

DEPARTMENT OF PATHOLOGY



Dr. Gilian Wharfe
Head of Department

WORK OF THE DEPARTMENT

During the year under review the Department of Pathology continued to strive to achieve the strategic goals of the university through excellence in teaching, research and innovation. Members of staff remains committed to the teaching of undergraduates in the Pathology/Microbiology clerkship despite the huge number of students, which often poses a difficulty for effective delivery. A total of 16 articles inclusive of book chapters were published in various peer reviewed journals. Efforts to improve research and innovation have resulted in the implementation of a monthly research meeting to motivate and empower staff members to engage in research activities.

Laboratories and Autopsy Service

The department consistently provides the UHWI and other medical facilities in Jamaica and the region with high quality laboratory service.

However, this is often disadvantaged by a shortage of reagents and supplies due to recurrent budgetary constraints. Notwithstanding, the department has made significant progress in collecting fees at source for our laboratory services which has proved to be a great help in enhancing the budget.

The Histopathology Laboratory accessioned and processed 9,053 surgical cases which generated 44,656 tests. Total immunohistochemistry tests were 1,450. The Cytology Laboratory processed 2,627 pap smears and 697 non-gynaecological cases. A total of 153 autopsies were performed, including 32 perinatal autopsies. The Chemical Pathology Laboratory performed a total of 686,724 tests while Routine Haematology Laboratory received and processed 103,944 specimens. The Blood Bank processed 3,200 blood donors and performed 20,796 tests.

Laboratory Information System

This system continues to work effectively in the routine Haematology and Chemical Pathology laboratories. End users can easily access results online decreasing wait times for results as well as reducing time spent by laboratory staff in telephoning results. Anatomical Pathology has yet to get online.

Accreditation

During the year the department submitted an application for the accreditation of tests conducted in the laboratories to the Jamaica National Agency for Accreditation (JANAAC) in March 2017.

JANAAC is currently conducting a review of the documents that were submitted and should be indicating shortly the date of the On-Site Initial Assessment. At this stage a team of Assessors from JANAAC will visit the laboratories in the department to evaluate the level of conformance of its equipment, methods and staff to ISO 15189:2012.

TEACHING & LEARNING

Undergraduate Programmes

The Department remains committed to the teaching of Pathology in both Stages I and II of the MBBS programme, delivering lectures in all aspects and sub-specialties of Pathology. Every ten weeks 50–70 students rotate and sit the Pathology/Microbiology Stage II examination.

Graduate Programmes

The DM programmes in the department continue, with offerings in Anatomical Pathology, Haematology/Oncology and Chemical Pathology. Applications to the DM Anatomical Pathology and Haematology/Oncology have continued to increase. Four residents were accepted in the DM Anatomical Pathology programme this year making a total of fifteen residents in the programme. Five were accepted in the DM Haematology/Oncology programme, a total of sixteen in the programme. The Ministry of Health continues to recognize the value of these programmes by sponsoring students for these programmes. Three residents were successful in the DM (Pathology) exit examination held in November/December 2016. Two candidates sat the DM (Haematology/Oncology) exit examination in June 2017 and one was successful. One candidate sat the DM (Chemical Pathology) exit examination in November/December 2016 and was successful.

RESEARCH & INNOVATION

Jamaica Cancer Registry

Case Registration

The registration of cancers continues in earnest at the University Hospital of the West Indies, following the employment of a second Nurse Registrar in June 2016. Cancer registration from other institutions in Kingston & St. Andrew has been hampered by administrative issues regarding

employment of nurse registrars, but it is hoped that the issues will be resolved soon.

International Agency for Research on Cancer (IARC) commitments

The registry's cancer data for the period 2008–2011 was accepted for publication in the eleventh volume of “Cancer Incidence in Five Continents”, a publication from the International Agency for Research on Cancer (IARC). In addition, registry data on childhood cancer for the period 1982–2012, will be published in the third volume of *International Incidence of Childhood Cancer*, another publication from the IARC.

Personnel

The nurse registrar staff complement remains at two (2), as does the complement of pathologists who undertake the work of the registry.

Research

In keeping with tradition, the Registry continued to provide information on cancers to members of the medical community and the Ministry of Health, and to assist in various research projects.

In addition to submission of data for IARC publication, the registry also published an article on sinonasal malignancies in the international, peer-reviewed journal, *Cancer Causes and Control*, as cited under publications below.

Conferences

There will be no representation from the Jamaica Cancer Registry at this year's annual conference of the International Association of Cancer Registries (IACR). However, the registry's IACR membership will be renewed.

Future Goals

The registry will be making another thrust in the upcoming academic year to liaise with the Registrar General's Department (RGD), to acquire data to enable registration of cancer deaths within the registry. This will

require acquisition of one additional registrar, with approved access to RGD data.

Cytogenetics Laboratory

During the period at caption, the clinical and research activities of the Cytogenetics laboratory were hampered by prolonged absence of the laboratory's sole technologist. The laboratory resumed limited operation on July 24, 2017, with the assistance of Dr. Kamali Carroll from the Hugh Wynter Fertility Management Unit at the University Hospital of the West Indies, Mona.

As a result of prolonged laboratory closure, encompassing the entire period of review for this report, but for one week, only three specimens were accessioned, all of which were tissue samples related to a research project by the laboratory.

External Funding

Dr. Tracey Gibson was awarded a capacity expansion grant by the Culture Health Art Sports and Education (CHASE) Fund, in the amount of J\$5 million. The grant was used to upgrade karyotyping software in the lab and purchase probes for fluorescence *in situ* hybridization (FISH).

Cytogenetics Laboratory Staff Complement

Full-time: 1 pathologist/Cytogenetics Analyst
 1 Laboratory Technician

Part-time: 1 Cytogenetics Analyst (as of July 24, 2017)

The full-time post of Laboratory Manager also exists, but is currently not functional, as the employed individual remains absent from her post.

Research

Ms. Sashane McLean, who is pursuing the degree of Master of Science in Biomedical Research at the University of the West Indies, Mona is

currently undertaking a Cytogenetic research project, in partial fulfillment of her degree. This project has received ethical approval, and is being hosted by the Cytogenetics Laboratory, where she is supervised by staff from the laboratory and by consultant Anatomical pathology staff.

Future Goals

- Stabilization of staff infrastructure, particularly the post of Laboratory Manager
- Re-establishment of FISH testing and accessioning of oncology samples
- Formal training of the current Laboratory Technician, so that she can be employed as a Cytogenetics Technologist. This will require overseas training, and therefore, funding will be required.

INITIATIVES/ACTIVITIES

HTLV-1 Project

This project continues with participants being enrolled in various treatment trials at the NIH with local follow up and care as required. The contract has been renewed for another year.

Haemophilia Research

The NNHF project has come to an end. At the moment a research paper is in draft form for publication. Testing and diagnosis of bleeding disorders continue. There is the possibility of getting an extension.

The World Federation of Haemophilia (WFH) continues to supply clotting factor concentrates to our patients. The enrolment of our patients in their registry continues after the pilot project. Members of staff have been invited to and have attended various workshops to assist with advocacy training. There is an invitation to be part of a Twinning project with Montreal.

Sick Kids – Caribbean Collaboration

This project has been picked up for another 4 years and the funding is in place to continue this collaboration. Members have been involved in attending the telemedicine sessions and we continue to collaborate on the registry for children with cancer. Case conferences also continue and consultations on laboratory and patient care continue.

RESEARCH FELLOWSHIP

Forensic Pathology Fellowship

- Two new DM Pathology 2015 graduates, Dr. Trudy-Ann Brown and Dr. Natasha Richards were awarded The G Raymond Chang Forensic Pathology Fellowship and have now completed the fellowship training with Dr. Richards going on to further specialization in cardiovascular pathology.
- Increasing numbers of undergraduate medical students are now pursuing elective rotations in forensic pathology with joint placement at the Institute for Forensic Science and Legal Medicine.
- Forensic pathology capacity development in Jamaica: Meetings with UWI Stakeholders, along with Mr. Andrew Chang, G. Raymond Chang Foundation and Professor Michael S. Pollanen MD PhD, Department of Laboratory Medicine and Pathobiology (LMP), November 18–25, 2016.

PAPERS PRESENTED AT CONFERENCES AND SEMINARS

Poster Presentations

- K Foster, N Younger-Coleman, W Aiken, **D, Brady-West**, R Delgoda. “Prevalence of Medicinal Plant use by Cancer patients in Jamaica”. Faculty of Medical Sciences Research Day, UHWI, Kingston, Jamaica, November 2016.

- **D. Brady-West**, “Right ventricular heart Strain on CT Pulmonary Angiography in Pulmonary Embolism” Faculty of Medical Sciences Research Day, UHWI, Kingston, Jamaica, November 2016.
- KA West, **D Brady-West**, “Clinical outcomes of Severe Aplastic Anemia in Jamaican Patients” Faculty of Medical Sciences Research Day, UHWI, Kingston Jamaica.

Presentations

- **Williams NP**, “Colon Cancer Development: From Polyps to Cancer”, Jamaica Cancer Society/Association of West Indian Gastroenterologist Colon Cancer Symposium, Jamaica Pegasus Hotel, Kingston, Jamaica, March 2017.
- **Williams NP**, “Cases that make the Pathologist go Hmmm”, Association of West Indian Gastroenterologists, Thirtieth Annual meeting and International Postgraduate course 2017, Radisson Grenada Beach, Grenada, April 2017.
- Shirley R, Rattray C, Mambury I, **McGrowder D**, Morgan O, Richards U. “Postnatal assessment of the components of Metabolic Syndrome: a study in patients previously diagnosed with pregnancy-induced hypertension and gestational diabetes at the University Hospital of the West Indies and Victoria Jubilee Hospital”. Faculty of Medical Sciences – 25th Annual Research Conference, UHWI, Kingston, Jamaica, November 2016.
- **Lowe D**. “Results from UHWI Registry for Persons with Haemophilia in Jamaica”, SickKids-Novonordisk-UWI Haemophilia Symposium, Faculty of Medical Sciences, September 2016.
- **Lowe D**. “Her-2 Positive Breast Cancer – Overcoming Hurdles to Treatment”, Annual Breast Cancer Symposium (Jamaica Cancer Society), Knutsford Court Hotel, Kingston, Jamaica, October 2016.
- **Lowe D**. “Bleeding in Women”, World Haemophilia Day Symposium, University of the West Indies, Mona, Kingston, Jamaica, April 2017.
- **Chin S**. “Cancer Research in Jamaica”, Emerging Issues in Cancer and Research: Translational Challenges in the Jamaican Context

(Harvard/MGH Center on Genomics, Vulnerable Populations, and Health Disparities & The University of the West Indies, Mona, Jamaica), Faculty of Medical Sciences Teaching and Research Complex, The University of the West Indies, Mona, Jamaica, December 2016.

- **Geelal, M, Bishop K.** “Perinatal Pathology Report January–December 2016”, Annual Perinatal Conference, Departments of Obstetrics & Gynaecology and Child Health, Faculty of Medical Sciences, UWI, Mona, February 2017.
- **Bishop K,** “Perinatal Pathology Report January–December 2016: Analysis of Data”, Annual Perinatal Conference, Departments of Obstetrics & Gynaecology and Child Health, Faculty of Medical Sciences, UWI, Mona, February 2017.

PUBLICATIONS

Books & Monographs

- **Dilworth L,** Riley C and Stennett D “Plant Constituents: Carbohydrates, oils resins, Balsams and plant hormones”. In Badal S and Delgoda R (ed) *Pharmacognosy: Fundamentals, Applications and Strategy*. Elsevier: 2016, 61–76.
- **Hanchard B, Gibson TN, Bishop KL, McNaughton D, Waugh N.** “Incidence of Childhood Cancer: Jamaica, 1983–2007” International Agency for Research on Cancer (IARC), World Health Organisation (WHO), for publication in *Incidence of Childhood Cancer*, Vol 3 Ed. by P. Hesselting, F Moreno, L Gloeckler Ries, H Young Shin, C Stiller, E Steliarova-Foucher.

REFEREED JOURNAL ARTICLES

- **Gibson TN, McNaughton DP, Hanchard B.** “Sinonasal malignancies: incidence and histological distribution in Jamaica, 1973–2007. *Cancer Causes Control* 2017. E-published ahead of print: <http://link.springer.com/article/10.1007/s10552-017-0916-9>
- Gardner N, Luke K, Wheatley W, De La Haye, P, Bahado-Sing L,

- Dilworth L, McGrowder D**, et al. "Plasma cocaine metabolite and liver CYP450 3A4 isoenzyme levels as indicators of cocaine dependence in rats treated with nutritional supplements". *International Journal of Measurement Technologies and Instrumentation Engineering* 2015; 5(2): 28–43.
- Tapper M, **Thompson R, Dilworth L, McGrowder D**. "Chemical composition of urinary tract calculi assessed by a basic method. *Indian Journal of Applied Research* 2017; 7(7):537-539.
 - **Buchner-Daley L, Brady-West D, McGrowder D**, Clark J. "Hypereosinophilic syndrome: A report of two cases and review of the literature". *The Southeast Asian Journal of Case Report and Review* 2016; 5(6): 2547-2551.
 - Learner-Ellis J, Doneney T, Ahmed H, George S, **Wharfe G, Chin S, Lowe D**, Royer R, Zhang, Narod S, Hurley J, MRAkbari. "A High Frequency of PALB2 Mutations in Jamaican Patients with Breast Cancer" *Breast Cancer Res Treat* 2017Apr; 162(3):591-596. Doi:10.1007/s10549-017-4148-1.Epub 2017Feb1 (IF-4.085)
 - Foster, SR, Omouruyi FO, Bustamante J, Lindo RLA, **Dilworth LL**. (2016) "The effect of combined inositol hexakisphosphate and inositol supplement in streptozotocin-induced type 2 diabetic rats". *International Journal of Experimental Pathology*, 97:397-407 doi:10.1111/iep.12210.
 - Facey A, **Dilworth L**, Irving R (2017) "A Review of the Leptin Hormone and the Association with Obesity and Diabetes Mellitus". *Journal of Diabetes and Metabolism* 8:727.doi:10.4172/2155-6156.1000727.
 - Aldeam Facey, **Lowell Dilworth**, Rosemarie Wright-Pascoe, Melissa Walker, Rachel Irving. "Association of Serum Lactate Dehydrogenase, Creatinine Kinase and Adiposity with Basal lactate Concentration in Male and Female Jamaican Athletes". *International Journal of Sports Science*. 2017; 7(2):94-98. Doi:10.5923/j.sports.20170702.11.
 - Aldeam Facey, **Lowell Dilworth**, Rosemarie Wright-Pascoe, Melissa Walker, Rachael Irving. "The metabolic Hormones Leptin, Adiponectin and troponin T in Type 2 Diabetes Patients and Athletes in Jamaica".

International Journal of Diabetes Research, Vol 6 No 2, 2017, pp. 35–40. Doi:1-.5923/j.diabetes.20170602.01.

- Shadae R Foster, **Lowell L Dilworth, Rory Thompson**, Ruby L Lindo and Felix O Omoruyi (2017) “Effects of combined inositol hexakisphosphate and inositol supplement on antioxidant activity and metabolic enzymes in the liver of streptozotocin-induced type 2 diabetic rats”. *Chemico-Biological Interactons*, pp. 108–115.doi 10.1016/j.cbi.2017.07.024
- **Marlene Tapper, Rory Thompson, Lowell Dilworth, Donovan McGrowder** (2017) “Chemical Composition of Urinary Tract Calculi Assessed by a Basic Method”. *Indian Journal of Applied Research*. Volume 7: Volume 7, Issue 7 July 2017
- Nwokocha C, Palacios J, Simirgiotis MJ, Thomas J, Nwokocha M, Young L, **Thompson R**, Cifuentes F, Paredes A, Delgoda R. “Aqueous extract from leaf of Artocarpus altilis provides cardio-protection from isoproterenol induced myocardial damage in rats: Negative chronotropic and inotropic effects. *J Ethnopharmacol*. 2017 May 5;203:163–170. Doi 10.1016/j.jep.2017.03.037.Epub 2017 Mar 22.
- Belza C, **Thompson R**, Somers GR, de Silva N, Fitzgerald K, Steinberg K, Courtney-Martin G, Wales PW, Avitzur Y. “Persistence of hepatic fibrosis in pediatric intestinal failure patients treated with intravenous fish oil lipid emulsion”. *J Pediatr Surg*. 2017 May;52(5):795-801.doi:10.1016/j.jpedsurg.2017.01.048. Epub 2017 Jan 30

PUBLIC SERVICE

Dr. D. McGrowder

- Member, Accreditation Evaluation Committee, Jamaica National Agency for Accreditation (JANAAC)

Professor B. Hanchard

- Cytopathology Consultant, Jamaica Cancer Society

C. Escoffery

- Cytopathology Consultant, Jamaica Cancer Society

Dr K Bishop

- Cytopathology Consultant, Jamaica Cancer Society

Dr. S. Shirley

- Cytopathology Consultant, Jamaica Cancer Society

Dr. M Bromfield

- Cytopathology Consultant, Jamaica Cancer Society

Dr. T. Gibson

- Cytopathology Consultant, Jamaica Cancer Society

Dr. L Dilworth

- Board Member, North Eastern Health Regional Authority
- Board Member, University Council of Jamaica
- Board Member, The Council of Community Colleges of Jamaica
- Board Member, The Rural Agricultural Development Authority

Dr. N. Williams

- Cytopathology Consultant, Jamaica Cancer Society

Dr. J. Jaggon

- Cytopathology Consultant, Jamaica Cancer Society

Dr. S. Chin

- Member, Oncology Advisory Board, National Health Fund, Jamaica

Dr. D. Lowe

- Clinical Advocate, Jamaica Haemophilia Society
- Volunteer Clinician, National Blood Transfusion Service

Dr. G. Wharfe

- Chair, Haemophilia Society of Jamaica
- Member, Oncology Advisory Board, National Health Fund Jamaica

INCOME GENERATION

- Capacity expansion of the Cytogenetics Laboratory
Funding source: Culture Health Arts Sports and Education (CHASE) Fund

Date of Award: November 2016

Total value: J\$5 million

DISTINGUISHED VISITORS TO THE DEPARTMENT

- Dr. Andrew Evans, Department of Pathology, University Health Network, Toronto, Canada
- Dr. Stephen Morley, Toxicology Unit, Department of Clinical Chemistry, Leicester, UK
- Dr. Matthias Klammer, Consultant Haematologist/Bone Marrow Transplantation St. George's University Hospital, London

AWARDS

Students – Undergraduate

- Kereene Francis – Pathology/Microbiology Medal (Best Overall Performance)
- Dominic Landell – S.E.H. Brooks Book Prize (Best Overall Performance in Anatomical Pathology)