

## Response to ERA EI Review Consultation Paper 2020

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*This paper is an individual submission. The views expressed do not necessarily represent the position held by the University of Melbourne or any other staff member.*

### **General Overview**

I welcome the opportunity to make this submission to the ARC review. Since 2010 I have published nine research papers reviewing the 2010, 2012, 2015 and 2018 ERA exercises. Most of these papers have been published through the L.H. Martin Institute. The Institute is now part of the Melbourne Centre for the Study of Higher Education. Some papers are [available at this link](#). They are not all readily available at that site. They may be all accessed on my own website in the ERA portfolio section (<https://franklarkins.wordpress.com/portfolio/australian-research-council-excellence-in-research-for-australia-outcomes/>) A list of these publications with a brief summary of each is given in Appendix A attached to this submission.

This submission is framed around the Terms of Reference.

A summary of the main recommendations are as follows:

- ❖ *The ERA exercises are both expensive and time-consuming for all parties. The three assessments to 2015 contributed constructively to the rationalisation of university discipline-based research priorities and assisted in the establishment of a more targeted and robust research and research training system in Australia. The effectiveness, credibility and impact on decision-making of the exercise declined markedly for the 2018 round.*
- ❖ *An alternative more effective and efficient approach to assessing the quality and impact of university research to the nation is warranted using a refinement of existing databases and a less administratively demanding approach.*
- ❖ *The unavailability to the community of the quantitative and qualitative details of the world standard benchmarks used for assessment by the Australian Research Council, and how they have changed since 2012, limits the capacity for independent evaluation of the robustness of the process and informed appraisal of the anomalies that have arisen. The credibility of some of the discipline excellence standards being achieved by universities is questionable. The ARC should be more transparent in how it has satisfied itself that the different methodologies for science-related and humanities and social sciences disciplines are comparable in terms of excellence assessments.*
- ❖ *If the review process is to continue there is a strong case for the ERA and EI reporting to be merged into a single exercise with a frequency interval of five-year at a minimum. Accountability to government for the research investment being made is necessary, but more streamlined and less labour-intensive methodologies are available and should be implemented using the publicly available data bases and search engines with some refinements. Reducing the administrative burden on universities leading to a reduction in reporting costs and staff time commitments should be a priority.*

## Comments on Terms of Reference

Page | 2 The principal focus of this submission is to provide comments on the ERA exercises rather than the more recent EI exercise.

### ***1. The Purpose And Value Of Research Evaluation, Including How It Can Further Contribute To The Government's Science, Research And Innovation Agendas***

The principal objective for the Government in commissioning the ARC to undertake the expensive ERA exercises has been to *'establish an evaluation framework that gives government, industry, business and the wider community assurance of the excellence of research conducted in Australia's higher education institutions'*. Fourteen years of longitudinal research performance data on the Australian higher education research system is now available based on exercises in 2010, 2012, 2015 and 2018. This data set is a valuable resource to map the progress over time of the contribution of universities to the national research and innovation agenda.

The government objective arguably is being achieved, but at the cost of tens of millions of dollars for each round and significant dedicated staff resource allocation. Resources have been diverted from other activities including from undergraduate teaching and learning as universities increasingly focused on strengthening their research agendas. More than 50 percent of all the money expended by universities on research and research training now comes from discretionary income sources. In 2008, prior to the first ERA exercise, discretionary income represented 41 percent of all the research expenditure. Without the ERA and EI exercises it is highly probable that more of the discretionary funding would have been directed to further improving other university priorities, including the resourcing and quality of teaching and learning initiatives.

Undoubtedly, the benefit to government from these reviews is to have a measure of where excellence for various disciplines resides in universities. The data are used by government policy makers and others to justify more than A\$12 billion expended annually by all parties on university research and research training. The ERA assessment is also believed to assist some R&D investors, especially industries, to identify researchers with discipline excellence in institutions to focus their collaborations.

The Australian Government does not directly link research funding to university ERA performances. Limited attempts to do so in the past have attracted much criticism. Funding allocation formulas that are acceptable to discipline groups and universities have not been satisfactorily developed. If the outcomes of the ERA and EI exercises are not linked to resource allocation the effectiveness of the exercise as a motivator for change is limited.

An important on-going benefit to universities of the ERA rankings by discipline has been that they provide a valuable marketing tool for staff and research student recruitment into areas of identified strength. The improved international rankings of several Australian universities have also benefited from the empowerment provided by ERA outcomes, especially in the early rounds, for research reform within an institution.

***While historically of benefit, a core question for the continuation of the ERA/EI exercises is whether the diminishing benefits to universities and government from the 2018 round outweigh the considerable cost and time commitment. My considered view, discussed further in this paper, is that***

*on balance an alternative more effective, efficient and less administratively demanding approach to assessing the quality and impact of university research to the nation should be developed.*

## **2. The Extent To Which ERA And EI Are Meeting Their Objectives To Improve Research Quality And Encourage University Research Engagement And Impact Outside Of Academia**

Many of the reforming aspects of university research management to realign priorities and staffing, were achieved using the outcome of the ERA rounds 2010, 2012 and 2015. There have been diminishing returns from each round for universities. Each successive review has identified increased research income, increased research publication outputs and a reported improvement in overall quality of performance as assessed by the proportion of outputs that are rated above world standard. Some 69% of the Units of Evaluation were rated above world standard (a 5 or 4 rating) in the 2018 exercise compared with 63% in 2015 and 46% in 2012. Universities have progressively refined their expertise in submission preparation based on previous experiences, *but has performance really improved that much?* More professional administrative reporting structures have masked whether research improvements are real or imaginary. The ARC has not directly addressed this matter.

The 2018 ERA exercise provides clear evidence that concerns about the evaluation methodologies are justified. In eight science-related disciplines assessed in 2018 more than 80 percent of the universities performed above the ARC 'world standard' benchmark. By contrast, the methodologies for humanities and social sciences disciplines (primarily peer review) are different from that for the sciences (primarily quantitative citation measures with the excellence ratings for disciplines in these areas more clearly defined). Citations appear to be producing more 'above world standard' ratings. If methodological differences are driving these results, and government and university resource decisions are being made based on these assessments, the outcomes may be having an unjustified and detrimental impact on research in the humanities and social sciences. The consequences of discrepancies in standard assessments, based on substantially different methodologies, can be very serious for university departments in terms of the perceived relative excellence of disciplines within an institution with associated research funding consequences for departments and researchers.

It is of concern that there is a lack of transparency about the metrics used to establish the world standard benchmarks and how they have changed over time for the 22 discipline fields of research. Informed discussion as to whether research excellence in Australian universities is really improving is curtailed because the benchmarks are not available for independent appraisal. While more than 80 percent of all the universities assessed in eight science-related disciplines were reported to be above world standard in 2018 no discipline was assessed at this level in 2012 and only one, Technology, achieved this level of university performance in 2015.

*Have Australian universities really improved so dramatically in the excellence of their science-related research performance or is there a flaw in the comparative methodologies that is being accentuated in the recent round?*

The anomaly is well illustrated by comparison of the performance data for 2018 and 2012 presented in figure 1 for the science-related disciplines and in figures 2 for the humanities and social sciences disciplines. The figures are presented on the same scale to emphasise the discrepancies.

Figure 1. Percentage of Universities with Science-Related Disciplines Ranked Above World Standard in 2018 and 2012 presented according to performance.

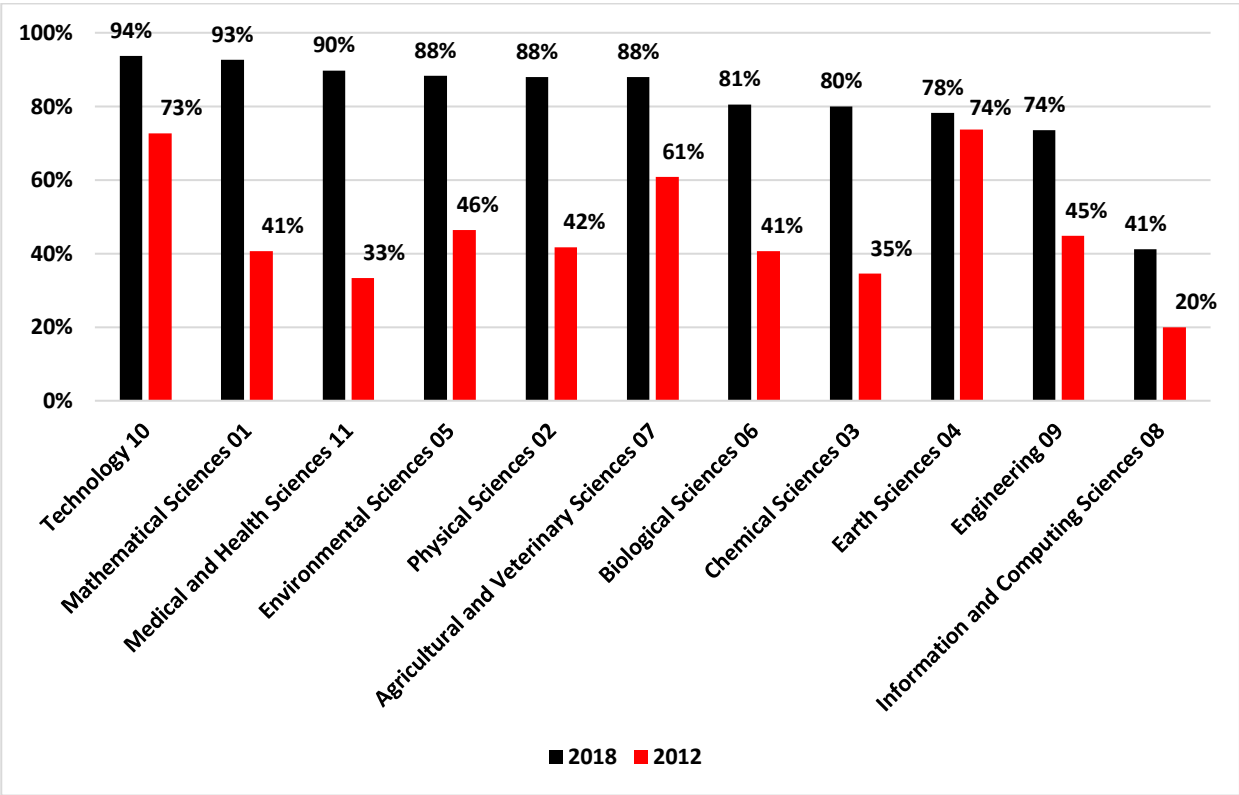
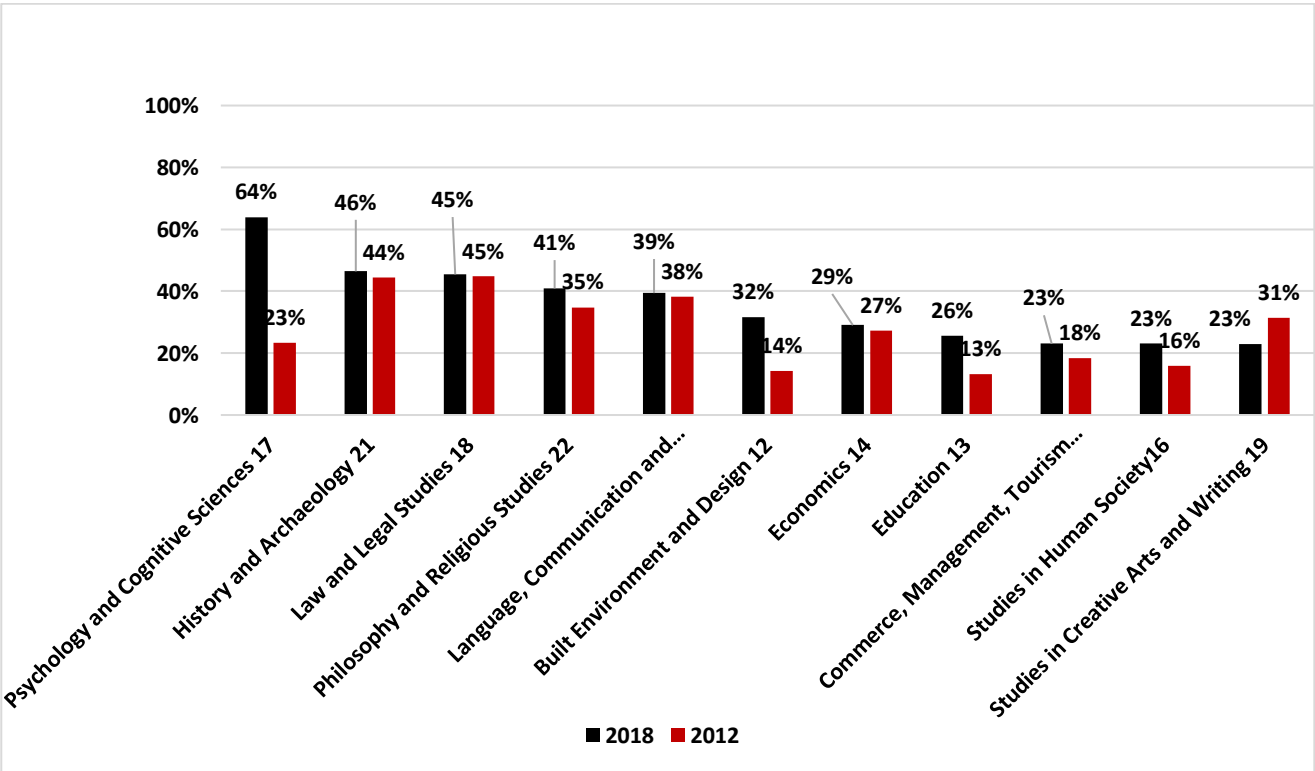


Figure 2. Percentage of Universities with Humanities and Social Science Disciplines Ranked Above World Standard in 2018 and 2012.



Overall, the percentage of universities with disciplines ranked above world standard increased from 34% in 2012 to 57% for 2018. ***The ARC has not to my knowledge explained this very significant apparent improvement.***

Page | 5 It is evident from the data presented in figure 1 that there has been a substantial increase in the number of universities assessed as being above world standard in all the science-related disciplines in 2018 compared with 2012. More universities were assessed as achieving excellence in all science disciplines than in previous rounds. The number of 'excellent' universities more than doubled for seven of the 11 science disciplines when 2012 and 2018 performances are compared. For example, for the Mathematical Sciences the number of universities achieving excellence increased from 11 in 2012 (41%) to 25 in 2018 (93%). In each of these rounds 27 universities were assessed. Environmental Sciences excellence increased from 13 universities in 2012 (46%) to 30 in 2018 (88%), while excellence in the Medical Sciences increased from 13 universities in 2012 (33%) to 35 of 39 universities in 2018 (90%). For these and all the other science disciplines, except for Information and Computing Sciences, there were major improvement above 70% in 2018.

These are remarkable outcomes that raise questions about the assessment methodology and the ability of universities to 'game' the system. The one science-related discipline that is an outlier is Information and Computing Sciences where only 41% of universities were assessed at above world standard in 2018 compared with 20% in 2012. Given the importance of the digital economy and cyber security to Australia this assessment should be of serious concern. The peer review assessment methodology mainly used for I&CS was somewhat different to the predominantly citation-based methodology for the other science disciplines. ***How did the ARC satisfy itself that these methodologies were comparable?***

Overall, the lower level of excellence H&SS performances have no clear trends between the ERA rounds as evidenced by comparing the data shown in figure 2. History and Archaeology increased from 44% to 46%. Economics improved marginally from 27% to 29%, while Law and Legal Studies was unchanged at 45%. Only in three of eleven H&SS disciplines, Built Environment and Design (14% to 32%), Education (13% to 26%) and Psychology and Cognitive Sciences (23% to 64%) have the number of universities with excellence doubled. For most disciplines there have been only small or no changes in performance between 2012 and 2018. For five disciplines fewer than 30 percent of universities were assessed at above world standard in 2018 with Commerce, Studies in Human Society and Creative Arts all ranked at only 23 percent. Creative Arts and Writing is the one discipline of all the disciplines where the number of universities assessed as excellent in 2018 (23%) was less than in 2012 (31%).

***The anomalies in assessments, unexplained by the ARC, raise an issue as to why the science-related and humanities and social sciences excellence trends are so different.***

Part of the answer lies in the fact that the science-related discipline assessments predominantly use quantitative metric-based performance indicators, whereas for the H&SS disciplines there is a stronger emphasis on peer review. The latter approach appears to apply more demanding world standard benchmarks that have changed little over time. As universities, including those in developing countries, publish more in science journals there is the likelihood that world standards for some disciplines, as measured by the world average citation rate per paper, have declined over time. The problem has been recognised for many years but apparently not addressed by the Australian Research Council. The integrity of the collections in the databases used is critical to achieving meaningful comparative outcomes. The ARC has not publicly demonstrated database integrity.

The ARC should examine the extent to which this factor is driving the results. It is not appropriate to be promulgating results which imply substantial improvement in the research performance of Australian universities when the results may simply be a by-product of a methodological ‘artefact’.

The discrepancy in both absolute performance and the change over time of the ERA research excellence performances raises important questions about the significance and credibility of the assessment process.

***• Are the H&SS discipline performances in universities much inferior to their science-related discipline performances especially for non-Go8 universities, in terms of absolute performance and trends over the years?***

***• Are there fundamental flaws in the world standard benchmarks used in the different methodological assessment approaches that account for the anomalies?***

It is not possible to answer these questions because of lack of transparency in the ERA excellence performance standards knowledge base currently being used by the ARC. Increased transparency of the benchmarks used and their comparability for the various disciplines and the assessment process is required so that more informed independent evaluations of the validity of the exercises can be undertaken.

***The unavailability to the community of the quantitative and qualitative details of the benchmarks used for assessment by the Australian Research Council and how they have changed since 2012 limits the capacity for independent evaluation of the robustness of the process and of the anomalies that have arisen. The credibility of some of the discipline standards being achieved by universities is questionable. The ARC should be more transparent in how it has satisfied itself that the different methodologies for science-related and humanities and social sciences disciplines are comparable in terms of excellence assessment.***

### ***3. The Effects Of Both ERA And Ei On The Australian University Research Sector, Whether Positive Or Negative, Intended Or Unintended***

The main benefits to universities of the ERA initiative came from the 2012 and 2015 exercises. The ERA has been the enabler and motivator for universities to undertake more directed strategic research planning. Many universities have felt empowered to rationalise their discipline-based research priorities for investment and their staffing profiles based on the ERA outcomes.

The ERA rounds have demonstrated very clearly that if a university aspires to increase its overall research standing, including international rankings, then an investment in science-related disciplines is more likely to provide a better dividend than investment in the H&SS disciplines. This is an undesirable outcome of the ERA exercises. The approach may not be in the national interest of preserving breadth and strength in research programs with a flow-on impact on undergraduate and postgraduate course and subject offerings.

One consequence has been the realignment of academic staff duties. Since 2013 system-wide there has been a very significant increase in teaching-only staff and no net growth in research-only and teaching-and-research staff despite the rapid growth in postgraduate education.



Another strategy to improve performance has been for universities to place a higher priority on the recruitment of researchers with high citation records and overseas doctoral research students rather than domestic students. Overseas students collectively have superior timely completion records and publication productivity. Domestic PhD students represented only 22 in 100 of the additional student load growth in 2017.

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#### ***4. Opportunities To Streamline The ERA And EI Processes To Reduce The Reporting Burden On The Research Sector***

If the ERA and EI are to continue then it would be of considerable benefit to universities if the two exercises were merged and the intervals between processes were five or more years. The availability of more research performance data in publicly available data bases should enable a more streamline and less burdensome impost on researchers and administrators.

#### ***5. Opportunities For Coordination Of Research Data Reporting And Analysis Across Government, Thereby Improving Whole-Of-Government Reporting Capability And Reducing The Reporting Burden On Universities***

Increased coordination between agencies of research performance data collection should be a high priority. The Australia Bureau of Statistics HERDC collection and the Department of Education annual financial, student and staff data collections could become primary input sources without the need for duplication if more discipline-based performance data was published regularly.

#### ***6. Publicly Available Data Sources And New Developments In Technology And Products To Capture Research Evaluation Data***

We are in an era of rapid change in technologies available to capture research output data. Minimising the impost on individual researchers and research administrators should be a major priority when considering any changes in collection and reporting methodologies. Universities have invested considerable workforce resources and information technology software to develop the present system. If major changes were to be implemented universities should be compensated for the expensive retooling and staff training that would be required.

#### ***7. The Frequency Of ERA And EI***

This is a most important question for all parties. The ERA and EI exercises are time-consuming and costly activities for universities with diminishing returns in terms of the benefits to manage their research programs. The government has chosen not to use the outcomes directly for research resource allocation, so other measures are being viewed as more appropriate. Hence, the benefits of the ERA/EI exercises to government are limited. If the exercises are to continue the ERA and EI exercises should have a frequency of not less than five years, as raised in section 4. The adverse impact of the COVID-19 pandemic on university research programs means that universities should be given time to recover before another exercise is undertaken.

## **8. The Appropriateness And Robustness Of The ERA And EI Methodologies.**

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The role of the ERA in reforming university research practices has not been wholly in Australia's long-term international competitive best interest. The balance between resource allocation to teaching and research programs has changed, administrative accountability requirements and costs are burdensome, staffing realignments have occurred and an overreliance on overseas doctoral students has developed. Accountability to government for the research investment it is making is necessary; however, more streamlined and less labour-intensive methodologies are available and should be implemented using the publicly available data bases and search engines with some refinements.

I thank my colleagues, Gwilym Croucher, Vin Massaro and Mark Warburton, for their most valuable advice.

*While this is a personal submission, Frank Larkins is currently an Emeritus Professor in the School of Chemistry and Honorary Professorial Fellow at the Centre for the Study of Higher Education, The University of Melbourne. He is a former Deputy Vice Chancellor from that university with portfolio responsibilities for research and global engagement. Many of his writings on higher education policy can be sourced from the [Melbourne CSHE website](#) or from [franklarkins.wordpress.com](http://franklarkins.wordpress.com)*



**Appendix A. Research Publications by Frank P. Larkins Reporting on the ARC ERA Exercises 2010, 2012, 2015 and 2018**

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1. **2010 Excellence in Research for Australia: What has been learned about discipline quality and diversity?** 24<sup>th</sup> August 2011.

The discipline outcomes of the first Excellence in Research for Australia (ERA) exercise conducted in 2010 were reviewed in this article. In 18 of the 25 discipline areas evaluated at least half of Australia's universities were assessed to be producing research outputs at or above world standard. Overall science-related disciplines rated more highly in quality than humanities and social science disciplines.

[https://franklarkins.files.wordpress.com/2018/11/a4-2010-excellence-in-research-for-australia-exercise\\_larkins\\_aug-2011.pdf](https://franklarkins.files.wordpress.com/2018/11/a4-2010-excellence-in-research-for-australia-exercise_larkins_aug-2011.pdf)

2. **2010 Excellence in research for Australia Exercise Part 2: University Discipline Diversity Matters for Research Excellence.** 28<sup>th</sup> September 2011.

The quality of the research outputs from Australian Universities assessed in the 2010 ERA exercise were reviewed in this article. Some 23 of Australia's 39 universities had at least half their disciplines rated at or above world standard. The Group of Eight Universities were the highest ranked overall.

[https://franklarkins.files.wordpress.com/2018/11/a5-higher-education-research-policy-analysis\\_frank-larkins\\_sep2011.pdf](https://franklarkins.files.wordpress.com/2018/11/a5-higher-education-research-policy-analysis_frank-larkins_sep2011.pdf)

3. **ERA 2012 (Part 1): University Responses and Performances compared with ERA 2010.** 27<sup>th</sup> February 2013

The performance of universities in the 2012 ERA exercise are compared with the outcomes of the 2010 exercise. Most universities increased their overall excellence ratings. Some 33 of 39 universities had more disciplines assessed at or above world standard in 2012 compared with 2010. Most universities were more strategic in defining their research profile for the 2012 round than previously.

[https://franklarkins.files.wordpress.com/2018/11/a14flarkins\\_he-research-policy-analysis\\_era2012\\_pt1\\_feb2013.pdf](https://franklarkins.files.wordpress.com/2018/11/a14flarkins_he-research-policy-analysis_era2012_pt1_feb2013.pdf)

4. **ERA 2012 (Part 2): Discipline Research Profile changes 2010 to 2012.** 27<sup>th</sup> March 2013.

Assessments made at the 2-digit and 4-digit Field of Research discipline codes are reviewed. Fewer assessment were made in 15 of 22 discipline areas. More rationalisation compared with 2010 was made in the humanities and social sciences disciplines than in the natural sciences and technology disciplines. The information provides a valuable insight into the breadth and quality of discipline research fields in Australian universities.

[https://franklarkins.files.wordpress.com/2018/11/a15-flarkins\\_he-research-policy-analysis\\_era2012\\_pt2\\_mar2013.pdf](https://franklarkins.files.wordpress.com/2018/11/a15-flarkins_he-research-policy-analysis_era2012_pt2_mar2013.pdf)

5. **ERA Case Studies: Behavioural Changes for Information and Computing Sciences.** 22 May 2013,

The information and computing sciences disciplines were the areas where the most changes occurred between the 2010 and the 2012 ERA rounds. The results are analysed to reveal evidence of very significant behavioural change by universities.

[https://franklarkins.files.wordpress.com/2018/11/a16-flarkins\\_he-research-policy-analysis\\_eracasestudies\\_infocompsciences\\_may2013.pdf](https://franklarkins.files.wordpress.com/2018/11/a16-flarkins_he-research-policy-analysis_eracasestudies_infocompsciences_may2013.pdf)

6. **ERA Case Studies: Chemical Sciences Responses.** 21 June 2013.

The behavioural responses of universities to reporting their research output performances in the chemical sciences from the 2010 to the 2012 exercise are analysed. The responses assessed were different from those for the information and computing sciences community reported in the previous article.

[https://franklarkins.files.wordpress.com/2018/11/a17flarkins\\_he-research-policy-analysis\\_eracasestudies\\_chemicalsciences\\_jun2013.pdf](https://franklarkins.files.wordpress.com/2018/11/a17flarkins_he-research-policy-analysis_eracasestudies_chemicalsciences_jun2013.pdf)

7. **Is the Excellence in Research for Australia assessment doing more harm than good?** Times Higher Education on line 28 March 2019.

A review of university and discipline research performance data from the four ERA exercises were reviewed. Benefits to government and universities are identified. On balance however the effectiveness of the ERA exercises in reforming university research practices has not been wholly in Australia's long term international competitive best interest.

<https://franklarkins.files.wordpress.com/2019/04/is-the-excellence-in-research-for-australia-assessment-doing-more-harm-than-good-copy.docx>

8. **Research at Australian Universities: Is Excellence Really Excellent?** 30 April 2019

There has been an exceptional increase for science-related disciplines in the proportion of universities assessed with a research performance above world standard in the latest ARC 2018 Excellence in Research for Australia (ERA) round compared with the performances in 2012 and 2015. There is a lack of transparency about the metrics used to establish the world standard benchmarks and how they have changed over time for the 22 discipline fields of research.

[https://franklarkins.files.wordpress.com/2019/05/a34.f-p-larkins\\_era-excellence.pdf](https://franklarkins.files.wordpress.com/2019/05/a34.f-p-larkins_era-excellence.pdf).

**9. Anomalies in the Research Excellence ERA Performances of Australian Universities** 27 May 2019

The changes in the research excellence performance of individual universities, as assessed by the Australian Research Council's 2012, 2015 and 2018 ERA exercises, are reviewed. Some anomalies that warrant further investigation have been identified. Many universities have significantly increased their above world standard research performance in science-related disciplines over each successive round, but not their humanities and social sciences performance.

[https://franklarkins.files.wordpress.com/2019/05/a35.-fp-larkins\\_university-performances-era-2018-12.pdf](https://franklarkins.files.wordpress.com/2019/05/a35.-fp-larkins_university-performances-era-2018-12.pdf)