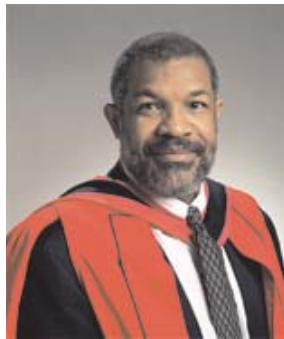


TROPICAL MEDICINE RESEARCH INSTITUTE (TMRI)

Professor Terrence Forrester, MB BS, DM, PhD, FRCP – Director

WORK OF THE INSTITUTE

Getting Research into Policy, Programmes & Practice



The Institute continues to be represented at national and regional levels in forums that have the potential to promote the uptake of research findings. In Jamaica and Barbados, the Institute has forged close working relationships with the Chief Medical Officers. In both of these countries, the Institute has responded to Ministry of Health identified information gaps. In Barbados, epidemiology projects have been established in order to address

HIV/AIDS and more recently, chronic non-communicable diseases through national registries. Likewise, in Jamaica, the Epidemiology Research Unit has established projects to provide information on Chronic Diseases and wider lifestyle health risks, and evaluated nutritional interventions in schools at the request of the Ministry of Education. The Sickle Cell Unit provides a cord blood screening service for the Kingston Metropolitan Area on behalf of the Ministry of Health. A formal partnership with the Ministry of Health was established this year to facilitate the design and testing of interventions to prevent and better manage chronic diseases.

The TMRI continues to contribute to the work of the Caribbean Commission on Health and Development. The Institute was given the responsibility to prepare the advisory paper on non-communicable diseases, such as hypertension, diabetes and mental disease. This commission, chaired and led by Sir George Alleyne, informed National Cabinets as well as Heads of Governments of CARICOM Heads of Government during the period under review. A Caribbean response has

been defined led at the highest levels by the Prime Minister of Trinidad and Tobago.

Expanding Training Programmes

MBBS

The TMRI has collaborated with the Department of Community Health and Psychiatry to design and deliver courses for Epidemiology and Statistics to 500 students reading for the MBBS. The Institute also delivers courses on Nutrition in the MBBS undergraduate curriculum.

MSc Epidemiology

The ERU completed the design of the MSc Epidemiology which was delivered for the first time in the academic year 2006/2007.

MPhil/PhD

The Institute currently has 7 students enrolled.

Clinical Fellowship

There are five Clinical Fellowships, 4 tenable in the Sickle Cell Unit and the other in the TMRU – the two Units which have direct responsibility for patient care. Fellows have an opportunity to work directly with patients with sickle cell disease, malnutrition or patients requiring parenteral nutritional support, and to develop a research project within that clinical context. Fellows are ideally post-DM, and reside in the Programme for 2 years leading to the MD degree.

Post Doctoral Fellowships

Three fellowships were created October 1, 2000 and funds to operate the programme were fully realised in 2007. This is the first structured post doctoral fellowship programme in the UWI and has as one of its prime objectives, the efficient transformation of PhD graduates into independent researchers. All posts are currently filled.

Outreach and Public Service

The TMRI provides in-hospital care for children with severe malnutrition at the TMRU ward. Through the TMRU, the Institute also provides a Clinical Nutrition service to the University Hospital,

offering nutritional support to the critically ill, including enteral and parenteral nutrition. Through the Sickle Cell Unit, the Institute provides ambulatory care for approximately 1200 sickle cell patients per month. In addition to the clinical care offered on site, TMRI also provides an outreach programme for social work and social welfare. It is hoped to collaborate with additional private sector partners and NGOs to improve the level of services provided to out-patients.

Institute staff serves on several boards in the private and public sectors, including the Environmental Foundation of Jamaica, OMNI Insurance, National Health Fund, National Advisory Committee on Health, National Council on Drug Abuse and St Joseph Hospital.

PUBLICATIONS

WIMJ = West Indian Medical Journal

Tropical Metabolism Research Unit

- * Jahoor F, Badaloo A, Vilapando S, Reid M, Forrester T. "Arginine flux and intravascular nitric oxide synthesis in severe childhood undernutrition". *Am J Clin Nutr* 2007; 86(4): 1024-1031
- * McKenzie C, Wakamatsu K, Hanchard NA, Forrester T, Ito S. "Childhood malnutrition is associated with a reduction in the total melanin content of scalp hair". *Br J Nutr* 2007; 98(6): 159-164
- * Jahoor F, Badaloo A, Reid M, Forrester T. "Sulfur amino acid metabolism in children with severe childhood undernutrition: methionine kinetics". *Am J Clin Nutr* 2006; 84(6): 1400-1405
- * Jahoor F, Badaloo, Reid M, Forrester T. "Sulfur amino acid metabolism in children with severe childhood undernutrition: cysteine kinetics". *Am J Clin Nutr* 2006; 84(6): 1393-1399.
- * Walker SP, Thame MM, Chang SM, Bennett F, Forrester T. "Association of growth in unero with cognitive function at age 6-8 years". *Early Hum Dev* 2007; 83(6): 255-260.
- * Boyne MS, Sargeant LA, Bennett FI, Wilks RJ, Cooper RS, Forrester TE. "Isoprostanes, a marker of lipid peroxidation,

may not be involved in the development of glucose intolerance". *Diabetes Res Clin Pract* 2007; 76(1): 149-151.

- * Kalra L, Rambaran C, Iveson E, Chowienczyk PJ, Hambleton I, Ritter JM, Shah A, Wilks R, Forrester T. The role of inheritance and environment in predisposition to vascular disease in people of African descent. *J Am Coll Cardiol*. 2006 Mar 21; 47(6): 1126-33. Epub 2006 Feb 23.
- * Leary S, Fall C, Osmond C, Lovel H, Campbell D, Eriksson J, Forrester T, Godfrey K, Hill J, Jie M, Fall C, Newby R, Robinson S, Yajnik C. "Geographical variation in neonatal phenotype". *Acta Obstet Gynecol Scand* 2006; 85(9): 1080-1089.
- * Leary S, Fall C, Osmond C, Lovel H, Campbell D, Eriksson J, Forrester T, Godfrey K, Hill J, Jie M, Law C, Newby R, Robinson S, Yajnik R. "Geographical variation in relationships between parental body size and offspring phenotype at birth". *Acta Obstet Gynecol Scand* 2006; 85(9): 1066-1079
- * Marshall KG, Howell S, Reid M, Badaloo A, Farrall M, Forrester T, McKenzie CA. "Glutathione S-transferase polymorphisms may be associated with risk of oedematous severe childhood malnutrition". *Br J Nutr* 2006; 96(2): 243-248.
- * Jahoor F, Badaloo A, Reid M, Forrester T. "Glycine production in severe childhood undernutrition". *Am J Clin Nutr* 2006; 84(1). 143-149.
- * Rambaran C, Chowienczyk P, Ritter J, Shah A, Wilks R, Forrester T, Kalra L. "The vascular effects if metabolic impairment clusters in subjects of different ethnicities". *Atherosclerosis* 2007; 192(2): 354-362.
- * Badaloo AV, Forrester T, Reid M, Jahoor F. "Lipid kinetic differences between children with kwashiorkor and those with marasmus". *Am J Clin Nutr* 2006; 83(6): 1283-1288.
- * Marshall KG, Howell S, Badaloo AV, Reid M, Farrall M, Forrester T, McKenzie CA. "Polymorphisms in genes involved in folate metabolism as risk factor for oedematous severe childhood malnutrition: a hypothesis generation study". *Ann Trop Paediatr* 2006; 26(2): 107-114.

- * Hanchard NA, Hambleton I, Harding M, McKenzie CA. "Predicted declines in sickle allele frequency in Jamaica using empirical data". *Am J Hematol* 2006; 81(11): 817-823.
- * Chung ST, Perue GG, Johnson A, Younger N, Hoo CS, Pascoe RW, Boyne MS. "Predictors of hyperglycaemic crises and their associated mortality in Jamaica". *Diabetes Res Clin Pract.* 2006 Aug; 73(2): 184-90. Epub 2006 Feb 3.
- * Chin S, Popat V, Boyne MS, Cochran C, Tulloch-Reid M. "Insulinoma induced hypoglycaemia in a Jamaican patient". *WIMJ* 2007; 56(20): 182-186

Sickle Cell Unit

- * Cumming V, Ali S, Forrester T, Roye-Green K, Reid M. "Asymptomatic bacteriuria in sickle cell disease: a cross-sectional study". *BMC Infect Dis.* 2006; 6:46.
- * Knight-Madden J, Lewis N, Hambleton IR. "The prevalence of marijuana smoking in young adults with sickle cell disease: a longitudinal study". *WIMJ.* 2006 Sep; 55(4): 224-7.
- * Reid M, Badaloo A, Forrester T, Jahoor F. "In vivo rates of erythrocyte glutathione synthesis in adults with sickle cell disease". *Am J Physiol Endocrinol Metab.* July 2006; 291(1): E73-9.
- * Marti-Carvajal AJ, Conterno LO, Knight-Madden JM. "Antibiotics for treating acute chest syndrome in people with sickle cell disease". *Cochrane Database Syst Rev.* 2007 (2): CD006110.
- * Thompson J, Reid M, Hambleton I, Serjeant GR. "Albuminuria and renal function in homozygous sickle cell disease: observations from a cohort study. *Archives of internal medicine.*" 2007 Apr 9; 167(7):701-8.
- * Knight-Madden J, Forrester TE, Hambleton IR, Lewis N, Greenough A. Skin test reactivity to aeroallergens in Jamaicans: relationship to asthma. *WIMJ.* 2006 Jun; 55(3): 142-7.

Epidemiology Research Unit

- * Wolfe CD, Corbin DO, Smeeton NC, Gay GH, Rudd AG, Hennis AJ, Wilks RJ and Fraser HS. "Estimation of the risk of stroke in black populations in Barbados and South London". *Stroke* 2006 Aug; 37(8): 1986-90.
- * Wolfe CD, Corbin DO, Smeeton NC, Gay GH, Rudd AG, Hennis AJ, Wilks RJ and Fraser HS. "Post stroke survival for black-Caribbean populations in Barbados and South London". *Stroke* 2006 Aug; 37(8): 1991-6.
- * Pramparo P, Montano CM, Barcelo A, Avezum A & Wilks R. "Cardiovascular diseases in Latin America and the Caribbean: The present situation". *Prevention and Control* 2006; 2: 149-157
- * Jackson M, Walker S, Cruickshank JK, Sharma S, Cade J, Mbanya J-C, Younger N, Forrester TE and Wilks R. "Diet and overweight and obesity in populations of African origin: Cameroon, Jamaica and the UK". *Public Health Nutrition* 2007; 10(2): 122-130.
- * Wilks R, Younger N, Mullings J, Zohoori N, Figueroa P, Tulloch-Reid M, Ferguson T, Walters C, Bennett F, Forrester T, Ward E and Ashley D. "Factors affecting Study Efficiency and Item Non-response in Health Surveys in Developing Countries: The Jamaica national healthy lifestyle survey". *BMC Medical Research Methodology* 2007; 7:13 doi: 10.1186/1471-2288-7-13
- * Walker SP, Chang SM, Powell CA, Simonoff E, Grantham-McGregor SM. (2006) "Effects of psychosocial stimulation and dietary supplementation in early childhood on psychosocial functioning in late adolescence: follow-up of randomized controlled trial". *BMJ* 333, 472-4 & doi: 10.1136/bmj.38897.555208.2F
- * Walker SP, Thame MM, Chang SM, Bennett F, Forrester TE.(2007) "Association of growth in utero with cognitive function at age 6-8 years". *Early Human Development*, 83, 355-60
- * Walker SP, Chang SM, Powell CA. "The association between early childhood stunting and weight status in late adolescence". *International Journal of Obesity* 2007; 31: 347-52.

- * Grantham-McGregor S, Cheung YB, Cueto S, Glewwe P, Richter L, “Strupp B & the International Child Development Steering Group. Child development in developing countries 1. Developmental potential in the first 5 years for children in developing countries”. *The Lancet* 2007; 369: 60-70 (S Walker, Member of the International Child Development Steering Group)
- * Walker SP, Wachs TD, Gardner JM, Lozoff B, Wasserman GA, Pollitt E, “Carter JA & the International Child Development Steering Group. Child development in developing countries 2. Child development: risk factors for adverse outcomes in developing countries”. *The Lancet* 2007; 369, 145-57
- * Engle P, Black MM, Behrman J, Cabral de Mello M, Gertler PJ, Kapiriri L, Martorell R, “Young ME & the International Child Development Steering Group. (2007). Child development in developing countries 3. Strategies to avoid the loss of developmental potential in more than 200 million children in the developing world”. *The Lancet* 369, 229-42. (S Walker, Member of the International Child Development Steering Group)
- * Borghi E, de Onis M, Van den Broeck J, et al. “Construction of the World Health Organization child growth standards: selection methods for attained growth curves”. *Statistics in Medicine* 2006; 25: 247-65
- * WHO Multicentre Growth Reference Study Group. Assessment of differences in linear Growth among populations in the WHO Multicentre Growth Reference Study. *Acta Paediatrica* 2006; Suppl 450: 56-65. [Van den Broeck J: Member of study group]
- * WHO Multicentre Growth Reference Study Group. Breastfeeding in the WHO Multicentre Growth Reference Study. *Acta Paediatrica* 2006; Suppl 450: 16-26. [Van den Broeck J: Member of study group]
- * WHO Multicentre Growth Reference Study Group. WHO Motor Development Study: Windows of achievement for six gross motor development milestones. *Acta Paediatrica* 2006;

- Suppl 450: 86-95. [Van den Broeck J: Member of study group]
- * WHO Multicentre Growth Reference Study Group. Enrolment and baseline characteristics in the WHO Multicentre Growth Reference Study. *Acta Paediatrica* 2006; Suppl 450:7-15. [Van den Broeck J: Member of study group]
 - * WHO Multicentre Growth Reference Study Group. Complementary feeding in the WHO Multicentre Growth Reference Study. *Acta Paediatrica* 2006; Suppl 450:27-37. [Van den Broeck J: Member of study group]
 - * WHO Multicentre Growth Reference Study Group. Reliability of anthropometric measurements in the WHO Multicentre Growth Reference Study. *Acta Paediatrica* 2006; Suppl 450:38-46. [Van den Broeck J: Member of study group]
 - * WHO Multicentre Growth Reference Study Group. Reliability of motor development data in the WHO Multicentre Growth Reference Study. *Acta Paediatrica* 2006; Suppl 450:47-55. [Van den Broeck J: Member of study group]
 - * WHO Multicentre Growth Reference Study Group. Assessment of sex differences and heterogeneity in motor milestone attainment among populations in the WHO Multicentre Growth Reference Study. *Acta Paediatrica* 2006; Suppl 450:66-75. [Van den Broeck J: Member of study group]
 - * WHO Multicentre Growth Reference Study. WHO Child Growth Standards based on length/height, weight and age. *Acta Paediatrica* 2006; Suppl 450:76-85. [Van den Broeck J: Member of study group]
 - * de Onis M, Onyango AW, Borghi E, Garza C, Yang H, WHO Multicentre Growth Reference Study Group. Comparison of the World Health Organization (WHO) Child Growth Standards and the National Center for Health Statistics/WHO international growth reference: implications for child health programmes. *Public Health Nutr* 2006; 9: 942-947. [Van den Broeck J: Member of Study Group]
 - * Rollins N, Van den Broeck J, Kindra G, Pent M, Kasambira T, Bennish M. The effect of Nutritional support on weight gain

of HIV-infected children with prolonged diarrhoea. *Acta Paediatrica* 2007; 96: 62-68.

- * Luabeya KA, Mpontshane N, Mackay M, Ward H, Elson I, Chhagan M, Tomkins A, Van den Broeck J, Bennish ML. Zinc or multiple micronutrient supplementation to reduce diarrhea and respiratory disease in South African children: A randomized controlled trial. *PloS ONE* 2007; 2(6):e541

Chronic Disease Research Centre

- * Rose A. - Member of Working Group for Mortality Estimation in Emergencies. Wanted: studies on mortality estimation methods for humanitarian emergencies. Suggestions for future research. *Emerg Themes Epidemiol* 2007 Jun 1; 4: 9 [IF=1.5]**
- * Grais RF, Rose AMC, Guthmann JP. Don't spin the pen: two alternative methods for second-stage sampling in urban cluster surveys. *Emerg Themes Epidemiol.* 2007 Jun 1; 4:8 [IF=1.5]
- * Nathan N, Rose AMC, Bjørlow E, Bachy C, Legros D, Firmenich P, Guerin PJ, Caugant DA. Meningitis Serogroup W135 outbreak, Burkina Faso, 2002. *Emerg Infect Dis* 2007; 13:920-3 [IF=5.3]
- * Chanteau S, Rose AMC, Djibo S, Nato F, Boisier P. Biological diagnosis of meningococcal meningitis in the African meningitis belt: current epidemic strategy and new perspectives. *Vaccine* 2007; 25(Supplement 1):A30-A36. [IF=3]
- * Thame M, Lewis J, Trotman H, Hambleton I, Serjeant G. The mechanisms of low birth weight in infants of mothers with homozygous sickle cell disease. *Pediatrics.* 2007 Sep; 120(3): e686-93.
- * Valley A, Kasindi S, Hambleton IR, Knight L, Chirwa T, Balira R, Chungalucha J, Watson-Jones D, Everett D, Gavyole A, Moyes J, Pujades-Rodriguez M, Ross DA, Hayes RJ. Microbicides development program, Tanzania-baseline characteristics of an occupational cohort and reattendance at 3 months. *Sex Transm Dis.* 2007 Sep;34(9):638-43.

- * Samms-Vaughan M, Thame M, Osmond C, Hambleton IR, McCaw-Binns A, Ashley DE, Serjeant GR. Growth curves for normal Jamaican neonates. *WIMJ*. 2006 Dec;55(6):368-74.
- * Allen CF, Lees SS, Desmond NA, Der G, Chiduo B, Hambleton I, Knight L, Vallely A, Ross DA, Hayes RJ. Validity of coital diaries in a feasibility study for the Microbicides Development Programme trial among women at high risk of HIV/AIDS in Mwanza, Tanzania. *Sex Transm Infect*. 2007 Jul 27;
- * Thompson J, Reid M, Hambleton I, Serjeant GR. Albuminuria and renal function in homozygous sickle cell disease: observations from a cohort study. *Arch Intern Med*. 2007 Apr 9;167(7):701-8.
- * Eck C, Pierre RB, Hambleton IR. Medical paediatric admission patterns at the University Hospital of the West Indies: issues for future planning. *WIMJ*. 2006 Oct; 55(5): 340-5.
- * Serjeant GR, Higgs DR, Hambleton IR. Elderly survivors with homozygous sickle cell disease. *N Engl J Med*. 2007 Feb; 356(6): 642-3.
- * Flower C, Hennis A, Hambleton IR, Nicholson G. Lupus nephritis in an Afro-Caribbean population: renal indices and clinical outcomes. *Lupus*. 2006; 15(10): 689-94.
- * Wierenga KJ, Hambleton IR. Comment on: Loureiro & Rozenfeld "Epidemiology of sickle cell disease hospital admissions in Brazil". *Rev Saude Publica*. 2006 Aug; 40(4): 740-1; author reply 741.
- * Carter AO, Hambleton IR, Broome HL, Fraser HS, Hennis AJ. Prevalence and risk factors associated with obesity in the elderly in Barbados. *J Aging Health*. 2006 Apr; 18(2): 240-58.
- * Day, J.R.S., Landis, R.C., Taylor, K.M. "The thrombin receptor PAR1 and aprotinin: antithrombosis, stroke reduction and inflammation". *Sem. Cardiovasc. Anaesth*. 10 (2006), 132-142.

- * Landis, R.C. "Protease activated receptors: clinical relevance to inflammation and hemostasis" *Hematol Oncol Clin North Am.* 21 (2007), 103-13.
- * Landis, R.C. "The Caribbean: Riding the dark horse of HIV/AIDS towards a brighter future" *Cytometry B Clin Cytom.* 72 (2007), 153-155.
- * Nadra, I., Boccaccini, A.R., Philippidis, P., Whelan, L.C., McCarthy, G.M., Haskard, D.O., and Landis, R.C. "Effect of particle size on hydroxyapatite induced tumor necrosis factor alpha synthesis by macrophages". *Atherosclerosis* [March 2007 Epub ahead of print
- * Askie LM, Duley L, Henderson-Smart DJ, Stewart LA; PARIS Collaborative Group (Hennis, A *member of group): Antiplatelet agents for prevention of pre-eclampsia: a meta-analysis of individual patient data. *Lancet* 369:1791-1798, 2007
- * Hennis A, Wu SY, Nemesure B, Honkanen R, Leske MC; the Barbados Eye Studies Group: Awareness of incident open-angle glaucoma in a population study: the Barbados Eye Studies. *Ophthalmology* 114: 1816-1821, 2007
- * Sharma S, Cao X, Harris R, Hennis AJ, Leske MC, Wu SY: Dietary intake and development of a quantitative food-frequency questionnaire for the Barbados National Cancer Study. *Public Health Nutr* 10: 464-470, 2007
- * Leske MC, Wu SY, Honkanen R, Nemesure B, Schachat A, Hyman L, Hennis A; the Barbados Eye Studies Group: Nine-year incidence of open-angle glaucoma in the Barbados Eye Studies. *Ophthalmology* 114: 1058-1064, 2007
- * Lavados PM, Hennis AJ, Fernandes JG, Medina MT, Legetic B, Hoppe A, Sacks C, Jadue L, Salinas R: Stroke epidemiology, prevention, and management strategies at a regional level: Latin America and the Caribbean. *Lancet Neurol* 6: 362-372, 2007
- * Hennis A, Hambleton I, Tulloch-Reid M, Barcelo A, Fraser H, Hassell T. Risk factors and cardiovascular disease in the elderly in Latin America and the Caribbean. *Prevention and Control* 2(4):175-85, 2006

- * Flower C, Hennis A, Hambleton IR, Nicholson G: Lupus nephritis in an Afro-Caribbean population: renal indices and clinical outcomes. *Lupus* 15: 689-694, 2006
- * Wu SY, Nemesure B, Hennis A, Leske MC; the Barbados Eye Studies Group: Nine-year changes in intraocular pressure: the Barbados Eye Studies. *Arch Ophthalmol* 124: 1631-1636, 2006
- * Nemesure B, Wu SY, Hennis A, Leske MC: Hypertension, type 2 diabetes, and blood groups in a population of African ancestry. *Ethn Dis* 16: 822-829, 2006
- * Wolfe CD, Corbin DO, Smeeton NC, Gay GH, Rudd AG, Hennis AJ, Wilks RJ, Fraser HS: Estimation of the risk of stroke in black populations in Barbados and South London. *Stroke* 37:1986-1990, 2006
- * Wolfe CD, Corbin DO, Smeeton NC, Gay GH, Rudd AG, Hennis AJ, Wilks RJ, Fraser HS: Poststroke survival for black-Caribbean populations in Barbados and South London. *Stroke* 37: 1991-1996, 2006