

**Duncan Ivison**

Deputy Vice-Chancellor (Research)

28 June 2016

**Professor Aidan Byrne**, Chief Executive Officer, ARC

**Mr Dominic English**, Group Manager, Research and Economic Group, Department of Education and Training

Co-Chairs of the Engagement and Impact Steering Committee  
Australian Research Council, Engagement and Impact Assessment Consultation

By email: [ARC-EI\\_consultation@arc.gov.au](mailto:ARC-EI_consultation@arc.gov.au)

Dear Professor Byrne and Mr English,

**NISA Engagement and Impact Assessment Consultation Paper.**

Thank you for the opportunity to comment on the National Innovation & Science Agenda (NISA) Engagement and Impact Assessment Consultation paper (2016) prepared by the Australian Research Council and the Department of Education.

The University of Sydney welcomes the opportunity to discuss a focus on engagement and the impact of our research. We believe any process for measuring impact and engagement needs to be very carefully designed so as to not create perverse incentives or undermine the pursuit of high quality research.

Ultimately, we believe it is the highest quality research – across the full range of our disciplines – that will generate the most transformative innovation for Australia.

We strongly recommend the first iteration of the assessment exercise focus mainly on engagement activities, using a core set of agreed indicators, based on agreed principles and suitable for the diversity of disciplines in our universities. New metrics and indicators should be piloted with a view to implementation in future rounds where proven robust and fit for purpose.

The University of Sydney is committed to contributing to excellence in this space, and we have volunteered to participate in the pilot, if required. Please do not hesitate to get in contact if you wish to discuss any aspect of this submission.

Yours sincerely,

*Signature removed for electronic distribution*

**Professor Duncan Ivison**

Deputy Vice Chancellor (Research)

**Attachment:** Comments in response to the NISA Engagement and Impact Assessment Consultation Paper

***University of Sydney submission to the National Innovation and Science Agenda (NISA).  
Engagement and Impact Assessment Consultation Paper***

***Brief Introduction***

The University of Sydney supports the Commonwealth Government's development of an assessment framework for Higher Education Providers (HEPs) to drive excellence in the university system and enhance the translation and uptake of that research in ways that positively impact society.

We understand and support the Government's desire for indicators and narratives that demonstrate the value of their investment in university research to the broader community.

***Impact Assessment***

The measurement and assessment of research impact is fraught with methodological problems, such as identifying impact and determining attribution, the often significant time-lags between research and its effects, balancing data collection, verification and cost, and managing disciplinary differences, which are explored in the NISA consultation paper (5.3 *Key Issues*, pp.8-12).

Impact metrics currently available to universities and government focus, almost exclusively, on commercial impacts and STEM disciplines. It is vital that any new assessment exercise is suitably inclusive of different disciplinary approaches to engagement and impact and does not value one over another. We believe strongly that some of the most transformative outcomes for Australia and the world will come from outstanding interdisciplinary research, incorporating a broad range of disciplines, including the natural sciences, physical sciences, engineering, humanities and social sciences (STEAM) to address the complex, multidimensional problems and challenges our communities face. Globally, the best universities and the best companies are embracing a much broader range of disciplinary approaches to both fundamental and translational research.

Impact case studies face the same methodological issues as metrics, and in addition impose a significant compliance burden upon the universities, as noted in the consultation paper (5.3.3 *Balancing data collection, verification and cost*, p.11)

For these reasons, we are particularly concerned to ensure that any measures adopted by the government take into consideration the diversity and depth of the Australian higher education research sector, as well as the costs involved for universities to respond to a new assessment regime.

The University of Sydney, similar to other Australian universities, is already capturing narratives and case studies about its engagement with community and industry partners, as well as the potential impact of its research. We encourage the ARC and DET to work with universities to ensure we take advantage of the existing material and data being collected.

***Engagement Measurement***

We strongly support the suggestion in the consultation paper that any measurement of ‘engagement’ needs to be separated from ‘impact’. The two should be kept distinct and require very different measurement frameworks. For example, we believe it is possible to design engagement indicators that will motivate institutions in appropriate ways to invest in and support greater engagement with their community and industry partners. This option is explored in the responses to questions 1-14 below.

We also believe that *measuring* engagement is not the only means to encouraging greater engagement between universities and our community and industry partners and even more impact for our research. There are broader initiatives that could be pursued across the sector in tandem with new assessment regimes, including reforming the R&D tax incentives scheme, implementing innovative research training initiatives, making greater investments in research infrastructure accessible to both industry and universities, as well as encouraging open access to research outcomes and knowledge transfer where appropriate.

**Responses:**

- 4.1 Parameters. We support the parameters (4.1) for engagement, though we believe much more work is required for developing appropriate measures of ‘impact’.
- 4.2 Model and guiding principles. We agree with the 10 principles.
- 4.3 Timing. Noted. The University of Sydney has volunteered to participate in the pilot.

**Responses to Questions:**

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

It is essential for the efficiency of the collection and success of the assessment that the criteria for assessment overall, or at a discipline level, are clear and unambiguous about the nature and detail of the collection; adequately piloted/tested; available well in advance of the commencement of the collection process (e.g. through the provision of rubrics etc); and, importantly, are understood and used by expert assessment panels.

The ATSE definition is suitably broad and inclusive, and captures the collaboration and reciprocity of genuine engagement and partnership. We propose adding ‘professions’, as per below, to ensure we are capturing disciplines such as Law and other professions.

*ATSE: “the interaction between researchers and research organisations and their larger communities, industries and professions for the mutually beneficial exchange of knowledge, understanding and resources in a context of partnership and reciprocity.”*

It is very important that research engagement not be restricted to engagement that has primarily commercial aims or returns as their focus. Some of the most significant forms

of engagement (and impact) that universities can achieve will include social, cultural and environmental benefits. As a result, it is important the ARC work with the university sector to develop clear indicators for community and industry engagement that captures these broader social outcomes.

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

We prefer definitions such as those adopted by the ARC or the UK REF that facilitate the capture of the breadth of disciplinary contributions to, and variations on, research impact.

For example:

*The ARC: "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."*

While we recognize the importance of research impact, we note that its measurement and attribution is fraught with methodological problems. It is also important to ensure that the ARC does not adopt an overly simplistic, linear account of research impact. Basic research in both the sciences and the humanities can generate outcomes that either take many years to translate into economic or social outcomes, or are hard to characterize as the product of a discrete, linear process. We believe there is much more work required to develop adequate indicators for research impact in order to avoid creating perverse incentives that would undermine support for conducting the highest quality research possible across a wide range of disciplinary and multidisciplinary domains.

**NB: We have combined ANSWERS to questions 3, 4, 5 and 6 about "The Scope of Assessment"**

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

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

**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?**

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

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

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

**Impact (Questions: 3, 4, 5 & 6):**

We believe further work is required for the assessment of impact and would prefer the predominant focus be on research engagement, which can serve as a reasonable proxy for likely impact and translation.

**Engagement (Questions: 3, 4 & 5):**

Sydney recommends a variation of what is termed in the consultation paper as a 'selective yet systematic approach.' The scope of assessment needs to be broad enough to ensure adequate representation of the wide range of disciplines, and yet rich enough to ensure we are not discriminating against particular disciplines (or overemphasizing others). This might include:

- Carefully selected and available indicators at the 2 digit and 4 digit Field of Research code (FOR) level – e.g., ERA, HERDC, NSRC and ABS – and refinements and analyses of these such as the REA analysis proposed by ATSE.
- Where possible align the collection period with ERA data.
- Excellence in Research for Australia units of evaluation (ERA UoEs) can be supported by case studies that explore and illuminate the available metrics ONLY:
  - where the core indicators do not adequately describe the situation. For example to:
    - accentuate engagement activities at the 4 digital FOR level
    - focus on interdisciplinary research that crosses ERA UoEs;
    - showcase collaboration at any scale – e.g., in the humanities, creative arts and social sciences, some of the most fruitful collaborations with stakeholders are small scale collaborations in galleries, charities, small government departments
  - where the UoE exemplifies an approach to engagement;
  - propose and demonstrate new and alternative metrics/altmetrics and processes for adoption at the disciplinary or cross-disciplinary level; or
  - where other anomalies or factors warrant explanation.
- Set a maximum and minimum number of case studies for each institution based on the number of ERA UoEs submitted. We believe that opting for a large-scale case study approach, such as with the UK REF, would be prohibitively expensive for the sector and deliver limited benefits. We support a more limited case study approach that would require institutions to provide contextual statements around how HEPs support and incentivize pathways to translation and impact through their research and engagement strategies. This could be limited to 5-7 such case studies per institution, covering the main research domains (life sciences, physical sciences, humanities, creative arts, but also perhaps multidisciplinary domains as well).
- Continue to investigate additional indicators and altmetrics for incorporation in future rounds – including commissioned research for public and private sector bodies, international agencies and foundations etc. These are currently not adequately captured in the existing ERA assessment exercise and there is an opportunity to devise new mechanisms for doing so here.

The benefits of this approach are:

- No ‘creative’ impact stories (i.e., minimised game-playing, selective reporting, time-wasting, consultancy costs, etc.);
- Avoids attribution and time-lag issues. Institutions can report and demonstrate actual steps, activities and strategies undertaken to achieve engagement leading to impact (within a definite time frame);
- Provides incentives for institutions to develop better methods of facilitating, recording and promoting engagement leading to impact;
- Uses existing metrics and a set number of case-studies, minimises institutional reporting burden; and
- Potentially addresses disciplinary differences, by providing opportunity to discuss cross-disciplinary linkages, and provides a feedback loop between assessment panels and institutions. For instance:
  - Case studies can be used to address disciplinary differences in practices that facilitate engagement leading to research impact.
  - Assessment by expert disciplinary panels would facilitate greater nuance and could feedback valuable information on best practice by discipline throughout the university community. Over time, these exercises could drive innovation in the ways that universities facilitate impact.

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

Yes. As argued above, we believe a selected case studies approach focused on institutional strategies and then evidence around engagement leading to translation and impact – contextualized according to broad research domains – would be the best approach.

***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?***

As argued above, we believe the case studies should focus on the pathway created by the institution to facilitate the translation and impact of its research. However, it is important to ensure that if a small number of case studies are used that they be broadly representative of the different research domains (including the humanities, creative arts and social sciences).

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

**Engagement:**

- HERDC Cat 2-4: Revenue; Number of contracts for research, consulting, expert witness and testing. Reported in the Higher Education Research Data Collection (HERDC).

- Number of different clients with contracts worth greater than a threshold value. We suggest \$150K as that is the value above which we have to make this data available through the Government Information (Public Access) Act 2009 (GIPA).
- Number of licences and assignments and options reported in the National Survey of Research Commercialisation (NSRC). International engagement should be highly valued as this it represents wide reach and therefore deep engagement.
- Ratio of ARC Discovery Projects to ARC Linkage Grants.
- Altmetrics case studies - e.g., Social media presence, public comment, media share, etc. However, further work is required to ensure that this is appropriately contextualized and does not simply reward popular 'commentary' at the expense of high quality research that generates substantial public interest and engagement.
- Support for cultural events/institutions – e.g., Writers' Festival, Film Festival, Vivid, etc.
- Philanthropy linked to research support
- Evidence of significant institutional partnerships – e.g., Sydney Health Partners; various global research consortia, OECD, World Bank, World Health Organization, UN, UNESCO etc.

**Impact:**

- Further work is required to develop suitably robust indicators for impact for use in any assessment exercise.

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

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

**RHDs and other Students:**

Data on the employment outcomes and destinations of research students (as well as UG and PG coursework) could potentially be valuable, but are currently patchy and difficult to track over the extended periods of time required for robust inferences about it serving as a proxy for impact.

There are a number of indicators of engagement and impact related to RHD students that warrant further exploration – e.g., numbers of external affiliate supervisors; numbers of industry sponsored research scholarships; number and duration of RHDs based externally; number of companies started by graduates and their number of employees and value; IP and its value created by RHDs or graduates. RHD destination surveys may provide interesting and useful data for institutions, but would be difficult to interpret in terms of engagement or impact, and may have perverse outcomes.

We are not aware of any Australian data sets that collect these data consistently at present - so they would need to be created - with all that that would entail for the sector in terms of additional data collection and reporting burden.

Students are one the greatest multipliers of research impact, given that they will take their acquired knowledge and skills and apply them over a lifetime to achieve a range of

academic and societal benefits. Research and teaching form the core mission of universities and the interaction between the two should be considered if we want a holistic understanding of research impacts. However, further work is required to capture these complex relationships in the form of a set of robust and informative indicators.

### **Staff and Affiliates**

We would like to point out the important role played by affiliates, often with rich industry and community experience, and who can provide a pathway to fast-track research impact and help maintain productive relationships between researchers and industry – including in the health and medical sector, professions and the creative arts.

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

The key challenges for assessing engagement and impact are partly addressed by the consultation paper. Recognizing the different disciplinary practices will present a significant challenge, as will ensuring a suitably rich set of indicators are developed to ensure perverse incentives are minimized and support for high quality research is not undermined. We need to ensure we are not creating incentives for supporting only those disciplines in which metrics more easily obtainable.

### ***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)?***

No. It is virtually impossible to attribute impact at a project level except in some very short-term applied research projects.

In addition:

- The exercise is expensive and will bias towards researchers and institutions with in-built tendencies towards applied or translational research, at the expense of potentially truly transformational research with much longer and more complex pathways to impact
- Any type of impact could be disputed, discredited or misattributed
- Specific impacts bias strongly towards short-term outcomes
- Universities will waste huge amounts of tax payer money searching for, sifting through, attributing, analysing and optimising individual research outcomes to find the best examples, time would be better spent summarising and understanding broader institutional approaches to enabling research impact

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

If aligned with ERA, then 4 digit FORs are preferable to 2 digit, since it provides a better account of discipline specific activity. There is a further question whether different classifications are better suited to engagement or impact. We would argue that 4 digit



FORs are better suited for engagement than impact, but more work is required to test the validity of these different approaches. Expert panels would be required to evaluate submissions should include industry and community members. It is also important to consider how to ensure we are recognizing international engagement and impact, especially in relation to our immediate region and with regard to international industry and community partners.

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

There are two related issues here: the reporting period, and the length of the engagement itself.

- The reporting period. Where possible the engagement data should align with the ERA collection period. Case studies/narratives should not be so constrained, and might extend both back and forwards a little longer (e.g., to allow narratives to include “that this work builds on previous work”, and/or “we are implementing strategies to increase engagement”).
- The length of engagement. Genuine engagement requires relationship building and is not an overnight activity. For example, long term contracts and engagements, return customers are a better measure of success and value added than a snapshot of activity over a short period.

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

See our answer to question 8 above. It is virtually impossible to identify and attribute impact at a project level except in some very short-term applied research projects.

We have expressed our general concerns about measuring impact above. However, if impact is to be assessed then only long-term impacts should be considered (i.e. 15-20 years).

- All other assessment exercises focus on short-term outcomes driving behaviours towards inefficient practices (publish or perish etc.);
- Impacts typically require time to identify and assess;
- More substantial forms of impact may be considered;
- Impacts involving influence or behaviour change more readily demonstrated, as well as those which have more complex, non-linear trajectories from the point of discovery to translation or impact;
- Impacts may be positive or negative (for example discredited studies such as the Wakefield Autism papers had huge impacts, which were later revealed to be very negative once study was discredited and drove behaviours that increased infant mortality) – time is needed to assess validity and nature of impact

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

Where possible align the collection period with ERA data and draw, as required, on existing data sets being collective for ERA. Develop agreed indicators through close collaboration with the sector, drawing where possible on available data sets but also establishing required new indicators in as efficient and collaborative way possible.

Limit the volume and size of case studies by focusing on institutional practices to facilitate impact. These require fewer assessments and can be individually scrutinised. Use expert panels to help provide context and rigour around the case studies.

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

As argued above, a suitably rich set of indicators will be required that can account for disciplinary differences, combined with expert panels. But more work is required generally to develop appropriate indicators and metrics for impact in particular.

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

If the broad case study approach discussed above is used, then a specific focus on multidisciplinary case studies of pathways to engagement and translation could be one of the required areas for submission. This would require institutions to demonstrate how they encourage, support and enable multidisciplinary research with regard to industry and community engagement and impact.

***Types of engagement and impact indicators***

***15. What types of engagement indicators should be used?***

***16. What types of impact indicators should be used?***

We have provided some suggestions above at Question 6. But further work is required and the ARC should initiate a formal working group to develop a suite of suitably rich indicators for engagement and impact that would be then subject to further consultation with the sector. The ATSE focus on research income is insufficient as the basic framework for assessing engagement and impact overall. Nor will it be possible to use metrics alone to capture the long term, non-linear and often diffuse nature of the relationship between research, engagement and impact.

## GLOSSARY

ABS - Australian Bureau of Statistics;

ATSE - Australian Academy of Technological Sciences and Engineering;

ERA - Excellence in Research for Australia;

HEPs – Higher Education Providers

HERDC - Higher Education Research Data Collection;

NSRC - National Survey of Research Commercialisation;

NTRO – Non Traditional Research Outputs

REA - Research Engagement for Australia, Measuring research engagement between universities and end users (2016).

ERA UoEs – Excellence in Research for Australia, Units of Evaluation.

RHD – Research Higher Degree

**QUESTIONS:** *From the paper.*

*Definitions and scope*

1. *What definition of 'engagement' should be used for the purpose of assessment?*
2. *What definition of 'impact' should be used for the purpose of assessment?*
3. *How should the scope of the assessment be defined?*
4. *Would a selective approach using case studies or exemplars to assess impact provide benefits and incentives to universities?*
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?*
6. *What data is available to universities that could contribute to the engagement and impact assessment?*
  - i. *Should the destination of Higher Degree Research students be included in the scope of the assessment?*
  - ii. *Should other types of students be included or excluded from the scope of assessment (e.g. professional Masters level programmes, undergraduate students)?*

*Key Issues*

7. *What are the key challenges for assessing engagement and impact and how can these be addressed?*
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)?*
9. *To what level of granularity and classification (e.g. ANZSRC Fields of Research) should measures be aggregated?*
10. *What timeframes should be considered for the engagement activities under assessment?*
11. *What timeframes should be considered for the impact activities under assessment?*
12. *How can the assessment balance the need to minimise reporting burden with robust requirements for data collection and verification?*
13. *What approaches or measures can be used to manage the disciplinary differences in research engagement and impact?*
14. *What measures or approaches to evaluation used for the assessment can appropriately account for interdisciplinary and multidisciplinary engagement and impact?*

*Types of engagement and impact indicators*

15. *What types of engagement indicators should be used?*
16. *What types of impact indicators should be used?*