Newnham US Bursary 2017 – Report to the Newnham US Committee
Máire Lawlor

This summer I had the incredible privilege of visiting academic collaborators based in California and the Hawaiian Islands as well as attending an international genetics conference in Minnesota. I am deeply grateful to the Newnham US Committee for their overwhelming generosity and kindness in funding this trip. Thank you!

To provide some background, I am currently a final year PhD student in the Transmissible Cancer group based at the Department of Veterinary Medicine. My research focuses on the biological phenomenon whereby cancer cells can become infectious agents. Clonally transmissible cancers can be transmitted between individuals by the physical transfer of living cancer cells. One such cancer, called Canine Transmissible Venereal Tumour, or CTVT, occurs in dogs and is endemic in dog populations around the world.

I’m interested in using genomics to unravel the evolutionary processes driving the emergence of transmissible cancers. I have also become increasingly interested in cancers in wildlife, particularly in California sea lions and green turtles, and the potential that such epidemics could be as a result of undetected transmissible cancers.

St Paul, Minnesota

I began my travels in the ‘Land of 10,000 Lakes’ otherwise known as Minnesota. In St. Paul, I attended the 9th International Conference on Canine and Feline Genetics and Genomics, a major conference in the field of animal genetics and only held once every two years. The conference was a wonderful opportunity to meet with leading researchers and veterinarians in the
field of canine genetics as well as a chance for discussion and striking up new collaborations.

An especially memorable conference dinner was held in the Wabasha Street Caves along the shore of the Mississippi River. During the Prohibition era, these sandstone caves were used as a venue for illicit speakeasies. I learned about the surprisingly interesting history of the state, including the fact that Minnesota is famously, and incongruously, home to Spam, Prince and the creator of Snoopy, Charles Schulz. A chance meeting with one of the speakers at the conference has since then led to an exciting new collaboration with a veterinary bioscience research group based at Texas A&M University.

San Francisco, California

After a brief return to the UK, my next stop was San Francisco where I had arranged to visit Dr Frances Gulland, an expert in marine mammal diseases, at the Marine Mammal Center. Dr Gulland has worked at the Center for almost 24 years and when I arrived there she was in the middle of a Skype call coordinating a last-ditch effort to save the...
remaining vaquita porpoises in the Gulf of California from near extinction. It’s impossible to capture in writing exactly how vital and inspiring Frances is in person. Having already worked with her on a paper about a cancer epidemic in California sea lions, it was amazing to finally meet her in person thousands of miles away from Cambridge.

The Center itself is nestled in the scrubby hills of Sausalito and surrounded by a fantastic diversity of marine life. The facility resounds with the distinctive barks, grunts and splashes of its sea lion and seal inpatients, though the Center also takes in whales, dolphins, sea otters, and sea turtles. I had the chance to sit in on the weekly (and sometimes very gory) pathology round-ups as well as observing the dramatic release of a young bull sea lion that had recently been rehabilitated at the Center.

In my downtime, away from the Center, I was lucky enough to meet with the inimitable Audrey Richards, a Newnham alumna, now based in Berkeley. We visited an exquisitely curated exhibition on ‘Degas, Impressionism, and the Paris Millinery Trade’ organised by the Fine Arts Museums of San

View of the Golden Gate Bridge on the boat back from the Farallon Islands
Francisco and also the nearby Holocaust Memorial at the Palace of the Legion of Honor.

Audrey regaled and delighted me with tales of her round the world trip, before settling in America, as well as stories of her grandchildren. I spent the rest of my free time scouring the Mission for the best burritos, hiking across the Golden Gate bridge and rounded off my visit to the Bay area with a whale watching trip on the Farallon islands, a wildlife refuge, 26 miles off the coast of San Francisco.

Oahu and Maui, Hawai‘i

The last stop on my travels was Oahu. I landed at last in a very humid Honolulu airport feeling totally out of place without a floral print shirt and lei. There I met with Dr Thierry Work, a wildlife disease specialist working at the U.S. Geological Survey National Wildlife Health Center. We had some very fruitful discussions about cancer biology, the native Hawaiian wildlife and the plight of the green sea turtle. Dr Work is a leading researcher on fibropapillomatosis (FP) having studied the disease for almost 25 years. Since returning to Cambridge, with the support of my supervisor, we have initiated a collaboration with the U.S.
National Oceanic and Atmospheric Administration looking into the aetiology of this highly prevalent disease.

During my final days in the US, I travelled from Oahu to Maui and volunteered with members of the Hawai‘i Wildlife Fund (HWF) watching over green turtles (honu) basking on Ho‘okipa, a popular touristic beach. Honu Watch is just one of many important conservation related projects run by HWF. Basking turtles are extremely vulnerable and easily disturbed by tourists and bathers. We even had to intervene when one beach-goer attempted to sit his toddler atop one of the larger turtles for a photo.

When I wasn’t meeting with other researchers and conservationists, I had time to hike the Diamond Head trail, snorkel in the clear waters of the North Shore beaches and even try out Barack Obama’s favourite shaved ice shop in Kailua.

It’s difficult to avoid sounding clichéd when describing just how meaningful this trip was for me. It was the definition of once in a lifetime and I am extraordinarily lucky, as a Newnham student, to have had this opportunity. I am enormously grateful to the committee, and in particular to Margaret Campbell, for their support.