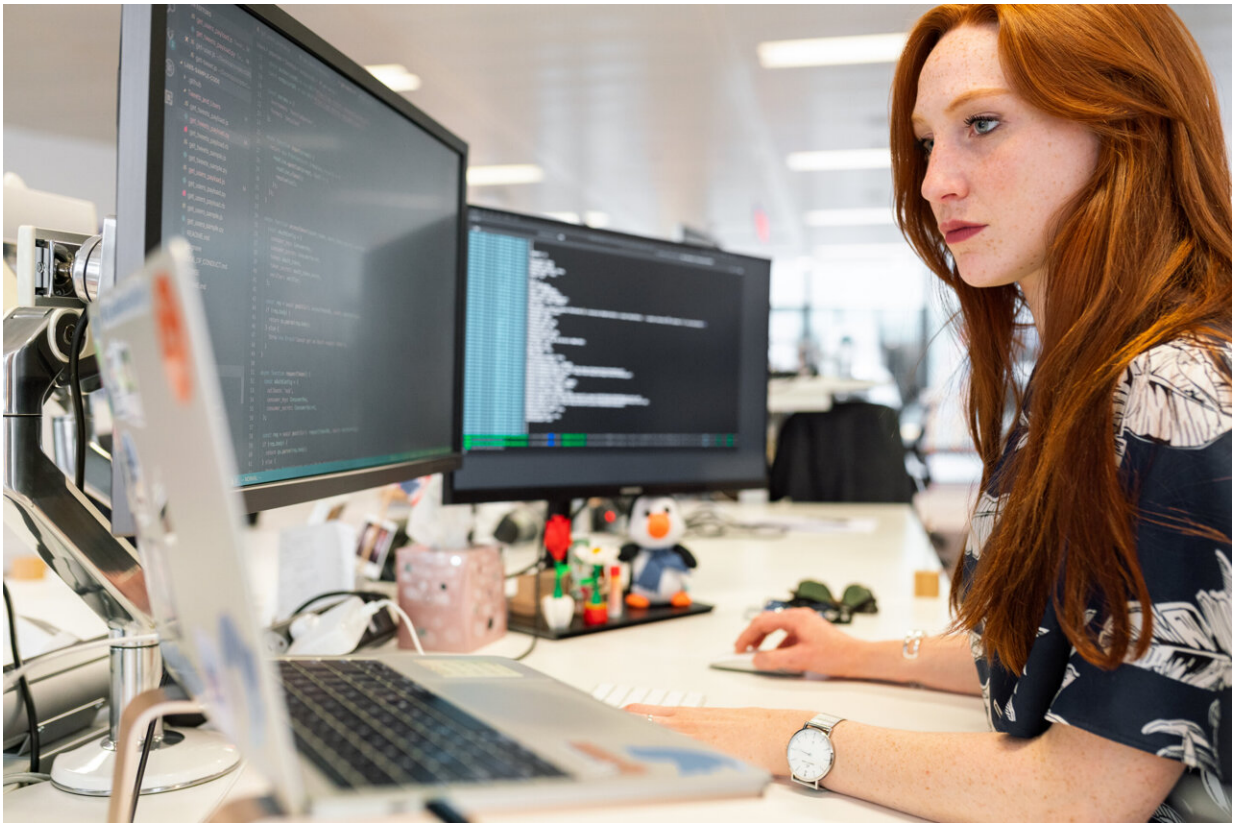
How to boost the business of science for the benefit of us all

October 24 2016, by Emma Johnston



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There has been some talk in recent weeks that Australia's much-vaunted "ideas boom" may be over before it's really begun. But the truth is Australian ideas were booming long before the Turnbull government

coined the term – and will continue for a long time to come.

Whether it's finding better ways to dry clothes or keep food cool; extracting precious metals more efficiently; creating banknotes that are harder to forge or barrels that monitor wine as it ages; developing spray-on skin cells or real-time maps in your phone; developing ways to see unborn babies in the womb; or helping to make air travel safer – Australia has always been a nation of inventors, innovators, and explorers.

Our great ideas come from throughout society, and from all sectors of the economy. But while scientists, engineers and technologists certainly don't have a monopoly on innovation, they are responsible for most advances in our understanding of the natural world and in developing new technologies.

Yet it's also fair to say that academia hasn't always walked hand in hand with the cultures of venture capital, entrepreneurship and commercial competition. Academics are driven to publish and replicate experimental success, in a long and laborious process that values collaboration over competition. Academic establishment can sometimes believe that entrepreneurialism should be resisted.

There is truth to the cliché of the humble scientist striving for knowledge for its own sake, for the greater good. And it's also true that entering the world of business, commerce and entrepreneurship can require a completely different mindset.

More publishing than patenting

A quick look at some relevant numbers supports this contention. According to data from Scopus, Australian researchers published more than 54,151 papers about drugs (excluding the topic of addiction) in the

area of medicine and pharmacy during the period 2000-13. That's an avalanche compared with the number of pharmaceutical patents taken out by Australian publicly funded researchers: 1,197 over the same period. It's true that not all research publications describe new, patentable products. But it's also fair to say Australian scientists do much more publishing than patenting.

It's a similar story in the agricultural and veterinary sciences, where according to data from Scival, 7,866 academic papers were published by Australian researchers last year. While Clarivate Analytics reports that 948 patents were lodged by academic and government organisations, and 2,112 by corporations.

Of course it's a huge generalisation to say that academics need to get better at turning inventions into investments; indeed, there are plenty of examples of this going very well. Over the past 20 years, the rate of Australian patents originating in Australia has grown for all technology fields except metallurgy and mining technology. According to Clarivate, computer and general IT technology have shown the fastest growth in this area, increasing by 8.8% a year.

The story is even stronger when it comes to Australian academics collaborating with top international companies. Clarivate's data shows Australia's research collaboration rate with the 400 top multinationals grew five fold between 2000 and 2015, second only to Singapore.

Making ideas work

We have always had the ideas. And many people who came up with those ideas also want to patent their work, and to collaborate more closely with business. The key challenge is helping them to do it.

To that end, Science & Technology Australia (STA) – Australia's peak

body in science and technology, representing some 60,000 specialists - and of which I am Vice-President - is holding its second annual "Science meets Business" conference in Melbourne today. It will bring together science, technology, engineering, maths and medical (STEMM) researchers of all stripes who are keen to collaborate with the corporate world. It will also feature leaders from across the spectrum of Australian business, from successful startups to multinationals.

The meeting has been hugely oversubscribed – an indication of the eagerness on both sides of the academic/corporate fence to form stronger connections and find better ways to work together.

It's also an indication of the need to equip our STEMM graduates and workforce with business and entrepreneurial skills. We have heard many stories from academics who would like to strike out on their own and start a business, but don't know how to take the first step. The Australian Early- and Mid-Career Researcher Forum has recently released a consultation paper with tips for "Starting the Conversation between Academia and Industry".

We've also heard many stories of academics who've successfully made that transition – people like Ross Smith, the founder of environmental consulting company Hydrobiology, and drone pioneer Catherine Ball, whose business leadership accolades keep piling up. And as academics watch more of their peers successfully become entrepreneurs , they're more likely themselves to give business a go.

That's why the Ideas Boom is welcome. It's an opportunity to build stronger and more effective business structures, policies and regulations to capitalise on the speed of technological and scientific innovation that's occurring in our universities and research institutes. It's an opportunity to turn Australia's geographic isolation, its "just get on with it" attitude and its spirit of invention, to our best advantage.

It is a chance to equip our STEMM pioneers with the skills to bring their research and technology to the world, and to strengthen our strategic long-term investment in research and design (R&D). The recent Review of the R&D Tax Incentive recommends tax break premiums for companies that actively collaborate with publicly funded research organisations. This move would be a welcome addition to other more formal initiatives to encourage cross-sector collaboration, such as the Cooperative Research Centres and Industry Growth Centres.

This is not to say that "public good" research and "blue sky" research won't continue to be the foundation of society's knowledge base; underpinning our critical requirements for sustainability, and fulfilling our innate human desire to explore. Indeed, "blue sky" discoveries are often the first step towards a patent, a product, a process, or a prize. A rejuvenated Australian economy in which all intellectual endeavours are valued and rewarded, will be one that supports every connection in the innovation chain.

And so we say: bring on the Ideas Boom. Bring on a culture of better communication and collaboration. Bring on more meetings of minds and an expectation that science and technology innovators should work hand-in-hand with business and economic success stories. Bring on a world in which intellect, imagination and bravery are recognised and rewarded.

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