



Australian Government

Chief Scientist

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***Nature* Symposium: Research, Translation and Innovation**

Keynote Address

Science in the Olympian spirit

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Divine inspiration

Over the next couple of weeks we can expect to hear a great deal about Olympians. It's got me thinking about the original Olympians – the *true* Olympians – by which I mean the ancient Greek Gods.

This, after all, is a 'symposium'. And we take that word from the Greek, meaning "a convivial gathering, or drinking party, of the educated".

So why not look to the Ancients for some inspiration today?

I'm thinking in particular of Athena, goddess of knowledge and wisdom. And in modern terms, we could say that makes her the goddess for the Science and Research portfolio. A fitting patron for today.

But she wasn't *just* the Minister for Science and Research amongst the gods. She invented the olive, the rake and the plough – which makes her the Minister for Innovation.

Then she invented the chariot and the warship – which suggests to me she'd be the Minister for Defence Innovation as well.

She was the only god whom Zeus allowed to borrow his lightning bolts – call that "Minister Assisting for Energy and Environment".

And the Ancient Greeks didn't just wrap all of these attributes up in a single figure. They made that figure *a woman*. And they made the woman the most revered of all their gods!

So we might think of the innovation portfolio and the collaboration agenda as modern inventions. But ladies and gentlemen – they're ancient history.

It made no sense to the Ancient Greeks to keep science and industry apart. It is we, in our wisdom, who forgot they belonged together.

So let's learn from history how the future might be made – and perhaps bust some contemporary myths in the process.

Formulas for progress

Now what else do we remember about Ancient Greece from high-school maths and science?

If you want to be remembered, come up with a formula!

So here's my formula for Australia's best possible future:

Science turns money into knowledge → innovation turns knowledge into human solutions

And that reaction is occurring all around us, every day.

But we don't just want to observe it, ladies and gentlemen, we want to engineer it.

And thinking as chemical engineers – or entrepreneurial chemists - the design brief is twofold:

ONE: To maximise the reaction rate, with catalysts to kick things along!

And TWO: to maximise the reaction yield, by optimising the input concentrations, the temperature and the pressure.

Like all chemical reactions, success in science and innovation will not come from a single magic bullet. It will come from optimising all aspects of the system.

There are places where we need new inputs, with a focus on those things that only government can provide.

Top of my mind is our big-ticket research infrastructure – to continue the success of NCRIS and landmark investments such as the RV Investigator research vessel and the Animal Health Laboratories.

An important part of my own role this year is leading the process to draft the Roadmap for the significant investments in research infrastructure that the Government is enthusiastic to make.

You've caught me in the middle of my nation-wide campus roadshow: consulting on all the options we might put forward. And it's astonishing how many ways I've discovered for spending money!

By all means, let's be excited about new money – but let's also be excited about making better use of the old.

There are places where we need to simplify: because the programs overlap or they don't reach sufficient scale.

There are places where we need to change the incentives – to encourage and reward the collaborations we want to see.

There might be a few things to be done with the settings of the R&D Tax Incentive as well... and I had the opportunity to consider them as one of the three authors of the latest review.

That report is now in the hands of the Government. And that's all I'm going to say.

Finally, we can throw in those catalysts that might encourage more collaborations to spark.

There are many such catalysts in the National Innovation and Science Agenda:

- The Biomedical Translation Fund
- The renewed focus on transformational research
- The support for horizon scanning and big picture conversations
- The changes to the taxation treatment for investment in innovation
- The creation of collaboration schemes within existing programs – including the new project-focused component of the Cooperative Research Centre Program.

We will have the opportunity to discuss many of those catalysts today.

We'll hear, for example, about how the Government hopes to recognise researchers who engage with end users, thereby maximising ultimate impact.

We'll hear how the Defence Department will follow the time honoured principle of attack being the best form of defence, by building our industrial commercialization skills and our local workforce capacity in the process of filling the armoury.

And the main emphasis of the day will be my favourite way to learn – by example. You'll hear lots of success stories and the secrets that made them possible.

But let's not forget that over and above all of those programs, there is one critical input, incentive and catalyst we need.

It is leadership, ladies and gentlemen: leadership that acknowledges the constraints but still chases the opportunity.

Leaders make decisions. They narrow the choices.

From the plethora of ideas presented today you will need to identify a few that work for you.

If at dinner tonight you can answer the question, "what did you do today dear?" with a simple answer such as "I learned two things that I can do to improve the impact of my research" the symposium will have been a success.

If your answer is that you heard twenty interesting things that you might consider contemplating as conceivable... then we will have failed to give you the analytical framework that you need.

Instead, let's aspire to leave, each of us, with a bold vision, and a clear and pragmatic path to that goal.

After all, we gather today in the tradition of the Olympian Gods. Let's make something of the phenomenal opportunity today.

THANK YOU