

DEPARTMENT OF BASIC MEDICAL SCIENC

Wayne McLaughlin, BSc *Waterloo*, PhD *UWI*
– Head of Department

WORK OF THE DEPARTMENT

During the 2007/2008 Academic Year, one of the major activities of the Department was to develop and present its five-year strategic plan. The key strategic areas that were considered included teaching and learning, research and graduate studies, developing core facilities, encouraging collaborative and interdisciplinary research, staffing, developing taught masters programmes, improving infrastructure and equipment, and improving income generation capabilities.



Under teaching and learning, both the BBMed Sci and Physical Therapy programmes will be reviewed in the next academic year to ensure that they reflect developments in the discipline and professional practice. An internship programme for students in the BBMed Sci programme will be developed to improve job skills through placement in industry. New academic programmes and courses to fill identified gaps or respond to emerging market needs e.g. Forensic Science, Microbiology were initiated. The Department does not yet offer taught graduate programmes. This is an area that will be explored in the coming year in order to provide potential students with access to attractive taught MSc programmes that are flexible in delivery and meet stakeholder needs.

In the area of research and graduate studies, the key focus was to strengthen academic supervision and overall programme quality in research at the MPhil and PhD levels and reduce the through-put time of graduate students. In the last academic year weekly postgraduate seminars continued with much success. The department also began to invest in world-class research infrastructure by developing core research and service facilities which are recognised as best practice. The department with funding from the Dean's Office and Bursary acquired a state-of-the-art GC/MS, an automated solvent extraction system and

freeze drier to support undergraduate training and to help to stimulate translational research and commercialisation particularly in biochemistry, pharmacology and toxicology. Caribbean Genetics (CARIGEN) purchased several pieces of key equipment, including a real time PCR cyclor and a level-2 biosafety cabinet, for work in molecular diagnostics. Notably, the Department of Microbiology in collaboration with CARIGEN was successful in the WHO External Quality Assessment Programme (EQAP) for the Detection of influenza Virus type A by real time PCR. The Animal House was refurbished to include animal breeding rooms and staff facilities.

In 2007/08 one-hundred and sixty-nine students were registered in the MBBS programme. The BMed Sci programme continued to be oversubscribed but only 22 students were accepted due to space limitation. Forty-one students were accepted in the Physical Therapy programme and 228 students were enrolled in the FPAS Biochemistry, Biotechnology and Molecular Biology programmes. Students' assessment of teaching was good. The average scores for students' assessment of lecturers in the MBBS, BMed Sci and FPAS programmes were 4.29, 4.33 and 3.88, respectively, and the average scores for course assessment were 3.89, 4.10 and 3.65, respectively.

Postgraduate registration declined slightly. Four students were registered in Biochemistry, one in Molecular Biology, three in Pharmacology and two in Physiology.

The Department hosted a workshop on "Early-onset of type-2 diabetes: metabolic and genetic characterization in Mexico and Jamaica" The workshop was part of the Technical and Scientific Co-operation Programme between Mexico and Jamaica, and was held on April 15, 2008. Members of the academic staff and their postgraduate students participated in several international conferences, and were also successful in attracting significant research funds of approximately US\$200,000. The per capita publication rate for the department was 1.0, down from 1.14 in the previous year.

The Department welcomed Dr. Manish Ramavat, Lecturer in Physiology, Dr. Roy Thomas Lecturer in Anatomy, Mrs. Sharmella Ropchand-Martin and Mrs. Gail Nelson, Lecturers in Physical Therapy. Dr. Lauriann Young-Martin was appointed Head of the Physiology Section, replacing Dr. James Mills who retired. Mr. Michael Gardner, Head of the Anatomy Section was on sabbatical leave. During this period Mr. Cyril Fletcher acted in the capacity of Head of the

Anatomy Section. Dr Shamir Cawich was appointed in the Department of Surgery and Dr. Roger Hunter resigned. Dr. Rachael Irving was appointed Research Fellow in the Biochemistry Section, where she continues to work in the area of diabetes and the genetics of Jamaica athletes in collaboration with University of Glasgow and the University of Technology (UTECH).

STAFF AWARDS AND RECOGNITION

Dr. Michelle Hamilton was awarded the UWI/Guardian Life Premium Teacher of the Year. The following academic staff members were also recognised for score equal to or in excess of 4.8 on their students' evaluations: Professors Norma Anderson and Dalip Ragoobirsingh; Drs. Maxine Gossell-Williams, Oswald Simon, and Paul Singh; Ms. Rosalee Chingara, Carron Gordon and Sharmella Martin. The following persons were recognised for their years of service: Dr. Andrew Pearson (30), Merle Dennis-Lawrence (21), Dr. Icolyn Amarakoon (15), Thornia Smith (15) and Sandra Bennett-Miller (15)

PAPERS PRESENTED

- Bahado-Singh, P.S., Wheatley, A.O., Osagie, A.U., Boyne, M., Choo-Kang, E., Morrison, E.Y. St. A., Ahmad, M.H. and Asemota, H.N. (2007). Glycemic indices of Caribbean foods: Use in dietary/lifestyle management of type 2 diabetes and cardiovascular disease prevention. Second international symposium on human health effects of fruits and vegetables. October 9-13, 2007, Houston Texas.
<http://favhealth2007.tamu.edu>.
- Beman, D, Crawford-Sykes, A, Williams, E, Paul, TJ, Branday, JM, Young, L (2007). Standard setting of medical examinations enhancing our quality assurance strategy at the University of the West Indies, Mona. 2007 CANQATE Conference, November, Ocho Rios, Jamaica.
- Beman, D, Paul, TJ, Branday, JM, Young, L, Williams, E (2007). Tough for students but easy for judges or vice versa?! An early evaluation of Angoff item accuracy in three examinations. 11th Annual IAMSE Meeting, Cleveland, Ohio.

- Dilworth, L., Asemota, H., Green, C. and Bailey, D. (2007). Bioactive compounds in commonly eaten foods and their impact on animal nutrition. 121st AOAC International Annual Meeting and Exposition, Anaheim, California, USA.
- Harvey A. C., Riley C. K., Adebayo S. A., Wheatley A. O., Ahmad H. and Asemota H. N. (2008). Effect of Acetylation on Properties of Yam (*Dioscorea* Sp.) Starches and Subsequent Impact on Compaction and Mixing in Tablet Formulation. 122nd AOAC Conference in Dallas, Texas.
- Less, L.A., D. Ragoobirsingh, E. Y. St. A. Morrison, M. Boyne and P. Johnson (2008) An Assessment of a Community Based Intervention for Diabetes Control in Adults with Type 2 Diabetes Mellitus in Three Parishes in Jamaica: participants were assigned to interventions using random allocations. 14th Annual International Conference on Diabetes, March 6-9, 2008, Montego Bay, Jamaica.
- Levy A. S. (2008) Interactions of herbal medicines with conventional drugs: Be careful. CARPIN Annual Conference, Kingston Jamaica, May 2008
- McFarlane-Anderson N. (2007) Cervical dysplasia and cancer in Jamaica. Afro-Caribbean Cancer Consortium. Satellite Meeting of the CHRC 52nd Annual Meeting.
- McFarlane-Anderson N, Bazuaye PE, Jackson M D, Smikle M, Fletcher H. (2007) Hormonal contraceptive use in Jamaican women: is there an association with cervical lesions? 2nd Annual International Meeting of the African-Caribbean Cancer Consortium (AC3), Miami, Fl, USA
- Paul, T. J, Scarlett, M, Williams, E, Crawford-Sykes, A, Branday, JM, Young, L (2007). Feedback from professionals as a contribution to Quality Assurance in medical education – proposal for a quality surveillance system. 2007 CANQATE Conference, November, Ocho Rios, Jamaica.
- Paul, T. J, Williams, E, Young, L, Branday, JM, Carpenter, R, Gordon, O, (2007). Adding personality to medical teaching at the University of the West Indies, Jamaica. 11th Annual IAMSE Meeting, Cleveland, Ohio.

PUBLICATIONS

Book Chapters

- * Duff E. M., N. McFarlane-Anderson and R. A. Wright-Pascoe “Barriers to control of Diabetes mellitus in a developing country: A search for effective interventions” pp. 1-6. Research Trends in Nutrition for the Middle Aged and Elderly. (2008) Ed. J. P. Urster. Nova Science publishers, Inc.

Refereed Journal Articles

WIMJ = *West Indian Medical Journal*

- * Agoreyo, B.O., Golden K.D and S. E. Brown (2008). Analysis of genetic variability among plantain cultivars (*Musa paradisiacal* L.) using arbitrarily primed PCR technique. *African Journal of Biotechnology* 7: 1041-1045.
- * Bowers, A.S., Pepple, D.J. and Reid, H.L. (2008). Oxygen delivery index in subjects with normal haemoglobin (HbAA), sickle cell trait (HbAS), and homozygous sickle cell disease (HbSS). *Clinical Hemorheology and Microcirculation* 10(24: 1-7.
- * Brown S. E. and W. McLaughlin (2008). The use of non-specific esterases in the differentiation of three adult whitefly species (Homoptera, Aleyrodidae) in Jamaica. *Journal of Tropical Agriculture* 82: June issue.
- * Brown, S.E., B.O Been and W.A. McLaughlin (2007). First report of the presence of the lethal yellowing group (16Sr IV) of phytoplasmas in the weeds *Emilia fosbergii* and *Synedrella nodiflora* in Jamaica. *New Disease Reports Volume* 16. <http://www.bspp.org.uk/ndr>
- * Brown, S. E., B.O. Been and W.A. McLaughlin (2008). First report of lethal yellowing group (16Sr IV) of phytoplasmas in *Vernonia cinerea* in Jamaica. *Plant Disease* 92: 1132.
- * Brown P.D., S.Badal, S.Morrison & D.Ragoobirsingh (2007). Acute impairment of insulin signalling by dexamethasone in primary cultured rat skeletal myocytes. *Molecular and Cellular Biochemistry* 297 (1-2): 171-177.

- * Cawich, S. O., Michael Gardner, Peter Johnson, Ramanand Shetty and Klaus Wolf. (2008). The clinical significance of an elongated styloid process. *The Internet Journal of Family Practice*. 6 (1).
- * Cawich, S. O., Peter Johnson, Michael Gardner, Eric Williams and Lisa Burnett. (2008) Radiological Evaluation of the Stylohyoid Syndromes. *The Internet Journal of Radiology*. 8 (1).
- * Cawich S. O., Bambury I, Mitchell DIG, Plummer JM, E.W. Williams. (2007) Colostomy for a Fourth Degree Perineal Laceration: Where is the evidence? *Int J. Gynaecol Obstet*. 8: (2).
- * Crawford, T., Michael T.Gardner and Donovan McGrowder. (2008) A Contemporary Analysis of Sexual Trends and Transmitted Infections Among Outpatients at Two Public hospitals in Jamaica. *American Journal of Infectious Diseases* 4 (2) : 109-116.
- * Crawford, T., Donovan McGrowder, Michael Gardner and Lorenzo Gordon. (2007) Socio-Economics and Child-Bearing characteristics of young Adults in Jamaica. *European Journal of Scientific Research* 18 (4) : 680-688.
- * Dilworth, L.L., Omoruyi, F. O. and Asemota, H.N. (2007). *In vitro* availability of some essential minerals in commonly eaten processed and unprocessed Caribbean tuber crops, *BioMetals*, 20:37-42. URL <http://dx.doi.org/10.1007/s10534-006-9012-4>
- * Dilworth, L., Omoruyi, F.O., Reid, W. and Asemota, H.N. (2008). Bone and Faecal Minerals and Scanning Electron Microscopic Assessments of Femur in Rats Fed Phytic Acid Extract from Sweet Potato (*Ipomoea batatas*). *Biometals* 21:133-141.
- * Gossell-Williams M. (2007) Generic Substitutions: A 2005 survey of the acceptance and perceptions of physicians in Jamaica. *WIMJ* 56 (5) 458-463.

- * Gossell-Williams, M., K. Lyttle, T. Clarke, M. Gardner, O. Simon. (2008) Supplementation with pumpkin seed oil improves plasma lipid profile and cardiovascular outcomes of female non-ovariectomized and ovariectomized Sprague-Dawley rats. *Phytotherapy Research* 22 (7): 873-877
- * Gossell-Williams, M, Davis A, Aiken W, Mayhew R. (2008) Herbal preparation use among patients with benign prostatic hyperplasia attending a urology clinic in Jamaica, West Indies. *WIMJ* 57:75.
- * Gossell-Williams, M, Fletcher, H. Zeisel, SH. Unexpected depletion in plasma choline and phosphatidylcholine concentrations in a pregnant woman with bipolar affective disorder being treated with lithium, haloperidol and benztropine: a case report. *J. Med Case Reports*. 2008. 20;2(1):55.
- * Green, C.O., Wheatley, A.O., Dilworth, L.L., McGrowder, D., Mills, J., Morrison, E.Y.St.A., Asemota, H.N. (2007) Effect of Jamaican Ortanique peel polymethoxylated flavones on kidney and thier function in diet-induced hypercholesterolemic rats. *WIMJ* 56 (Suppl 3): 1-42.
- * Irving, R., Mills, J., Choo-Kang, E., Morrison, E., Wright-Pascoe, R., McLaughlin, W., Mullings, M. (2007). Depressive Symptoms in Children of Women with Newly Diagnosed Type 2 Diabetes. The Primary Care Companion to the *Journal of Clinical Psychiatry*. 9:21-24.
- * Irving, R., J. Mills, E. Choo-Kang, W. McLaughlin, R. Wright Pascoe, E. Morrison and P. Brown (2007) Diabetes and psychological co-morbidity in children with a family history of early onset type 2 diabetes. *International Journal of Psychology*.
- * Irving, R., J. Mills, E. Choo-Kang, W. McLaughlin, A. Mullings, E. Morroson and R. Wright Pascoe (2008). The burden of gestational diabetes in women of families with autosomal dominant type 2 diabetes. *Revista Panamericana de Salud Pública/Pan American Journal of Public Health* 23(2):85-90
- * Irving R, Mills J. L, Choo-Kang E, Mullings A, Morrison E. Y, Wright-Pascoe R. McLaughlin W. (2008). Glycemic control

in patients with early onset autosomal dominant type 2 diabetes. *The Internal Journal of Medicine* ISSN 1 360-0168.

- * Lawrence T. G., C. Green, M. E. Roye and W. A. McLaughlin. (2005). Potential of *Pseudomonas putida* NCIMB-9571 and *Bacillus* sp. UWI-3 to promote growth and delay potyvirus disease development in greenhouse-grown *Capsicum chinense* Jacquin cv. Scotch Bonnet pepper. *Tropical Agriculture*. 82 (3): 188 – 196.
- * Levy A.S. (2008) Mechanisms involved in the anti-inflammatory activity exhibited by 6-shogaol in complete Freund's adjuvant mono-arthritis in rats. *WIMJ* 56 (3): pp.1-42.
- * McFarlane-Anderson N, Bazuaye PE, Jackson MD, Smikle M and H. M. Fletcher (2008) Cervical dysplasia and cancer: use of hormonal contraceptives in Jamaican women. *BMC Women's Health* 8:9
- * McGrowder, D., P. Brown, L. Gordon, S. Budall, R. Irving, R. Alexander-Lindo, M. Mhlanga (2008). The Application of Thromboelastography in Clinical Practice. *Haema* 10 (2): 61-67.
- * Omoruyi, F.O., Dilworth, L. and Asemota H.N. (2007). Anti-Nutritional factors, zinc and calcium in some Caribbean tuber crops and the effect of boiling and roasting. *Nutrition and Food Science*, 37: (1) 8-15
- * Pepple, D.J. (2008). The role of hypoxia and substance P in the painful crisis of homozygous sickle cell disease. *Medical Hypotheses* 70(4): 901-920.
- * Ragin C, Taioli E, McFarlane-Anderson N, Avery G, Bennett F, M. Jackson (2007) African-Caribbean Cancer Consortium for the study of viral, genetic and environmental cancer risk factors: Meeting Report, *BMC Infectious Agents and Cancer* 2:17.
- * Riley, C.K., Adebayo, S.A., Wheatley, A.O. and Asemota, H.N. (2008). The interplay between Yam (*Dioscorea* sp.) starch botanical source, micromeritics, and functionality in paracetamol granules for reconstitution. *Eur. J. Pharm. Biopharm.*: DOI.org/10.1016/j.ejpb.2008.03.001

- * Riley, C. K., Adebayo, S.A., Wheatley, A.O. and Asemota, H.N. (2008). Surface properties of yam (*Dioscorea* sp.) starch powders and potential for use as binders and disintegrants in drug formulations. *Powder Technology*: 185, 280-285. (www.sciencedirect.com).
- * Unwin, N., R. Bhopal, L. Hayes, M. White, S. Patel, D. Ragoobirsingh, G. Alberti (2007). A comparison of the new international diabetes federation definition of metabolic syndrome to WHO and NCEP definitions in Chinese, European and South Asian origin adults. *Ethnicity and Disease* 17: 522-528.
- * Vigilance, J. E., H. L. Reid (2008). Segmental blood flow and rheological determinants in diabetic patients with peripheral occlusive arterial disease. *J Diabetes Complications* 22 (3):210-216.
- * Xuereb Godfrey, Pauline Samuda, Dalip Ragoobirsingh, Errol Y (2007) Morrison Improving best practices through nutrition education among Caribbean healthcare professionals. *International J. Diabetes and Metabolism* 15: 88-93

Abstract in Peer Reviewed Journal

- * Bowers, A.S., Pepple, D.J., Reid, H.L. (2007). The oxygen delivery index in subjects with normal haemoglobin (HbAA), sickle cell trait (HbAS) and homozygous sickle cell disease (HbSS). *WIMJ* 56 (Suppl 3): 27
- * Bramwell G, Wierenga A, Jackson M, Fletcher H, McFarlane-Anderson N. (2006) Methylene tetrahydrofolate reductase genotypes, homocysteine and folate levels in women with pre-eclampsia. *WIMJ* 2006; 55 (Suppl):21.
- * Cawich, S. O. M Arthurs, T Murphy, JM Plummer, DIG Mitchell, EW Williams, MS Newnham, MEC Mcfarlane. (2007) Recent Advances in Endoscopic Retrograde Cholangiopancreatography at the University Hospital of the West Indies. *WIMJ*. 56(S3): 3
- * Cawich, S. O., M. Arthurs, E.W. Williams, D.A.L. Laws and J. Williams-Johnson. (2007). The Experience with

- Percutaneous Endoscopic Gastrostomy at the University Hospital of the West Indies in Jamaica. *WIMJ* 56(S3): 32.
- * McFarlane-Anderson N. Technology in Diabetes Management. 2008. *WIMJ*. 57 (Suppl). 18.
 - * Plummer, J. M., M. A Arthurs, DIG Mitchell, J Deans-Minott, SO Cawich. (2007) Laparoscopic Colectomy the University Hospital of the West Indies: Are we ready for prime time? *WIMJ* 56(S3): 21.
 - * Riley, C.K., Wheatley, A.O., Adebayo, S.A, Ahmad, M.H., Morrison, E.Y. St. A. and Asemota, H.N. (2008). Evaluation of local tuber starches as excipients for tablet and reconstituted granule formulations for diabetic individuals. *WIMJ* 57 (Suppl. 1): 37.
 - * Simon G, McFarlane-Anderson N, Fletcher H, Golden K, Wharfe G, Ogegbo O (2006) Phytoestrogen levels in selected Jamaican foods. *WIMJ*; 55(Suppl) :24
 - * Singh, K., D Kesavi, S. Melani Rajendran (2007) Tendinous architecture of extensor digitorum. *WIMJ* 56:(Suppl 3) 33.
 - * Watt A, Ragin C, Younger N, Garwood D, Jackson M, Smikle M, Fletcher H, McFarlane-Anderson N. (2007) Human papillomavirus (HPV) infection in Jamaican women. *WIMJ* (Suppl) 56: 31.
 - * Watt A, Ragin C, Younger N, Garwood D, Jackson M, Smikle M, Fletcher H, McFarlane-Anderson N. (2006) Investigation of human papilloma virus infection in pregnant and non-pregnant women in Jamaica. *WIMJ* 56 (Suppl): 23.
 - * Watt, A., C. Ragin, N. Younger, D. Garwood, M. Jackson, M. Smikle, H. Fletcher, N. McFarlane-Anderson. (2007) High-risk human papillomavirus (HPV) genotypes in Jamaican women. *Proc. Am. Assoc. for Cancer Research.*, :LB-122.

INCOME GENERATION

Research Grants

Professor Helen Asemota

Environmental Health Foundation of Jamaica (EHF). "Bioactivity Screening of Jamaican Plants Extracts" US\$8,600.00.

Dr. Paul Brown

National Health Fund (PI) "Seroepidemiology and pathophysiology of leptospirosis in Jamaica" J\$6,200,000

University of Minnesota Interdisciplinary International Research Circle Grant (Co-PI) "Geographical information system (GIS) as a tool in epidemiological assessment of human leptospirosis in Jamaica". US\$35,000

Dr. Sherline Brown

Coconut Industry Board/Common Funds for Commodities (CFC) "Sustainable Coconut Production through Control of Coconut Lethal Yellowing" (CFC/FIGOOF/22) US\$29,500

Dr. Maxine Gossell-Williams

CHRC Grant Award: "Evaluation of the physiological, cytological benefits of pumpkin seed oil supplementation in post-menopausal women". US\$5000

Medi-Grace, HD Hopwood, Cari-Med. "Islandwide survey of the prevalence of adverse drug events from a pharmacy perspective. J\$30,000

Dr. Lisa Lindo

Principals New Initiative Fund " The effect of some nitric oxide releasing compounds on the central nervous system and platelet aggregation" J\$1,500,000

Dr. Dagogo Pepple

Principal's New Initiative Fund: "Maternal blood viscosity and perinatal outcome in homozygous sickle cell disease" J\$1,400,000

Dr. Lauriann Young-Martin

Environmental Health Foundation (EHF). “The Neurobiology of Drug of Drug Addiction: Neurophysiological and Behavioural Mechanisms Associated with Addiction. **J\$250,000**

School of Graduate Studies and Research, Mona Campus. “Mechanisms Associated with Learning and Memory in Ageing”. **US\$3,790**

School of Graduate Studies & Research Funding for Postgraduate students totalled approximately **US\$18,000**

CATEGORIES OF STUDENTS

First Class Honours Degree Awarded

BB Med Sci	Pharmacology	2
	Physiology	1
	Physical Therapy	6
	Biotechnology with Botany	2

Postgraduate Degrees Awarded:

Sasha Campbell	PhD Biochemistry
Janet Campbell-Shelly	PhD Pharmacology
Damian Cohall	PhD Pharmacology
Yvonne Bailey-Shaw	MPhil Biochemistry
Suzette Curtello	MPhil Biochemistry
Margot Thompson	MPhil Pharmacology

PUBLIC SERVICE

Professor Helen Asemota

- Member, International Proxy Parents’ Education Committee, Jamaica.
- Scholarship Liaison Officer, Organization of scholarships/ bursaries for underprivileged Jamaican students including some UWI students.

- Member of Executive Committee, International Christian Fellowship (ICF), USA.

Dr. Paul Brown

- Member, Technical working group on Leptospirosis, Jamaica

Mr. Michael Gardner

- Executive Member, Jamaica Historical Society

Dr. Kerith Golden

- Vice Chairman, Stock Form Road Citizens Association, Golden Spring, St. Andrew
- Member, Editorial Advisory Board for Stewarts Post Harvest Review.

Dr. Maxine Gossell-Williams

- Scholarship Chair, Jamaica Fulbright-Humphrey's Alumni Association
- Member, Optimist Club of North St. Andrew
- Pharmacology Section Representative , Central Drug and Therapeutics Committee- Ministry of Health.
- Executive Member, Citizen Association of Armour Glades

Professor McFarlane-Anderson

- Chairman, Education Committee - International Proxy Parents
- Member, Friends of Foundation for International Self Help (FISH).

Dr. Wayne McLaughlin

- Board Member, Coconut Industry Board
- Deputy Chairman, National Commission on Science and Technology, Jamaica - Biosafety Committee
- Council Member, Jamaica Society for Agricultural Sciences

Professor Dalip Ragoobirsingh

- Chief Examiner, Caribbean Examination Council, CSEC Human & Social Biology

- Diabetes Educator, Diabetes Association of Jamaica (DAJ)

Dr. Oswald Simon

- Observer, Technical Advisory Committee for the CARICOM Drug Testing Laboratory

Dr. Paul Singh

- Member, Caribbean Poison Information Network Management Committee

Dr. Lauriann Young-Martin

- Council Member, Holy Cross Community