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# President's column

## Where's the science?

In the first issue of *New Zealand Science Review* this year, I outlined my concerns for the New Zealand science system as it underwent some of the largest upheavals since the Crown research institute reforms in the early 1990s. The lack of opportunities for early-career scientists, the effects of a second major restructuring of the Ministry responsible for science in two years, and the prospects of the continued cannibalisation of science for economic purposes were all on my mind. Unfortunately, my worries for the coming year were not without merit.

The Association's conference in April addressed this first issue by asking 'Do emerging scientists have a future in New Zealand?' While many speakers at the conference highlighted New Zealand's on-going need for scientists and science graduates, younger researchers painted a sobering picture of the struggles they face to establish their careers in this country. Over the last decade, the number of science PhDs graduating from our universities has grown more rapidly than the number of academic and CRI research positions available. This means that young scientists now have greater competition for roles in our universities and CRIs, while most are expected to find work in industry or move into careers orthogonal to their scientific speciality.

This is by no means a bad thing for the economy. A scientific education teaches critical thinking and problem solving, as well as many technical skills – qualities that are as highly valued in the private sector as they are in our universities and CRIs. Nonetheless, today's PhD education is still oriented towards the traditional academic career; while many PhD students are exposed to teaching, few receive training in project management or finance. Rather than leave the academic world for which they have been prepared, many of our most talented young scientists will simply go overseas.

One of the positive outcomes of the April conference was a resolve to establish early-career researcher networks, like Stratus<sup>1</sup> at the University of Auckland, to help new researchers around the country deal with this changing career landscape. Peer mentoring networks like these can provide opportunities for researchers to develop professional skills and to learn how to better manage their careers. A Wellington-based network for early-career researchers will be launched in November, and the Association will be encouraging the establishment of similar networks in other regions over the next year. The team behind the Wellington network consists of young researchers from Victoria University, NIWA, IRL, Te Papa, and the Otago Medical School. Some of these young scientists have only found employment through a series of short fixed-term contracts, as they struggled with an on-going lack of postdoctoral opportunities.

Indeed, in May this year, Nikki MacDonald, a reporter at the *Dominion Post*, obtained figures from the Ministry of Science and Innovation showing that the number of postdoctoral positions funded by the Ministry (including those provided by the Marsden Fund and the Health Research Council) fell from 386 in 2007/08 to 323 in 2009/10. It is important to remember that this decline occurred *before* the government axed the New Zealand Science & Technology postdoctoral fellowships in

Budget 2010. While the Ministry will not be aware of all the postdoctoral fellowships on offer in New Zealand, it would be very surprising if other providers in this sector had moved to pick up the slack. By the middle of next year, once the last of the New Zealand S&T postdoctoral fellows finish, a rough estimate suggests we may have 40% fewer postdoctoral fellows than we had in 2007/08.

Despite these figures, the Minister of Science and Innovation, Steven Joyce, has yet to take any significant steps to improve the situation. Mr Joyce at first denied there was an issue, possibly basing this stance on incorrect numbers supplied by his Ministry. Although the NZAS subsequently corrected these numbers for him, he rebounded with Ministerial aplomb by calling for further study of the problem. A better understanding of the career paths and opportunities available to our early-career researchers would be welcome of course, but how much of this understanding has simply been lost by the Ministry as a result of being restructured twice in two years?

In fact it is clear that the latest restructuring – the folding of the Ministry of Science and Innovation into the Ministry of Business, Innovation and Employment – severely disrupted this year's Vote Science and Innovation investment round. Last year, after the Foundation and the Ministry merged, the hybrid decided against holding any investment round. This year a round did take place, but was subject to considerable delays, as the Ministry appeared to have underestimated the time and effort needed to undertake review of the proposals received. At one point I was even asked to act as an end-user reviewer for the Biological Industries portfolio, an invitation I declined despite my extensive expertise in theoretical physics. At this stage there are probably many research groups that were awarded funding from 1 October that have yet to complete contracts with the Ministry.

While we have a government that is willing to invest more in science and innovation, we need to be wary of the fact that not all of this investment is finding its way into the laboratories of scientists. This year's budget saw small nominal reductions in funding for environmental and health research, for instance, albeit offset by a big increase in research for high-value manufacturing. How much of this new money will actually go towards scientific research? At least some of it is earmarked for the new Advanced Technology Institute, an organisation which will be taking on a good deal of administrative responsibility for managing research funding in its sector. At worst, we could simply be recreating the Foundation in another guise without funding any new science at this Institute.

There are great opportunities for science and scientists in New Zealand at the moment, but it is also clear that our science system is undergoing some disruptive changes. In my column earlier in the year, I bemoaned the fragmented, opaque, and often haphazard approach we have in New Zealand to doing science. I see little evidence at the moment that this situation is changing – instead we seem intent on reinventing a wheel that may be a good deal less effective than the one we were running on a few years ago.

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<sup>1</sup>See Hay, D.L.; Cater, J.; McGillivray, D.J 2012. Stratus as a voice, guide and ambassador for emerging scientists at the University of Auckland. *New Zealand Science Review* 69(3):56–60.