The Faculty Reaches Out

Dr Lynda Wickham, FFA's Deputy Dean of Outreach and Internationalisation, left, gets involved in a session on small business development in Soufriere, St Lucia

The Faculty of Food and Agriculture continues to focus on its mandate of teaching and training for building human resources in the food and agriculture sector in the Caribbean Region and assisting the Region to improve its food and nutrition security status.

To this end, the Faculty has been active in many outreach ventures and has embarked on a programme of identifying training and research needs to be addressed in short courses, in addition to its normal degree offerings at undergraduate and graduate levels.

The programme started with consultations with the OECS Secretariat in which training needs of the OECS Member States have been identified, with the assistance of Mr George Alcee, Agricultural Economist.

A proposal for the OECS/UWIFFA Collaboration for Agriculture is being developed. Meetings were also held with staff of the Ministry of Agriculture, Food Production, Fisheries and Rural Development, St Lucia, including Ms Sonia Montrose, Deputy Permanent Secretary; Mr Barry Innocent, Deputy Director of Agricultural Economics.

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The Faculty is Thrown into Mourning yet again

Still reeling from the recent blow of the passing of Professor Emeritus, Nazeer A Ahmad, of the Department of Food Production on June 6th 2013, the Faculty was once again thrown into great sadness with the sudden passing of Professor Emeritus Lawrence Wilson on December 2nd 2013.

Professor Wilson contributed significantly to education, research and development in the field of tropical agriculture. He was well known regionally and internationally for his work in tropical root crop physiology and postharvest biology.

One of the early graduates of the University College of the West Indies in Jamaica, he graduated with the BSc (Botany, Zoology, Chemistry) in 1957 and the MSc in Plant Physiology (1960), before attending the University of Bristol, Long Ashton Research Station, where he obtained the PhD in Plant Physiology in 1964. Returning to Trinidad and Tobago, he pursued research at the Ministry of Agriculture’s Central Experiment Station, Centeno, on mineral nutrition of vegetable and field crops, and formulated fertilizer recommendations for farmers.

Professor Wilson joined the Faculty of Agriculture at The University of the West Indies (UWI) in 1967 as a Lecturer in Plant Physiology/Biochemistry. By 1975, he was appointed as Professor and Head of the Department of Crop Science (1975-1980) and as Dean of the Faculty of Agriculture for three terms over 1981-1986 and 1991-1994. He also acted as Principal of the St Augustine Campus on several occasions.

He retired from The UWI in 2002 and was made Professor Emeritus in 2004.

In 2012, The UWI St Augustine named one of its laboratories in the Faculty of Food and Agriculture, The Lawrence Wilson Food Biology Laboratory in his honour.

Professor Wilson’s contributions have been national and international. Professor Wilson gave over 20 years of public service to various national boards such as the National Council for Technology Development, Fertrin, Central Marketing Agency, the National Poultry Company, Food and Agriculture Corporation of Trinidad and Tobago, Caroni (1975) Ltd, and the Sugarcane Feeds Centre among others.

In 1994, Professor Wilson was appointed Head of the Caribbean Sub-regional Office of the FAO with its headquarters located in Bridgetown, Barbados. Following a two year stint in that position, he returned to his sustentative post in the Faculty. He held this post until he retired in 2002.

Internationally, he served as a member and as chair of the Board of Trustees of the International Institute of Tropical Agriculture (IITA) in Ibadan, Nigeria. He served as a Member and Chair of the Committee of Board Chairs of the CGIAR International Agriculture Research Centres. Professor
Wilson was an advisor to the International Foundation for Science, a member of the International Editorial Board of Tropical Science and the Board of the Commonwealth Agricultural Bureau International (CABI).

He was a founding member of the International Society for Tropical Root Crops and an Honorary Life Member of that Society. Additionally, he was a Fellow of the Third World Academy of Science.

Among the many awards Professor Wilson received were the National Institute of Higher Education, Research, Science and Technology (NIHERST) “Lifetime Achievement Award” for his outstanding contribution to root-crop research and post-harvest biology in 2000 and the “Commitment to Excellence Award” in recognition of distinguished teaching and research in Postharvest Physiology and Biochemistry, from the International Society for Horticultural Science (ISHS) in July 2013.

Professor Wilson served as the Editor In Chief of the Tropical Agriculture Journal from 2005, and also as the co-editor of the Faculty of Food and Agriculture News, until his passing.

The Faculty Establishes a Communications Unit and Appoints a new Interim Editor in Chief for its Flagship Journal

The Faculty of Food and Agriculture, has established a Communications Unit, operating out of the Dean’s Office. The goal of this unit is to create a central focal point for communication and publication, video, audio as well as web-based media production and provide technical, marketing and distribution support. Among its varied activities, the unit publishes the Tropical Agriculture journal (which was established in 1924 under the Imperial College of Tropical Agriculture) and the faculty newsletter. The unit is headed by Ms Sarojini Ragbir, Communications Coordinator, and is also staffed by Audio Visual Technician, Mr Terry Sampson.

The Tropical Agriculture journal now has a new Interim Editor In Chief, Professor Emeritus, Julian Duncan. Professor Duncan graduated from the University College of the West Indies (UCWI), Mona, Jamaica in 1960, with the BSc (Botany and Zoology as majors and Chemistry as a minor) in 1960, on the results of which he was awarded the first Sir James Irvine Memorial Scholarship to the University of St Andrews, Scotland, from which institution he graduated with the PhD in fungal cytology and genetics in 1963. In September 1963, he was appointed Lecturer in Botany at the then College of Arts and Sciences of the St Augustine, Trinidad campus of The University of the West Indies where he lectured for 35 years, broken by a spell in 1976 when he lectured on exchange at the University of Reading, England. He was promoted to the position of Senior Lecturer in 1973 and appointed Professor of Plant Sciences in 1991.

During his tenure at the University he served as head of department on two occasions: 1973-1976 and 1991-1998. He served as Deputy Dean for Postgraduate Studies and Research, Faculty of Agriculture and Natural Sciences, from 1996-1998.

Professor Duncan served as local coordinator of the Organization of American States Programme on Food and Biotechnology in the 1980s and as the representative from the Trinidad on the Board of Governors of the International Centre for Genetic Engineering and Biotechnology. Professor Duncan is still actively involved in research.

Ms Sarojini Ragbir

Professor Emeritus, Julian Duncan
The Faculty Reaches Out Continued

Services; Ms Marie Edward, Human Resource Officer; and Mr Cletus Alexander, Agricultural Officer. The discussion focused on training to facilitate employment of youths.

Value Addition

The Faculty views value addition in regional commodities as an avenue for improved regional food and nutrition security, increased youth employment, sustainable food production and income generation. Accordingly, it has begun an assessment of regional needs in this area. Dr Wickham met with several individuals in visits facilitated by Ms Anthia Joshua, Farm Improvement Officer of the Agri-Enterprise Development Section, Corporate Planning Unit of the Ministry.

Meaningful discussions were held with Mr William Weeks, well-known pioneer of processing at the cottage level in St Lucia and with the staff of the Fond Assau Agro-processing Plant. Dr Wickham also met with some members of the women’s group who have developed and are marketing a range of value added products for domestic use.

In 2013, Dr Wickham met with relevant personnel in the Ministry of Agriculture, Industry, Forestry, Fisheries and Rural Transformation, St Vincent and the Grenadines, to assess the current state of value addition in the tropical carbohydrate storage crops. She also advocated the production of flour as a viable alternative use of banana, plantain, breadfruit, cassava and sweet potato for composite flour production as a strategy to boost food and nutrition security in Caribbean states.

Training Needs

More recently, after a quick survey of some of the areas that suffered greater damage as a result of the weather trough that affected some of our sister islands of the OECS, the Deputy Dean of Outreach met with Agricultural Extension Officers of the Ministry of Agriculture, St Lucia during a recruitment exercise hosted by the Open Campus of The University of the West Indies. Training needs were also identified here including GAP training, training in postharvest and marketing to reduce postharvest losses.

Officers also expressed great interest in the Master’s programmes offered by the FFA and are looking forward to the time when they can pursue their degrees in blended mode. They were assured by the Deputy Dean that the FFA has plans to extend the availability of these programmes through blended modes so that registered students can spend much of the time in their home territory, will not have to leave their jobs and will spend time at St Augustine only for such aspects of the programmes that have to be offered face-to-face, such as laboratory sessions and other practical exercises.

The FFA continues to serve on the Technical Steering Committee for the Centre for Food Security and Entrepreneurship, administered through The UWI, Cave Hill, Barbados.

Consultations

Closer to home, members of the Faculty have participated in several meetings of state and non-governmental agencies on matters relevant to the food and agriculture sector, including the Ministry of Food Production Stakeholder’s Consultation on the Draft Agriculture Sector Policy Document 2014-2018.
College Science Fair

The Faculty participated in the North Eastern College Science Fair, Sangre Grande, Trinidad, introducing students to the range of degree offerings and exposing them to some of the research and teaching activities of the Faculty.

Displays on composting, organic media and flour made in the Food Biology Laboratory from alternative carbohydrate sources (breadfruit, cassava, sweet potato and plantain) generated much interest among the teenagers.

Staff were introduced to the Undergraduate Diploma in Agriculture that was designed to allow students to matriculate to the two-year programme from CSEC level, with the option to continue to the BSc degree at the second year, completing the UWI degree only four years after CSEC.

Regional Plant Quarantine Course

The FFA places great value on its collaboration with regional and international partners. Such collaboration includes the offering of a Regional Plant Quarantine Course hosted by the FFA in collaboration with the USDA, the Food and Agriculture Organisation of the United Nations (FAO) and the Inter-American Agency for Cooperation on Agriculture (IICA). The course, which runs for two weeks, exposes participants to training in various aspects of plant quarantine with the objective of protecting our borders from the entry of invasive species, public education and dealing with relevant agencies and the public.

The call for participants for the fifth regional course will be issued later in March. The programme is expected to be scheduled for August 2014.

Participants get practical experience during the course

Graduate student, Micah Martin, explains composting to students of North Eastern College
Producing food safe enough for human consumption is a significant challenge of the global agri-food sector. Production of safe food depends on identification of risk factors and determination of ways to achieve mitigation, followed by development and implementation of an adequate system for monitoring and enforcement within a sound legal framework. As the potential problem of heavy metals, in particular of cadmium in cocoa, became of increasing concern in 2004, a preliminary investigation was undertaken at the University of the West Indies (The UWI), St Augustine to assess the status of possible contamination of local cocoa beans, locally produced cocoa products and imported cocoa products.

Cadmium affects the mammalian kidney, bones and immune systems, while lead is known to affect the nervous system, especially in young children. Literature review also pinpointed the fungal toxin Ochratoxin A (OTA) as an important contaminant of cocoa. OTA is reported to be toxic even at very low doses in mammals, including humans. Consequently, OTA is strictly controlled in chocolate-manufacturing countries and trading blocs, notably, the European Union, the USA, Canada and Japan, through food safety standards. Unfortunately, such food safety standards can become barriers to international trade if cocoa-producing countries do not develop the means to monitor and control the levels of specific contaminants in cocoa beans.

Based on the results from the preliminary investigation, and what was known about Ochratoxin A (OTA) in cocoa in the literature, a project proposal for a detailed study of the problem of safety of cocoa produced in Trinidad and Tobago was prepared by a UWI team (Dr Ivan Chang-Yen (Analytical Chemist and Project Leader), Mrs Frances L Bekele (Cocoa Specialist), Dr Isaac Bekele (Biostatistician) and the late Professor Lawrence A Wilson (Biochemist/ Plant Physiologist). Subsequently, the project was funded by the Government of the Republic of Trinidad and Tobago (T&T) through the then Ministry of Agriculture, Lands & Marine Resources (MALMR), which later became known as the Ministry of Food Production (MFP), as a collaborative study involving The UWI and the Research Division of the Ministry.

**Objectives of the Project**

This study was designed to undertake the following:

1. Development of reliable test methods for selected heavy metals and Ochratoxin A in cocoa beans and related products (chocolates, cacao tissues, soils).

2. Evaluation of the status of heavy metal and Ochratoxin A contamination of cocoa beans in T&T to determine whether local producers could meet international food safety standards.

3. Identification of major sources and conditions responsible for contamination of cocoa beans by heavy metals and Ochratoxin A.

4. Evaluation of the suitability of soils used for cacao cultivation in T&T and to develop digital maps of heavy metal and other mineral distributions to allow corrective actions to be taken to improve cocoa bean quality.

5. Development of the human resource capacity to handle technical aspects of food safety through formal and short-term training.

6. Facilitation of systems for certification of cocoa beans for heavy metals and Ochratoxin A to allow continued and expanded exports of cocoa beans and cocoa products.

7. To investigate the distribution of cadmium in different tissues of the plant and how its levels relate to soil cadmium.

This research project was thus intended to ensure the production of consistently safe, high quality cocoa beans and to enhance their processing into fine chocolates, thereby ensuring the demand and high prices for locally grown cocoa. The training of staff was an integral part of this project to build the capacity of relevant bodies to allow for independent agricultural and health research and monitoring.

Similarly investigation of heavy metal profiles of soils currently used for cocoa production was intended to identify farms, which could readily meet international food safety standards. It is envisaged that the same techniques developed in this project can be applied to all arable lands, thereby enhancing agricultural and food quality in T&T. The project was funded from 2005 to 2010 by the Government of T&T through the MALMR. This was done under the PSIP Crop Protection Sub-Division, H542 Expansion of the sanitary, phyto-sanitary and food safety capabilities of Trinidad and
Achievements of the Project

1. The heavy metal studies were expanded to include a unique study on the reduction of cadmium uptake by cacao trees by way of chemical treatments of cocoa soils. After four consecutive years, the results provide the first proof that cadmium in cocoa can be controlled by appropriate soil treatments.

2. The studies on OTA in cocoa beans along the cocoa processing chain allowed for the development of a Hazard Analysis Critical Control Point (HACCP)-based system for minimizing OTA contamination of cocoa beans. This system was developed in collaboration with Professor Inteaz Alii of McGill University, who also assisted Drs Chang Yen and Roberts in conducting a training programme for MALMR, Cocoa and Coffee Industry Board (CCIB) personnel, as well as local cacao farmers in 2011.

3. The results of the heavy metal and OTA studies were used by the MALMR to develop an Action Matrix for Heavy Metals and OTA Contamination of Cocoa Farms to minimize cocoa bean contamination through preventive and corrective actions.

4. A new and effective method of determination of heavy metals in cocoa tissues and beans was developed and presented internationally. Training of local laboratory staff was subsequently conducted using Proficiency Testing, under the supervision of Drs Chang Yen and Ramtalal.

5. An improved method for OTA determination in cocoa beans was developed and has been accepted for publication in the Journal of the Association of Official Analytical Chemists. This method permits OTA to be determined at levels below the Maximum Permissible Levels for cocoa beans and chocolates and can be used to certify cocoa beans for export by local accredited laboratories, once the method is accredited.

6. Long-term storage of cocoa beans under modified storage atmospheres using carbon dioxide was highly effective in storage pest control. Such storage techniques have strong potential for use on a range of other commodities.

7. A survey of farms for cadmium levels in cocoa beans in collaboration with the MALMR and CCIB has identified farms with potential problems of heavy metal contamination to be identified and allows appropriate preventive action to be taken.

8. Of three PhD candidates trained under this project, two have successfully completed their study and the third is in the final phase.

This project has been outstanding, not only for its importance to the local and international cocoa industry, but also for the exceptional level of collaboration between the MALMR, The UWI and the local cocoa industry.

Research Potential

The research findings to date have opened many new areas of cocoa research of benefit to the entire cocoa industry, especially in the area of cadmium and Ochratoxin A control. Soil reclassification has also been identified as an urgent area for research to ensure that soils are correctly classified and appropriately used for crops, including cacao, to ensure optimal productivity and quality.

This research has also paved the way for Trinidad and Tobago to meet the impending introduction of food safety standards in cocoa (and other foods) to be imposed within the next four years by the EU. The EU proposes a Maximum Residue Level (MRL) for cadmium in chocolates with equal or more than 50% cocoa solids of 0.8 µg/g, a concession from the 0.6 µg/g first proposed and then contested by lobbyists from cocoa-producing countries, including T&T. In May 2012, our research team assisted in preparing a position paper on the status of cadmium contamination in local cocoa, which was forwarded to the T&T High Commission in Brussels, where diplomats from major cocoa-producing countries such as Ecuador have been lobbying for realistic MRLs to be instituted by the EU. In 2012, the Joint Expert Committee FAO/WHO Food Additives (JECFA) issued a data request (“Call for Data”) on all information related to the assessment of exposure to cadmium in cocoa and cocoa products. This was a response that conceded to a recommendation made in the position paper from Trinidad and Tobago and other cocoa-producing countries. Trinidad and Tobago is currently working with the Codex Alimentarius Commission, the Codex Coordinating Committee for Latin America and the Caribbean – CCLAC, IICA and the Joint Expert Committee FAO/WHO Food Additives (JECFA) on this issue. IICA is also now co-ordinating a project, which includes Trinidad and Tobago, to develop SPSS measures to ensure food safety that will also benefit cocoa.

Acknowledgement

Many individuals and organizations have contributed to this study. The then Director of the Agricultural Research, Ms Cynthia Persad, provided strong leadership and support as Head of a collaborating organization. Among her staff members, Mr Kamaldeo Maharaj (Cocoa Agronomist, MFP), Mr Ian Rampersad (Soil Science) and Central Experiment Station (CES), Centeno and La Reunion Estate staff provided critical and timely support throughout the project. In addition, Dr Balmatee Sukha, Analytical Chemist, MALMR (until December 2007), Dr Lisa Harrynanan, Analytical Chemist, MALMR (until January, 2011) participated in this project, Professor Emeritus E Julian Duncan and the late Professor Nazeer Ahmad participated in OTA and soils, respectively. The CCIB of Trinidad and Tobago also provided invaluable assistance in facilitating access to cocoa farms, processing centres and storage facilities for the study.
The old adage of “publish or perish” is becoming a reality at many research and comprehensive universities due to the justifiable demands of funding organizations for tangible returns on their investments. In response, the administrative hierarchies at many institutions have set high output targets in an attempt to garner more external funding, but which are not commensurate with the resources available to researchers.

This has manifested itself in the greater weighting of publications than teaching and outreach activities by promotion and tenure committees when assessing academic staff. Thus, junior faculty often engage in “salami slicing” of their scientific reporting to avoid the guillotine and graduate students see strong publications during their candidature as their only hope of landing a post-doctoral position, much less a faculty appointment.

Gone are the days when students hold back on publishing until they have attained a research position, instead many purposefully delay graduation to beef up their CVs. Publication pressure is more keenly felt in STEM fields, where journal articles are the major unit of currency, than in the arts and humanities where researchers are afforded more time and creative space to complete book projects.

This has created an opportunity for open access scientific journals with fast turnover times and these now publish approximately 11% of all articles, whereas they were virtually non-existent prior to the 1990s. Titles like PLOS ONE have become major players as the number of articles this mega-journal publishes has risen from 138 in 2006 to 23,464 in 2012. This level of output would not be possible without PLOS ONE abandoning the practice of considering the potential impact of a piece of work and instead screening exclusively on scientific validity. Mega journals have turned to providing articles that use statistics and letting the field decide which works are groundbreaking, but this comes at a price to the author that can make all but the most well-endowed blink. Herein lies the rub. Mega open-access journals like PLOS ONE and scientific reports are often far too expensive for researchers in the developing world and as such, many are tempted by open access journals which offer little to no actual peer review but require a publishing fee.

These entities have been labeled “predatory journals” characterized by their request for papers with impressive though annoying regularity and the prominence of “International” and “Global” in their titles. The persons behind these titles seemingly intentionally use titles very similar to more established ones and one of our anonymous interviewees at The UWI shared his shock at mistakenly submitting a paper to the Journal of Agronomy instead of the prestigious Agronomy Journal. The journal’s alarmingly quick acceptance time was the only sign that he was about to commit a grave error but one wonders how many researchers were as vigilant? Detractors of open access publishing often nostalgically look back at the pre-open access era but forget some of the issues plaguing the old guard. The bias of brand name traditional journals against authors from ACP countries has long been suspected and many of the researchers we consulted in preparing this article have shared instances when they received encouraging responses from reviewers only for the editor to deliver the dreaded news that “this work does not appeal to our readership.” Many traditional journals now offer an open access option and article turn around times similar to that of mega open access scientific journals.
Navigating Through the Pressures of Publishing in an Era of Predatory Journals (Continued from Page 8)

access titles but at comparable cost. They charge high access fees for a product obtained and refined largely for free, which again hinders access to scientific information by researchers from ACP countries. This shows that there are swindlers on both sides of the divide and the administrators who set these lofty publication output targets must accept their responsibility to provide guidelines to help students and faculty navigate the minefield that is modern scientific publishing.

Norway is ahead of the curve in devising a “white-list” of approved journals to which research funding is linked, while Jeffrey Beall (an Associate Professor at the University of Colorado, Denver) has produced a list of suspected predatory journals and publishers.

We propose a two-tiered journal ranking system where the first tier would consist of titles that offer peer review of acceptable quality while the second tier would consist of titles which are leaders in their sub-discipline as we believe it is important to recognize ground breaking work. This should be updated on a bi-annual basis with an appeals process for titles not previously assessed.

Further, we advocate improving the visibility of UWI-aligned journals like Tropical Agriculture and West Indian Journal of Engineering by offering open access options.

1 http://www.dcscience.net/?p=5388.
3 http://www.nature.com/news/open-access-the-true-cost-of-science-publishing-1.12676
8 http://dbh.nsd.uib.no/kanaler.

1 Department of Food Production
2 Faculty of Food and Agriculture and Faculty of Science and Technology, Alma Jordan Library

From left to right: Renaldo Belfon, postgraduate student and Mark Wuddivira, lecturer
Wildlife hunting is a major activity of the Trinidad and Tobago population, with an estimated 14,000 legal and 5,000 illegal hunters, as indicated by the Forestry Division of the Ministry of the Environment and Water Resources, Trinidad and Tobago. “Wildmeat” is considered as cultural cuisine and hunting patterns are strongly influenced by meat values. Hence, the local demand for wildmeat must inform wildlife conservation strategies.

In the Amazon basin, community based strategies have informed the status of wildlife populations, generated management decisions and initiated mechanisms to evaluate the impact of hunting.

The Department of Food Production, Faculty of Food and Agriculture (DFP) has been involved in wildlife studies since 1997, through the efforts of Professor Gary Garcia. Professor Garcia has advocated the change in the term “wildlife” to “neo-tropical animal” in order to counteract the negative connotation of the term “wildlife” and to identify with the animals found in our backyards- the “new world tropics”-, from the megafauna (lions, elephants etc). The neo-tropics is home to the world’s most diverse animals, with over 2,000 species of mammals indigenous to this part of the world. Some of the most popular of these mammals, the agouti, lappe, wild hog and deer, are hunted for their meat. Agouti is the most hunted and consumed species, hence an agouti production unit was built to farm agouti at the University Field Station, Mount Hope. This unit is the second largest scientifically managed unit in the world (second only to that at Embrapa, Brazil) and breeds agouti of different colour: black, white, brown, gold, brown with a golden rump, white with a golden rump and the brown with white feet. Based on research on male agouti at the unit, over 11 scientific papers on reproductive anatomy and physiology have been published. Feeding and nutrition studies have also been conducted to determine the best feeds for the agouti. Tropical forages and grasses as well as seasonally available fruits and vegetables make up the diet of this animal.

In its collaborative efforts, the DFD has worked closely to provide assistance for the development of a “Quenk/Wild Hog” farm. This animal, also known as the collared peccary, is considered quite a delicacy in Trinidad and Tobago. This farm has generated large amounts of data, especially on breeding and mating patterns, feeding strategies as well as animal introduction methods.

In 2012, The UWI was successful in winning a bid to host the 11th Conference on Management of Amazonian Wildlife (XICIMFAUNA). This conference has as its theme, “Alternative sustainable conservation and utilization methods for Neo-tropical animals”, and will be held at The UWI, St Augustine Campus from 17th to 22nd August, 2014. The sub-themes of the conference are: Management for the Conservation of Utilized/Exploited species, Conservation Management of Animal species with Conflicting Conservation Status, Wildlife Conservation Laws and Policy, Ex situ Conservation and Domestication, Finance and Economics of Neo-tropical Animals, Health, Tourism, Education, Native Peoples and Neo-tropical Animals, Hunting of Neo-tropical Animals, Cuisine, Neo-tropical Animal Art, Conservation of Neo-tropical Animals: The Special Case of the Caribbean Small Island States.

For registration and accommodation, please see website xicimfauna.org or email michele.singh.xicimfauna@gmail.com.
Mr Barton Clarke, a national of Barbados, holds a BSc (Hons) in Agriculture, from The University of the West Indies, Trinidad and Tobago, 1975 and a Master of Agriculture, from the University of Queensland, Australia in 1980.

Mr Clarke started his career in 1975 as Senior Agricultural Assistant, at the Central Agronomic Research Station, Ministry of Agriculture, Barbados. From 1976 to 1980, he worked as an Agricultural Officer and Agronomist of the Soil Conservation Unit, Scotland District, Barbados. From 1980 to 1984, he returned to the Central Agronomic Research Station of the Ministry of Agriculture, Barbados as a Senior Agricultural Officer, Agronomist and Manager. Between 1984 and 2001, he worked for the Caribbean Agricultural Research and Development Institute (CARDI) where he held various positions, at times simultaneously: from 1984 to 1989, he was Agronomist and Country Team Leader Farming System Research and Development in Dominica, where, in 1985, he was also appointed CARDI Representative, a position he held until 1989; from 1986 to 1989, he was also Technical Coordinator, Leeward Islands and Dominica Farming Systems Research and Development, and, from 1987 to 1994, Programme Leader, Technology Adaptation and Transfer; between 1989 and 1994, he was Project Leader, Agricultural Research and Extension, and coordinated the Tropical Produce Support project, whilst serving as CARDI Representative in St Lucia. Finally, he became, in 1995, Project Manager at the CARDI Headquarters in Trinidad and Tobago, also acting as Senior Scientist (1994-1995). In 1995, he was nominated Deputy Director of Technical Programmes at the Organisation of the Eastern Caribbean States (OECS). From 1997 to 2001, he served CARDI as Manager of the Technical Department, and Representative in Barbados. From 2001 to 2011, he was the Chief Agricultural Officer (CAO), periodically assigned to the position of Permanent Secretary, at the Ministry of Agriculture, Food, Fisheries and Water Resources Management, Barbados. From September 2011 to date, Mr Clarke has been the FAO Representative for Trinidad and Tobago and Suriname.

AS CAO Barbados, Mr Clarke provided leadership and guidance in the formulation and implementation of policies to support the agricultural sector, including:

- The Agricultural Development Fund;
- The Sugar Cane Tripartite Committee comprising representation from labour, private sector and the public sector to move from a sugar to a sugar cane industry;
- Marketing of Barbados branded sugar in England and Barbados;
- Disaster Rehabilitation Fund;
- The Gilt Build Up Programme to resuscitate the pork industry;
- The Land for the Landless programme;
- Scotland District Development Programme;
- Development of an Integrated Cotton Industry Business Plan and the establishment of the regional company Exclusive Cottons of the Caribbean and
- Transformation and improvement of the Agricultural Incentive Scheme including
new initiatives in organic farming, youth in agriculture, adoption of post harvest technology, agricultural health and food safety, purchase of local produce by public institutional and hotels, good agricultural practices, irrigation and water harvesting.

Mr Clarke also participated in and provided leadership in several multi-sector and multidisciplinary initiatives including the:
- National Chronic Non Communicable Diseases Commission,
- National Advisory Committee for Occupational Safety and Health,
- 360 degree performance review and development system for Permanent Secretaries and Officers of Related Grade,
- Energy conservation and information and communications policies for the public sector,
- Food and General Supplies Committee under the Department of Emergency Management with responsibility for feeding the nation post any disaster.

Mr Clarke is known to have been and continues to be an outstanding representative of the Government of Barbados, CARDI and FAO, having participated in many regional and international fora including International Sugar Organization, the International Cotton Advisory Committee, West Indies Sea Island Cotton Association, Council for Trade and Economic Development of CARICOM, Food and Agriculture Organization and OECS Ministers of Agriculture Meeting.

During his career, Mr Clarke has maintained contact with the Faculty of Agriculture, assisting with instruction in the Windwards and Leewards Extension Training, attending the Annual Regional Agricultural Research and Extension Conference held under the auspices of the Caribbean Agricultural Extension Project, partnering with The UWI in the implementation of the Agricultural Research and Extension Project and being a member of the CARDI, UWI, University of Florida committee to promote exchange, training and transfer of technology.

The Department of Food Production (DFP), the Faculty of Food and Agriculture, participated in UWI Credit Union’s Annual Carnival Ole Mas Competition on Friday 21st, February, 2014, held at the Dudley Huggins Car Park. The DFP’s team, using the sobriquet Big People Possee, comprised academic, administrative, technical, field and secretarial staff, undergraduate and postgraduate students, and members of the Agricultural Society. The DFP team had less than one week to prepare for this event. Through its presentation titled Food Production for Food Security and Safety, the DFP convincingly beat out the competitors to win the following major prizes:
- Ole Man Band 1st Prize - $2000.00
- Biggest Posse-Uniform - $500.00
- Best Individual Male Ole Mas (Shadow Benny) - $700.00
- Best Portrayal-Social - Special prize for Hog Farmer- $500.00
- Early Bird Prize- Ice cream supply
- Recognition for Best Flag Portrayal

Some of the portrayals were on the production of agouti, pumpkin, shadon beni, banana, dasheen bush and food safety. Congrats to the DFP’s Big People Possee!
The African/Caribbean European Union/Edulink 11 project on Food Science and Technology in Africa and the Caribbean (FST in AC) got off to a start with a meeting of the partners at the University of Botswana, from Dec 2nd to 4th, 2013. The project, which received a grant of 500,000 euros, is being led by Dr Jose Malete Jackson of the University of Botswana with Professor Neela Badrie of The University of the West Indies (UWI), Dr Esther Sakyi-Dawson of the University of Ghana and Dr Tomaz Langerholc of University Maribor in Slovenia, as partners. Other project collaborators are the Botswana College of Agriculture (BCA) and the Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA).

The UWI leg of the project is being coordinated by Dr Marsha Singh of the Department of Food Production, Faculty of Food and Agriculture, UWI, St Augustine. The project deals with human capital development with focus on graduate students, early career professionals and female agri-business entrepreneurs.

The programmes to be offered as part of the project on Food Science and Technology in Africa and the Caribbean will be delivered by on-line/blended format, and are the Postgraduate Diploma and MSc in Agri-Food Safety and Quality Assurance (offered by UWI), MSc Food Science (offered by the University of Ghana), the MSc in Public Health and Nutrition and MSc Applied Microbiology (offered by the University of Botswana) and the MSc Food Science (offered by the Botswana College of Agriculture).

Nine training workshops would also be conducted and the focus of research would be on value addition of indigenous crops and the formation of networks.

The project coordinators recently partnered with the Caribbean Academy of Sciences (CAS) and the Department of Food Production and Faculty of Engineering, The UWI, and held its first workshop on ‘Food Safety and Food Security in a Globalised World’ which was attended by over 95 participants on January 16th, 2014 at The UWI.

The Centre for Excellence in Teaching and Learning, UWI, has begun its series of workshops on on-line training for distance delivery of programmes.

For more information, contact Professor Neela Badrie, Project Manager of ACP/Edulink 11 and Head of the Department of Food Production, Faculty of Food and Agriculture at: neela.badrie@sta.uwi.edu or nbadrie@yahoo.com.

Lecturers from the Postgraduate Diploma and MSc in Agri-Food Safety and Quality Assurance programmes attend workshop on online/blended learning held on February 15th, 2014.

The facilitator was Dr Dianne Thurab-Nkosi, of the Centre for Excellence in Teaching and Learning
**Departmental Projects - Geography**

The Faculty of Food and Agriculture News will feature research projects that are being conducted by the Departments of the Faculty of Food and Agriculture. In this issue, we highlight the projects conducted (in some cases in collaboration with other universities and organizations) by the newest department within the faculty, Department of Geography.

**Terrestrial Flood Risk and Climate Change in the lower Caroni river basin, Trinidad: Adaptation Measures for Vulnerable Communities**

In this project, flood risk in the lower Caroni River basin is being assessed within the contexts of climate change, community vulnerability and adaptive capacity. The project aims to quantitatively assess current and future flood risk using computational modelling and integrate the results from this into a spatial analysis of vulnerability to flood risk, based on key indicators in Trinidad census data and the outcomes of community surveys and structured interviews, within a community-based vulnerability assessment (CBVA) framework.

**A Matter of Survival: A life-course approach to understanding the decision-making and economic livelihoods of school dropouts in Trinidad and Tobago**

This research aims to investigate the life-course trajectories and complex decision making of school dropouts in Trinidad & Tobago in order to improve retention in formal education and the income-generating capabilities and prospects of dropouts. Only about 60% of the students in Trinidad & Tobago survive the formal national education system to complete high school. This study compares dropout livelihoods, and especially the uptake of crime, in variably rural and urban parts of the country.

**Climate Change and Inland Flooding in Jamaica: Risk and Adaptation Measures for Vulnerable Communities**

Flooding is one of the major natural hazards affecting Jamaica as well as other small island states in the Caribbean, causing significant loss to life and property. Jamaica has shown repeated occurrences of flooding as a result of disharmony between human use of the environment and natural systems. In addition, the Intergovernmental Panel on Climate Change (IPCC) outlook for climate change in Jamaica shows an increasing likelihood of more intense hurricanes, which would result in increased frequency of flooding due to intensive rainfall. This project aims to generate new and improved flood risk maps and adaptation measures for vulnerable communities.

**Partnership for Canada-Caribbean Climate Change Adaptation (ParCA)**

The Partnership for Canada-Caribbean Climate Change Adaptation (ParCA) is an International Development Research Centre Challenge Fund project under the International Research Initiative on Adaptation to Climate Change with funding from the Canadian Research Councils (SSHRC, NSERC, CIHR) and the IDRC, and administered by the University of Waterloo, Canada. The methodology at the core of the ParCA is the Community Based Vulnerability Assessment (CBVA), which integrates physical and social science assessments of vulnerability. The ParCA research programme develops the CBVA approach in order to integrate governance dimensions, explicitly considering maladaptation and the contribution of adaptation to achieving the Millennium Development Goals.

**Before the Pavements: Housing and Homelessness in Trinidad and Tobago**

This project examines the causes and characteristics of homelessness in Trinidad & Tobago. Street-dwellers are characteristic of urban areas, but the CSO has also documented street-dwellers in more rural parts of the country. This research on homelessness examines the material and social spaces of homelessness and the lives of hidden homeless persons, including women and children.
Retirement and Appreciation Function

Retirement is a time of reflection and celebration. The Department of Food Production, Faculty of Food and Agriculture held its Retirement and Appreciation Function on Thursday 30th January, 2014 at the Conference Centre, Lloyd Braithwaite Building, The University of the West Indies, St Augustine.

Three outstanding retired staff members, who collectively gave 121 years of service to UWI were honoured. They were Mr Esau Mohammed, Mrs Judy Cato and Mr Sarran Harryram.

Mr Mohammed, Laboratory Technician (microbiology), retired on December 25th, 2014 after 39 years of service to the Department. He is the proud father of two sons who are both graduates from the Faculty of Engineering, The UWI. He epitomizes the saying of Napoleon Hill: “If you can’t do great things, do small things in a great way”.

Mrs Judy Cato gave 42 years of service to UWI. In the latter part of her career, she was the Secretary to the Head of the Department. “Nothing was ever too difficult for her and she always assisted with a smiling face”, were the words of Professor Gary Garcia, Deputy Dean, Planning and Development, as he paid tribute to her. Mrs Cato is actively involved in the church. She is the proud mother of two children. Her daughter is presently a second year student at the University of the Southern Caribbean.

Mr Sarran Harryram is a firm believer in the quality of education offered by The UWI. His four children, all UWI graduates, are Dr Ryan Harryram (Dental Medicine), Ms Sherene Harryram (Management), Mr Randy Harryram (Engineering) and Mr Robin Harryram (Information Technology). Mr Harryram served The UWI for 41 years and was promoted to Chief Technician (Field) in 2009. His sense of fulfillment came from working with students and conducting research on various crops. As noted by Professor Emeritus Richard Brathwaite, during his career Mr Harryram had several training opportunities at the University of Reading, United Kingdom (Technician in Training Course), International Centre for Tropical Agriculture (Post-graduate Course in Seed Technology) and the University of London (Pesticide Application Technology).

Also, honoured were Ms Deniece Deane and Ms Shivaun Alexander for their service to the Department of Food Production. Ms Deane served from 1999-2013 and Ms Alexander from 1999-2012.

The Faculty of Food and Agriculture congratulates the retirees and other honoured staff for their sterling service, dedication, advice and encouragement.

Submitted by Professor Neela Badrie, Head of the Department of Food Production, Faculty of Food and Agriculture, UWI, St Augustine
Postharvest Management Strategies to Reduce Losses of Perishable Crops

Improved methods to reduce postharvest losses of fresh produce as well as minimally processed products, was the focus of a workshop conducted by the Technical Centre for Agricultural and Rural Cooperation in collaboration with The UWI and the National Agricultural Marketing and Development Corporation (NAMDEVCO).

The workshop, which took place at the NAMDEVCO packing house conference facility, Piarco, Trinidad from February 24-25, 2014, targeted field officers, certified farmers and produce managers.

This training came out of recommendations from the third ISHS Conference on Postharvest and Quality Management of Horticultural Products of Interest in Tropical Regions, which was held in Trinidad from July 1st -5th, 2013. The need for follow-up activities for reducing postharvest losses and promoting development of value-added products for food security and increasing employment opportunities were identified.

Facilitators were from The UWI (Dr Majeed Mohammed, Dr Saheeda Mujjafar, Dr Wayne Ganpat, Dr Lynda Wickham, Dr Gaius Eudoxie) and the private sector (Mr Prakash Issaire from Price Mart and Mr Rhett Chee Ping from Gordon Grant Shipping Company).

Presentations were made by Ms Pathleen Titus (Technical Advisor, Tobago House of Assembly), Ms Celestine Butters, (Packaging House Manager, Guyana Marketing Corporation), Mr Ronnie Pilgrim (CARDI, St Lucia), Ms Nirmala Persad (Packing House Manager) and Ms Afiya John (Postharvest Technologist), NAMDEVCO.