

Online submission

11 April 2025

Australian Academy of Science EMCR Forum submission on the *Strategic Examination of Research and Development*

The Australian Academy of Science's Early- and Mid-Career Researcher (EMCR) Forum welcomes the opportunity to comment on the *Strategic Examination of R&D discussion paper*. The EMCR Forum represents over 6,000 of Australia's early- to mid-career researchers across science, technology, engineering, mathematics and medicine, and offers a unique perspective from the future leaders of STEM research across Australia. This submission provides responses to the consultation questions on page 41 of the discussion paper.

1. What should an integrated, sustainable, dynamic and impactful Australian R&D system look like?

An integrated, sustainable, dynamic and impactful Australian R&D system would include more opportunities and targeted funding calls to translate evidence into practice (for example, health services research and implementation science). This would enable the translation of existing cutting-edge knowledge into practical outcomes. This should involve integration across different funding bodies and funding mechanisms. This could also involve tax incentives for businesses and industries to fund such translation.

2. What government, university and business policy settings inhibit R&D and innovation why?

Current academic performance metrics have an emphasis on publications and citations. This can inhibit innovation and disincentivise risky blue-sky research. There is an unequal distribution of R&D resources (access to equipment, collaborations with industry) spatially across Australia, with a heavy focus on developing R&D resources in metropolitan areas, and less focus on regional areas. This inhibits innovation specifically in regional areas and must be addressed.

3. What do we need to do to build a national culture of innovation excellence, and engage the public focus on success in R&D and innovation as a key national priority?

The EMCR Forum has identified two key actions to build a national culture of innovation excellence. First, it is vital to recognise that all of society plays a role in research. All aspects of society should be involved in driving research priorities, and research should benefit society. Research priorities should not be driven by small lobby groups, but should be designed to benefit all of society. Second, regional areas are being left behind in Australian R&D. National R&D networks are needed that connect metropolitan and regional R&D needs and capabilities.

4. What types of funding sources, models and/or infrastructure are currently missing or should be expanded for Australian R&D?

The EMCR Forum has identified two funding sources. First, greater funding support is needed for clinician researchers. Medical research should include all healthcare professionals (nurses, midwives, allied health professionals etc), not just doctors with academic research roles. These clinician researchers can bring 'on-the-ground' knowledge and experience to developing innovations and translation of knowledge. Secondly, mentoring models and funding should be directed towards empowering Early and Mid-Career Researchers, recognising Senior Career Researchers that contribute towards that empowerment, and to strengthen cross-university, cross-region research networks that involve researchers from all career stages. This will help build capacity of the next generation of researchers.

5. What changes are needed to enhance the role of research institutions and businesses (including startups, small businesses, medium businesses and large organisations) in Australia's R&D system?

Movement between academic and industry-focused research pathways should be encouraged. The role that both academic research institutions and businesses play in R&D innovations and building the careers of Australia's future researchers should be recognised.

6. How should Australia support basic or 'discovery' research?

Australia should support discovery research largely by protecting long-term funding schemes (10+ years) for discovery and basic research. It is also important to publicise the benefits of the investment into past basic research, to ensure that the public supports Australia's basic research funding.

7. What should we do to attract, develop and retain an R&D workforce suitable for Australia's future needs?

It is important to encourage movement between academic and industry research pathways (particularly for underrepresented and underserved groups). This could be done through industry-funded (or co-funded) fellowships and PhDs, and greater training and internship opportunities during PhD programs. In addition, it is important to change the 'measures of success' to ensure movement between sectors, enabling researchers to transition easily between academia and industry. The Forum agrees with the statements on page 23 of the discussion paper that the current industry focused PhD is an excellent first step towards developing the suitable R&D workforce, but that the narrow focus limits impact. As such, broadening the focus would be of benefit.

To ensure the 'best and brightest' within Australia (and from overseas) engage in research training, and therefore a research career, PhD stipends need to be at a financially sustainable level (i.e., not below minimum wage). This will also make it easier financially for researchers or practitioners in industry to do a PhD.

We suggest an increase in industry and business funding into supporting EMCRs (especially those in underrepresented and underserved groups) in science and research, and also in supporting EMCRs to engage in 'blue-sky' knowledge development. This could be done through tax incentives.

We also recommend funding or tax incentive schemes to prevent the 'brain drain' of researchers from regional areas to metropolitan areas. It is important to ensure that there are viable research pathways in regional areas.

9. What incentives do business leaders need to recognise the value of R&D investment, and to build R&D activities in Australia?

It takes 17 years to translate evidence into practice, if businesses want their innovations more quickly adopted, they need to invest in implementation science and research. This acknowledgement is essential for businesses and funding agencies. It is also important to encourage business leaders to engage more with research institutions. Currently, the onus to do this is on research institutions. Incentives and government programs to encourage business leaders to lead these discussions and engagements would also be worthwhile.

10. What should be measured to assess the value and impact of R&D investments?

The nature of the group that the R&D investment benefits should be measured. It is important to ensure that under-represented groups are not only receiving R&D investments to conduct research, but are also the beneficiaries of new knowledge that comes out of these R&D investments. This will ensure equity in research and that no groups in Australia are left behind by the R&D sector.

This submission was prepared on behalf of the EMCR Forum by the Executive team. To discuss or clarify any aspect of this submission, please contact Ms Penny Brew, EMCR Program Manager at emcr@science.org.au.