Honoring Dr. Marcel Tsang As He Retires from CAFNRM

By Dr. Christopher Lu

Long time faculty Professor Marcel Tsang, is retiring, after decades of exemplary service at College of Agriculture, Forestry and Natural Resource Management. A native of Mauritius, Dr. Tsang built a professional career and a family in Hawaii. He moved up through the ranks to full professor at the University of Hawaii-Hilo.

Dr. Tsang, a trained agricultural engineer by Louisiana State University, has taught a number of core courses at the College including Farm Power, Farm Structures, Introduction to Agricultural Mechanization, Irrigation Principles and Practices, and Microcomputer Applications in Agriculture. Students and fellow faculty members perceive him as a dedicated, sincere and caring professor. Dr. Tsang served as the curriculum committee chair for many years and assured the curriculum structure to be consistent with the mission of the College. His passion of hands-on education has permeated through the curricula with a lasting effect on agricultural development in Hawaii. He has advised, guided and excelled many students throughout their academic careers.

(Continued in page 8)

CAFNRM Congratulates Graduating Class of Fall 2016

A total of 14 students will be graduating from the College of Agriculture Forestry and Natural Resource Management with a Bachelors of Science in Agriculture and specialization in either animal science: pre-veterinary medicine (VET) track, tropical horticulture (THO) and tropical plant science and agroecology (TPSA). Some of students from CAFNRM and other academic programs will also graduate with certificates in beekeeping (AGB). We congratulate the following students who will be honored and recognized during Ag Seniors Night Banquet on December 16, 2016 at the UH Hilo Farm Pavilion and whose degrees will be formally conferred on Dec. 17 at UH Hilo Campus: Calvin John Arca (TPSA); Cyrus Kalaiopuna Aton; Zoe Doreen Banfield (AGB); Brandon Leon Carvalho (THO); Kyle James Davis (TPSA); Jonah G. Dedrick (TPSA); Michael Montgomery Dowsett (AGB); Adrian Vincent Frazier (VET); Kyle Alexander Frazier (VET); McKayla Faith Meyer (VET); Britni Taylor Evelyn Schock (AGB); Zachary Jordan Solarte (THO); , Santana Jacqueline-Ka'uilani Soria (VET); Elenoa Temukisa Taisali (TPSA) and Timothy Michael Zimmerman (TPSA).
CAFNRM Sophomore Alexis Stubbs represents UH Hilo for Students Sustainability Coalition of Hawaii

The beginning of this month held opportunity for a student sustainability representative from each UH Campus to join and collaborate on student sustainability driven initiatives and prepare for the upcoming World Youth Congress. Alexis Stubbs, a sophomore in CAFNRM joins the coalition of students from other UH campuses.

Camp Pālehua hosted a 3-day retreat in Kapolei, ‘Oahu November 11-13. The retreat was titled Aha Ho’owaiwai, A Whole Community Approach to Wellness, and aimed to reflect the strength of coming together, sharing and caring as a community all in preparation of the Makahiki season. Community from the entire Hawaiian archipelago were present.

The World Youth Congress (WYC) gathers youth leaders from across the globe every two years to discuss global themes. The WYC is entirely youth driven, planned, and executed which gives youth a unique opportunity to build skills and collaborate with high-profile decision makers. Each congress is run by Peace Child International, with the 2017 WYC being co-hosted with the University of Hawaii System. Previous locations have included: Rio, Turkey, Morocco, and Scotland. The first WYC was actually hosted in Hawaii, and WYC still retains Hawaiian practices such as starting with an oli.

The University of Hawaii will be hosting 250 international delegates, including 200 Hawaii delegates between June 24th and July 1st 2017. Delegates range between ages of 18-25 and will participate in local action projects across the state. A UH Student Sustainability Representative will be coordinating local action projects on their home island and our UH Hilo Representative will be Alexis Stubbs, student of Tropical Horticulture. The local action projects will provide opportunity for delegates to engage and work alongside with the local community and give delegates an idea of Hawaiian guiding principles such as the ahupua’a system. This all contributes to Hawaii’s Aloha+ Challenge and our states goal to lead sustainability by example for the world.
Hidden Gems around UH Hilo Farm and Campus

By Trevor Dopp

In the far corners of the UH Agricultural farm at Pane‘ewa, exist a few forgotten gems, that the prolific growth of the forest has encroached upon. Underneath the vast network of fast growing grasses and vines, lie an untapped resource of agricultural potential. Through the shuffle of changing class schedules and finance/budget driven management of resources, past students’ labor and planning awaits to be mined by future semester’s sweat and tears, as long as class enrollment permits. This issue was directly addressed by Dr. Aracon’s HORT 352: Tropical Fruit Crop Production class this semester. Two major reclamation projects were taken on during lab time, as well as a collaborative effort in the final week of classes between his AG230, HORT 262, and HORT 352 classes. The first project was thinning, harvesting, and defoliating the neglected banana patches at the back end of the farm. At first glance they were more “Mess-a” than Musa acuminata, but after removing dead foliage from the producing plants, and removing all ripe bunches then cutting down those plants, they were once again in top shape. The patches were also thinned out to give airflow. Unsurprisingly to any AG students with farm-field experience, fire ants and prevailing rains were a challenge. It took three attempts to finally finish, and in a last act of mercy to all healthy cultivars remaining, one stand of bunchytop infected M. acuminata were removed to insure future health of their neighbors.

Next the class tackled an overgrown row of mango (Mangifera indica) on the backside of the farm. There they found head high cane grass, a web of vines choking out the trees, and multiple fallen branches that would need to be removed. The first visit was met with yet more rain, so they postponed for two weeks and with no rain to hold them back, handled the situation with efficiency. All vines and grasses were cut, and the dead branches were hauled off, leaving it looking much cleaner, and hopefully more productive than before. The final project was located at the AG230 plots near the Nowelo bridge and graveled parking lot on campus. Its original date was planned for December 2nd 2016 but due to flash flood warnings it had to be rescheduled for December 9th. The weather was beautiful that day and many students showed up, enticed by the opportunity to add a few extra credit points to their final grades. Every thing was mowed, trimmed, and weeded. A big mulch pile and pile of biochar were moved out of the parking lot, and the long standing and overgrown patch of sugar-cane was harvested, and cut back to the ground, opening a view of the gardens from the road, and all was well.
Indonesia

After presentation of an invited talk entitled “Phosphorus, Sustainability, and Advancing Nutrient Management” at the 3rd International Seminar on the Sciences in Precision and Sustainable Agriculture in Bogor, Indonesia (near Jakarta on the Island of Java) I visited Bogor Agricultural University, and toured their facilities and field stations. This included visiting their climate smart agriculture program in the Department of Geophysics and Meteorology, visiting with their faculty and some local ag industry leaders, and presenting a talk on the chemistry of phosphorus in agricultural systems to their chemistry department which was followed by an overview of agriculture in Hawai‘i. Their climate smart agriculture program is connected to several remote real-time rainforest monitoring stations throughout the country with several more under construction.

Next my wife and I then flew to Padang in West Sumatra where we were hosted by 1986 UH CTAHR alumnus, Dr. Ardi, who is now the Dean of Agriculture for Andalas University. For several years Dr. Ardi had been looking forward to a visit from someone from UH agriculture to interact with their students. While Andalas is a university of about 20,000 students, the city of Padang was a lot more rural and less congested then Jakarta and Bogor. After presenting the same talks at Andalas University for their faculty and students we toured the surrounding areas used for agriculture, forestry, and mining. Many of the farms were mixed operations where some family members raised horticultural food crops while others (usually women) raised ornamentals and had floriculture operations in greenhouses primarily for local markets. Vegetable farmers discussed huge pest and disease challenges and how they favored integrated approaches to deal with the problems.

On the larger scale in Indonesia there were of course the massive and highly controversial oil palm plantations, new plantings of Arenga sugar palm plantations for ethanol that are claimed to be more environmentally friendly, and tea plantations. Sugarcane and rice were grown primarily by small independent farmers. At both Andalas University and Bogor Agricultural University I was informed that some of Indonesia’s major agricultural challenges are that most of the farms are small, the farmers cannot easily increase their scale for improved economic efficiency, and that the farmers are not usually organized into effective cooperatives to improve their positioning in the marketplace to purchase inputs and improve product distribution and sales. I was informed that the sugarcane industry suffers from inefficiencies associated with antiquated mills and lack of cane feedstock quality control with all the small independent growers. Similarly it was conveyed that rice production would improve if the better farmers could more easily expand their land holdings. The water and fertilizer saving System of Rice Intensification (SRI) that has been widely advocated by non-governmental organizations (NGO’s) was not strongly endorsed by any of the academics or farmers that I met with. The major complaints were that it does not consistently work well across locations or growing seasons, and (or) promotes weed problems that require a lot more labor. The various “natural/nature farming” methods being promoted by NGO’s were considered crop nutrient management disasters because the supercharged indigenous microbe additions could not release nutrients from the soils and organic inputs in synchrony with crop demands and most beneficial effects were attributed primarily to the added substrates rather than the microbes themselves.

Organic farming of horticultural crops was considered highly lucrative when positioned close to large cities with a critical mass of upscale consumers with the means and desire to pay significantly greater prices. Organic farming growth is constrained by availability of high quality organic inputs of manures and composts. There were lots of discussions about improved nutrient recycling and technologies to recover nutrients from locally mined sources. As expected the views on biotechnology were mixed however people tended to be open minded about future possibilities that could help tropical agriculture better meet regional needs. Climate change was discussed with respect to greater average nighttime temperatures in the uplands, salt water intrusion in the lowlands, and more erratic rainfall distribution patterns. Andalas University already has quite a few international students through the Association of Southeast Asian Nation (ASEAN) University Network and is very interested in forming exchanges with UH Hilo’s CAFNRM and the College of Pharmacy.

Continued next page
Dean’s Corner continued…

They have one of the top five pharmacy programs in Indonesia. My one regret was not having time to visit the nearby Mentawai Islands just off the coast of Padang where there are world class waves without the crowds of Hawaii’s top breaks. Instead we took the short Air Asia flight from Padang to Kuala Lumpur, Malaysia, for the weekend to visit a family member who works there.

Malaysia

The international airport is quite a drive from the Kuala Lumpur city center and you see miles of oil palm plantations on your way into the city. Kuala Lumpur itself reminded me of a much larger Honolulu with a China Town and all. There are lots of interesting places to visit there such as the Batu Caves, the Royal Selangor pewter operation, etc. The most surprising thing was encountering quite a few Syrian and Yemenis refugees who were accepted by Malaysia as a fellow Muslim country. Based on discussions it was apparent that many were from middle class backgrounds but are now living in poverty as they used up all their savings and now lack the means to make a living in Malaysia. I did not have time to explore more of Malaysia beyond the Kuala Lumpur area.

Philippines

Next we flew to Manila, Philippines. What a difference compared to my last visit nearly five years ago! The international airport was clean and modernized, customs and immigration clearances were fast, and there was even a welcoming live band. One quickly starts to hear about the changes under their new President Rodrigo Duterte who most Filipino citizens seem to consider favorably (despite negative press in the USA and Western Europe) as they simply want law, order, and reduced corruption and habitual criminals, even if it contradictorily means going to extremes (extrajudicial actions) to implement. You also soon hear about his $3.00 book entitled “The Duterte Manifesto” which some enthusiastic supporters around the country handout to visitors for free. There is very little of the former disorderly chaos (hustlers, scammers, and insane traffic) when you exit the airport. Taxi driver’s talk about how they now comply with the metering requirements, queue up orderly, and that people will call the government hotline if they have complaints and it is not worth the trouble to risk getting in trouble. The roads from the airport to Roxas Boulevard along Manila Bay were the cleanest and the traffic was the smoothest flowing that my wife who grew up in the Philippines says that she has ever seen. The hustlers, homeless, beggars, and drug dealers were almost completely gone from the parks and Harbor Square Bayfront sidewalks near the Cultural Center of the Philip pines where we strolled on a Sunday morning. Yet one is left to wonder what became of these people and what will be done to address the underlying causes of such problems that also still plague wealthier countries that unlike the Philippines have government run social safety nets.

The following day we were flying off to Kalibo on the northeastern part of the Island of Panay to visit Aklan State University where it’s respective Colleges are located at five different campuses which we all visited over several days while being hosted by their President, Dr. Danilo Abayon, who had been looking forward to a possible visit from UH Hilo CAFNRM for several years. Their College of Agriculture, Forestry, & Environmental Science; School of Veterinary Medicine, and School of Arts & Sciences are located at the Banga (main) campus. The downtown Kalibo campus is the smallest campus yet has the largest enrollment in its College of Industrial Technology. The New Washington campus is on the coast of the highly productive Sibuyan Sea and is home to an extremely impressive College of Fisheries and Marine Sciences with its numerous commercial-scale teaching, research, and extension operations and mangrove/estuarine system restoration projects. Their fisheries program could be a wonderful opportunity for our aquaculture students to gain experience with large scale operations in the tropics. It was amazing to see what hands on Ph.D. faculty with a heavy teaching load can accomplish when they were provided considerable support staffing coupled with requirements for students to provide service to the program. This being said it is no doubt easier to mandate such hands on service by students when the government rather than tuition covers 90%+ of educational costs. The Makato campus is home to a teacher education program which places great emphasis on incorporating sustainable livelihood technologies into the curriculum. The very friendly Ibajay campus is home to their College of Hospitality and Rural Resource Management. I also found this campus to be cutting edge with their hiring of some faculty (professors of practice) with extensive upscale hotel and restaurant management experience and considerable emphasis on sustainability and ecotourism. The majority of Philippine tourism attractions are nature-based and the focus at Aklan state is on polices that strengthen rural communities while protecting the environment from human-induced degradation. Many of their students do internships at the nearby resorts and tour businesses on the world famous 4.5 mile-long white-sand island of Boracay which is 15 minutes by boat from the barangay of Caticlan in the municipality of Malay, Aklan. Boracay is definitely geared to attract the young crowd that is into marine aquatic activities, seafood buffets, and fun nightlife.

Continued on page 6
**Dean’s Corner continued…**

Accommodations range from budget to five-star however there is a definite fear that the Island will turn into the congested Waikiki-Miami Beach of the Philippines.

Finally, we visited our own Dr. Norman Arancon’s alma mater for his B.S. degree, Xavier University – Ateneo de Cagayan, on the northern part of the main southern Philippine Island of Mindanao. At Xavier we were hosted by Dr. Arancon’s former classmate, Dr. Maria “Charie” Mosqueda who is now Dean for their College of Agriculture which has 560 students. The major regional topics of discussion at Xavier were the challenges faced by farmers expanding agronomic cropping into acidic, phosphorus deficient volcanic-derived upland soils with residual andic properties (despite the fact that none of them classify as Andisols); carbon sequestration in these soils; limited farmer use of soil testing services; accelerated decline during the past decade in the economic viability of small scale farming to support a family; sustainable rural development; contracted short-term (7 to 8 year) albizia cultivation by small farmers for the Paper Industry Corporation of the Philippines (PICOP) and the limited information on potential impacts pro (increased soil N supply) or con (soil acidification) on subsequent agricultural crops like corn or cassava; rural social justice issues; and inflated Mindanao security risks disseminated in Western governmental travel advisories etc. and their negative impact on the economy and international partnerships. UH Hilo presently has an exchange agreement with Xavier however concerns were discussed regarding the fact that the exchange has been one way with none of our students going there. It was suggested that we might explore a June short course program on their campus as a bridge to entice some of our students to exchange for a full semester.

**General Observations**

Some often repeated concerns that were brought up throughout this trip were a lack of Southeast Asian cultural and historical awareness by young American’s and European’s who travel to the region. This also included some comments regarding limited awareness of the colonial legacies and post-colonial interventions by Western powers. Who can deny that general education and international cultural literacy should be improved in America? It was frequently mentioned that the role of American bridges to the region such as USAID and the East-West Center had diminished too much during the past two decades and that it would be good if more American students, especially from Hawai‘i, visited the region. Muslims in the region were concerned about misperceptions in the West and wanted it to be known that they want peace, friendship, exchange of ideas and religious tolerance and don’t want radicalization. Some conveyed that recent external influences from Saudi Arabia were instigators for extremist viewpoints relative to the moderate and more tolerant Islamic norms in the region. It is also worth noting that we received quite a bit of inquiry about the social fabric of America in terms of race relations, how mixed marriages (race and religion) work, the 2nd amendment issues, gay rights, etc. On a very positive note social scientists were happy about efforts in Hawai‘i to revitalize Hawaiian language and cultural awareness. During discussions the people we encountered would first generally state the party line rhetoric of their belief systems (religious, political, etc.) and then open up to dialogue with respectful inquiry. Some wanted to know what we thought about America’s future role in the world given numerous recent setbacks as a global policeman coupled with the increasing power of China. US President Obama was loved but often perceived as a bit too soft. Most viewed incoming US President Trump as someone who could escalate tensions with China which could definitely cause regional turmoil. This being said some openly suggested that they would like to see some counterbalance to China’s influence which they consider excessive in certain aspects. It was a good trip that left me with lots to consider with respect challenges and opportunities for our future.
Often going unnoticed until the tell-tell bump-like clusters form on hibiscus leaves, the Hibiscus Leaf-Crumbling Mite or *Aceria hibisci*, is small enough to escape most human visibility. The unsightly growth or galls are the results of feeding *Aceria hibisci*, otherwise known in Hawai‘i as the Hibiscus Erineum Mite or just the Hibiscus Mite. First identified in Hawai‘i in 1989 on the island of Oahu. Now the microscopic mite can be found on most of the Hawaiian islands and other Pacific areas, like Fiji, the Cook Islands, New South Wales, Australia in 1992, and Brazil. The adult Hibiscus Erineum mite is very small—invisible to the unaided eye. The mite is soft-bodied and wormlike, with two body regions: the gnathosoma (mouthparts), and the idiosoma (remainder of the body). Hibiscus Erineum mites are unique among mites because they have only two pairs of legs, compared with the four pairs of other mite species. *Aceria hibisci* are about 0.2 mm long and are voracious vascular plant feeders.

Interestingly, though *Aceria hibisci* can feed on a wide variety of hibiscus plants, it seems to demonstrate a preference for the Chinese red hibiscus (*Hibiscus rosa-sinensis L.*). Infrequently the mite has been seen feeding on plants of the same family, but are generally limited to the Hibiscus family.

There feeding is directly responsible for the unattractive, often-clustered and gnarled-looking, puckered bumps that affect leaves, buds and flowers, small limbs and twigs, but especially new vegetative growth (Photo 1). Often, other mites and plant insects can been seen within and surrounding the gall damaged areas. These may or may not be pests. There exists many mites and other bugs that can feed on the *Aceria hibisci*. A rule of thumb suggests that if you see quick-darting very small insects, they are potentially predatory and are seeking other pests.

Biological control consists of a broadened understanding of microscopic pests and predators. Predatory mites within the family of Phytoseiidae have been identified as having an association with the galls and it appears that when they are present, there is lessened galling over time. Chemical control methods are present, however when miticides are applied, it not only targets the Hibiscus Erineum Mite, but the helpful predatory types as well.

Happy gardening…

www.ufdcimages.uflib.ufl.edu/IR/00/00/13/47/00001/IN77700.pdf
Professor Tsang con’t…

Dr. Tsang is vigorous in pursuing his scientific curiosity. Through collaboration with scientists both within and out of the College, he has published extensively in the fields of applied engineering and applied horticulture. His contribution on the post harvest treatment of tropical fruits, vegetables and floricultural crop is evident.

The design, development and implementation of hot air and hot water treatments of horticultural crops provided growers an alternative to minimize pest infestations. Many students benefited from the hands-on experience in his research endeavor.

With an immaculate service record for the university community, Dr. Tsang is a gold standard when comes to integrity and ethics. He is respected by many as an independent, unbiased and fair individual. He assisted in guiding the College in making many unprejudiced decisions regarding academic and personnel. Because of his quality and characteristics, he has been asked more than once to serve on the leadership position in the College. Because of his passion on teaching and research, Dr. Tsang humbly declined those invitations. His friendliness toward students and colleagues alike is contagious and everyone feels comfortable to step into his office and strike a conversation whether is professional or personal.

Dr. Martin Luther King, Jr. once said: "The ultimate measure of a man is not where he stands in moments of comfort and convenience, but where he stands at times of challenge and controversy." Dr. Tsang is a good testimony being an individual who upheld the integrity and excellence throughout difficult moments of the College. We wish him a much-deserved happiness in retirement.
Looking at a package of basil from Maui, a revelation hit Mikey Pierron; why is Hawai‘i island not food sustainable? This revelation gave rise to Hilo UrbFarm, a small composting and food garden operation, located at the East Hawai‘i Cultural Center. Composting is a key practice in island sustainability. Hilo UrbFarm develops compost from paper wastes, mulch (from the County Greenwaste facility), and food scraps from local vendors including the Locavore store, Conscious Culture Café, Hilo Sharks Coffee, and Loved by the Sun. By taking greenwaste that would otherwise be added to the near-capacity landfill, Hilo UrbFarm produces compost that will aid the growth of a variety of food crops. Hilo UrbFarm also grows a variety of herbs and food crops.

Herbs, including sage, basil, and dill, will be started in pots and trays, and then transplanted into raised garden beds. These crops will be sold to local businesses, farmer’s markets, or donated to local food banks or charities. Potted plants are also available for purchase at some local businesses including Shark’s Coffee and the Locavore store. Aside from compost and herb growing, Hilo UrbFarm has a deeper focus: community building and involvement. “The overall goal of the project [Hilo UrbFarm] is to get more people into composting by offering workshops and tours of the nursery and to show them examples of how they can be involved in reducing the waste generated by the community”, says Pierron. Mikey Pierron is a recent graduate of the University of Hawai‘i CAFNRM program with a focus in Tropical Plant Science. Aside from Hilo UrbFarm, Mikey has also been involved Let’s Grow Hilo!, a part of the Hilo Improvement Program, which focuses on community garden in downtown Hilo.

For more information or to volunteer, please visit hilourbfarm.webs.com or check them out on Instagram or Facebook.
SNAP SHOTS: “A photograph is worth a thousand words”. This section features Dean Mathews most recent travel to Asia.

At the Ibajay Campus of Aklan State University with some faculty from the College of Hospitality and Rural Resource Management.

Boracay, a world class resort area where students from the College of Hospitality and Rural Resource Management at Aklan State University gain experience through internships at the resorts and ecotourism businesses.
SNAP SHOTS: “A photograph is worth a thousand words”. This section features Dean Mathews most recent travel to Asia.

Off to the Batan Bay mangrove restoration project managed by the College of Fisheries and Marine Sciences at the New Washington Campus of Aklan State University.

Seafood sales at the College of Fisheries and Marine Sciences at the New Washington Campus of Aklan State University.
SNAP SHOTS: “A photograph is worth a thousand words”. This section features Dean Mathews most recent travel to Asia.

A view from the Harbor Square Bayfront near the Cultural Center of the Philippines in Manila.

Women are leaders in diversifying small farms in Indonesia.
SNAP SHOTS: “A photograph is worth a thousand words”. This section features Dean Mathews most recent travel to Asia.

Onion farming on the fertile volcanic soils in the uplands of Padang, West Sumatra, Indonesia.

With Grenia, Monica (an Indonesian graduate student), Sylvia (the wife of Dr. Ardi), Dr. Ardi (Dean of Agriculture at Andalas University in Padang, West Sumatra, Indonesia), and Thao Nguyen (a Vietnamese graduate student who is studying weed management options in upland rice farming systems).
SNAP SHOTS: “A photograph is worth a thousand words”. This section features Dean Mathews most recent travel to Asia

The contrast of the indigenous nipa huts of upland farmers with a view of the modern city of Cagayan de Oro, Mindanao, Philippines.