

Young scientists must be seen and heard

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Postdocs do the lion's share of research, so maybe it's time we started listening to them. ∞ katherynemily./Flickr, CC BY-NC-SA

Postdoctoral scientists – postdocs – are the engines of biomedical research. As early career researchers, they conduct the most experiments and are responsible for sculpting how we treat disease in decades to come. But as a major stakeholder in discussions about the future of biomedical research, their views are often overlooked.

Young scientists from eight Boston institutions including Harvard and MIT last week published a report, [Shaping the Future of Research](#). The paper speaks for hundreds of [young scientists](#) who attended the Future of Research symposium held by the same group in October this year.

The problems raised may not all be new, but do represent a starting point for discussions between young scientists and other, more senior stakeholders.

Some concerns of the US group resonate with Australia's recent [McKeon Review of Health and Medical Research](#). The excessive burden of grant administration and short funding cycles are mentioned. As one quoted participant put it, this means "too much time [is] spent by highest-level scientists writing grants".

Other concerns raised in the report are of less relevance to the Australian system. US postdocs typically earn a starting wage of US\$42,000 (A\$49,000). Although many would still argue that Australian postdocs are underpaid for their level of expertise, in a global context they are relatively well off. Their typical starting salaries are around A\$72,000 (US\$60,000).

On the whole, though, the report is highly relevant to Australians as we continue to debate our own preferred models for research in our science, technology, engineering and maths (STEM) and health sectors.

No success without support

Last week, Australia's Chief Scientist, Ian Chubb, [documented](#) our bottom-of-the-table performance for collaboration between business and research.

But even in the US, which prides itself on strong academic-industry collaboration, graduate and postdoctoral programs train researchers solely to become academics, despite [less than 15%](#) of postdocs progressing to run an academic lab within five to seven years.

This lack of support for non-academic careers led one symposium

participant to comment "there is no way to exit [academia] positively". If Professor Chubb's [vision](#) for increasing STEM-trained researchers' contributions to Australian business is to come true, appropriate training and support to equip researchers must be a focus.

Recent downward trends in Australian funding success rates (which were [14.9% this year](#) compared with [22.9% five years ago](#) for National Health and Medical Research Council (NHMRC) grants), are also worrying.

US postdocs cite the hyper-competition caused by their similarly low success rates as a problem for innovation, reproduction and integrity of research – three key aspects we should instead be encouraging.

Worryingly, 58% of respondents to a [survey of British scientists](#) released last week identified as "being aware of scientists feeling tempted or under pressure to compromise on research integrity and standards". This shows this is a global issue that needs to be addressed, perhaps through changing the metrics used to evaluate a "good" scientist.

The report also raises concerns over increasing trends for funding to focus on "short-term" applied research at the expense of "longer-term" fundamental research. Similarly, focusing on "popular" topics at the expense of mature fields is mentioned as a problem.

In a time when big funding increases, courtesy of the [medical research future fund \(MRFF\)](#), are on the table in Australia, albeit with an uncertain future due to the complex Senate landscape, these discussions are particularly pertinent to the future of Australian research.

US postdocs favour a model where "industrial/commercial entities should assume responsibility for the advances that are most directly commercialisable". This leaves more government funding to "support public health and environmental health research" and "prospective"

research.

In Australia, where the venture capital market is far smaller and the number of biotechnology and pharmaceutical companies is tiny compared to the US, it is unrealistic to think the private sector will, in the short to medium term, take responsibility for funding all or even a majority of the research needed to translate fundamental discoveries into new diagnostics, vaccines or pharmaceuticals.

The US postdocs' concerns are an important reminder, though, that we need to choose carefully where our balance eventually lies.

Overall, the recommendations from US postdocs are clear:

- increase communication between young scientists and other stakeholders
- increase transparency for outcomes of scientific careers and train young scientists accordingly
- increase investment in young scientists.

Careful planning for major changes, such as those the MRFF and STEM strategy may bring, is necessary to ensure a sustainable and honourable future for Australian biomedical research.

The Australian Academy of Science's [Early- and Mid-Career Researcher Forum](#) is one group advocating for young scientists and their ideas.

Young scientists, as major stakeholders in the future of [biomedical research](#), will continue to be important voices in this process. They are a group worth investing in.

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