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UROP: Summer 2019

Matter from Light Project

### **How I secured my research experience under the supervision of Dr Stuart Mangles, Dept of Physics**

At the beginning of my second year of my Physics course I was just starting to explore my possible future careers. I always had a research career in mind, but had some doubts because I didn't know exactly what it would be like. I heard about UROPs from someone in the year above who explained to me how useful they are, therefore after the Christmas break I started looking for opportunities. I looked on the Imperial website and read about what the type of research that different people in each department were conducting. I came across a few that sounded very exciting, so I decided to send a short email asking if they were interested in taking me on for a UROP. I was very lucky to get a quick reply (as it usually takes emailing several people before one of them contacts you back) and was asked to come in to discuss the possibilities. We talked about possible projects that could interest me. At the time, I wasn't sure if I wanted to focus on the more theoretical, the more experimental, or even the more computational part of physics, so we didn't finalise a project straight away. We had a couple of ideas on how I could help and gain some experience within the group, with the plan that this could also help me decide which career path I wanted to take.

### **Preparation and Start**

I kept in contact with my supervisor and he gave me some useful material to read before the start of my project. When I arrived, I was a bit nervous because it was something new and I was scared I wouldn't fit in, but everyone was really nice and friendly, I really liked the atmosphere within the group, and I felt welcomed very soon.

### **The UROP itself**

What I worked on was just a first theoretical design of an experiment that could possibly be implemented, however more research will be needed to check if the actual laboratory conditions would make it feasible and more efficient than the already existing one. I had to mainly read a lot, do calculations, and create computing simulations of the process. Even if it turned out that the lab conditions were not favourable, my work was still useful as it helped ruling out one of the possibilities. Another student took over after I left and continued working on the same project.

### **Outcomes**

I have to say I learned a lot from this experience, both personally and academically. I acquired many new skills that could be useful for my future career and, now that I have seen what research is really like, I feel even more motivated to do a PhD after my undergraduate studies (I've now started Year 3). I want to thank my supervisor, Dr Stuart Mangles, for allowing me to be part of his group for a bit and for being there to help me, guide me, and explain concepts when necessary.