

19 October 2020

Review of ERA and E&I
Australian Research Council
Level 2, 11 Lancaster Place
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AUSTRALIA

Dear ARC Review Team

Re: ERA EI Review Public consultation

The Australian Academy of Science Early and Mid-Career Researcher Forum (**EMCR Forum**) is the representative body of over 5,600 early to mid-career researchers (**EMCRs**) in science, technology, engineering, mathematics and medicine (**STEMM**) in Australia. EMCRs are defined as researchers with less than 15 years' experience post PhD. EMCRs work across the higher education sector, government, research organisations and industry.

The EMCR Forum Executive comprises 12 EMCR volunteers from across the STEMM disciplines across Australia, including metropolitan and regional universities. The EMCR Forum's mission is to serve as the voice of Australia's EMCRs, championing improvement in the national research environment through advocacy. More information about the EMCR Forum can be found on our website.¹

Background to ERA Review

Research and the role of the institutions that drive it have never been more important as Australia recovers from the impact of COVID-19. Australia has historically performed exceptionally well in terms of research impact. Measuring research outcomes and impact are critical to ensuring that Australia continues this success. This review reflects a once-in-a-decade opportunity for the ARC to consider how Excellence in Research In Australia (**ERA**), and Engagement and Impact (**EI**) operate and whether they continue to be fit for purpose. These questions are crucial to the future of Australian researchers, universities and businesses as they seek to adapt into the 21st century.

The EMCR Forum welcomes this review. We express our hope that the outcomes will ensure that university research will benefit the social, economic, cultural and scientific health of the nation.

This submission focuses on the experiences that EMCRs have when engaging with current grant processes. Broadly, the EMCR Forum is concerned that the current ERA processes fail to capture the contributions of EMCRs to research, and fail to capture the role of non-university research organisations/groups. Further, ERA processes

favour senior researchers and do not appropriately consider the importance of diversity in research funding.

Recommendations

Following consultation with the EMCR Forum members, we make the following recommendations:

1. Include a metric on the retention of early career researchers (ECRs) and mid-career researchers (MCRs) in the ERA assessment to ensure equity in the assessment process across career stages
2. Expand the ERA assessment to include all research conducted in Australia, and in particular, research conducted under the different ministerial portfolios
3. Extend the period between ERA assessments instead of increasing the frequency of assessments
4. Include data on funding sources and the number and proportion of EMCRs who are named in funded research
5. Use publication by-lines as indicators for collaborations with industry and co-supervision of PhD students
6. Consider incorporating qualitative indicators similar to the ones used in the UK's Research Excellence Framework to assess EI and research outside academia, contextualised to the Australian research environment
7. Improve communication of the impact and benefit of Australian research to the broader society, and also specifically targeted to industry to highlight the benefits of research and development
8. Include a metric which identifies the contributions of ECRs and MCRs to research impact and engagement
9. Include diversity metrics which extend beyond gender, including Aboriginal and Torres Strait Islanders, those from CALD backgrounds, those who identify as LGBTIAQ+, people living with disability, and engagement with low SES communities.

EMCR response

We acknowledge that the ERA assessment is a reasonable objective way to assess research impact because it considers the social, economic and environmental impacts from research. However, the ERA and EI assessments are currently biased towards promoting, recruiting and retaining senior researchers, and do not provide a mechanism to recognise the research conducted by EMCRs beyond their contributions to publications and research funding. This provides little incentive to universities/research organisations to retain/promote EMCRs.

EMCRs are the engine of research activity in the university sector, many of whom were trained with funding from the Commonwealth Government, including the ARC.² However, EMCRs are often employed on short-term contracts, or via the limited number of Fellowships (DECRA and Future Fellowships) offered by the ARC.³ There are

currently no metrics to measure the retention of this talent in the ERA and EI assessment process, despite their significant contribution to quality research outputs and research funding.

Recommendation: Include a metric on the retention of early career researchers (ECRs) and mid-career researchers (MCRs) in the ERA assessment to ensure equity in the assessment process across career stages

The impact of ERA

The ERA assessment provides a mechanism to measure high quality research conducted in Australian universities and assess the impact of that research. It also provides a metric to benchmark the quality of Australian research against research conducted globally. However, in its current form, ERA provides an incomplete assessment of research quality in Australia because only one sector is assessed.

ERA only measures the quality of research conducted in Australian universities, providing an incomplete assessment of research in Australia. While universities are the largest sector which conducts research, a number of other sectors also conduct research including government organisations (at a Federal, State and Territory level) and government funded research organisations, in addition to universities and medical research institutes. Furthermore, research in Australia is conducted across a number of different ministerial portfolios, each with different targets and assessment procedures.

Recommendation: Expand the ERA assessment to include all research conducted in Australia, and in particular, research conducted under the different ministerial portfolios

A perverse outcome of ERA following the initial two rounds of assessment is that ERA drives institution research strategy, career development opportunities via recruitment, promotion and probation. These issues particularly affect EMCRs. ERA can drive research group and individual behaviour in universities. In particular, it can encourage allocating, or coding, funding towards particular Field of Research (FoR) codes, allocating publications to particular FoR codes and targeting particular journals which may not be the most appropriate journals, or reach the most appropriate readership. This behaviour can help universities maximise their ERA score and the funding they receive because publications in lower ranked journals can be “hidden” in FoR codes with low volumes, and funding allocated to a particular FoR code may not reflect the true discipline of the project, but can boost the funding total.

ERA encourages institutions to “game” the system. The census date for each ERA assessment encourages universities to target high-profile researchers for (in some cases temporary) recruitment to claim their previous research achievements in the recruiting university’s ERA assessment. This action highlights that ERA does not take into account research performance relative to opportunity. There is no mechanism in the ERA assessment to consider the career stage of a given researcher, or any career interruption they have had. The assessment, through not factoring in a researcher’s teaching load, is also biased towards established researchers with research-focused

positions. This disadvantages EMCRs who are frequently on short-term contracts or have multiple commitments including teaching, as universities are less likely to support EMCRs because of their lower outputs relative to a senior researcher with a large research group. In some cases, this leads to EMCRs losing promotion opportunities or being terminated by universities for failing to meet particular targets. Therefore, increasing the frequency of ERA assessments will be disadvantageous to EMCRs because an annual assessment process will drive institutional behaviour to become the norm.

Recommendation: Extend the period between ERA assessments instead of increasing the frequency of assessments

ERA opportunities

Because ERA drives institutional research strategy and research behaviour, there is an opportunity to use ERA to better support EMCRs and promote diversity and inclusion principles. Through its impact on researcher and research team behaviour, ERA can also be used to promote collaborative and inclusive culture within institutions.

To support EMCRs, ERA should include data on funding sources, and the proportion of EMCRs that are named in funded research. This could provide an indirect measure of mentoring within institutions and encourage inclusion of EMCRs in funding proposals and publications.

Recommendation: Include data on funding sources and the number and proportion of EMCRs who are named in funded research

Engagement and Impact effects

Engagement is largely measured by research income, with a focus on Category 1 Higher Education Research Data Collection (**HERDC**) funding and income from research end-users. Reporting of income assessment should extend beyond the focus on Category 1 to include Categories 1-4 funding and income. The focus on Category 1 funding does not fully capture engagement across all research and this distinction appears to be arbitrary.

The key in measuring research income is to balance the required resourcing with accurate measures that capture true engagement. An additional consideration is that ERA EI should consider measuring outcomes and impact using non-dollar values. It is also critical to note that dollar income does not correlate with societal impact. For example, the scholarly examination of suicide prevention in LGBTQIA+ communities is more likely to directly, and imminently, result in lives saved, which cannot be quantified or costed. The current process does not capture this which creates a perverse incentive when internal research funding is considered. This additional reporting should be done while simultaneously decreasing the resourcing required for ERA reporting, as the assessment process disproportionately affects universities that cannot provide large, well-funded research services teams allocated to ERA.

Currently, the EI assessment metrics are not appropriate to measure the benefits of research on the broader society in terms of economic, environmental, social and other benefits. For example, research that leads to marked improvements and changes to policy and practice outside of the health sciences is not captured in a systematic approach.

Additional EI metrics

The suggestion of including additional metrics such as the co-supervision of PhD students is not a trivial matter due to the concern that being listed as a co-supervisor says nothing of the co-supervisory activity. This can further perpetuate current practices in PhD supervisions whereby researchers are listed on supervisory panels in name only. It would be preferred to use publication by-lines to determine whether a collaborator, such as an industry-based collaborator, is research active. This is the model used by OECD⁴ which estimates numbers of publications with industry co-author, where unfortunately, Australia is lowly ranked indicating our limitations in collaboration.⁵ This approach will allow the ERA assessment to capture other international collaborations and would, importantly, not be onerous for university research offices to provide.

Recommendation: Use publication by-lines as indicators for collaborations with industry and co-supervision of PhD students

The inclusion of research outside of academia in the assessment is challenging. Beyond publications and patent outputs, quantitative indicators are risky and prone to misunderstanding true performance and may provide further perverse incentives, such as hiring people from industry, regardless of their fit and ability. It is critical to recognise the power and importance of qualitative indicators in the assessment of EI. The assessment process conducted in the UK (REF Impact) is one such model that should be considered,⁶ provided this is contextualised to the Australian research environment.

Recommendation: Consider the use of qualitative indicators used in the UK's Research Excellence Framework to assess EI and research outside academia contextualised to the Australian research environment

Engagement and impact opportunities

The impact of Australian research and the benefits to society are not clearly articulated to society. While one may argue that this is the responsibility of the researchers themselves, a national-level assessment process provides the overarching view of the state of research and should be used as a communication tool. The impact of Australian research and the benefits that are derived from research should be clearly communicated, not only to broader society, but also specifically to industry to encourage greater research and development opportunities. This would also enhance mobility between the private and public sector for researchers.

Recommendation: Improve communication of the impact and benefit of Australian research to the broader society, and also specifically targeted to industry to highlight the benefits of research and development

There is a benefit in making use of the system to incentivise universities to support EMCRs because the current system is inequitable and results in significant challenges in planning and talent development. Therefore, a specific field of reporting metrics that are associated with Early and (separately) Mid-career staff is almost certain to incentivise universities to take actions to support EMCRs.

Recommendation: Include a metric which identifies the contributions of ECRs and MCRs to research impact and engagement

Diversity and inclusion metrics

Statistics from the ARC demonstrate that funding awarded in all schemes shows a distinct gender bias. However, gender is the only diversity metric that is currently measured and reported. Reporting should include diversity assessment beyond gender, and include people who identify as Aboriginal and Torres Strait Islanders, those from culturally and linguistically diverse (CALD) backgrounds, members of the LGBTQIA+ community, people living with disability, and engagement with low SES communities. These metrics should be used, not just for reporting purposes, but be directly tied in to the rankings provided in the ERA and EI assessments. A qualitative approach such as the REF Impact, mentioned above, will be able to accurately capture these.

Recommendation: Include diversity metrics which extend beyond gender, including Indigenous and Torres Strait Islanders, those from CALD backgrounds, those who identify as LGBTIAQ+, people living with disability, and engagement with low SES communities

References

- ¹ Australian Academy of Science, 'Early and mid-career researchers' (Webpage, 2020) <<https://www.science.org.au/EMCR-Forum>>.
- ² Department of Innovation, Industry, Science and Research, 'Examining the Full Cost of Research Training' (Report, July 2011) <https://docs.education.gov.au/system/files/doc/other/examining_the_full_cost_of_research_training.pdf>; Department of Education, Skills and Employment, 'Research Training Program' (Webpage, 6 October 2020) <<https://www.education.gov.au/research-training-program>>.
- ³ Australian Research Council, 'Discovery Early Career Researcher Award (DECRA)' (Webpage, 2015) <<https://www.arc.gov.au/grants/discovery-program/discovery-early-career-researcher-award-decra>>.
- ⁴ OECD, 'OECD Science, Technology and Industry Scoreboard 2013' (Report, 2013) <https://www.oecd-ilibrary.org/oecd-science-technology-and-industry-scoreboard-2013_5k44x0hx8vvr.pdf?itemId=%2Fcontent%2Fpublication%2Fsti_scoreboard-2013-en&mimeType=pdf>.
- ⁵ IP Australia, 'University-Industry Collaboration and Patents' (Report, May 2017) <https://www.ipaustralia.gov.au/sites/default/files/reports_publications/university-industry_collaboration_and_patents.pdf>;
- ⁶ Higher Education Funding Council for England, 'REF 2014 Impact Case Studies' (Webpage, 2014) <<https://impact.ref.ac.uk/casestudies/About.aspx&sa=D&ust=1603001102779000&usg=AFQjCNHqGCJ5rvnColilcj6yYU6iNJuZxw>>.