

My first summer of my Laidlaw project was spent doing research, or rather it was spent reading textbooks for weeks and then a bit of research at the end. This was neither the fault of my supervisor nor my own laziness, but instead was the product of my own single mindedness. My supervisor, Chris Hooley had mentioned that I could take two strategies in doing my project, either I do the research after the textbook learning or do both tasks concurrently. I decided very quickly that I would do one after another which turned out not to be the best strategy for me. I ended up getting very bogged down in the textbooks, struggling to keep motivated and spending a lot of time trying to understand content that had no relevance to my project. In the end I spent eight weeks working my way through the materials and a further three weeks on research and writing up my research poster. I had decided that since I was stuck inside over COVID, I would enjoy having some sense of purpose, even if it meant spending far longer than the five weeks I was expected to on the project.

This period made me realise the importance of constant self-reflection and re-evaluation. Had I done this more frequently I might have earlier realised a variety of things, such as that study for its own sake was no longer something which was sufficient to motivate me for extended periods. For much of my adolescence and university career this had essentially been my plan for life, to study the most fundamental physics possible and to then work in a similar area. However, to work my way through the material and get myself back to being productive, I had to enforce many structures and reward mechanisms, and become more of a self-starter. In hindsight, I also had to try to reset my perspective on work to get me out of dreading to do it as I think it had become very daunting.

Had I more quickly reconsidered starting my research alongside the study, I would have both found self-motivation much easier and sooner recognised the value of focussing your study. By this I mean go into reading it with certain goals in mind and process information from a certain perspective. This is because there are many levels of intuition which you can aim for which can take very disparate amounts of time. This focussed study is also an effective way to help self-motivate since it feels as though the effort you are putting in is well placed, where learning endless detail of the more abstract can become tedious especially when the relevance of concepts is not given. It also helped me cut down on unnecessarily worrying over the details of complex mathematical derivations which saved a lot of time and mental strain.

Something else that was highlighted by my output for this first summer was the importance of setting reasonable goals, telling me that I need to get a better idea of how to gauge how much work something will be. Had I gone in with a mindset of trying to learn what was useful to the project rather than trying to understand general relativity I might have made more speedy progress.

The second summer was the part of the experience I was least looking forward to. In fact, when I started the Laidlaw program, I was hoping that the leadership in action component was merely hoops to be jumped through, that most of even my second summer would be spent doing research for research's sake.

My dream outcome was that after my first summer, I would have created something meriting my building it in a lab, or at least worthy of giving some sort of talk about. These would have also had the added benefit of giving me the opportunity to use some of the travel bursary Laidlaw offers. As it turned out, either this was wildly naïve or just made unlikely by the aforementioned fact that I focussed too

much of my time into irrelevant study before I even started my active research. In the end, I came into my second year with neither of the above being real options, especially since COVID had made impossible any travel to foreign labs.

In the end, Chris and I produced a two-pronged agenda for the summer. First, I would host a mini-academic conference with attached closed door discussion sessions, presented and attended by a set of professors from all over the world. The second prong would involve me giving outreach sessions to classes of 8 year olds in a SIMD 40 school, this last detail is important as one of the Laidlaw criteria is that my project does more beyond purely research goals, it must aim to make a difference.

The flexibility which the Laidlaw program gives you especially for your leadership year, gave me the opportunity to work on my public speaking and confidence in front of people which were major goals for my entire Laidlaw experience. I was able to organise my own academic conference, where I had the opportunity to introduce and speak to a variety of academics from all over the world. This has helped my confidence and helped me to identify many of my own characteristics and beliefs that I have been able to change or understand better. For example, it was only on reflection of my difficulty making small talk with the academics that I realised that I not only didn't see myself as a peer of the attendees, but actually felt like an imposter. This is something that I have subsequently been able to work to change my mindset on which also ties into general self-confidence and self-image issues that I have been figuring out in my more personal life. I get very overwhelmed by the ideas of tasks that of course end up being much easier to complete than what had been built up in my head. I have found that generally having more confidence in my future ability to solve problems or complete tasks when the time comes has put me in a much better mindset.

This is an instance of me trying to develop my self-leadership abilities, which were not something I had ever heard of before Laidlaw and in fact were something which I quickly dismissed as irrelevant to me when they were first brought up in a Laidlaw talk session. However, alongside this second Laidlaw summer, I have been doing a lot of self-reflection in my personal life which I have a feeling has happened to many people during COVID times. It turns out that much of this is entirely relevant to my leadership development, especially in this category of self-leadership, though in all honesty many of these connections have only very recently been made while trying to write this and other reflective Laidlaw pieces.

Something I've identified recently was that while my motivations have drastically changed since being in university, I hadn't really questioned my life goals or general beliefs accordingly. I used to solely be driven by the abstract, believing that investigating the structure of the universe was one of the most noble goals, having relatively derisive views towards more applied disciplines. Now however I have concluded that I don't see the same value in studying something for which humankind probably won't be around for long enough to experimentally verify. Instead, I have decided that working on what I can to try help combat a challenge like climate change may provide me with a far more satisfactory life even if I am unsuccessful. Much of this sort of thinking and understanding came during and after listening to the academics speak about their work, the scientific politics and their interests at the conference. I think it brought me far more into the reality of the significance of the decisions I am about to be making, with less focus on their greater context in my life and more on figuring out what I think I will enjoy while I am doing it. Also reminding me that it is possible that should I choose well, I could spend my entire life in a related field, a duration of time I cannot even begin to comprehend.

One of the greatest challenges throughout my time in Laidlaw has surprisingly been finding a primary class in which to do my project. It took 4 months and many failed avenues for me to find someone to get me in touch with a teacher in a suitable school. During this time, I tried to get in contact with interested primary school teachers in many ways, through university channels, my own personal contacts and even family friends, but the most interesting attempt was suggested to me during one of Laidlaw's Action Learning Set sessions. One of my fellow Laidlaw cohort had been browsing the Laidlaw Network and had read a blog post written by another scholar, a student from the University of York. They had been interviewing and creating a mailing list of primary school teachers as part of their own Laidlaw project. I contacted them via the Laidlaw network and they quickly responded, sending my advert out to their relevant contacts which I appreciated greatly.

Despite the repeated failures I felt through this process, I am glad to have gone through it. In the end I have learned valuable things from the experience, such as that I deal with stress poorly, this being an instance where I became overwhelmed with the idea of a task. For months I stressed over not having a school place, not being able to do anything about it with primary schools being closed. After this was quickly solved a couple weeks into the new term, it's obvious now how unnecessary and counterproductive it was for me to stress in that way. Looking back, I can see that the same has often been true, which I have taken as proof that if I were able to deal with this now, I will live a much happier, more productive life.

I now also recognise that I must be more assertive at times, in this case when following up with unanswered emails. Despite giving myself 6 weeks before primary schools broke up, the time I'd been advised that teachers stopped responding, I didn't manage to get a single response from a teacher. This was because over my exams I was not on top of following up on unanswered emails because I didn't pay attention to the time which was passing before I would receive a response, not having set calendar deadlines or made any real plan. This was compounded by the fact that my supervisor had both warned me not to leave it too late and reminded me of the importance of following up, telling me that it wouldn't be rude since they had agreed to work with me and that it was their job. This has been a reminder to listen more actively to people, taking note of advice especially that of those more experienced.

Overall, my experience at Laidlaw has helped me to develop into a much happier, more productive person, giving the opportunity to push myself and drive my own project, which I found to be a vastly distinct experience to anything I had done so far in university.

I would like to thank my supervisor, Dr Chris Hooley, for his support and guidance throughout the project. I would also like to thank the entire Laidlaw team, especially Lord Laidlaw himself, who made the Laidlaw Scholarship program possible.