

Dear Newnham US Alumnae,

My name is Ella, and I am a second-year undergraduate studying Biological Natural Sciences aspiring to work in scientific research.



This summer, I will be spending three months at the Ottawa Hospital Research Institute (OHRI) in Canada investigating the molecular and cellular mechanisms of chemoresistance in ovarian cancer. In my opinion, this is not only an incredibly meaningful cause, but also an excellent opportunity to stretch my academic capabilities, and the perfect chance for personal development both in terms of career choices and maturity. I hope to share my excitement with you, and sincerely hope for your support!

Ovarian cancer is the fifth most common cancer seen in women, and despite advancements in our understanding, chemotherapeutics and palliative care, remains as the most lethal form of gynaecological cancer. Chemotherapy drugs quickly face the hurdle of chemoresistance upon their usage: mutations in even a small number of persisting cancer cells can result in their desensitisation to treatment. Upon their proliferation, the patient would relapse into a second bout of malignancy that would prove much more difficult to treat than the first.

Dr Benjamin Tsang, who has been working on various types of women infertility for over 30 years at the OHRI, has successfully identified several of the gene mutations that contribute to this chemoresistance hurdle. Amongst them is a mutation of the highly coveted p53 protein – the “molecule of the year” – that controls regulated cell-death. p53 mutations are best known for their causative effect in cancer; however, Dr Tsang was one of the first to discover that they also play a continuing role in malignancy through the establishment of chemoresistance.

The question of how this occurs will be my main research focus this summer. I had first become interested in the mechanisms of p53 action after it had recurrently appeared in different modules of my course, from embryonic development to death and disease; it struck me how pivotal p53 was in maintaining a healthy, functioning organism as a whole. To encounter so many well-characterised, textbook roles of p53, and now have the opportunity to work such a newly discovered role in depth, is exciting to say the least.

Provisional placement timeline:

- *Week 1:* Familiarise with the lab, fellow researchers in the lab and each of their projects. At the end of the week, Dr Tsang and myself will discuss which projects interested me the most, and from there, **develop a research question of my own;**

- *Weeks 2-3: Training on relevant experimental techniques* that will be of use to my project until reliable, potentially publishable results can be consistently achieved;
- *Weeks 4-13: Work on my research project under the guidance of Dr Tsang and an intermediate mentor, with whom I will meet at least once a week.* Lab reports and presentations will also be presented to the rest of his research groups, both in Canada and Korea, during the lab meetings in the duration of my placement.

I feel extremely fortunate in that these three months place such emphasis on the fostering of critical thinking: not only will I have the chance to work on my own research question, but I will also be guided through the thinking process behind developing one. This extra support is truly more than I could ask for; it is in my firm belief that cultivating their mindset at the OHRI – above anything else – will help me to best understand the nature of scientific research.

It is a learned attitude rather than manipulative skills that I hope to take away with me after this placement. As the time to select and apply for a post-graduate degree draws ever closer, I believe it is important to consider that a critical way of thinking will ultimately serve me better in all my future pursuits than a specific set of hard skills alone.

It is by this same token that I have tried my best to complement the academic rigor of Cambridge with a medley of different student societies. The experiences that I have come by thus far have vastly enriched my Cambridge life:

As an international student from Hong Kong, it is all too easy to become absorbed in the bubble of student life abroad and fall out of touch with the goings on in my home country. It was for this reason that I initially became involved in the Cambridge University Hong Kong and China Affairs Society (CUHKCAS), a society numbering over 600 inclusive of alumni, in which I was elected as Internal Secretary.

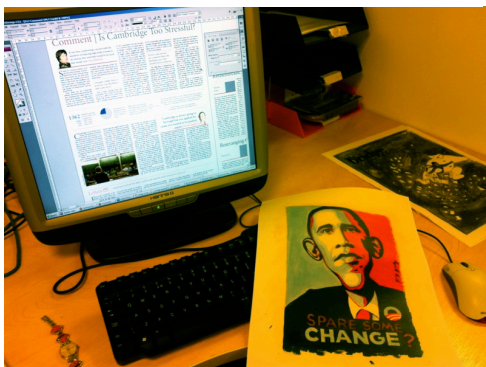
As part of the committee, I became much more involved and had many opportunities to speak with prominent individuals about issues that directly affect my home. Just recently, The Right Hon. Lord Wilson of Tillyorn, penultimate governor of Hong Kong prior to its handover from British rule, explained to me how the vestiges of British colonisation in Hong Kong have been preserved by the Sino-British Joint Declaration that he had a hand in drafting, and which defines the unique identity of our city.



Myself (2nd from left) and my fellow committee members with Lord and Lady Wilson (centre) at the CUHKCAS Annual Dinner, an event which we organised

I also have a great passion for writing and publications – indeed, my secondary career interest after biological research is scientific writing – which I have pursued as the Deputy Comment Editor of The Cambridge Student (TCS), a student-run weekly newspaper. This has been an immensely enjoyable experience; I had initially chosen to participate in TCS over a more science-based publication for the opportunity to be a part of a more diverse team. As it turns out, I have been able to meet and work with a committee mainly composed of historians, economists and English students who, despite everyday differences in political and artistic opinion, share the common enthusiasm for making TCS a success week after week.

The Cambridge Student



Setting pages and artwork for a review of Obama's achievements halfway through his term in office



Charity hitchhiking to South Germany for Jailbreak 2011, an annual Cambridge Raise and Give fundraising event

Recently, I have also participated in a charity hitchhike in which teams travel as far from Cambridge as possible within 36 hours, without spending any of my own money. This was truly an eye-opening experience in itself, as my friend and I reached South Germany, fueled by the generosity of strangers alone.

The significance of charity work by no means falls on deaf ears in Cambridge; a close group of my friends and I are in the process of volunteer recruitment for a school-building project in Cambodia (Cambridge Hong-Kong Operation International Children's Education, or CHOICE), an initiative which we built from the ground up. I have left a hard copy of our promotional booklet that I compiled as Publicity Officer with the Tutorial Office, and hope that alumnae in Cambridge will have the chance to see the result of our efforts.

It is through these experiences in which I have matured the most in my time as a university student, and I hope that I have adequately conveyed my enthusiasm for actively seeking out new opportunities to challenge myself.

I see this summer – three months abroad working with pioneers in their field – as one of the biggest and most rewarding challenges that I have faced thus far. I will be immersed in the study of one of the most researched proteins, p53, in the context of

treating one of the most unforgiving diseases, ovarian cancer. Whilst I acknowledge that I myself am unlikely to produce any groundbreaking findings in my time limited time at the OHRI, I am still fortunate in that I will have the chance to discuss other projects with the many scientists in the lab, if only to experience them vicariously.

In addition, not only will this summer help me to decide whether or not I wish to pursue a career in scientific research, but it will also equip me with a set of skills in both scientific thinking and specialized hands-on experience which I can directly apply in my Part II project, in either genetics or pathology. I also trust that these skills will stay with me beyond graduation, whether or not I continue with scientific research, and carry me through any future degrees and careers paths that I may walk. Furthermore, the chance to experience the scientific community of a different continent will open up many doors, which I would be happy to consider.

I truly hope that my cause is be one that you deem worthy of the Newnham US Alumnae's support. Thank you for your time and kind consideration!

Best regards,

Ella Fung

Item	Estimated cost (USD)
Accommodation <ul style="list-style-type: none"> • University of Ottawa student accommodation • US\$900/month Source: http://www.ottawaresidences.com/english.php	\$2700
Travel <ul style="list-style-type: none"> • Return economy-class airfare from London, UK to Ottawa, Canada via Air Canada Source: Expedia	\$1478
Living Expenses <ul style="list-style-type: none"> • Assume \$25 per day • \$175/week x 13 weeks 	\$2275
Insurance <ul style="list-style-type: none"> • US\$80 for 31 days + \$18 per additional week (for 8 additional weeks) Source: AIA	\$224
Total:	\$6677

Additional costs can be covered using personal finances.