

The scientist and science in the new scientific environment

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Traditionally Government funded research in New Zealand has followed the path: acceptance by management that a piece of research should be carried out, experimentation, and finally reporting the findings in a scientific journal. For those in the "privileged" position of carrying out research deemed to be in the public good or offering no immediate prospects of commercial advantage, this situation remains unchanged and these scientists are at liberty to publish their research findings and maintain or develop a local or international scientific reputation.

However, the changes that we have seen in the scientific environment over the past few years have resulted in the development of a second group of scientists carrying out research with commercial end points. Because of the confidential nature of their research, by and large these scientists are unable to publish their research findings and hence cannot further, or develop a scientific reputation, i.e. they may work for many years in an area with few if any worthy research publications to their credit. Such scientists will therefore be looked on as less attractive should they wish to exchange their job for a more academic one. Worse still, if their research should fail to produce a desired result they may find that their employer (albeit probably through the management of the Ministry of Research Science and Technology) may wish to make them redundant leaving them with little chance of further employment in their scientific field. And yet it is these very scientists who are expected to make the break-through which will secure the future for their organisation.

This problem has not been adequately addressed by science management and politicians. If they do nothing then they run the very real risk of having their organisations labelled as having little regard for the welfare of their scientific staff. The consequences of this will be a marked reduction in staff morale, and possibly a reduction in the quality of science, increasing instances of breach of trust, a movement of staff out of scientific research or out of the country, and difficulties in attracting quality replacement staff.

Whilst the resolution of these problems is the responsibility of politicians and senior civil servants entrusted with the management and welfare of science in New Zealand, it is worthwhile debating three options open to them.

The short term contract

The short term research contract, typically of 1 to 3 years, is extensively used in Australia, USA and the UK. They are also to be found in New Zealand medical research institutes, the Universities and to a lesser extent in government departments such as the DSIR and the MAF. The feature of such contracts are that both the employer and the employee are fully aware that employment is for a restricted but defined period.

Where there is a competent core of research workers in a particular field, employing an additional worker to research a specific topic for a limited period has much to recommend it. It brings in new ideas, generates discussion and often rejuvenates a research programme. However, when this core is absent, contract research often leads to a fragmented research pattern within a research centre, and a short term research philosophy on the part of the research worker - e.g. for a three year contract, research only what can be completed in two years and in the third year write up and publish the results and look for funding for the fourth.

In the U.K. over the past decade there has been a major reduction in funding of Universities and research organisations and an increasing emphasis on the short-term contract. However, because there are not enough research positions, some have to move from one short term contract to another while others finish up in jobs beneath their aspirations and for which they are over-trained. It is therefore not surprising that there has been a fall in the popularity of science as a career in the U.K.

Compensation for working in confidential areas

The obvious way of compensating those working in a high risk area is to pay a salary which reflects this. For New Zealand politicians this is reflected in an adequate salary while they are sitting members and if they survive nine years in office a handsome superannuation package. However, those working on confidential research in private industry are not always financially fully compensated for their inability to publish but substantial security of employment arises because they have knowledge that could benefit competitors. But in New Zealand essentially there is only one employer for the research scientist, the Government, and job security is no longer a feature of research positions.

On termination of a research programme

It is important for all scientists and technicians, in particular those who are working in confidential areas and who are at greatest risk, to know just what the status of a project is likely to be at least twelve months or preferably two years in advance. It is indefensible and unjustifiable to tell a person that his job will no longer be available in a few weeks time when generally planning and budgeting for expenditure is taking place from 12 to 18 months into the future. Upper level managers must also be surely aware at least a year ahead of time what lines of research they are going to support and those which they don't favour. If such a warning was given from upper level management then there would be adequate time for those who wished to do so to change their line of research to a more favoured one. On the other hand, if a person did not wish to do this then it is reasonable to expect that adequate time should be budgeted for to allow staff to write up and publish their work before the termination of their employment.

Whatever government and senior civil servants decide, it is to be hoped that the best interests of science in New Zealand will prevail and that it will be metered with a degree of humanitarianism.