

## Challenges for science

What is the value of science in New Zealand? This is the question we asked ourselves at our annual conference this April past. As our conference chair, Dr Nicola Gaston, put it: 'When scientists are asked to describe scientific research that isn't done for short-term economic benefit, they call it blue-skies research, basic, fundamental, or sometimes investigator-led. But what do these terms mean to non-scientists? Is it perhaps time to discuss the value of the science that we do more explicitly, without necessarily resorting to economic jargon?'

Even in economic terms, putting a value on science is difficult. We use markets to determine the value of many things: a used car can be valued by placing it for sale on TradeMe. Scientific knowledge, however, cannot be valued this way. Many people can use the same piece of knowledge, and once this knowledge exists, it is hard to stop it spreading. Without the ability to fully and exclusively own an idea, markets will pay less for it than it is worth to society as a whole. The social value of scientific knowledge can be much greater than its market value.

This is one of the reasons why governments fund science. As Les Oxley and I both noted at the conference in April, our government's relatively low spend on research and development probably reflects the fact that New Zealanders place less value on scientific knowledge than the citizens of other countries. Attempts at getting Kiwis to value science more through initiatives like the National Science Challenges have met with a lukewarm response. Sadly, our politicians are well aware that the New Zealand public is ambivalent about science. What politician is going to campaign on increased spending for science if she knows that the voters don't care?

But what does it mean to place a value on science? At the end of our conference, the members of a discussion panel were asked how they would spend an extra \$50 million in tax revenue.

Surprisingly, after a day of talking about the value of science, not one indicated that they would invest the money in science. Our panellist's priorities ranged from funds for early childhood education through to subsidies for green energy. Like their fellow New Zealanders, our colleagues seemed to place a lower value on science than other social priorities.

And such was the public reaction to one of the National Science Challenges, 'A Better Start: improving the potential of young New Zealanders to have a healthy and successful life'. Mana Party MP, Hone Harawira, mirrored the response of our panel by calling for the money to be spent directly on alleviating the poverty that affects the health and prospects of the nation's underprivileged children. Yet we know that societies that value science more (as measured by their relative investments) also tend to be wealthier and healthier. Is it just because the citizens of these countries don't have to make the tough choices that we are faced with today, or is it because they had the foresight to invest decades ago in generating the knowledge that makes them better off now? I think it is the latter: even in the grip of the great financial crisis, most of these countries did their best to maintain their investment in science. It is no coincidence that countries that place a high value on science become richer.

The challenge that the New Zealand science community faces, then, is to clearly articulate the value of science to the public. The National Science Challenges were a laudable attempt to do this, but their focus on our immediate needs and on areas of science that are 'business as usual' failed to capture the imagination of the public. Only once we have spelt out the benefits of free scientific enquiry that asks the difficult questions and that takes us in unexpected directions, will we, and the society we live in, start to place a higher value on science.

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