

Application for Work Experience at RAL

*Required

In which areas are you most interested?

Rank in order of preference. (Please select at least two – mark as 1st, 2nd and 3rd choice)

Computing	Second Choice
Engineering	Third Choice
Science – theoretical	First Choice
Science - practical	

I have a specific interest in.....*

Particle Physics

and I would particularly like to do.....*

Particle Physics experiments including use of Python programming language

Why do you want to do work experience at RAL, and what do you hope to gain from your placement? * Please write at least 50 words.

In August 2013, I attended the STFC/RAL Open Day. I managed to see the ISIS experiment, along with other parts of the RAL operations. This was my first experience of such experiments, and it really sparked my interest and desire to work in this area. In October 2013 I was fortunate enough to spend time at Imperial College London and CERN on work experience. One of the key things I learnt was the true complexity and size of the engineering and computing that is required alongside the theoretical side of particle physics. I have also worked closely with Thales Research and Technology UK, (TRT), who provided help and guidance through a number of projects including TeenTech 2014. They continue to offer help for any future projects or academic work. Now two years on from my first visit to RAL, I would very much like to build on these experiences through a work placement. Through this opportunity, I believe it will help guide me to the best academic path beyond A-levels, and early thoughts on my eventual career. I would also like to see the work done in the UK, and see how the UK teams work with other UK teams, and teams from around the world. I have committed myself, with help from contacts within ICL, to vastly improve my Python programming skills by the Summer of 2015. I would be very keen to work with staff at RAL to see how Python programming knowledge is applied to the current experiments, and perhaps even help code for some of these experiments, which would be truly amazing.

Do you have any computer knowledge or skills that might be of use? Which software packages are you familiar with? Do you have you any programming experience?*

I spent part of my summer 2014 holidays at ICL, Kensington site, being taught Python. Being taught by an individual who has direct involvement at CERN, helped not only to learn the basics of the programming language, but to also understand at a fundamental level the importance of computing knowledge in the execution of their experiments. Further, I am waiting for more Python training materials from ICL, which I have committed to completing before the 2015 summer holidays. Again this will be with assistance from Post Doc staff from ICL.

What are your interests (both in and out of school)?*

Technology and Physics Competitions and Lectures.

As an example of my practical work, I entered the TeenTech 2014 competition. With the support of TRT, and along with a school friend, we entered a project for the recovery of otherwise lost energy within the office work place environment. This included systems for recovery of energy from elevators, door mechanisms and piezo crystal laced floor tiles, recovering energy from people walking around the office. We also included a mechanism to recover the wasted energy from toilet flushes! We were very pleased to get through to the finals, which took place at the Royal Society London, where the patron of TeenTech, HRH Duke of York, and a number of well-known and popular science and technology experts reviewed, and praised our project. At every opportunity I attend lectures by well-known popular scientists, especially in the physics area. I also spend time reading many books in the area of particle physics. My next public lecture to attend is the Quantum World day in February 2015, run by New Scientist publication.

Volunteering

Certainly the highlight of my volunteering activity to date was the work done within the four week National Citizen Service (NCS) programme for 16 and 17 year olds, supported by Future Foundations. The aim of this was to create a Social Action Project. Our concept was to design and build Sensory Gardens for local primary schools, targeting mostly children with physical, behavioural, and other mental disabilities. After agreeing with Loddon School in Wokingham to develop this concept, and to be the pilot site, we set about fund raising and gain support from the local businesses for free materials and delivery. In four days we had raised £1,150. In a further six days the concept became reality. Post the official part of the NCS program, the team has stayed together and we have now completed a Second Sensory garden at another local school. Starbucks Youth Action, following a successful pitch to them for financial assistance, provided funding for this second project. They kindly donated £2,000. One of Starbucks requirements for the funding was to ensure that we increased the number of volunteers in the group from 13 to a minimum of 32. With great support from friends and family, we were able to comply with their requirement. The feedback from the staff and pupils at these schools has been overwhelming positive. At the Future Foundations 2014 Annual Awards ceremony on December 13th 2014, the team was awarded the NCS Team of the Year

2014. The plans for a third school have been developed, and will be implementing this in the Summer of 2015.

Sport

I've never been a very sporty person, and it wasn't until I was 15 that I discovered a sport that I really enjoyed. A new American staff member at school organized an open trial day for students to experience Lacrosse. I immediately enjoyed the game, both from an exercise point of view, and being part of a competitive team sport, (but also who wouldn't like having a legitimate opportunity running around after people flailing a big stick!) In a few short months we entered a competition with Reading and Wokingham Private schools, which have a long tradition of playing the game. As the only state school in the competition we were very pleased to be not only competitive, but were thrilled to win the competition at the first time of entry. I continue to train every week. After originally following the NHS 'Couch to 5k' programme, I now regularly enjoy running, including taking part in the parkrun 5k events, where I take great pleasure in beating the other 5 members of my family!