



Monday, 19 June through Sunday, June 25, 2017
Newsletter #5

EXPERIENCING UP'S AND DOWN'S IN THE LAB: BEGINNING TO RESEARCH THEIR CULTURAL PROJECTS

In the laboratory, research projects are progressing at different speeds. Research rarely progresses in a straight line, often twisting and turning here and there. Let's face it, if research was easy, we would already know all the answers. Here are some comments our MHIRT students had this week:

Ashley: "Today, I will be doing dilutions and incubating two more plates for MCF-7 at 1:30pm, 1:45pm. I am hoping with the three plates, (plus two I conducted last week) that I will be able conclude cytotoxicity screening and move on towards the next step of this project." **Brianna:** "This week I worked on the experimental design, and autoclaved the glass bottles that will be holding the media." **Brad:** "This week we continued with PCRs and ran a few qPCRs with varATS primers to see if they would be useful for detecting *Plasmodium* DNA in saliva. We also started another MELGA assay that will be finished next week, and we learned how to use the MAGPIX machine to measure antibody levels in a sample." **Brithney:** "We performed DNA extraction on all 7 [new jellyfish] samples and got the highest DNA concentration amount that I've ever seen since I've started working here, which is amazing! Next, in this upcoming week, we will perform PCR and send our data out for sequencing....."; **Cindy:** "This week has been an interesting one. In the laboratory, we restarted the cloning portion of my project." Hopefully, when we extract our plasmids and test them this coming week, I'm praying that a lucky colony will contain our recombinant plasmid." **Dwayne:** "In the beginning, STATA is really mind-boggling to learn but as time progresses, you'll get used to it. Practice is the key here. You'll make lots of mistakes (showing red colors) but those mistakes challenge you to try again until you get a table, summarizing the variables being compared to." (left: Dwyane and mentor Gii).



comfort ability due to language barriers and fluidity in more northern states. This was actually my last time in the field shadowing. And now I will be looking into macro inventory through local grocery stores." **Jovikka:** "This week, Yukie demonstrated how to use MAGPIX.



MAGPIX is a compact system that can measure multiple beads simultaneously. It is utilized to detect antibodies in a sample." **Lean:** "For my research progress, I believe I'm ready to analyze subjects now." **Mark:** "So this week my research took an abrupt stop with inconsistent ELISA results. I redid my ELISA to detect for TNF-a and this time around I did get somewhat expected results with highest level of cytokine response in both my two organisms at the 48 hour mark," **Michael:** "In terms of science and research, I got to help one of the

grad students with her Western blot and revisit the basics of gel casting since I've been so fortunate to have the luxury of pre-cast gels in Dr. Lehrer's lab. I also learned more about predicting peptides in low and high resolution using the in silico software Dr. Tandon has shown me (Net CTL and PEPVAC)." **Sasha:** "We also figured out how to use the AKTA machine, which is an automated method of purifying antibodies with the Protein A column. At this point we think that may be the most effective for our purification needs."

Today, the Newsletter is highlighting one Cultural Project and sharing "other fun information" about the adventures of 4 other MHIRT students. Stay tuned. We'll get to everyone by the end of summer.

Culture Project: Cindy: Thai silk Making.

“Saturday's visit to the Jim Thompson House was fun! I was excited to start on my cultural project, and our journey from the Ratchathewi BTS station took us alongside the San Saeb Canal. It was nice to be able to briefly escape from the bustling streets...” “ When we arrived at the Jim Thompson House, Ashley, Brithney, and I toured the house filled with many ancient artifacts that Jim Thompson had collected from all over the world.” “He helped to revitalize the Thai silk industry, and I learned that he utilized old Chinese printing blocks as a means and inspiration for his silk designs. In the courtyard, we had the opportunity to observe how the silk filaments are first unwound from the cocoons by boiling them in water (white cocoons left), combined to form a thread of raw silk, and then spun into long bundles of silk (colored silk-right). I was amazed as I watched the individuals operating the wooden equipment manipulate the raw silk with ease and skill. I also had the chance to try my hand at the silk threading process! I was pretty thrilled, and the experience truly made my day. I am looking forward to continuing to learn more about the silk manufacturing process when I visit Baan Krua Nua, a local silk weaving community, and enroll in a silk weaving workshop.”



A weekend in Chiang Mai working on a conservation project. Lean

“As for yesterday, it was a really special day for me. I took part in a tree planting event that took place in Mae Kampong (up in the mountains) as a volunteer. Mark wasn't able to come with me since he had plans with his lab group. I started my day arriving alone in this event (transportation and lunch were provided), however, I ended my day with an amazing and funny bunch of Thai locals that I now call my friends. All it took was one day to establish one of my most valuable friendships and experiences I've had in my life. To see hundreds of people in the Thai community taking part in this project on conservation efforts was very touching.”



A dream come true in Palau. Brianna. “Sunday and Monday, I was open water scuba certified with one of the lab students. It was amazing being able to breathe under water and dive to 50ft! The coolest thing I saw was a 2ft long giant clam and a sea snake. My dive instructor has been diving for 40 years. He said not many Palauan girls dive (he thought I was Palauan). This is because traditionally the men dive and fish, and the women stay in the shallows hunting for giant clams.” Congrats, Brianna. Yep, her family approved!

Exploring the culture of Cameroon with Jovikka and Brad “We drove northwest for about 5 hours. The drive itself was a cultural event. We got to see a bunch of towns, stop at a market on the way for lunch, and see all kinds of foods for sale on the street. On Saturday we went to a museum in a town called Bandjoun. The museum had cultural artifacts from the area, but it also functioned as a warehouse for items used in ceremonies. Next to the museum was a huge structure that functioned as a town hall. It took 500 people two years to complete the building (picture).”

