Professor Penny D. Sackett

Chief Scientist for Australia

Young Scientists: Australia's Future.

Remarks from the Chief Scientist for Australia on the importance of Australia's young people undertaking science careers

Presentation to the National Youth Science Forum

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Venue: Main Committee Room,
Parliament House of Australia

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Thank you Michael for that warm introduction.

I'm advised, Michael, that your local Rotary Club chose you to attend this valuable Forum from over two thousand applicants. Congratulations on your selection! I hope you enjoy your time in Canberra.

Before I begin I would like to acknowledge the Ngunnawal people and their ancestors as the traditional owners of the land on which we are meeting today here at Parliament House.

May I also recognise Professor Hans Bachor, Chairman of National Science Summer School Council and Bob Greeney of Rotary.

It is a pleasure to be here talking with you today. I see so many excited faces. Excitement, no doubt, for what lies ahead in the next two weeks as part of your incredibly rich program of National Youth Science Forum activities. You have worked hard to earn the privilege to be here today, and I commend you for that.

But the thrill of science that you share and your determination to be leaders will carry you beyond

the next two weeks. Far beyond, into a future in which Australia --- and indeed the world --- depends increasingly on young people like you.

- Scientists who question the world around them, and take the time to learn how to use mathematics, experimentation, observation, and logic to interpret the answers that the universe whispers back.
- Engineers interested not in building more, but in building better.
- Citizens who understand that evidence is how we honestly assess where we are, and rigorous scientific models are how we predict what may lay ahead.

Only with science and engineering will Australia be able to find innovative solutions to tomorrow's problems.

Only with young leaders like you --- willing to combine these technical skills together with determination and compassion --- will we be able to overcome the daunting challenges that our nation shares with the rest of the globe, such as climate change, dwindling traditional energy supplies, and new health epidemics.

That’s why it can be disheartening to know that participation in senior secondary school science has declined over the last 30 years.

In 1976, just after I finished secondary school:

- 55 per cent of all Year 12 students in Australia studied biology,
- 29 per cent were budding chemists, and
- 28 per cent did what I did and studied physics.

These subjects, together with mathematics, are the building blocks of science, engineering and technology. They lead to understanding of the Earth we call home, the health we enjoy, the structures we create, and the vast Universe in which we live.

Sadly, things have changed somewhat in the last thirty years. In 2007 the numbers of secondary students taking up biology, chemistry and physics had fallen to around half of what they were in 1976 with percentages reduced to 25 per cent, 18 per cent and 15 per cent, respectively.

But today as I stand here, I look out at your faces with hope.

Hope that tomorrow's future will brighten as you spread the infectious enthusiasm that you feel, reigniting interest in science among your peers.

Hope that you will not be bound by expectations placed on you by others, but will forge ahead to discover new truths and explore new possibilities.

Hope that as tomorrow’s leaders, you will use this wealth of new possibility and truth wisely, in order to shape a healthy, diverse, equitable, sustainable, and delightful world for yourselves and those who will follow you.

This year, 2009, is an amazing year of reflection for science. It is four hundred years since Galileo made his first wonderful observations with a small handmade telescope discovering

- That the sun was not a perfect sphere, but a changeable, spotted globe
- That Venus underwent phases as the moon did, which implied that it revolved around the Sun, not the Earth

Discoveries that altered our understanding of our place in the Universe forever.

And 200 years ago this year, Charles Darwin was born.

Fifty years later he published his masterwork, *The Origin of the Species,* which postulated and supported with scientific evidence, the theory that species are not fixed, once and for all, but evolve over time through natural selection of those inherited traits most suited to survival in a given environment.

Again, an idea that has changed how we look at ourselves and the world around us in ways not even Darwin himself could imagine, as we now see the fingerprints of evolution coded into our very genes.

We remember the names of giants like Galileo and Darwin, but sometimes forget that they are part of a long chain of scientists --- each learning from one another and leaving behind a bit of new knowledge and insight.

And through that chain of knowledge, we are able to see just a little bit further than those giants --- on whose shoulders we now stand.

As you fly through the next two weeks, stop once to consider the possibilities for your place in this chain of science and humanity.

Your ability as a scientist or engineer, to change the world around you, as a single individual, has never been greater. This has been publicly recognised by our Prime Minister and just a few hours ago, by the new President of the United States of America.

Your future, our future, is in your hands.

So keep the flames of curiosity, enthusiasm and determination burning and remember
that Australia's only astronaut (at least for now), Andy Thomas, is just one example of how scientific study can, literally, one day take you off this planet.

Thank you