Personal Statement

2013, Natural Sciences (Biology), Trinity College

I have always been fascinated by mathematics as an art and how science uses it to explain the natural world around us. Having won gold medals five years running and in the UK Maths Challenge as well as achieving 'Best in the School' last year, I gained satisfaction from pushing myself and expanding my mind in all matters numerical. I taught myself AS maths modules during year 11 and plan to sit the additional M3 module later in the year. I find the pure side of mathematics such as calculus and algebra the most enthralling, for instance, the use of differentiation of exponential functions to calculate how quickly I have to drink my coffee before it turns cold, or alternatively, separating variables to find the equation of the temperature of the coffee, when it is cooling at a rate proportional to time.

My love of science and ardour for discovery originate in conversations with my father about what we had read in the New Scientist periodical. From the genetic and neurological foundations of humanity to the spellbinding counterintuitiveness of particle physics, I have always been absorbed in the natural sciences and look to pursue them to the highest level. I would love to be at the cutting edge of scientific discovery and so leapt at the opportunity to visit CERN this coming year and learn more about those at the forefront of research into the invisible. I have followed with attentiveness the articles on particle physics. Especially since the discovery of the Higgs Boson, curiosity drives me to find out whether the Standard Model can be extended to include the most mysterious force of nature: gravity. Fascinated by the idea of black holes and multiple universes in different dimensions, I believe that understanding gravity could be the key to unlocking countless mysteries about the nature of existence.

Reading "Why Does E=mc2" by Brian Cox enriched my understanding of how maths and abstractions can be used to explain reality and left me with a strong desire to understand in greater depth special relativity theory, and the strange vector of time. Aside from the fundamental questions ringing inside my mind -such as 'why does the universe exist?' and 'why does life exist?'- that have driven scientists for millennia, I find collaboration between the sciences the most exciting. "Why Chemical Reactions Happen" by J Keeler & P Wothers introduced me to the Second Law of Thermodynamics, which deepened my understanding of chemical reactions.

Always following rules, chemistry in my eyes became the tool that is essential in solving the Earth's burning economic and environmental issues - for which solutions we can use the tricks of millions of years' worth of biology, such as harvesting solar energy through artificial photosynthesis. I enjoyed learning to marshal time and evidence to complete an extended project entitled 'Mavericks and the Invention of Computer Technology'. Studying, amongst others, the work and life of John von Neumann provided me with a source of inspiration as the genius man, of Hungarian origin, made incredible scientific discoveries and synthesised multiple fields of science, from computer technology to nuclear physics. In the project's conclusion I admired the interplay between the role of individuals in the development of information technology and the socialising effects of their invention.

The unsung heroes I met in Mike Green's "The Nearly Men; A chronicle of scientific failure" never gave up trying to advance humanity through their theories and inventions. Lacking social influence or fame for one reason or another, they were driven solely by the desire for scientific discovery - rather than their own personal gain. Similarly, I hope to study scientific subjects purely for the sake of science. Ultimately, I have always wanted to be part of the melting pot of clever people pushing the boundaries of discovery and defining the extent of human knowledge, and I look forward to studying it at the highest level.