I acknowledge that we meet on the lands of the Ngunnawal people. They were the first Australians to create and apply knowledge, and we still have much to learn from them.

Warmest congratulations to all who walk across the stage today to collect their degrees and to those who have supported you in this quest. You have worked hard and overcome challenges to get to this point, many achieving these qualifications while juggling study with the responsibilities of work or caring for others. You should be proud of these achievements, and it is only right that you celebrate this milestone.

Whether you know exactly what path you would like to take or are less sure, you now have secure foundations from which to venture forward and make a contribution. As Malcolm X said, “Education is our passport to the future, for tomorrow belongs to the people who prepare for it”.

In a world where geostrategic uncertainty, climate change, misinformation and societal fragmentation threaten our way of life and notion of the future, it is human to feel overwhelmed, to stand back and say “what can I do?” to make a difference. To think extraordinary courage, circumstances or capabilities are called for.

But I put it to you that each of you have already shown you have what it takes to shape our collective future. All it takes is the courage to be curious, a thirst for understanding, and a willingness to learn from our mistakes and from others and persist towards our goals.

I grew up in the western suburbs of Sydney, with what to some might seem a curious mix of interests. I’d always loved maths for its patterns, its beauty and music for its ability to move us. I knew from an early age that I wanted to do something creative - to explore uncharted territory, but it wasn’t until I had an extraordinary teacher that I realised that maths is the language of the universe and physics the art of asking the

universe questions, that science, at its heart, is a creative process. At that point I was hooked, and I set about becoming a physicist. Like many of you, I was the first in my family to attend university.

My field of science is photonics - the science of light. Whenever you use an AI tool or even do a Google search, you are sending photons scurrying under the ocean floor along optical fibres. When you check out an item at a supermarket, photons read the barcode, and if you have cataract surgery, precise incisions are made in your cornea with sophisticated lasers. As a scientist, I have contributed to the fundamental understanding how light can be generated and controlled, have started a laser company, and worked on practical issues as diverse as creating smart bungs for wine barrels, understanding how embryos develop within an IVF incubator and detecting where an aircraft is corroding without having to pull it apart.

It has been an extraordinary adventure so far, and it is currently my great privilege to serve as Australia's Chief Defence Scientist. As head of the 50-year old Defence Science and Technology Group, I am focussed on making sure our nation and those serving in our defence forces are safer because of Aussie ingenuity and through our work with likeminded nations. Our nation has a rich tradition of innovation and I'll share some examples that have originated from my own organisation.

Every time a plane takes to the skies we are safer because for decades all planes worldwide have carried a Black Box - pioneered by David Warren. The black box (which is in fact bright orange!) records what happens when things go wrong, meaning that we can learn from every unfortunate accident or near miss. Australia developed technologies that stopped deaths in the Middle East due to improvised explosive devices. We can provide early warning of incoming threats to Australia through our world-leading over the horizon radar technology, which bounces radio waves through the ionosphere, and this technology is now being exported to Canada. In just three years, we have, in partnership with industry, produced the world's most advanced uncrewed submarine, the Ghost Shark. This disruptive new approach

allows us to conduct missions that would have previously only been possible by putting people in harm's way in a submarine.

What do these four stories have in common? People who dared to ask questions, challenge orthodoxies, who experimented and learned from failure. People coming together to team their complementary strengths for a common purpose, step by step, shaping a different future.

People who learned how to pick themselves up when things didn't pan out, and kept on keeping on, finding ways to replenish their energy when depleted, not to listen to the voice saying that it couldn't be done or was too hard.

Others saw their potential and developed it, whether that be parents supporting their children's play and passions, music teachers instilling diligence through practice, or sports coaches a sense of team, mentors offering a gentle nudge when of greatest value, leaders creating a safe environment in which to fail, or friends and loved ones simply listening when times got tough.

These characteristics apply to any field of endeavour of course and are not evenly slightly unique to the scientific domain.

To support you as you step into your life beyond university, I've raided my experience to craft these top three tips:

Firstly, know yourself, your strengths and weaknesses and what gives you a sense of purpose. This includes monitoring what gives you energy and what drains you. When you are in energy surplus you always have more to give and never burn out. It also helps you to get better and better at seeing how you can make the biggest difference whether that be to the workplace or the lives of others around you or in the community.

Secondly, don't fear making a shift to something new or a little terrifying. Have courage - what is the worst that can happen?

If the worst thing that can happen is something that you can handle, you are liberated to try things you might have only previously dreamed were possible. You'll have to prepare to be vulnerable, but never underestimate the personal growth and tangible outcomes that can stem from taking a bold leap.

Lastly, invest in relationships with as diverse a range of people as you can find. Ask for and give feedback, seek out wisdom, listen to understand rather than to respond, and focus on doing the things that build and sustain trust for the long term.

It was Eleanor Roosevelt who said that "The future belongs to those who believe in the beauty of their dream".

On average we're allotted around 4000 weeks on this earth. It's an extraordinary place and we're really lucky to be here, statistically. Let's not squander this rare gift. Instead let's strive to maintain or regain the openness, joy and curiosity we had as children so we can continue to learn and adapt throughout our professional lives and support and inspire others around us to do the same.

In the words of Anais Nin in her poem "Risk":

And then the day came,

when the risk

to remain tight

in a bud

was more painful

than the risk

it took to blossom.

So when you walk out today, I charge you to bring courage and curiosity to your lives so that you unfurl your talents to the world and so that you are always learning. Strive to build connections between people and to use the gifts you have been given to bring hope and help others imagine how to create a different future for all of us.

Instead of wondering “what difference can I make”, ask “what difference can I make”.