

## **The House of Representatives Standing Committee on Employment, Education and Training**

### ***Inquiry into Funding Australia's Research***

Griffith University welcomes the opportunity to lodge this submission to the House of Representatives Standing Committee on Employment, Education and Training Inquiry into Funding Australia's Research. While the University appreciates any attempt to reduce red tape and improve efficiency in Australia's system of research funding, the overall tone of this submission is one of caution to avoid unnecessary changes to policy and funding arrangements before previous changes have achieved their desired effect.

Based on the recent experience of this University we contend that the issues under consideration around fragmentation and diversity of research programs could equally be seen as a strength of the current arrangements. This submission also highlights emerging evidence that universities are exercising more scrutiny in managing research grant applications, although several improvements can be made to strengthen the pool of available reviewers by curtailing other activities. Finally we are strongly supportive of the dual system of research funding and question whether simplification of funding (e.g. such as distribution of research funding based on past performance) is anti-competitive and enshrines a university hierarchy that is not necessarily in the national interest.

These points aside, Griffith University makes several recommendations around easily implemented refinements that the Inquiry might consider that could produce considerable efficiencies for universities and the Government.

#### **1. Diversity across Australian Government funding for research and the need for consistent messages to the academic community**

In its submission to the *Review of Research Policy and Funding Arrangements* (Watt review, 2015), Griffith University emphasised that the existing research policy and funding arrangements support a university system that is excellent and diverse; comprising established sandstones, emerging comprehensives, regional and metropolitan institutions, and those with a science and technology or other focussed disciplinary orientation. The current funding arrangements have created a strong and diverse university system, the balance of which should not be altered without good cause. In Griffith's view diversity, also characterised as fragmentation, of research funding programs is within reason a positive attribute of the current system.

Although the current Inquiry focuses on research investment across the Australian Government, university implementation of the Watt Review outcomes, based on a broader examination of the research ecosystem, should not be completely overlooked. That Review and the Government policy that followed encouraged universities to diversify funding streams, increase industry collaboration, and undertake more impactful research. This has in a short period of time created a new internal narrative within universities. Individual



researchers are becoming more thoughtful about their own pathways to the achievement of research impact while universities are recognising and rewarding more diverse career paths through enhancements to academic performance appraisal and promotion.

Universities better appreciate the importance of having a diversified portfolio of research applications and grants – and while there is general encouragement for researchers in many disciplines to view ACG as the gold standard, there is increasing recognition by others that the source of the dollars is less of a consideration than in the past.

***Recommendation 1*** – *That the Watt Review outcomes require at least another five years to run their course before consideration is given to any changes to the policies initiated as a result of that Review.*

## **2. ERA has had a demonstrable impact on the quality agenda within Australian universities – but has made its mark and is expensive**

The most recent Excellence in Research for Australia (ERA) assessment exercise in 2015 revealed that more than 80 per cent of units of assessment submitted nationally in broad fields of research were rated world-standard or above. In terms of citation impact, a key ERA indicator for the science, technology, engineering, health and medical fields, Australia's performance has improved from 1.15 times the world average in 2003<sup>1</sup> to 1.41 in 2016 – the 2016 figure corresponds to 'above world standard' in the ERA ratings.

The transformational impact of ERA and the internal quality agenda on the Australian university sector is seen in Table 1, showing national research performance characteristics in 2003 and 2016. Research volume in 2016 is more than three times that in 2003 and yet quality has improved, both in terms of citation impact and the proportion of research outputs in leading (Q1 and Q2) journals. This trend is shared by institutions across the sector to varying degrees.

**Table 1: Australia – key research performance indicators (2003 and 2016)**

Year	Research Outputs	Citation Impact (world = 1)	Outputs in Q1 Journals	Outputs in Q2 Journals	Outputs in Q3 Journals	Outputs in Q4 Journals
2003	29,506	1.15	48.86%	24.92%	17.57%	8.66%
2016	96,071	1.41	53.57%	26.63%	14.41%	5.39%

Source: Clarivate Incites, accessed on 25 June 2018.

The ERA 2015 outcomes also align well with the Academic Ranking of World Universities (Shanghai) Top 500 where Australia had 23 universities listed in the 2017 edition, up from 13 in 2004. Broadly therefore Australia has at least 23 universities that are considered research intensive in global terms and yet almost 70% of ACG funding remains concentrated in around a third of these universities. ERA has had a demonstrable impact on the research quality agenda, although recent Incites figures (June 2018) suggest that the rate of improvement since ERA 2015 has slowed. Citation Impact for the ERA 2015 reference period

<sup>1</sup> The year 2003 was selected as the first year of the reference period for ERA 2010.

was 1.35 times the world average – it stands at 1.40 for the six year reference period of the ERA 2018 submission, suggesting only marginally better outcomes for this round.

In view of these diminishing returns from an exercise estimated to cost between \$60-80 million per round for the Government and universities (ERA alone), it is recommended that ERA and the parallel labour-intensive Engagement and Impact (EI) exercise be conducted every six years. The fact that ERA 2015 outcomes align broadly with easily generated citation impact in relevant citation disciplines, also suggests that ERA could be largely automated.

From the Government and university side it is often the same researchers who act as research centre leaders and key advisers for ERA/EI (both for the ARC and universities) and then double-up as internal mentors for grant preparation as well as reviewers for the sector.

A six-year ERA/EI cycle will deliver cost savings and free up considerable academic and administrative resources, benefiting both the Government and the university sector, to engage more effectively in peer review ranging from internal scrutiny of grant applications prior to submission to that conducted on behalf of the granting bodies.

***Recommendation 2 – Conduct ERA and EI every six years.***

### **3. Universities have improved internal scrutiny of grant applications – the Inquiry should consider whether funding levels are sufficient to support top quality research**

The Watt Review (November 2015) recommended that “institutions apply more stringent control on grant application numbers”. Since then, as one example, ARC Discovery applications have fallen by 15% from 3,689 in 2015 (cited by Watt) to 3,136 in 2018 with the success rate still only at 18.9%. In contrast, international success rates vary from the European Research Council (15%), UK Research Council (around 25%) to the German Research Foundation at 35%, the latter achieved through a two-stage process involving expressions of interest round prior to the actual granting round. A report by Research Councils UK, as far back as 2006, concluded that a “success rate between 20 and 50 per cent represented an acceptable balance between the benefits of competition and the cost/effort to support the system”.

Less than 20% for major grant rounds is unacceptably low for Australia when both ERA outcomes and trends in application numbers suggest the presence of high quality research backed by effective internal processes. This is the case at Griffith University which has conducted an internal expressions of interest (EoI) program since 2015 for ARC Discovery applications. Researchers are required to submit grant proposals mid-year for the following year's grant round, either direct to the Office of the Senior DVC or through pre-approved Research Centre and Institute processes. From 89 EoIs for the current Discovery round (2019), 61 were eventually submitted – a decrease of 11.6% on the 69 applications submitted for the 2018 round and a decrease of 22.8% on the 79 submitted in the 2017 round. This process has now been extended to other grants programs including ARC DECRA, Discovery Indigenous, NHMRC Project, and NHMRC Fellowships.

To match the British success rate of 25% then ARC Discovery grant allocations would need to increase by approximately 32% (\$72m) from an allocation of \$225m to \$297m. The more untenable alternative is for grant applications to be reduced by another 25% to 2400 –

which is not impossible but would require all institutions to implement more effective processes for scrutiny of grant applications similar to those already in place at responsive universities like Griffith. As already posited, the issue seems more likely to be one of scarce funding than a research quality issue however it is also likely that not all universities have quality control processes in place.

**Recommendation 3** – *That the Government set a minimum grant success target of 25% across all Programs with acceptance of 50% as an aspirational target in some.*

**Recommendation 4** – *That the major granting agencies (ARC and NHMRC) require universities and MRIs to provide evidence of effective programs of grant application scrutiny for high volume grant programs and that where this is not demonstrated then application quotas be set limiting that institution in the following round.*

#### **4. Grant writing is not time wasted and unfunded research is not necessarily weak research**

Although much has been made of the 550 working years or five centuries<sup>2</sup> of time spent annually writing NHMRC grant applications (assuming a similar figure applies to the ARC) this should not be considered time wasted even for the current 80 per cent of unsuccessful applications. Subject to effective university processes of scrutiny to ensure that only excellent proposals proceed, researchers benefit greatly from the opportunity to test innovative research in the high quality, high stakes arena of competitive grant peer review.

A 2015 study in *Plos One*<sup>3</sup> concluded that grant writing shapes ideas and benefits scientific thinking allowing ideas and collaborations to develop ensuring spin-offs for research teams, including the management of limited resources and the development of postdoctoral fellows and higher degree research trainees.

In Griffith's experience while 20% of applications to major grant rounds are successful, the next 10-20% are often revised into future successful ACG grant proposals. Some are re-purposed to meet the requirements of other schemes, often with higher success rates, while some form the basis for strong internal research often allowing time for further incubation into successful contract research, consultancy, and other forms of high value research. Any suggestion, raised in some quarters, that universities might receive a guaranteed allocation of funding for internal distribution to research projects, based on RBG, ERA or another formula, is anti-competitive and denies researchers the opportunity to test innovative research proposals in an open field.

**Recommendation 5** – *That the Inquiry explicitly recognises that grant writing and the associated peer review processes, even with 25% success rates, are necessary ingredients of a well-functioning and highly competitive, high quality research system.*

**Recommendation 6** – *That competitive grant funding should remain competitive.*

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<sup>2</sup> Herbert DL, Barnett AG, Clarke P, et al. BMJ Open 2013;3:e002800. doi: 10.1136/bmjopen-2013-002800

<sup>3</sup> Von Hippel, T., & von Hippel, C. (2015). To Apply or Not to Apply: A Survey Analysis of Grant Writing Costs and Benefits. PLoS ONE, 10(3), e0118494. <http://doi.org/10.1371/journal.pone.0118494>

### The Dual funding System is both necessary and effective

Although universities recorded \$3.78bn in HERDC-eligible research income for 2016, they expend around \$10.88bn annually on research and development as reported to the Australian Bureau of Statistics. A declining proportion of this expenditure comes from Australian Competitive Grant income (15.3% in 2016) while a growing proportion is sourced from General university Funds (includes overseas student fee income), business and industry, donations, foundations and overseas sources. Research Block Funding of around \$1.8bn recognises these diverse funding sources and allow universities to shape their own research agendas and become more distinctive. Table 2 provides the 2012 figures used by the Watt Review, updated with the latest 2016 ABS figures.

**Table 2: Higher Education R&D expenditure (2012 & 2016)**

Source of funds	\$M (2012)	%	\$M (2016)	%
Australian competitive grants	1,625	16.9	1,673	15.3
General university funds	5,340	55.6	6,075	55.8
Other Commonwealth Gov't (includes RBG)	1,448	15.1	1,610	14.8
State and local government	420	4.4	420	3.9
Business	398	4.1	475	4.4
Donations, bequests & foundations	124	1.3	251	2.3
Other Australian	24	0.2	1	0.1
Overseas	231	2.4	372	3.4
<b>TOTAL</b>	<b>9,610</b>	<b>100</b>	<b>10,877</b>	<b>100</b>

Source: ABS 8111.0 - Research & Experimental Development, Higher Education, Australia, 2016

Based on the ABS Higher Education Expenditure on Research and Development (HERD) figures for 2012, the Watt report recognised that a considerable proportion (55.6%) of HERD was sourced from international student fees and the Commonwealth Grants Scheme while anticipating that a growing proportion would be sourced from business, donation and bequests, and overseas sources – recommending adjustments to better recognise and reward these shifts.

The Final Report recommended several refinements which have reduced red tape (including the elimination of HERDC publications reporting) and made for more efficient funding arrangements such as the simplification of Research Block grants into two schemes. The report also emphasised the need to retain the dual-funding mechanism for research allowing universities the flexibility to pursue their unique paths in the development of research scale and excellence.

Griffith University has consistently supported the need to retain and enhance the dual-funding mechanism for research allowing universities the flexibility to pursue their unique paths in the development of research scale and excellence – which given sufficient time will support market-driven diversification across the sector.



The University's expenditure on R&D in 2016 (submitted to the ABS) was \$265m which provides the base for 54 fields of research assessed at world standard or above in ERA 2015. To illustrate efforts made by institutions to diversify their research profiles, Griffith's investment over the past five years has supported:

- Formation of 12 Areas of Strategic Research Investment;
- Strategic support for Research Centres and Institutes;
- More PhD scholarships (in addition to commonwealth funded) – 150 additional scholarships per annum or 600 over four years;
- Internal postdoctoral fellowships program, new researcher grants, international collaboration schemes and visiting fellowships;
- Investment into facilities/infrastructure including the Health and Knowledge Precinct at Gold Coast and other national research infrastructure including Compounds Australia, Social Science Analytics Laboratory, and 3D metal printing facility.

***Recommendation 7*** – *That increases to Research Block Funding be considered to recognise and reward the efforts of universities that have self-invested into their research futures.*

## **Conclusion**

In conclusion, Griffith University points to the risk of introducing further false efficiencies to research funding and programs that could result in unintended consequences including greater homogeneity across a research sector that is performing strongly and becoming more diverse. The Australian university system is changing rapidly and it is likely that several 'challenger' universities will emerge within the next decade. Australia therefore does not want to be locked into an entrenched university hierarchy.

## **Griffith University contact for further Information:**

Professor Ned Pankhurst  
Senior Deputy Vice Chancellor  
Griffith University  
Gold Coast, Qld

