



## OFFICE OF THE PRIME MINISTER'S SCIENCE ADVISORY COMMITTEE

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### **Graduation address at The University of Auckland's Faculty of Science Autumn Graduation Ceremony**

**Aotea Centre, Auckland, 2 May 2012**

Firstly congratulations to all of today's graduands and diplomates. You should be deservedly proud of having graduated from New Zealand's highest ranked University from a Faculty that has outstanding scholarship, research and teaching.

Sometimes I am asked whether science graduates have a future in New Zealand. I would turn that around and ask, "Does NZ have a future without science graduates such as yourselves?"

It does not.

There is no challenge that we will face as a nation over coming decades that does not depend on science. It will be critical to our economic, environmental, social and cultural development. And this does not just mean science in the lab; science has a critical role to play in the public dialogue as we develop a national consensus on how best to manage economic growth to meet societal aspirations while protecting our environment. All of this must require a much more scientifically aware and literate population.

Whether you develop your careers in science itself or in other areas, your contribution to our society based on your experiences at this University will be critical.

So having graduated in science, it is perhaps worth reflecting on what is science?

Science is not just a collection of facts. Rather, it is a particular way of observing the natural and built world so as to gain a better understanding of it. It is wrong to assume science is about certainty, for in most of science certainty is not possible; it is largely about reducing uncertainty.

As the great Nobel laureate and immunologist the late Sir Peter Medawar once put it, "Science is a means by which we analyse the many things that might be true about the universe and pare them down to the few that are probably true."

I emphasise this because of the great issues we face. For example how is the planet going to deal with 40% more people, all expecting higher standard of living? This can only mean more use of the planet's finite resources, yet at the same time there is also an increasingly understood need to conserve the planet.

There are also important issues that emerge as the very substrate of society moves from the physical to virtual. The internet has created the problem of how to discern reliable from less

reliable information in a world smothered with information and polemic, leading to increasing confusion and indeed a loss of confidence in science as the key source of knowledge.

But science, both formal and informal, remains the only process we have to gather information about our world on any scale and from any perspective. To reject this is to reject the very basis of logical assessment of the challenges we face. The one dimension of science that needs to be protected at all costs is the need for the collection and interpretation of data to be value free. Such freedom from bias is not easy.

But science alone does not determine society. We thankfully do not live in a platonic society. Rather we live in a participatory democracy that is underpinned by values that determine our priorities. But equally when values dominate in the absence of science-based knowledge, inappropriate decisions can follow.

It is this interplay between science and values that makes society what it is.

Technologies are developing faster all of the time and they having far greater impact as they project so much more quickly. The challenge is for society to understand and accommodate these technologies at a pace commensurate with their development. Otherwise some important technologies may wrongly rejected, and yet others may be misused or their harm misunderstood. Indeed this conflict between the pace of development and understanding can manifest in anti-scientism — an illogical but understandable response to the pace of change.

Therefore, well-trained science graduates are inevitably critical to a modern participatory democracy. We want you to participate — indeed, you must. We need you to not just use your hard-earned degree to follow your aspirations, but also to use your knowledge of the scientific process and understandings of science to participate in helping society to navigate the challenges ahead.

Universities are special places. Their role as critics and consciences of society is enshrined in law and tradition. Often this has been assumed to be the role of your colleagues in the great faculties of Arts and Law, but that obligation is equally so of the scientist. As graduates of this University, you are now members of the University's court of convocation. In this new role, it is important that you play your part in protecting the contribution of scholarship, and in participating in the now critical and public dialogue between knowledge and values that is so essential as our society moves forward.

Congratulations to you all.

ENDS