Sir Gregory Winter CBE FRS FMedSci MA PhD (Cantab)

An honorary award of a Doctor of Medical Science (honoris causa) was conferred upon Sir Gregory Winter CBE FRS FMedSci by the Chancellor, Ms Belinda Hutchinson AM, at a University of Sydney Faculty of Science at 11.00am on 7 November 2019.

Citation

Chancellor, it gives me great pleasure to present Sir Gregory Winter CBE FRS FMedSci to you for admission to the degree of Doctor of Medical Science (honoris causa) in recognition of his outstanding contribution to medical science, entrepreneurship and human health.

Greg is one of the most distinguished medicinal chemists of our era. He is a Fellow of The Royal Society and was winner of its 2011 Royal Medal for his pioneering work in protein engineering and therapeutic monoclonal antibodies. His many international awards include the King Faisal International Prize for Medicine and the Gairdner International Award. He was appointed Commander of the Order of the British Empire in 1997 and Knight Bachelor in 2004. He was until recently Master of Trinity College at The University of Cambridge. He is a former Deputy Director of the MRC Laboratory of Molecular Biology, Cambridge, where he was Head of the Division of Protein and Nucleic Acid Chemistry.

In 2018 Greg was jointly awarded the 2018 Nobel Prize in Chemistry for his creative use of phage displays to generate monoclonal antibodies. His creation of “humanised” and “fully human” monoclonal antibodies tapped into evolutionary biology and revolutionised modern therapeutics across a panoply of human diseases. These antibodies can reasonably be said to be to modern medicine what Fleming and Florey’s development of penicillin was to the antibiotic era.

Name a disease, and you will likely find “an antibody to treat”. There are now more than 500 therapeutic monoclonals. In diseases such as cancer and inflammatory disease, they target protein molecules on the surface of cells, or those that interact with them. In oncology this can lead to the killing of tumour cells - as with Herceptin for breast cancer and Keytruda for melanoma. In inflammatory disease it can lead to the blocking of the inflammation that leads to rheumatoid arthritis, psoriasis, inflammatory bowel disease, and multiple sclerosis. Their uses are many – from targeting leaky retinal blood vessels in diabetes and other sight-threatening disorders, or treating osteoporosis or reversing dangerous bleeding caused by modern anticoagulants. The newest effective treatments for migraine are monoclonals which target a receptor protein in pain pathways.

Greg’s achievements are testament to the crucial academic synergy between chemistry and clinical medicine, whose advances are underpinned by the basic molecular sciences. It could not be more appropriate than that a degree from within the Faculty of Medicine and Health is being conferred at a ceremony of the Faculty of Science.

His home Laboratory in Cambridge has produced sixteen Nobel Laureates since World War II. How? He says this happens when scientists have freedom and ambition to answer “important and difficult questions”. This is an important lesson for universities, and those who fund us.

It was one thing to have an ingenious idea and to bring it to scientific fruition. Quite another to persuade the business and pharmaceutical communities that it was worth supporting. Whereas some scientists might have stalled when faced with corporate indifference from Big Pharma, Greg devised his own path to commercial success, created the Cambridge Antibody Technology company, and in an inversion of the usual patterns of capital flow he turned for seed funding to the other side of the world - to none other than to his old Australian friend Geoffrey Grigg and the Sydney biotechnology company Peptech, with its shareholder base in the horse racing fraternity of New South Wales. Only later did Big Pharma realise the potential of the technology and has since stepped in to fully globalise the antibodies. In 2018 the international market for therapeutic monoclonals was reported to be $US115 billion. Greg has views on the wrong ways for countries and institutions to sell intellectual property. He is still innovating - his latest novel engineered “find and attack molecules” are small peptides called “bicycles”, now in clinical trials via his newest company, Bicycle Therapeutics.

When Alfred Nobel established his eponymous Prizes his will specified that they were to be awarded “annually - - to those who have conferred the greatest benefit to humankind”. Monoclonal antibodies have indeed conferred a very great benefit on humankind.

Chancellor, I present the Sir Gregory Winter CBE FRS FMedSci for admission to the degree of Doctor of Medical Science (honoris causa) and invite you to confer the degree upon him.