Research Translation Fund to turn more of Australia’s research into innovative new products, services and jobs.

### The ‘valley of death’ in research translation

*Technology Readiness Level* conceptualises the path from research to commercialisation (adapted from [PWC](#))





# Appendix

### There are five types of higher education providers in Australia

Type	Description
Table A providers	'Public universities' – All universities established by a government, plus the Australian Catholic University and the Batchelor Institute of Indigenous Tertiary Education
Table B providers	'Private universities' – Bond University, the University of Notre Dame, the University of Divinity, and Torrens University
Table C providers	Higher education providers operating in Australia but controlled from overseas – this is currently only Carnegie Mellon University, a non-profit organisation established under Pennsylvania law
Other approved providers	TAFE, vocational and non-university higher education providers
Open Universities Australia	An organisation providing online courses from universities across Australia

## Appendix

### Eligibility of students for government financing

By higher education provider type

Type of financing	Higher Education Providers					Other accredited higher education institutions
	Table A providers	Table B providers	Table C providers	Other approved providers	Open Universities Australia	
<b>Student loans</b>						
HECS-HELP	✓	✓	x	✓	x	x
FEE-HELP	✓	✓	✓	✓	✓	x
OS HELP	✓	✓	x	✓	x	x
<b>Commonwealth scholarships</b>						
Undergraduate scholarships	✓	✓	✓	✓	x	x
Postgraduate research scholarships	✓	✓	x	x	x	x
<b>Student income support</b>						
Youth Allowance and Austudy	✓	✓	✓	✓	x	✓
Australian Development Scholarships	✓	✓	✓	x	x	x

Source: [Bradley Review of Higher Education](#)

## Appendix

### Eligibility of providers for government financing

By higher education provider type

Type of financing	Higher Education Providers					Other accredited higher education institutions
	Table A providers	Table B providers	Table C providers	Other approved providers	Open Universities Australia	
<b>Commonwealth Grant Scheme</b>						
All grants	✓	x	x	x	x	x
National priority areas only	✓	✓	x	✓	x	x
<b>Other Commonwealth grants under HESA</b>						
Equity, disability	✓	x	x	x	x	x
Productivity	✓	x	x	x	x	x
Learning and teaching performance	✓	x	x	x	x	x
National Institutes	✓	x	x	x	x	x
Capital development	✓	✓	x	x	x	x
Superannuation	✓	x	x	x	x	x
Research Block Grants	✓	✓	x	x	x	x
Research Training Grants	✓	✓	x	x	x	x
Diversity and Structural Reform	✓	✓	x	x	x	x
Systemic infrastructure	✓	✓	x	x	x	x
<b>Research grants</b>						
ARC Centres of Excellence	✓	✓	x	x	x	x
ARC Discovery and Linkage Grants	✓	✓	x	x	x	x
ARC Fellowships	✓	✓	x	x	x	x
NHMRC grants	✓	✓	✓	✓	✓	✓
<b>Other support for higher education</b>						
Open learning Initiative	x	x	x	x	✓	x

Source: [Bradley Review of Higher Education](#)

## Appendix

### Change to Commonwealth contributions as part of the Job-ready Graduates package

Commonwealth funding per unit of study (by subject) for Commonwealth supported students

Subject	OLD Commonwealth contribution	NEW Commonwealth contribution	Change \$
Communications	\$13,547	\$1,100	-\$12,447
Other Society and Culture	\$11,015	\$1,100	-\$9,915
Medical science	\$24,446	\$16,250	-\$8,196
Environmental studies	\$24,446	\$16,250	-\$8,196
Humanities	\$6,226	\$1,100	-\$5,126
Science	\$19,260	\$16,250	-\$3,010
Engineering	\$19,260	\$16,250	-\$3,010
Management and commerce	\$2,237	\$1,100	-\$1,137
Law and economics	\$2,237	\$1,100	-\$1,137
Mixed fields	\$2,237	\$1,100	-\$1,137
Food and hospitality	\$2,237	\$1,100	-\$1,137
Clinical Psychology	\$13,547	\$13,250	-\$297
Allied Health	\$13,547	\$13,250	-\$297
Creative arts	\$13,547	\$13,250	-\$297
Nursing	\$15,125	\$16,250	+\$1,125
Education	\$11,462	\$13,250	+\$1,788
Maths	\$11,015	\$13,250	+\$2,235
Other Health	\$11,015	\$13,250	+\$2,235
IT	\$11,015	\$13,250	+\$2,235
Architecture & Building	\$11,015	\$13,250	+\$2,235
Professional pathway psychology	\$11,015	\$13,250	+\$2,235
Professional pathway social work	\$11,015	\$13,250	+\$2,235
Agriculture	\$24,446	\$27,000	+\$2,554
Vet science	\$24,446	\$27,000	+\$2,554
Dental	\$24,446	\$27,000	+\$2,554
Medical	\$24,446	\$27,000	+\$2,554
Foreign Languages	\$13,547	\$16,250	+\$2,703
English	\$6,226	\$13,250	+\$7,024

Source: [Australian Department of Education](#)

## Appendix

### Change to maximum student contributions as part of the Job-ready Graduates package

Maximum student contribution per unit of study (by subject) for Commonwealth supported students

Subject	OLD maximum student contribution	NEW maximum student contribution	Change \$
Communications	\$6,804	\$14,500	+\$7,696
Other Society and Culture	\$6,804	\$14,500	+\$7,696
Humanities	\$6,804	\$14,500	+\$7,696
Management and commerce	\$11,355	\$14,500	+\$3,145
Law and economics	\$11,355	\$14,500	+\$3,145
Mixed fields	\$11,355	\$14,500	+\$3,145
Food and hospitality	\$11,355	\$14,500	+\$3,145
Creative arts	\$6,804	\$7,950	+\$1,146
Professional pathway psychology	\$6,804	\$7,950	+\$1,146
Professional pathway social work	\$6,804	\$7,950	+\$1,146
Vet science	\$11,355	\$11,300	-\$55
Dental	\$11,355	\$11,300	-\$55
Medical	\$11,355	\$11,300	-\$55
Environmental studies	\$9,698	\$7,950	-\$1,748
Science	\$9,698	\$7,950	-\$1,748
Engineering	\$9,698	\$7,950	-\$1,748
Allied Health	\$9,698	\$7,950	-\$1,748
Other Health	\$9,698	\$7,950	-\$1,748
IT	\$9,698	\$7,950	-\$1,748
Architecture & Building	\$9,698	\$7,950	-\$1,748
Clinical Psychology	\$6,804	\$3,950	-\$2,854
Nursing	\$6,804	\$3,950	-\$2,854
Education	\$6,804	\$3,950	-\$2,854
Foreign Languages	\$6,804	\$3,950	-\$2,854
English	\$6,804	\$3,950	-\$2,854
Medical science	\$11,355	\$7,950	-\$3,405
Maths	\$9,698	\$3,950	-\$5,748
Agriculture	\$9,698	\$3,950	-\$5,748

Source: [Australian Department of Education](#)

## Appendix

### Eight Sydney federal electorates have degree attainment levels below the national average of 22%

University degree attainment levels across every Greater Sydney federal electorate - 2016

Greater Sydney Commonwealth Electorate	Percentage of University Degree Holders
Fowler	12.7
Lindsay	13.5
Macarthur	14.4
McMahon	14.5
Werriwa	15.2
Blaxland	17.3
Chifley	17.8
Macquarie	21.0
Watson	22.9
Cook	23.3
Hughes	23.7
Banks	25.8
Greenway	27.1
Mackellar	27.8
Barton	29.7
Mitchell	33.4
Parramatta	34.0
Kingsford Smith	34.2
Berowra	35.4
Reid	37.6
Bennelong	39.8
Warringah	42.3
Grayndler	42.6
Sydney	43.8
Wentworth	46.8
Bradfield	47.2
North Sydney	49.8

Source: Centre for Western Sydney (ABS 2016 data)

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## Acknowledgements

Lead author: Harri Bancroft.

Thanks to Macquarie University, University of Sydney, University of NSW, University of Technology Sydney, University of Wollongong and Western Sydney University for your contributions to this paper.





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