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Undergraduate, Year 2 in 2019-20, MSci Geophysics, Department of Earth Science & Engineering

UROP: Summer 2020 (undertaken in the Department of Earth Science & Engineering)

Investigating crustal structure in the US Pacific northwest from receiver functions and constraining seismicity in the Abaya region in Ethiopia to aid geothermal power investigations

In the middle of my second year, as I was seeking productive ways to spend the summer of 2020, I decided to look for a UROP experience. Having my sights set on a research career, I was keen to discover how high-level research works and what the daily life of a researcher looks like, to ultimately see whether a research postgraduate degree could be a good fit for me. Fortunately, at the same time I was looking for UROPs, I was taking a 2nd year spring term module in seismology taught by Dr Ian Bastow. Before taking the module, I had a vague interest in seismology, but after discovering more aspects of it, I knew that the subject appealed to me. I contacted Dr Bastow directly, and he was able to walk me through his group's research activities, and together we figured out the topic areas I could become involved in over the summer.

I filed an application to the College UROP Bursary scheme and was lucky enough to receive funding from the Engineering and Physical Sciences Research Council (EPSRC).

When the summer rolled around, the impact of COVID-19 and the switch to remote working meant that it was impossible for my UROP experience to go ahead as planned. However, in the face of this setback, my supervisor was extremely supportive, and was able to reconfigure the UROP into a project that could be undertaken remotely.

During the UROP itself, I worked in very close cooperation with one of my supervisor's PhD students, who provided invaluable day-to-day support and advice. In my UROP, I had the chance to apply myself to a series of interesting research questions from across the world, through using openly available seismological data, as well as data collected by Dr Bastow's group. I also learned how to troubleshoot issues involving the computer codes used to deal with large datasets.

Finally, I was able to massively increase my proficiency in using Linux shell scripting, and the Generic Mapping Tools, which is the standard software used for producing publication-ready maps and figures in geophysics.

Following the completion of my UROP, I felt that I gained much across many areas. The computational skills I learned have proven to be of great value for my Year 3 work. The experience taught me that scientific research can at times be frustrating, but when one works consistently and effectively, the end result can be incredibly rewarding. Following my UROP, I feel even more convinced that a career in research is something I would like to pursue in the future. Last but not least, having had to undertake my UROP in a summer heavily impacted by COVID-19, 'forced' me to adapt to the new normal, and learn how to effectively collaborate with others without face-to-face contact. I believe that the summer's experience allowed me to more easily adapt to remote learning in my degree.