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Deputy Vice-Chancellor (Research)

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Mr Andrew Laming MP

Member for Bowman

Chair, House of Representatives Standing Committee on Employment, Education and Training

Parliament House

Canberra ACT 2600

Via email: ee.reps@aph.gov.au

Dear Mr Laming,

Inquiry into the efficiency, effectiveness and coherency of Australian Government funding for research

The University of Sydney welcomes the Committee's interest in understanding current issues in the administration of the federal research funding system (excluding the National Health and Medical Research Council) with the objective of reducing red tape and reducing the time and effort researchers spend applying for research funding.

We have contributed to and endorse the submissions Universities Australia, the Group of Eight and the Australasian Research Management Society (ARMS) have provided, with our comments intended to complement their respective contributions. For context, we preface the remarks below relevant to the inquiry's four terms of reference with some brief contextual information about our research effort, its administration, our research strategy and the key current issues policy issues facing the Australian research and innovation system.

Key facts about the University of Sydney's research (2017 unless specified)

- Ranked in the top 100 research universities globally by four key rankings organisations (top 0.3% of all universities).
- 3,400 full-time academic staff and 4,800 higher degree by research students across possibly the broadest range of disciplines of any Australian university.
- \$394 million in federal research funding.
- \$535 million total research and consultancy income.
- 100% of our research ranked at world standard (Australian Research Council Excellence in Research for Australia Initiative 2015).
- 49,940 research outputs submitted across 22 two-digit (157 four-digit) Field of Research (FOR) codes in the 2018 Excellence in Research for Australia assessment (ERA 2018), an increase of 24% compared to 2015.
- Extensive research partnerships with diverse industry sectors and organisations including Microsoft, Rio Tinto, Qantas, GE Healthcare and many others.
- Significant commercialisation successes, for example \$107 million or 5% of our research income in 2015 was from industry partnerships and research commercialisation activities, while in 2017 we made 120 invention disclosures.
- More than 90 research centres and institutes.
- Home to many world-class research collections and facilities and involved with a dozen National Collaborative Research Infrastructure Strategy (NCRIS) facilities.



Our research administration and support services, staffing levels and costs

- Our Research Portfolio supports the delivery of all aspects of our research effort other than research training, which is the responsibility of the Deputy Vice-Chancellor (Education). **Appendix A** provides a list of the portfolio's core functions with extensive further information available through our website: <http://sydney.edu.au/research.html>
- The cost of delivering the listed services was approximately \$15 million in 2017, with 194 full-time equivalent (FTE) staff employed centrally in related activities; equivalent to about 2.3% of our total numbers academic staff and higher degree by research student.
- A further \$70 million was administered by the Research Portfolio in 2017 for investment in strategic programs supporting our research activities.
- We estimate that we currently have 25 (FTE) dedicated to external grant administration activities, with the cost of these staff currently representing between 4% and 6% of the total grant income we earn each year (noting that the value of grant income received is not stable).

Our research strategy

Our research strategy forms a core element of our 2016-20 Strategic Plan released in March 2016 following wide-ranging consultations with our staff, students, government and industry partners and other key stakeholders.¹ We aim to be the leading, research-intensive university in Australia with outstanding researchers, networks and partnerships that improve the lives of our local and global communities. Our vision is aspirational, aiming to position the University of Sydney as the best university in Australia and a leading institution globally.

We are investing in outstanding research to ensure that our best work – work of national, regional and international impact – is supported with the right people, equipment, and physical infrastructure. Examples of the key strategic initiatives we are pursuing to drive research excellence across the University include:

- implementing new targets for research performance at each stage of a researcher's career as part of our drive to improve the quality, impact and efficiency of our research effort;
- growing our investment in our researchers and the physical environment in which they undertake research to \$150 million annually by 2020, building strategically on existing and emergent strengths in disciplinary and multidisciplinary areas;
- establishing a Centre for Translation Data Science and the Sydney Policy Lab as part of a suite of new multidisciplinary initiatives;
- remodelling the pathway to our PhD to provide more structured research training and support to better prepare students for their research studies while also ensuring they build broader competencies in project management, research integrity and ethics, commercialisation, entrepreneurship, research leadership, translation and public engagement, and teaching;
- creating new scholarship and fellowship schemes to attract outstanding research students and early career researchers from around the world; and
- further strengthening our research collaborations with industry, knowledge transfer (including research commercialisation) to maximise the contribution our research makes in Australia and internationally.

¹ The University's Strategic Plan 2016-20 can be accessed here: <https://sydney.edu.au/about-us/vision-and-values/strategy.html>



Key current policy issue facing the Australian research and innovation system

We have engaged with many reviews relevant to the research and innovation system conducted over the last decade, raising key policy design issues including the following ten:²

- 1. Long-term holistic planning** The need for federal research and innovation policy to take a holistic, long-term approach to building and sustaining innovation and skills ecosystems.
- 2. Research excellence** The underpinning role that research excellence plays in supporting national capacity for innovation and productivity improvement, as well as our largest services export industry.
- 3. Research training excellence** The importance of Australia having a strong system of research training producing world-class graduates.
- 4. Funding actual research costs** The need for federal funding of research to reflect the true costs of the funded research and remove the perverse incentives that arise from funding shortfalls.
- 5. Fundamental research** The need to stem Australia's declining rates of investment in fundamental, discovery research.
- 6. Research breadth and depth** The importance of maintaining research capacity across the disciplines, including in the humanities, arts and social sciences.
- 7. Sustaining the dual funding system** The challenges facing the dual funding system, including the large resource and opportunity costs imposed for researchers, research organisations and the Government's funding councils and agencies.
- 8. Enhancing university/industry collaboration** Improving levels of research collaboration between universities and industry, particularly focused on the creation of new industries and jobs.
- 9. Research infrastructure** The importance of strategic and stable approaches to the investment in Australia's stock of research infrastructure as a national asset over the long-term.
- 10. International engagement and talent acquisition** The value of Australia's participation in international research collaborations, people-to-people exchanges and the importance of Australia remaining a desirable to, and open for, top research talent from around the world.

² For example, some of our more recent submissions directly relevant to this inquiry can be found at the following links:
[The Review of the Research Training System](#) undertaken for the Australian Government by the Australian Council for Learned Academies (ACOLA) in 2015;
[The Review of Research Policy and Funding](#) led for the Australian Government by Ian Watt in 2015 and 2016;
[The Review of the R&D Tax Incentive](#) completed by Bill Ferris AC, Dr Alan Finkel AO and John Fraser in 2016
[Innovation and Science Australia's Development of a 2030 National Innovation Plan](#) completed in 2018



ToR 1 The diversity, fragmentation and efficiency of research investment across the Australian Government, including the range of programs, guidelines and methods of assessment of grants

The University of Sydney is a large research-intensive institution engaged in diverse activities arising from the pursuit of core education, research and knowledge generation and translation missions. As such, the legal, policy and funding environment in which we operate is arguably as complex as that experienced by any other Australian organisation. By way of example, we currently have some 114 pieces of federal and state legislation on our legal compliance register, with close to 50 of these relevant to our research activities (see **Appendix B** for a current list of research-related laws with which we must comply).

The staffing and other costs required to ensure we stay up-to-date with our ever-changing legal compliance obligations are significant and growing as governments in all jurisdictions introduce new or amending laws and related administrative processes. While a degree of regulatory complexity is inevitable, there is a need for ongoing vigilance from all levels of government to ensure the regulatory compliance and reporting burden faced by Australian universities and other organisation is minimised.

The Australian Government's Acts, regulations, policies, guidelines and processes covering its wide range of research programs are responsible for a significant share of the administrative compliance burden currently experienced by Australian universities. As Universities Australia highlights in its submission, the federal system of funding for research is complex, characterised by multiple schemes with sometimes related or overlapping objectives but very different approaches to pre- and post- award grant administration. The extent of this complexity is demonstrated by the fact that the Australian Competitive Grant Register currently contains 140 separate schemes, many of which are delivered by federal agencies, while the Science, Research and Innovation Budget Table released annually by the Department of Industry, Innovation and Science contains more than 400 line-entries for superseded and current relevant programs funded by the Australian Government.

While governments often deem it desirable to develop new research funding schemes in areas of priority, it is equally important to ensure that the research funding system remains coherent and well-managed. A proliferation of programs, with different objectives, funding rules and processes undermines efficiency and ultimately reduces the likelihood that the outcomes desired by governments are achieved.

In addition to the compliance requirements arising from federal research funding schemes, compulsory reporting initiatives such as the Australian Research Council's Excellence in Research for Australia (ERA) Initiative and the more recent Engagement and Impact Assessment (EI) require a huge investment of staff time and resources to complete. This inevitably increases our operating costs and diverts researchers away from their research. While we believe both ERA and EI are important, care needs to be taken to ensure that the administrative burden they impose is commensurate with the value of the information they delivery about the quality and impact of Australian university research.

The Review of Research Funding and Policy (Watt Review) completed in 2016 is one recent example of a review that has resulted in significant streamlining and improvements in policy coherence for a major suite of federal research funding programs. The National Collaborative Research Infrastructure Strategy and prioritisation process is another. We would welcome recommendations from the Committee directed towards achieving similar outcomes for other aspects of the Federal Government's substantial annual investment through research grants and other programs. In this regard we note the following recommendations of the Watt Review, which may be of interest to the Committee:



“The Minister for Education and Training, in consultation with the Minister for Industry, Innovation and Science, the Minister for Health and other relevant ministers, should take the lead on assessing and reporting on the performance of the publicly funded research system through:

- a. an annual public assessment of the performance of the Australian research system;
- b. advice to the Cabinet annually on current and emerging policy implications to inform policy consideration at both the whole of government and portfolio by portfolio levels; and
- c. public release of the results of the assessment after the Cabinet’s consideration.”³

ToR 2 The process and administrative role undertaken by research institutions, in particular universities, in developing and managing applications for research funding

In terms of developing applications for research funding from federal government and other grant schemes, the Research Development and Collaboration Team within our Research Portfolio leads this activity in close collaboration with academic and professional staff in our faculties, centres and institutes. The team’s core functions include:

- providing strategic advice on research, including the development of large and often complex multi-party internal and external proposals, and the investment of University resources to support research priorities;
- supporting improvements in research performance including through researcher education, training and development; and
- identifying proactively potential successful applicants for external funders by targeting and enabling the ambitions and expertise of our researchers.

Our Research Grants and Contracts Team works closely with the Research Development and Collaboration Team, providing the following support services for our researchers:

- identification of opportunities for funding research grants and fellowships (domestic and international);
- advice on funding rules and application guidelines;
- review of grant applications for compliance and eligibility;
- management of final submissions of applications to funding bodies;
- guidance on navigation of grant funding portals;
- submissions of rebuttals/rejoinders for NHMRC/ARC schemes;
- formal acceptance of grant awards;
- establishment of grant records and related accounts;
- advice on post-award compliance;
- advice on financial and eligibility requirements;
- management and negotiation of multi-institutional agreements for all University-led grants and collaborative grants;
- management of variation requests to funding providers;
- management of grant transfers into and out of The University;
- ethics notifications to funding providers;
- monitoring, review and submission of progress and final reports to funding agencies; and
- training sessions for academic and professional staff in faculties, centres and other University central support services.

³ Report of the Review of Research Funding and Policy, Watt I, et.al, Recommendation 25, p. viii



To give a sense of scale, resourcing and workload involved for these two teams:

- in 2017 we submitted 1,375 applications for funding across all domestic and international grant schemes, with 972 of these (70%) submitted to federal funding schemes: ARC, NHMRC, CRCs and others;
- 8 full-time staff are employed to manage and deliver our research development and collaboration initiatives and support services;
- 6 full-time equivalent Research Administration Officers spend on average 32 hours-a-week processing funding applications; with ARC and NHMRC grants representing 30% of this work for most of the year and other federal research schemes around 10%;
- from January to April each year, 5 of these 6 full-time equivalent Research Administration Officers spend 100% of their time administering ARC and NHMRC grants;
- 16 casual staff (approximately) are employed for 4 weeks each year from January to February, and dedicate 35 hours a week to ARC and NHMRC funding applications;
- 4 full-time equivalent Research Administration Officers spend 100% of their time on post-award administration activities, plus a seasonal casual staff member who assists the team during peak periods;
- 2 full-time equivalent Research Reporting and Compliance Officers spend 100% of their time on the monitoring, review and submission of progress and final reports to funding agencies; and
- 1 full-time equivalent Major Initiative Coordinator who spends on average 20 hours per week leading the administration of significant and complex funding applications 100% focused on ARC and NHMRC, with these hours increasing from January to March.

ToR 3 The effectiveness and efficiency of operating a dual funding system for university research, namely competitive grants and performance-based block grants to cover systemic costs of research

A key strength of Australia's dual funding system for university research is that it gives institutions some capacity to be strategic, which may not be available under schemes where infrastructure and indirect costs are tied to each grant. This flexibility is important because it allows universities to reduce duplication, for example, by investing in shared research infrastructure and other services, or to build research capacity in areas identified as strategically important.

Key weaknesses include the large and growing gap between the true costs of supporting Nationally Competitive Grants programs, and the large cost (in staff salaries and opportunity costs) of the time required by staff to win external grants. For example, a 2013 survey of 3727 applicants in one major NHMRC scheme in 2012, found that on average they spent 34 days preparing each proposal. The study estimated this amounted to some 550 working years of researchers' time, and a salary cost to employing institutions of \$66 million.⁴ With success rates for most ARC and NHMRC schemes now low for most schemes and under continual pressure, the total salary and opportunity costs of Australia's dual funding system are likely to be significant and growing. Both the ARC and NHMRC are working with the sector to try to reduce the pressure on the schemes, but all stakeholders recognise that in the absence of additional funding to increase success rates there are no easy solutions.

We welcome the Committee's interest in the dual funding system but note that the Watt Review completed in 2016 resulted in major changes to the Research Block Grant component of the dual funding system, alongside a range of recommendations for

⁴ Herbert D.L et. al. *On the time spent preparing grant proposals: an observational study of Australian researchers*, BMJ Open, 2013: <http://bmjopen.bmj.com/content/3/5/e002800.full.pdf+html>



changes to the administration of the federal government's competitive grant schemes. The changes to the Research Block Grants component are in the early stages of implementation and it may be too early to fully assess the impact of these reforms.

ToR 4 Opportunities to maximise the impact of funding by ensuring optimal simplicity and efficiency for researchers and research institutions while prioritising delivery of national priorities and public benefit.

System-wide simplification

As discussed in response to ToR 1, Australia's research funding is complex and multi-layered with schemes operated by Federal, State and Territory governments, local governments, industry, philanthropic and community-based organisations. There is significant scope to improve the simplicity, efficiency and coordination of the national system, thereby maximising the impact of available funding. However, achieving this will require all levels of government committing to a long-term concerted effort to raise the profile of research and the importance of achieving system-wide coherence and efficiency. The Federal Government can play a leadership role by setting an example across its agencies' research programs and by utilising the Council of Australian Governments' structures and processes. Meanwhile, research organisations including universities need to remain focused, as we are, on simplifying and streamlining our internal administrative processes.

More efficient grant application and post-award processes

There is potential to reduce the amount of unproductive time and effort researchers and research organisations spend preparing grant applications (and reporting on them post-award) by further improving the efficiency of the Commonwealth's competitive grants programs. The university sector works regularly with the Australian Research Council, National Health and Medical Research Council and other funding agencies to improve grant application and reporting processes. For schemes such as the Cooperative Research Centres program this has resulted in the adoption of a two-stage process comprising an initial expression of interest (EOI), followed by full detailed proposals only by applicants invited to progress to Stage 2 based on their EOIs. Similar multi-staged approaches are used in other Australian schemes and internationally and the major structural reforms the NHMRC is now implementing after an extensive period of review and consultation are partly designed to improve efficiencies.

Application and management systems

The ARC and NHMRC continue to retain customised grant application and management systems. This adds unnecessary complexity, risks processing errors and sometimes necessitates double handling of grants and post-award information. The Federal Government could achieve budget savings and improve efficiency in its agencies as well as within universities and other organisations through improved integration of the research application and management systems used by key funding agencies.

Simplifying requirements for multi-party schemes

The contractual requirements for Australian Research Council multi-party schemes such as the *Industrial Transformation Research* and *Linkage* are complex and time consuming to negotiate, and would benefit from simplification and streamlining.

Standard contract templates and key clauses across all federal agencies

The Federal Government's extensive recent efforts to simplify and standardise the design, establishment, administration and management of grant programs across all agencies are most welcome. However, one year since the *Commonwealth Grants Rules and Guidelines 2017* (CGRS) came into effect, the suite of whole-of-government *Grant Opportunity Guideline Template* and *Funding Agreement Template* available through the



GrantConnect initiative do not appear to have been taken up widely by many Federal agencies operating research grant programs.⁵

The efficiency and cost-effectiveness of the Federal Government's research investment would be enhanced significantly if the time and resources required to reach agreement on contractual terms could be reduced across the board. The Government and university sector made good progress on this front in the late 2000s following the Cutler Review of the National Innovation System and an influential submission made by the Group of Eight universities to that review.⁶ However, we have observed a general deterioration in levels of templating and standardisation arising from a range of factors including changes in key personnel in Government and universities, an absence of effective inter-departmental mechanisms to achieve cross-agency coordination regarding the design and content of research contracts and agreements, and in some cases a hardening of agencies' stance regarding intellectual property-related issues. These developments are inconsistent with the Government's push for simplification and standardisation through *GrantConnect* and at odds with international best practice policy approaches to maximising opportunities for the commercialisation of intellectual property arising from publicly funded research.

We trust the information and suggestions we have provided in this submission assist the Committee with its inquiry and would welcome the opportunity to assist the Committee further as required.

Yours sincerely,

(Signature removed for electronic distribution)

Professor Duncan Ivison
Deputy Vice-Chancellor, Research

Appendix A University of Sydney Research Portfolio summary of key functions

Appendix B Key research related Acts and regulations with which The University must comply (current June 2018)

⁵ <https://www.grants.gov.au/>

⁶ Group of Eight, *In the interests of innovation, time for a new approach to research agreements between the Commonwealth and Australian universities, supplementary submission to the review of the national innovation system*, April 2008.

Appendix A

University of Sydney Research Portfolio Key Functions (Alphabetical)

Aboriginal and Torres Strait Islander Research strategy and program
Core Research Facilities
Delegations (in-bound and out-bound)
Industry engagement relating to research
International partnership development, support and delivery
Multi-disciplinary research initiatives
Research analytics, data and systems
Research commercialisation
Research communications (internal and external)
Research development and support
 Research ethics and integrity
Research grants and contracts
Research intellectual property
Research policy development, review and implementation
Research reporting
Research strategy and coordination
Strategic partnerships and academic recruitment



Appendix B

Key research related Acts and regulations shaping The University of Sydney's operating environment, June 2018

Agricultural and Veterinary Chemicals Code Act 1994 (Cth)
Anatomy Act, 1977 (NSW)
Animal Research Act 1985 (NSW) and Animal Research Regulation 2010 (NSW)
Assisted Reproductive Technology Act 2007 (NSW)
Australian Border Force Act 2015
Australian Research Council Act 2001 (Cth)
Autonomous Sanctions Act 2011 (Cth) (and Charter of the United Nations Act 1945 (Cth))
Biosecurity Act 2015 (Cth)
Civil Aviation Safety Authority Regulations 1998 (Cth)
Copyright Act 1879, (NSW)
Copyright Act 1968 (Cth)
Customs Act, 1901 (Cth)
Defence Trade Controls Act 2012, Defence Trade Controls Regulation 2013
Environmentally Hazardous Chemicals Act 1985 and Regulation 2008 (NSW)
Export Control Act 1982 (Cth)
Gene Technology Act 2000 (Cth)
Government Information (Public Access) Act 2009 (GIPA) (NSW)
Health Records and Information Privacy Act 2002 (NSW)
Higher Education Support Act 2003 (Cth)
Human Tissue Act 1983 (NSW)
Mental Health Act 2007 (NSW)
Narcotic Drugs Amendment Act 2016 (Cth) and Narcotic Drugs Regulation 2016 (Cth)
National Health and Medical Research Council Act 1992 (Cth)
National Health Security Act 2007 (Cth)
Nuclear Non-Proliferation (Safeguards) Act 1987 (Cwth)
Patents Act 1990 (Cth)
Pesticides Act 1999 (NSW)
Plant Breeders Rights Act 1994 (Cth)
Poisons and Therapeutic Goods Act 1966 (NSW) and Regulation
Privacy Act 1988 (Cth)
Privacy and Personal Information Protection Act 1998 (NSW)
Public Finance and Audit Act 1983 (NSW)
Public Health Act 2010 (NSW) and Public Health Regulation 2012 (NSW)
Public Interest Disclosures Act 1994 (NSW)
Radiation Control Act 1990 and Regulation 2003 (NSW)
Research Involving Human Embryos (New South Wales) Act 2003
Space Activities Act 1998 (Cth) and Space Activities Regulations 2001 (Cth)
State Records Act 1998 (NSW)
Surveillance Devices Act 2007 (NSW)
Telecommunications (Interception and Access) Act 1979 (Cth)
Tertiary Education Quality and Standards Agency Act 2011 (Cth) TEQSA
Therapeutic Goods Act 1989 (Cth)
Trade Marks Act 1995 (Cth)
University of Sydney Act 1989 (NSW)
Work Health and Safety Act 2011 (NSW) and Regulation (formerly Occupational Health and Safety Act 2000 and Regulations (NSW))