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China zealotry comes at a cost, if it stops shared university research

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As I sit at my desk contemplating the latest round of panicky comments about China's influence operations in Australia – including claims about how they are supposedly undermining the military technology lead of the US – my attention keeps being drawn to two astonishing statistics.

Both are in a US National Science Foundation [report](#) published in January. The first standout conclusion: no less than 23 percent of US international articles in science and engineering are now co-authored with Chinese collaborators. This is up from a mere [5 percent](#) in 2002.

Researchers in the US these days are nearly twice as likely to work with those in China than those in the UK, which finished in second place.

The Australian share was just 6 percent.

So the reality on the ground is that Donald Trump's America is living cheerfully with China being its premier international research partner.

It's not just US universities that are engaging with China. The [latest data](#) from the US National Bureau of Economic Analysis reveal that in 2015 majority US-owned affiliates in China spent \$US3.4 billion on research and development.

That's more than double their investment in 2011 and represents a big lick of US cash delivered on-shore to support innovation in Beijing, Shenzhen and China's other tech hubs.

Just last week Microsoft [signalled its future direction](#) by signing a 'strategic framework' to deepen cooperation with Chinese tech firm Xiaomi on 'cloud computing and artificial intelligence'.

In December last year Google [announced](#) it too was opening a new research lab in China focused on

artificial intelligence.

Why the US has become so keen on China as a source of science and engineering expertise is explained by the NSF report's second standout conclusion: China's total research output now exceeds that of the US. It's the first time that China has pulled ahead.

To be sure, the US retains a lead in astronomy, biological sciences, medical sciences and psychology. But China swamps that by being more prolific in engineering, chemistry, physics and computer sciences, among others.

In other words, it's in US interests to seek out China because it has an exceptional pool of talented researchers and is becoming a global technology leader in a growing number of fields.

Yet academic Clive Hamilton, whose new book says Australia is in danger of becoming a Chinese puppet state, would have our universities abandon joint research with China in artificial intelligence and other areas, such as supercomputing. That's right, abandon research collaboration with China in the very areas the US has so enthusiastically embraced.

The Australian Strategic Policy Institute's Peter Jennings [adds driverless car technology](#) to the list of Australian expertise that supposedly needs to be protected from China's People's Liberation Army.

All research in Australia is subject to export controls overseen by the Department of Defence.

When questioned late last year, Defence Secretary Greg Moriarty [said](#) that in his experience Australian universities 'are very sensitive to the dangers and risks around these leakages of technology'.

In fact, the export controls that Australian universities face are more [stringent](#) than those in the US, where International Traffic and Arms Regulations permit 'fundamental research in science and engineering at accredited institutions of higher learning' – that is, at universities.

And the US rules say that fundamental research includes work that is 'basic and applied' where the results are 'published and shared broadly within the scientific community'.

How ironic then that this is precisely what is being peddled as evidence that researchers at Australian universities are effectively operating as Chinese agents.

For example, Hamilton tells us that Xue Jingling, professor of computing science and engineering at the University of New South Wales has 'extensive links' with China's National University of Defence Technology (NUDT), 'having published over two dozen papers with NUDT supercomputer experts'.

Hang on, published papers? Peer-reviewed? In freely accessible journals, many based in the US?

And look at the Scopus, the world's largest index of scientific articles. It shows researchers at universities in the UK and Canada have co-authored more publications with NUDT staff than those in Australia. There's also a swag of papers written with scholars in Korea, Japan, Singapore, Sweden, the Netherlands and the US.

This is the world that some zealots would have us live in: one where the Americans, Brits, Canadians and others, all benefiting from engagement with China, the new technology powerhouse. But not Australians.

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