



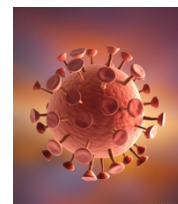
Monday July 3 through Sunday July 9, 2017
Newsletter #7

PANIC SETS IN AS MHIRT STUDENTS REALIZE THERE ARE ONLY TWO WEEKS LEFT FORTUNATELY, THEY WERE ABLE TO SPEND A QUICK WEEKEND TRAVELING

When the students left in late May, eight weeks seemed like a long time. MHIRT students were optimistic about getting lots of data and having statistically significant results. Now with a little over two weeks to go, reality is beginning to set in and some realize they won't have time to finish their research projects, or get as much data as they would like, or even reach a logical stopping point. Alas, this is *normal*, as experimental research is usually a lot slower than we think it should be. But, don't worry, research is a team effort, and the project will ultimately be completed. This week, we will highlight 4 research projects; two with direct public health significance and two projects that are looking for new drugs to treat cancer and diabetes.

Public Health-related Projects

HIV is a viral disease of global importance. Today, the life span of individuals living with HIV has been greatly expanded by the use of drugs; however, individuals who are infected and those who are likely to become infected, need to be monitored closely. The prevalence of HIV is high in Thailand among men who have sex with men and transgender women (TG). At the Thai Red Cross, **Dwayne** is working with Dr. Reshmie Ramautarsing, at local HIV clinics to try to identify the best methods possible for providing good health care services to this under-served population. They are conducting a survey about the good and bad aspects of the current services provided and are trying to figure out how to make the system work better and reach more people. Dwayne has had an opportunity to see how the questionnaire is administered, enter results into a database, and is helping analyze the results. Clearly, new and more appropriate services at health clinics are of public health importance.



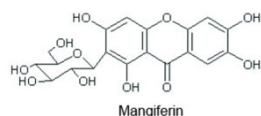
Around the world, diabetes is a major problem. There are two types of diabetes, genetic (Type I) and life-style associated (Type II), although there may be a genetic component for susceptibility as well. Diabetes is a major health problem in the Republic of Palau. Accordingly, **Jessica** has joined Dr.



Christopher Kitalong and his team who are conducting a "Food Habits Survey." The survey is being distributed island-wide and asks individuals about the food they eat for a week. One aspect is to determine if people are eating locally-grown (health) food or imported processed (unhealthy) foods. The survey is being administered to people of different ages. Hopefully, once the research group understands the source of food, they will be able to make recommendations about how Palauans who are at risk of diabetes can modify their diets.

Finding new drugs for cancer and diabetes

Many of our current drugs were originally discovered in plants that have been used traditionally as herbal remedies. In Palau, a compound called mangiferin has been isolated from traditional medicines used to treat diabetes. This summer, **Brianna** and Dr. Kitalong are culturing pancreatic cells *in vitro* with and without mangiferin to see if the compound will stimulate pancreatic cells to make insulin. If so, it is possible the compound might become a new drug for the control of diabetes.



Natural products have been a great source of anti-cancer compounds. *Vernonia cinerea* (VC) has been used in traditional medicines of India, Africa, and Asian origins to treat cancer, as well as inflammation, microbial/viral activities, and

diabetes. The compound of interest is hirsutinolide-type sesquiterpene lactones 6 and 10 and has been attributed to having cytotoxic, antibacterial, and anti-inflammatory activity. So, at Rangsit University, **Ashley** is working with Dr. Suchada and her UH-Hilo mentor, Dr. Leng Chang, to evaluate the activity of hirsutinolide on breast cancer cells. They are using an MTT assay that gives a color reaction proportional to the number of live cells. It could take years to evaluate the efficacy in hirsutinolide in breast cancer, but the search for new cancer drugs is of utmost importance.

WEEKEND GETAWAYS - This past weekend, MHIRT students from Bangkok and Rangsit University went to visit Lean and Mark in **Chiang Mai**. After their flight, everyone was hungry and experienced Northern Thai food (photo). “That evening,” Lean says “we took them to the famous Chiang Mai Night Bazaar.” “The next day, they wanted to visit the temple I went to: Doi Kham.” “Because it was a Buddhist holiday, many locals



were there more than tourists and I was very happy. Everyone had incense sticks and flower offerings while praying.” Of course, a visit to see the elephants was required. Brithney reports “I am so extremely happy that we decided to do so because one, it was very nice to get away from the city (Bangkok) and finally see trees instead of tall buildings, and two I finally got to touch an elephant! Now I can cross that off of my bucket list J.” “I had a blast at Chiang Mai and it was great to finally be reunited with the whole Thailand group again. “



In **New Delhi**, Michael reported, “This past weekend, I returned to Old Delhi with Saleem, my go-to rickshaw driver. I visited Jama Masjid and climbed to the top of one of the minarets (see photo). Afterwards, Saleem took me to this holy crematorium that runs 24/7 where people take their loved ones’ ashes and throw them into the river that flows down to Varanasi.”



In Cameroon, the group traveled to **Doula**, the economic center of Cameroon, to visit friends and examine fabric (Jovikka’s cultural project) and then went to the beautiful seaside town of



Limbe. Brad mentions, “It was nice to be in an anglophone region for once, where I could assume people spoke English, but I still found myself saying thank you and asking how much things cost in French. There was a lovely black sand beach there, and we ate really fresh seafood. We



actually got to choose the fish and they were grilled for us.”

In **Palau**, “On Saturday, we went to Peleliu for a field trip with the Step-Up students to survey coconut trees and do the food habit survey. Peleliu was heavily bombed in World War II. The island was very quiet, and did not have as many people as compared to Koror.” The Step-Up students were surveying coconut rhino beetles that do damage to coconut trees.

