

Engagement and Impact Assessment Consultation Paper University of Melbourne response – June 2016

The University of Melbourne welcomes the opportunity to provide feedback to this important Consultation paper.

At the outset the University notes its broad support for the establishment of a framework for national assessment of the engagement and impact of university research. It is appropriate that universities, as the beneficiaries of public monies, demonstrate the value and contribution that are made to the wider society by research. As a publicly-spirited University, we have a long-standing commitment to engagement. Engagement for the University of Melbourne is understood to encompass activities that are far broader than the research engagement considered in this paper.

The University of Melbourne is a comprehensive university committed to research excellence both in breadth and depth. The results of ERA 2015 confirmed this breadth and depth of research excellence with research outputs reported in 105 4-digit level codes, and the University being awarded the highest number of any university of 'well above world standard' (5) ratings at both the 2-digit and 4-digit level.

We support the guiding principles enunciated in the Consultation Paper and reiterate the point that indicators used for this assessment must be robust and objective, balanced by the need to avoid excessive additional reporting burden and expense. We note that exercises such as ERA are time consuming, and have a considerable financial and resourcing impost on both universities and the ARC. Any further reporting requirements imposed upon universities without commensurate support will significantly add to the financial burdens under which universities currently operate.

1. What definition of 'engagement' should be used for the purpose of assessment?

The University supports the ATSE definition of engagement:

'Engagement describes the interaction between researchers and research organisations and their large communities/industries for the mutually beneficial exchange of knowledge, understanding and resources in the context of partnership and reciprocity.' (ATSE Research Engagement for Australia Report 2015)

2. What definition of 'impact' should be used for the purpose of assessment?

The University supports the ARC definition of research impact:

'Research impact is the demonstrable contribution that research makes to the economy, society, culture, national security, public policy or services, health, the environment, or quality of life, beyond contributions to academia.' (ARC Research Impact Principles and Framework)

3. How should the scope of the assessment be defined?

The scope of assessment should reflect, and be appropriate to all research disciplines as far as practical. The scope should not hone in on measureable economic benefits but include social and

other impacts. It should not inadvertently create disincentives for multi, inter-disciplinary or indeed cross-institutional research and collaboration by employing overtly fine-grained disciplinary categories of submission.

The University supports the measurement and reporting of both engagement and impact but notes that it is simply impractical for the measurement of impact to be as comprehensive as the approach to excellence taken in ERA. Instead, the measurement of engagement and impact should be restricted, as far as possible, to existing data sources. In particular, we support a selective and systematic approach including relevant metric based indicators of engagement where available, and limited case studies for illustrating impact.

In taking into account the non-linear nature of research impact we note the need for guidelines (along the lines of census dates as per ERA reporting) so as institutions are clear about precisely what research and which academic staff are to be included. We recommend a 6-12 year window for assessing impact of research, as it balances between that research which has near-immediate impact, and that which evolves over a longer time. There are also practicalities to such a time frame, in that it sits reasonably within 'corporate memory' and record keeping.

A UK Research Excellence Framework (REF) style sampling technique, in which universities were required to make submissions across 36 subject-based units of assessment based on a proportion of their research outputs submission, is not appropriate in the Australian setting. Aside from the very different requirements of REF, the number of case studies that would be required under a model which called for impact case studies as a percentage of submitted research outputs would make it impractical and extremely costly. With 42 universities in Australia and some 430,000 outputs submitted for ERA2015, the average submission of outputs for ERA per institution stands at about 10,200, but with large institutions such as the University of Melbourne, the University of New South Wales and the University of Queensland each submitting more than 10 per cent of the total outputs to ERA, it means that there are very significant differences in the volume of eligible outputs being submitted by Australian universities.

4. Would a selective approach using case studies or exemplars to assess impact provide benefits and incentives to universities?

The University believes that a case study approach is the most appropriate way to assess impact. A case study approach can reflect the impact of all disciplines, not just those that can be demonstrated to have immediate economic benefits, which are relatively easily shown through existing data sets. There is a range of ways that case studies could be selected and these are canvassed below. We note that our preferred approach is option 2.

- 1. A whole of university submission.** This would enable universities to showcase their internal processes, provide exemplars of research impact and highlight best practice. Such an approach would enable universities to profile their strengths without dictating how they should be measured, providing flexibility in responses and minimising the burdens imposed. The potential downside to such an approach may be the lack of representativeness of the exemplars, and the difficulties in comparability between institutions.

2. Case studies reflective of discipline clusters, based on the six ERA clusters.¹ This would mean up to six case study submissions per institution (with a threshold number of 4-digit ERA submissions to trigger the requirement to submit a case study). Such an approach would provide a level of granularity together with a degree of flexibility of response. This would have the additional benefit of not unduly disadvantaging interdisciplinary and multi-disciplinary research, as the clusters are reasonably broad in discipline terms. This is the University of Melbourne's preferred approach.
3. Case studies based on SEO sectors. The way in which disciplines are grouped into sectors in the SEO codes makes this an unworkable proposition. The sector entitled 'society', for example, encompasses health, education, and law, is hugely disproportionate to the other sectors and unrepresentative of the ways in which universities conduct research and add value. Further granularity to the SEO division level would reveal a significant concentration of activity in some areas, and very limited activity in others. As the SEO sectors and divisions do not map on to Field of Research (FoR) codes, the potential for alignment and comparison with the standard ERA outcomes is extremely limited.
4. Case studies based at the FoR 2 digit level. This would mean potentially 22 case studies, discourage inter and multi-disciplinary work. In addition the FoR codes, whilst retaining a coherence in terms of ERA reporting, do not necessarily accurately reflect discipline categories and also tend to silo disciplines in a manner which obscures important differences. ERA submission volumes between 2-digit FoR codes vary dramatically.
5. Case studies based on FoR 4 digit level. This would be impractical given the large number of case studies that would be required, and would exacerbate further the complexities and difficulties outline in reporting at the 2-digit level.

There are myriad other options available and we have considered some of these against the need for practicality and accessibility of existing data. For example, using the ANZSIC codes may present impact in a way that is ostensibly more meaningful to end users (as these are the statistical categories most familiar to them). On balance we believe the options listed, in particular our preferred approach, to be the most amenable to narrate for the end-user, and make best use of existing data collections. The higher the level of aggregation the greater the flexibility offered to the institution to interpret the requirements to suit their discipline mix and to make best use of existing data.

5. *If case studies or exemplars are used, should they focus on the outcomes of research or the steps taken by the institution to facilitate the outcomes?*

The focus should be on both as outcomes can occur without facilitation, and facilitation may not result in outcomes or impact. Engagement can be measured separately and in conjunction with the impact data. The case studies should be reasonable and realistic in order to ensure appropriate focus of effort is on quality of research and its impacts rather than process.

¹ Biological Sciences and Biotechnology; Engineering, Mathematics and Informatics; Humanities and Creative Arts; Physics, Chemistry and Earth Sciences; Social Behavioural and Economic Sciences; and Health and Medical Sciences.

6. What data is available to universities that could contribute to the engagement and impact assessment?

The data already submitted to government in various forms such as reporting to the ABS, or for HERDC, could be appropriately re-purposed for reporting on engagement. This would satisfy the considerations for minimising reporting burden whilst ensuring that data and measures are robust and verifiable.

a. Should the destination of Higher Degree Research students be included in the scope of the assessment?

The inclusion of HDR student destinations in the scope of assessment is supported. One of the important ways in which university research impacts on society is via the training of HDR students who move into industry, government and the not for profit sector either immediately post PhD completion or in the subsequent years. Recent research by Bell & Yates (2015)² for example, is able to demonstrate how women qualified in Chemistry and Biological Sciences and who move out of the academy remain connected to, and contributing to their areas of research in a very broad range of industries and areas of employment.

A further complexity with this issue that is worth noting is the highly international nature of the HDR student cohort at University of Melbourne. For example, approximately one third of all University of Melbourne PhD students are international. The University does not have robust mechanisms for tracking their destinations post completion, nor are we able to track local HDR students who take positions overseas upon completion.

As noted in the recent ACOLA Review Australia's Research Training System³ current available data is inadequate to determine the performance of the research training system. The review recommends that longitudinal data on destinations for HDR students should be collected and reported nationally. The collection and reporting of such data is something that the University would support and welcome.

b. Should other types of students be included or excluded from the scope of assessment (e.g. professional Masters level programmes, undergraduate students)?

The University does not support the inclusion of students, other than HDR students, in the scope of assessment. The reason for this is that the HDR student cohort is the only student cohort dedicated, and publically funded, to undertake research.

7. What are the key challenges for assessing engagement and impact and how can these be addressed?

There are a number of significant challenges associated with the assessment of research impact. The first key challenge is that of the period of time over which research impact can or should be measured. Research impact can extend for lengthy periods, in excess of 30 years, and the connecting of discovery to impact is often extremely difficult with a very long reach. Further, the assessment of

² Bell, S & Yates, L (2015) Women in the Science Research Workforce. LH Martin Institute, Sept 2015

³ ACOLA (2016) Review of Australia's Research Training System, March 2016, Key Finding 7

impact is highly subjective and efforts at precision may create perverse incentives or exclude critical disciplines. Attribution of research impact is also a significant challenge, as detailed in our response to Q8 below.

Further, multi-disciplinary, inter-disciplinary, and cross-institutional research can be disadvantaged as many impact measures necessarily narrow what is assessed.

In respect to engagement measures, engagement is difficult to measure and can be difficult to audit, creating perverse incentives and behaviours. There is a risk that the sector may focus on the wrong things if the engagement measures are not appropriate.

A further critical point relating to both engagement and impact measures is that of the nature of the academic workforce. Academic staff are highly mobile, nationally and internationally, and as a consequence tracking and attributing activity is complex and cannot be dealt with in the same manner it is managed in the ERA reporting process. As noted in our response to Q3, clear guidelines as to the scope of inclusion of both research and researchers would need to be provided to institutions.

8. *Is it worthwhile to seek to attribute specific impacts to specific research and, if so, how should impact be attributed (especially in regard to a possible methodology that uses case studies or exemplars)?*

In considering this question and by way of highlighting the complexity in attributing specific impacts to specific research it is useful to examine the example of the HILDA Survey. All of the Government funding for this survey comes to one institution – the University of Melbourne. This is used to create a data source through basic research which then underpins the research efforts of many hundreds of researchers, not only in academia but also in the public sector and within NGOs (over its life to date there have been over 2600 licensed users of these data, generating over 700 peer-reviewed scientific journal articles, and countless other papers and reports). The HILDA survey has research impact, as do the many research papers that flow from analysis of the survey results. As such there could be multiple claims to impact flowing from the HILDA data set, from multiple universities.

The attribution of impact is ideally a tangible thread between cause and effect, however there may be multiple discoveries along the way; consequently the pathway is typically non-linear. Requiring specified evidence of connection between research and its impacts will be challenging to delineate, and may lead to some perverse outcomes, such as the exclusion of highly correlated research and subsequent social benefits that do not have documentation to certify the connection between them.

9. *To what level of granularity and classification (e.g. ANZSRC Fields of Research) should measures be aggregated?*

A level of granularity is useful and necessary for the measures to be robust, however if this taken too far then it is likely not to represent the way in which research is conducted. If it is too fine grained it will cause reporting challenges particularly for the reasons outlined in our response to Q4. The FoR codes describe categories of disciplines and were not designed for the reporting of research impact and are therefore problematic. The University believes that the six ERA clusters of disciplines, while they are based on FoR codes, provide the right mix of aggregation, specificity and flexibility.

10. What timeframes should be considered for the engagement activities under assessment?

11. What timeframes should be considered for the impact activities under assessment?

The timeframes should link with the three-yearly ERA cycle, with a corresponding impact assessment aligned with every second ERA. A longer timeframe for impact assessment than the ERA research excellence cycle is necessary in order to see demonstrable differences. Engagement can be measured in accordance with a similar cycle to ERA, whereas impact assessment will need a much longer reach. We suggest the following set of timeframes:

ERA: Excellence, Engagement and Impact (Full assessment, every six years, i.e. ERA2018)

- ERA excellence measures, with 3- and 6-year data sets
- Engagement metrics, 3-year data set
- Impact case studies based on research conducted between 6-12 years prior, with impact demonstrable within the last 6 years

ERA: Excellence and Engagement (Midway partial assessment within a six-year cycle, i.e. ERA2021)

- ERA excellence measures, with 3- and 6-year data sets
- Engagement metrics, 3-year data set

In addition, as we detail in our response to Q8, ideally the attribution of impact would be a tangible thread from discovery to outcome, however the reality is that the process is non-linear and much more difficult to trace. The paths to impact are also likely to have significant disciplinary differences.

12. How can the assessment balance the need to minimise reporting burden with robust requirements for data collection and verification?

The assessment can balance the need to minimise reporting burden with robust reporting requirements by using existing data as much as possible, and using practical, sensible and auditable metrics for engagement. Notwithstanding the challenges outlined in our response to Q7, flexible design of case studies can assist with minimising reporting burden, whilst allowing for robust data collection and verification.

13. What approaches or measures can be used to manage the disciplinary differences in research engagement and impact?

The societal impact of research will have different paths depending on the discipline origins and inputs and this needs to be recognised in developing measures for engagement and impact. The capacity to report through limited case study exemplars will significantly ameliorate this issue.

14. What measures or approaches to evaluation used for the assessment can appropriately account for interdisciplinary and multidisciplinary engagement and impacts?

The University believes that the measures and approaches need to strike a balance between the need for granularity and the disadvantages for multi and inter-disciplinary research, and that a 6-cluster approach, outlined in our answer to Q4 will satisfy much of this criteria. It may be helpful, in addition to the 6-cluster approach, that institutions be permitted a 'wild-card' case study in order to enable flexibility to interpret and present their best case from a whole-of-university perspective.

15. What types of engagement indicators should be used?

Engagement is an important transition point between the creation of research and its impact on the wider community. The efficacy of engagement depends on a whole series of variables and contacts, some of which are very difficult to measure. Engagement activity is not a definitive indicator of future research impact, but can offer understanding of the efforts of research creators to ensure the best possible prospect of their research having impact. In other words, measurement of engagement can result in understanding of the likelihood of impact, not impact itself.

Any engagement indicators need to relate to the definition of engagement being employed. The indicators must be practical and auditable, which will necessarily lead to a narrower band of engagement measures possible than would be otherwise considered. It is our view that a smaller set of measures with limitations is preferable to broader all-encompassing measures, which would be difficult to verify: the need for integrity of the measures outweighs the desirability of comprehensiveness. Commercialisation income, licensing income, sealed patents, start-up or spin-out companies, and joint ventures, can also provide some indication of research engagement, but we would argue that the social good must also be included and is of equal importance. For this reason, we propose that industry-sponsored and related research income should be a key engagement measure. To offset the concern that social good research is not adequately represented in simple Cat 2-4 reporting with commercialisation income, we propose that the measure include the NCG-funded (Cat 1) contributions to industry-focused grant schemes, as not all schemes require cash contributions from industry partners. Here we note that the use of the term 'industry' is understood in its broadest sense, to include government, not-for-profit organisations as well as private business.

The fostering of translation of research is also an important aspect of research engagement. The ecosystem that supports and encourages knowledge transfer into the wider community can be considered a lead indicator of the potential for achieving research impact, although it should not be assumed that there is a direct and linear correlation between the provision of support for engagement and the realisation of impact. We thus propose that university expenditure on knowledge transfer or engagement should also be an engagement measure.

Both of these key measures – industry-connected research funding and earnings (income) and university-sponsored investment in engagement infrastructure (expenditure) – are robust and auditable. These also formed the basis of the engagement measures proposed by ATSE, which we broadly support.

Yet, institutions need to be provided with some flexibility to identify and report on the indicators and measures that best represent and showcase their research engagement activity. Engagement bridges discipline quality and research impact and is not an end in itself. It will necessarily have a different form depending on the nature of the discipline and how close the discipline is to the end-user or beneficiary of the research (theoretical physics compared with law or public policy). Given the potential range of indicators and the difficulty in systematically collecting them, we propose that universities also provide an 'engagement statement' that can encompass and describe a greater range of activities than the simple accounting of income and expenditure to demonstrate the tangible and intangible aspects of their research engagement eco-system. This could include aspects like staff secondments or exchanges with industry, a description of the types of engagement undertaken across the university, and policies and procedures that actively support and value research engagement.

16. What types of impact indicators should be used?

Indicators need to reflect the definition of impact being used, noting the earlier cautions expressed about imposing additional resourcing burdens upon universities and creating perverse or unintended incentives and consequences.

There are a series of metrics that can be used to demonstrate the impact of research, including economic effects (i.e. GDP, investment, employment and exports), environmental outcomes, social benefits and population health outcomes, but these are difficult to make direct connections to specific research activity and are best understood at a national or sectorial level. Drawing these broad effects down to disciplinary or institutional impacts is difficult, as the thread of connection between the research within the discipline or institution and the broader impact is very challenging to demonstrate.

Given the broad range of evidence that might be employed to describe the impact of research across all disciplines, we believe that case studies offer the best means by which impact can be demonstrated.