

## My Time in Thailand and at KMUTT

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My name is Callandra Moore. I am an Engineering Science undergraduate student at the University of Toronto, though I am originally from Arizona. During the summer of 2019 after I finished my first year of studies, I was privileged to be a research intern at King Mongkut's University of Technology Thonburi (KMUTT) under the guidance of Professors Jonathan Chan and Kwanchanok Pasuwat. I applied to be a research intern through my program at UToronto, where Professor Jonathan Chan completed his undergraduate degree.

Currently, under Dr. Kwanchanok Pasuwat there have been separate research foci on both the development of chitosan films which can be peeled from acrylic surfaces and on how proteins secreted from live cells help heal diabetic wounds. The current method of using live cells to treat diabetic wounds involves layering incredibly delicate sheets of individual cells. Professor Kwanchanok would like to integrate these two aspects of her research by culturing cells on chitosan films, allowing the cells to be applied to the patient on a more durable bandage. The goal of my project was to modify the existing chitosan film manufacturing procedure in order to make the chitosan films suitable for cell growth. At the beginning of my placement, I was introduced to the basics of cell culturing and various methods of measuring cell proliferation. My day-to-day work often consisted of – to be frank – a lot of pipetting and reading various research articles on chitosan's applications in cell culture. In addition to my cell culture work, I was able to find time to learn more about machine learning techniques.

While researching at KMUTT, I have had lots of positive mentorship and guidance. Especially helpful in my experiments and in Thailand in general were the two PhD students with whom I was working, Manow and Ant. They took time and effort to not only train me in the basics of cell culturing and help me develop my experimental procedures, but also to introduce me to Thai culture and to university life at KMUTT. Though the language barrier was at times an obstacle in receiving instruction, they have taught me extensively about cell culture research, from how to properly design and record experiments to how to use a pipette. In addition, they introduced me to different sorts of Thai food and helped me expand my culinary experience in Thailand beyond restaurants with pictures. Meeting and working with them was one of the highlights of my experiences in Thailand.

Through living in Thailand for three months, I have pushed the boundaries of my comfort zone by travelling around Thailand and around Bangkok independently. I was able to see all the most touristy places in Thailand – the Grand Palace, the beaches of Phuket, the old capital of Ayutthaya – but also immerse myself in Thai culture. I had lots of excellent food from street vendors and walked through local markets selling fruit I had never even seen before. Through walking through museums and temples, I was able to learn about Thai history, Buddhism, and the artistry that went into the historical buildings and places of worship. One of my favorite outings was when Jonathan took me and other interns to Erawan Waterfalls in Kanchanaburi Province. I was also able to take a break from the hustle and bustle of lab work to travel to Phuket; Chiang Mai; and Siem Reap, Cambodia. In navigating Bangkok, managing my own time, and communicating despite language barriers, I feel that I have grown more independent, more courageous, and more aware of lapses in my understanding of my surroundings. I will always be grateful for this amazing opportunity to research in and experience Thailand.