

FACULTY OF SCIENCE & TECHNOLOGY

Mona

Year ending July 31, 2018



PROFESSOR PAUL REESE
BSc (Hons), UWI, DPhil, *Sussex*, CChem, FRSC
DEAN

– *Dean's Overview* –

TEACHING, LEARNING AND STUDENT DEVELOPMENT

The Faculty received approval from the Board for Undergraduate Studies to modify regulations so as to permit entry of lower level matriculating students with one, rather than two, laboratory-based CSEC subjects. This change was made to facilitate the intake of students into majors offered by the Department of Computing.

The Faculty Office made financial contributions worth approximately J\$436,276 to assist students with offsetting expenses associated with attending conferences, competitions and other science-related activities.

Two Study Skills Workshops were hosted during the academic year. These were designed to assist students who were on 'academic warning'. The sessions were attended by a total of 274 students.

The first in a series of Career Day Seminars was held on November 19, 2017. These talks were tailored for second and third year students to provide information on graduate studies and research. A segment on monetizing research was included. Seventy five students participated. Professor Marcia Roye discussed the UWI graduate programme, requirements, scholarships, prospective projects, and research that solved real world problems. Professor Daniel Coore addressed aspects of his research, generating income from research, and the research process. Both hosts included stories and anecdotes on their journey as researchers. The students were engaged and posed questions at the end of the presentations.

The Department of Mathematics hosted its 5th Career Fair on November 17, 2017. The companies represented were Jamaica National Bank, Victoria Mutual Building Society, Financial Service Commission, Scotia Bank and Sagicor.

The Department of Computing and the Mona School of Business and Management launched the Digital Talent Laboratory Internship, sponsored by the National Commercial Bank (NCB). NCB is aggressively pursuing a Digital Agenda through the development of distinctive digital capabilities in the organization's infrastructure, operations and human resources towards the strategic objective of "Building a World-Class Digital Experience" for all stakeholders. They approached the University to assist in their capacity building efforts for certain critical roles and competencies. Fifteen students were involved in this programme.

2017/2018 – Undergraduate and Graduate Degrees Awarded

Faculty of Science and Technology Degree Awarded 2017/2018	# of Awards
Graduate Students	19
Distinction	2
Pass	17
Undergraduate Students	441
First Class Honours	34
Second Class Honours (Upper Division)	142
Second Class Honours (Lower Division)	168
Pass	97
Grand Total	460

2017/2018 – Undergraduate Admission/Enrollment Data for the Faculty of Science and Technology

Academic Year	Total Applications	Total Applicants	Total Offers	Total Registered
2017/2018	10375	6201	4258	1276

2017/2018 – Graduate Enrollment Data for the Faculty of Science and Technology

Academic Year	Taught Masters	Research Degrees	Total
2017/2018	58	26	84

NATIONAL ENGAGEMENT AND OUTREACH

The Food and Agro-Processing Technology programme held a Food Safety Preventive Controls Workshop for eight students between September 18 and 20, 2017 and for Industry personnel between November 6 and 8, 2017. The training was conducted by Dr. Andrea Goldson-Barnaby.

The Department of Chemistry conducted the Better Process Control School (BPCS) January 11–19, 2018. The BPCS is a certification programme approved by the United States Food and Drug Administration and the Bureau of Standards Jamaica Limited. The course is offered annually to members of the food industry and regulators on processing of low-acid and acidified canned foods, and is coordinated by Dr. Donna Minott-Kates. Participating entities in 2018 included Mussons Jamaica Limited, Tijule Company Limited, Associated Manufactures, Norsai Enterprise Limited, Island Packers Limited, Bureau of Standards Jamaica Limited, M.F. Foods Limited, Dairy Industries, P.A. Benjamin Limited, Scientific Research Council and Lasco Distributors. Two UWI graduate students, Raylee Dunkley and Chevanese Morgan, also took part in the programme.

The Department of Chemistry facilitated the staging of the Biannual Visible Emissions Observer (VEO) Certification Training offered by the National Environment and Planning Agency on January 23, 2018. The training was administered by representatives of Eastern Technical Associates, a US-based company. The VEO Training School is accredited by the United States Environment Protection Agency.

The Climate Studies Group, Mona hosted a training workshop for civil society groups (NGOs, and CBOs) on January 19, 2018 in the Physics

Virtual Lab. The exercise was funded by the Small Grants Programme and implemented by the United Nations Office for Project Services, through funds provided by the Australian Agency for International Development. Presenters included the Country Focal Point of the United Nations Framework Convention on Climate Change, Mr. Clifford Mahlung, and Focal Point for the Intergovernmental Panel on Climate Change, Miss Jacqueline Spence.

A training course in Measurement, Monitoring, Interpretation and Application of Soil Moisture Data was convened at the Headquarters of the Meteorological Service Jamaica on January 24, 2018. The facilitator was Dr. Dale Rankine. In attendance were technicians and technical officers of the Climate Branch of the Meteorological Service. The agenda included a video presentation on the proper installation procedure for the Vantage Pro2 moisture probe, as well as presentations on monitoring protocol, data analyses, interpretation and application of the data for irrigation and crop modelling.

Dr. Tannecia Stephenson (Head, Department of Physics) along with Miss Arlene Williams, Director, Water Policy, Ministry of Economic Growth and Job Creation participated in an interview on CVM @ Sunrise on March 20, 2018. The interview highlighted World Water Day activities and the impact of Climate Change on Jamaica's water resources.

Dr. Dale Rankine facilitated training at a workshop held at the St. Augustine Campus, The University of the West Indies, Trinidad and Tobago on April 23–27, 2018. Participants were very receptive to the material provided on Crop Modelling and the Decision Support System for Agrotechnology Transfer software, in particular.

The Natural Products Institute (NPI) hosted attendees of the XVth TRAMIL workshop. Thirty-five members from eighteen Caribbean countries visited the Faculty on February 8–9, 2018 and toured the Botany Herbarium, Botany Gardens, NPI and the Research Village.

CAPE workshops were held during the period of January 8–19, 2018 for the following subject areas: Biology, Chemistry, Computer Science, Geography, Mathematics and Physics. The Marketing, Recruitment and

Communications Office, represented by Mrs. Marjorie Bolero-Haughton, participated.

The Chemistry Department opened its doors to Mona High School CSEC students on Thursday, March 15 and on Tuesday, March 20, 2018 as a response to an explosion at their school laboratory. This facilitated the completion of their School-Based Assessments before the end of March deadline. The students, who carried out three experiments over the two day period, were very appreciative of the opportunity to experience a university laboratory.

The Discovery Bay Marine Laboratory (DBML) hosted a three day workshop from December 12–14, 2017. This meeting, organized by Mrs. Marcia Creary-Ford, was one of the deliverables of her Global Biodiversity Information Facility project. The session saw individuals from the PRML, DBML, CMS, Department of Life Sciences and Alligator Head Foundation coming together to begin the process of digitizing biodiversity data which have been collected over the years. Publication of the data is the next step.

RESEARCH AND INNOVATION

Members of the Faculty published 66 articles during the 2017/2018 academic year.

The Faculty was able to raise J\$16,839,212.81 in grants and contributions through initiatives of the Resource Mobilization Unit and the Departments.

REGIONAL AND INTERNATIONAL COLLABORATION

A Memorandum of Collaboration was signed between the Fort Worth Zoo, Texas, USA and The UWI, Mona. This was facilitated by the Department of Life Sciences.

A project agreement was signed between the United States Agency for International Development and the UWI. As part of the contract US\$15,000 will be provided for the project entitled: 'Sustainable Fishing

in Kingston Harbour.' Mrs. Sophia Davis from the Port Royal Marine Laboratory is the Principal Investigator.

A Memorandum of Understanding was signed on October 26, 2017 to mark the partnership between Huawei, the UWI, and University of Technology. This was organized by the Resource Mobilization Unit, Mona School of Engineering, and the Departments of Computing and Physics.

A Memorandum of Understanding (MoU) was signed between the UWI and Kingston Freeport Terminal Limited (KFTL), through the efforts of the Port Royal Marine Laboratory (PRML) which falls under the Centre for Marine Sciences (CMS). As part of this agreement KFTL will provide US\$100,000 for the project: 'Coral Reef Rehabilitation of the Port Royal Cays, Jamaica.' Dr. Suzanne Palmer is the Principal Investigator.

Work on the CMS/PRML/KFTL Refuge Cay Clean-up Project continued with the assistance of approximately 23 fishers from Port Royal. A total of over 8,200 bags of garbage were removed from Refuge Cay to complete the clean-up aspect of the project. A boom/solid waste screen was deployed to control the amount of garbage that accumulated on the cay. A visit by Mrs. Sherina Russell, UWI Now Newspaper, was facilitated by the PRML team. A report emanating from that visit was published in the Jamaica Gleaner on March 9, 2018.

The Planning Institute of Jamaica (PIOJ) Pilot Programme on Climate Resilience (PPCR) Improving Climate Data and Information Management Project (ICDIMP) and the Climate Studies Group Mona (CSGM) launched the 2015 State of the Jamaican Climate Report on February 9, 2018 as a signature event of the 2018 UWI Research Days. The report is an update to the 2012 edition, and provides a concise overview of data and information about Jamaica's climate. The report is intended as a first reference point with respect to climate information on parameters such as rainfall, temperature, sea level rise and solar radiation. The CSGM also partnered with the regional PPCR and the PIOJ to stage a booth at the UWI Research Days held from February 7–9, 2018.

The Chemistry Department hosted the 27th Mona Symposium on

Natural Products and Medicinal Chemistry from 8–11 January 2018. The meeting was dedicated to the memory of Professor Cedric Herbert Hassall, FRS and Professor Wilfred Rupert Chan, CD, both of whom made immeasurable contributions to the Chemistry Department and The University of the West Indies. A Thanksgiving Service was held in their honour on January 12, 2018 at the University Chapel.

The Faculty of Science and Technology hosted its 11th Conference between April 25 and 27, 2018 under the theme: *Science for Society: F.I.T. for Purpose*. The symposium featured four keynote speakers, 42 oral presentations, and 58 poster presentations, and attracted over 150 registrants. The sessions were funded by ten sponsors and eight supporting UWI entities. A 19-member Organizing Committee, chaired by Drs. Daniel Fokum and Tannecia Stephenson, aided by a 10-member Secretariat, along with 27 other Departmental Volunteers organized the Conference activities. The Faculty acknowledges the tremendous work that went into the planning and execution of the event.

STUDENT ACHIEVEMENT

Dr. Andrea Goldson-Barnaby (Department of Chemistry) attended the American Chemical Society Conference that was held in New Orleans from March 18 to 22, 2018. The conference theme was “Nexus of Food, Energy and Water”. Dr. Goldson-Barnaby was accompanied by Kailesha Duffus (undergraduate student) and Jesse Clarke (MSc FAPT student), who obtained a travel grant of US\$2,500 from the American Chemical Society to attend the meeting.

Jermaine Smith, M.Phil. student in Chemistry, received partial funding from the European Union Horizon 2020 Marie Curie Actions Initial Training Network Programme to attend the European Doctoral Symposium (Metal-Organic Framework 2018 Conference) in Raitenhaslach Germany, April 20–May 2, 2018.

Dr. Candice Delisser, a final year Physics major, participated in a two week course of study at the Sophia University in Japan in January 2018.

Sanchez Palmer, M.Phil. student in Applied Physics (Medical Physics), was accepted to pursue an Advanced Masters in Medical Physics at the International Centre for Theoretical Physics (ICTP) commencing January 2018. The opportunity is being funded by the International Centre for Theoretical Physics.

Annaleise Aiken, M.Phil. student in Chemistry and supervised by Dr. Ian Thompson, was offered a scholarship by the Nutritional Sciences Department, University of Toronto to further her studies on her research project titled "The Structure and Quality of Proteins from the Leaves of Jamaica Varieties of Cassava (*Manihot esculenta* sp.)". Ms Aiken was away for the second semester. During her stay at the University of Toronto she was under the supervision of Professor G. Harvey Anderson.

The Annual Faculty Awards Ceremony was held on March 22, 2018 at the Mona Visitors' Lodge and Conference Centre. There were approximately 270 awardees.

Notable Mentions

The UWI Annual Research Day Awards Ceremony was held on February 9, 2018. Recipients of awards included:

- Dr. Nickeisha Stephenson (and collaborators) – Best Research Publication;
- Dr. Marvadeen Singh-Wilmot – Best Research Publication;
- Dr. Venkateswara Rao Penugonda – Best Research Publication;
- Professor Mitko Voutchkov – Most Outstanding Researcher;
- Dr. Rupika Delgoda – Most Outstanding Researcher;
- Climate Studies Group (Department of Physics) – Most Outstanding Researcher;
- Professor Simon Mitchell and Mr. Paul Williams – Research Project attracting the Most Research Funds;
- Drs. Rupika Delgoda and Sheena Francis – Research Project with Greatest Development Impact.