

Submission to Science meets Parliament essay competition 2015

Dr. Tamsyn Ross



In your view what policy settings and initiatives would help attract the next generation of scientists to the profession?

by Tamsyn Ross

In order to attract the next generation of scientists to the profession, Australia needs to deepen and mature its relationship with science. But what could a deeper and more mature relationship with science look like for Australia? Consider countries that enjoy the strong economic benefits accompanying a culture of respecting science and innovation, countries such as Japan, the USA or Germany. In such countries science is always broadly supported at the highest level, popular opinion holds that science is not just a worthy academic pursuit but also a necessary undertaking with GDP-increasing, real-world outcomes, and a career in science is regarded by the general public as a very valid option. If Australia is to move further in this direction, it is important to consider that the question of how to attract the next generation of scientists should not be taken in isolation. Rather, it should be considered inextricably linked with the issues of how to retain and develop young scientists in their profession once attracted, as well as how to sustainably continue to attract the generation after the next, and the one after that, and so on. So, where does the effort start? Is such change best initiated in the classroom, the lecture theatre or in the wider public psyche? Probably, all three must be addressed concurrently.

In the primary school and high school classrooms, accounts of past Australian scientific innovations and notable scientists should be taught as a part of our general history, matters of interest and pride to all. Young people should grow up recognising that science belongs to Australia, and seeing it as a natural part of Australia's business. CSIRO's excellent 'Science in Schools' program recently saw year 7 students experimenting on methods to keep cut pine trees looking fresh; this sort of early encouragement to undertake scientific projects should occur as part of the national curriculum, perhaps even at a primary school level, so that science is never treated as the preserve of older students, or that of a peripheral, academic few. In the science classroom, penultimate and final year science students should be better taught about real science careers available in Australia, with the possibility for minor components in the curriculum to cover existing and developing scientific infrastructure, key employers in Australia and a basic understanding of possible career paths and job content.

At a university level there should be greatly increased focus on careers counselling for both undergraduate and postgraduate science students; efforts in this regard will help to keep graduating scientists from failing to pursue a career in the profession due to ignorance of possibilities or disillusionment with the job market. Further to this, greater emphasis should be placed on soft skills training within science degrees, which could help with graduate employability; many universities have been voluntarily 'rounding out' science degrees in this vein, but a greater push at government level may be valuable. Importantly, there should be an effort to create better recognition of the enduring symbiosis between the commercial sector and university science, and to encourage both universities and businesses to work more closely together. Certainly, in this regard, better and ongoing government incentives may be needed to encourage risk-averse businesses and university researchers needing to produce a constant stream of peer-reviewed publications to work more closely together. However, this will help to produce more science graduates with the skills and experience that Australian businesses need, as well as to help Australian businesses to innovate and grow, such that they can afford to employ these graduates. In the long-term, such measures will work to attract new scientists looking to be a part of Australia's expanding research economy, as well as to retain those looking for career progression.

In public discussion, science must increasingly be referenced in terms of the economic growth it will bring to Australia. Whilst science should always be a source of excitement and discovery and academic freedom, the prevailing paradigm must evolve; science is wonderment and hope, but science is also business, science is good for the country and science is needed to keep us economically strong. Ideally, this should be the message that the Australian public would receive from their government. Australian science should be more aggressively reported on so that its relevance to the lives of all Australians can be fairly demonstrated. Our scientific output should

come to be seen as iconic of Australia, something that we can proudly regard as a distinguishing trait of our national character. In this way, support for public investment in more science infrastructure and science education may be developed. Further, it may grow public support for the government to incentivise major commercial bodies conducting scientific research to initiate operations in Australia, a key step in growing employment opportunities for scientists.

The young, potential Australian scientist must feel encouraged and excited about science in school in order to want to pursue it further, and parents must see both that there is value in doing science and that there are strong employment opportunities in order for them to encourage their children to consider a professional future in a scientific field. As they enter university, the young Australian scientist must feel excited and encouraged, but also supported and secure as they progress through their studies, and life's economic realities begin to dawn. Upon graduation there must be a place for them to work, and as the years pass, potential for growth in their career. For them to recommend a career in science to the next generation, they must feel sincerely that it is a great option for persons living in or coming to Australia. In order for Australia to continue to produce the next generation of scientists, as well as to continue to attract top young talent from abroad, there must be a grass-roots effort. And it must begin at a high level, with stable and sustainable funding, mentoring, professional career development, appropriate recognition and reward as well as patience, persistence and self-belief.

Science meets Parliament would be a fantastic opportunity to talk with decision-makers about how best to position us for a positive future in science and innovation. We need to actively talk about the best ways to encourage industry/research sector collaboration and the strategies that will allow us as a nation to develop and foster an agile and engaged STEM workforce.