Welcome

A ainonna ghradamúla agus a dhaoine uaisle, ach go háirithe na mcleínn atá anseo linn, tá fáilte romhaibh go lèir chuig an Helix inniú don ocáid tábhachtach seo.

Distinguished Guests, Ladies & Gentlemen, but especially all the students here today, you all very welcome here to the Helix for this very important event.

118 years ago, almost to the day, in November 1895, Alfred Nobel signed his last will and testament, giving the largest share of his fortune to a series of prizes - the Nobel Prizes. Since 1901, the Nobel Prize has been awarded to men and women from all corners of the globe for outstanding achievements in physics, chemistry, physiology or medicine, literature, and peace. In 1968, economics was added to the list of fields.

There are some significant facts associated with the Nobel prize:
- 851 individuals and 25 organisations have been awarded Nobel Prizes since 1901.
- Out of the 851 Nobel Prizes awarded to individuals, only 45 have been awarded to women.
- The youngest Nobel Laureate is Lawrence Bragg, who was just 25 years old when he received the Nobel Prize in Physics in 1915.
- Only 10 Irish people (North & South) have received Nobel Prizes: 5 for Peace, 4 for Literature and 1 for Physics (Prof ETS Walton).
- But, hopefully, today and this series will increase those numbers for Ireland!

DCU and Magnet Broadband have been working together for 3 years to bring Nobel Laureates to the Helix.

Our objectives for this series are very clear: The focus is primarily on students with a view to raising their aspirations, to setting the bar for their ambitions as high as possible by exposing them to excellence of thought, intellect and creativity, a brand of excellence that brooks no argument, the Nobel brand.

Serge Haroche

Born: 1944, Casablanca, Morocco

He is Professor at the College de France and holds the Chair of Quantum Physics.

2012 Nobel Prize for Physics: David Wineland and Serge Haroche "for ground-breaking experimental methods that enable measuring and manipulation of individual quantum systems"

Studies of Quantum Phenomena

When it comes to the smallest components of our universe, our usual understanding of how the world works ceases to apply. We have entered the often paradoxical and difficult- to-comprehend realm of quantum physics. In this world, the same object can exist in different states simultaneously. For a long time, many quantum phenomena could only be examined theoretically. David Wineland and Serge Haroche are responsible for the development of ingenious experiments designed to study quantum phenomena when matter and light interact.

Haroche has been able to capture photons using another kind of trap - two mirrors which they can bounce between. This device allowed Haroche to study the photons by passing atoms through the trap. Wineland has been able to create incredibly precise clocks based on his discoveries. These discoveries may also make it possible to build computers that are much faster than those we use today.

So, I am delighted this morning that Prof Haroche has honoured us with his presence here today and will deliver his lecture to a very large audience of 700 people – including nearly 200 from secondary schools and 200 from CTYI.

I am also delighted that this lecture is being streamed live on Magnet.ie. And all of us are looking forward to a wonderful lecture.

Before I hand over to Prof Haroche, I want to thank Magnet and Mark Kellett for their support in making this event possible. I also want to thank the DCU team for all their sterling efforts in making today a success.

Prof Haroche, I invite you now to deliver your lecture.