

Interactive Sessions with Nobel Laureate Prof David Gross

The Future of Physics Research

by David Kum Wei Kuan

On 27 August 2013, the NUS High School of Mathematics and Science had the honor of hosting an interactive session with Prof David Gross (Nobel Laureate in Physics 2004). The event was coordinated by the Institute of Advanced Studies and the Science Centre Singapore in relation to the “Sketches of Science” exhibition of Nobel Laureates. Prof Gross is one of the theorists working on the asymptotic freedom in theory of the strong interaction back in 1973 along with Prof Frank Wilczek and Prof David Politzer. He was awarded the Nobel Prize for this work in this area, along with many other notable achievements such as the Dirac Medal in 1988.

Prof Gross’s lecture was well received by the students. The talk covered the background of quantum physics, providing rich and substantial insights to the budding scientists of NUS High who were looking to start their explorations in the field of the quantum world. After a quick run-through of the history, Prof Gross updated the students on the latest news in the field of particle physics, highlighting especially the discovery of the Higgs boson which created much excitement throughout the international scientific community.

Prof Gross highlighted the characteristics students should strive to attain so as to become good researchers. Being constantly curious, having the ability to aim high and fall hard, and a genuine passion and love for physics were some of the points he mentioned. The talk went a long way in encouraging the young generation of scientists to take up research and help demystify the wonders of science.

Personally, this was a very interesting experience for me and my friends who are very keen in quantum physics. We relished the chance to interact with such a prominent physicist who is an expert in his field. Prof Gross was an engaging speaker and explained the concepts in layman terms so that everyone could understand. He ended off with the note that there are still more mysteries and unexplained phenomenon that could be explored in the field of quantum chromodynamics and string theory; it really made many of us look forward to the future of physics research.

Following the talk, we had a good discussion on the life ahead of us as physics students and it was very helpful in preparing ourselves for the future. As Prof Gross put it reflectively, we are the next generation that will lead the physics field in formulating theories and conducting research in the future, building upon the



Prof David Gross explaining some of the concepts in quantum physics.




The students were enthused by Prof Gross’s lively and engaging talk.



Many students crowded around Prof Gross after the talk to seek advice from the Nobel Laureate.

achievements of Prof Gross’s generation to further our knowledge of the universe, just as he once built his research on the shoulders of his own professors.

Thanks Prof Gross for his words of wisdom! 

David Kum Wei Kuan is a student at the NUS High School of Mathematics and Science. He is interested in physics and the field of quantum physics in particular. For more information about this article, please contact Mr Tan Kian Chuan, Head of Physics & Engineering at NUS High, at nhstkc@nus.edu.sg.