

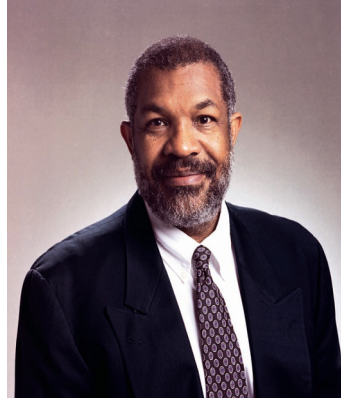
TROPICAL MEDICINE RESEARCH INSTITUTE

Professor Terrence Forrester, MBBS, DM, MSc, PhD UWI,
MRCP *Lond*, FRCPEd – Director

Introduction

The Tropical Medicine Research Institute (TMRI) was established on October 1, 1999 by the University of the West Indies to achieve the following main objectives:

- Increase the output of research in major areas affecting the health of regional peoples
- Increase the number of trained research scientists working in health
- Facilitate the uptake of research into policy, programmes and practice, thereby contributing to improvement in the health status of Caribbean peoples.



Synopsis of Strategic Plans

The goal, purpose and objectives of the TMRI in the medium term

The overall goal is to improve health locally, regionally and globally through providing the evidence that can only come from quality research.

The medium term purpose is to maintain and enhance its capacity for research, training and service – the latter in some restricted areas within its competence, all through securing the necessary resource stability.

The Strategic Objectives for the next 5 years are:

- *To increase research activity and output in the priority areas of health now being addressed.*
- *Increase its capacity to deliver courses in Nutrition, Biostatistics and Epidemiology.*
- *Build and operate a consultancy business in Clinical Nutrition and use the surplus generated to fund some of the staff positions needed to secure critical mass.*

Progress Report 2008 - 2009

Steps taken toward implementation of the plan

Receiving inputs into this TMRI Strategic Plan from the appropriate University Committees/Bodies (Campus Principals and Vice Chancellor, Office of Finance, School for Graduate Studies and Research, F&GPC, TAC, and UGC). This was accomplished, on target, in 2005.

Establishing the buildings, staffing and training, and operating the research and the businesses. The new Intervention Research Unit for obesity and co-morbidities should finally be erected December 2010. Contracts with the Architects and other professionals were signed in July 2009.

Launching of the new Education programmes in Biostatistics and Epidemiology. The MSc Epidemiology programme has been launched. Low local capacity has delayed the launch of the MSc Biostatistics. However, hiring of two Staff at UWI Mona should allow us to mount this new course.

Over the period from TMRI establishment in 1999 to 2009, the scheduled expansion of the Institute had not been appropriately funded. The resulting instability was, however, dealt with conclusively in 2007. The Institute is indebted to Mr. Winston Bayley, Director of Finance, UWI and Dr Allister Hinds, Director of HR, UWI Mona Campus for this breakthrough. In 2008, 2 of a requested 19 new posts were awarded. One of these posts has been made available. This post has been allocated to the Child Development Research Group, in the ERU to enable the start up the new Child Development Research Unit planned

for December 2009. Acquiring the additional posts required to drive the Strategic Plan, now effectively four years behind schedule, is the prime target in 2009-2010.

Key Events 2008-2009

Epidemiology Research Unit

Launch of the University of the West Indies Clinical Epidemiology Unit (UWI CEU) within the CanUSACLEN of the International Clinical Epidemiology Network (INCLIN), Mona Visitors' Lodge, Kingston, February 19-20, 2009. This collaboration will facilitate increased opportunities for training and collaborative and increase the competitiveness of the UWI. Our first benefit is the Canadian government ELAP scholarship to Damion Francis (see below).

Sickle Cell Unit

The inaugural biennial Sickle Cell Conference with theme "Managing Sickle Cell Disease: The Chronic Care Model" was held at the Mona Visitors Lodge, UWI, Mona and the Main Lecture Theatre, Faculty of Medical Sciences, Mona on October 30th and 31st, 2008. The keynote speaker was Prof Russell Ware, Chair, Department of Hematology, St Judes Children Research Hospital, who spoke on "Updates in the Management of SCD". We also launched our standard of care guideline entitled "Sickle Cell Disease: The clinical care guidelines of the Sickle Cell Unit", ISBN 978-976-41-0226-7 at the conference. It is our intention to use this resource in an island-wide educational campaign targeted towards health care professionals during 2009.

The United Nations (UN), the World Health Organization (WHO) and the Pan American Health Organization (PAHO) have collectively recognized the public health burden of sickle cell in various declarations and resolutions. More recently in December 2008, the United Nations declared JUNE 19TH, as the "World Day of Sickle Cell Disease" .

The SCU welcomes this declaration and proposes to commemorate the day annually with special activities. For the inaugural day, June 19, 2009, the SCU undertook a series of activities which focused on increasing public awareness through print and electronic media messages. In 2010, we plan to combine the Sickle Cell Conference with the World Day of Sickle Cell.

Research Funding

2008-09 – The CHASE Fund. Early childhood stunting and participation in an intervention: Impact of parents' early childhood experiences on the development of their children

Investigators: S Walker, S Chang

J\$450,000

2008-09 – Caribbean Health Research Council. Early childhood stunting and participation in an intervention: Impact of parents' early childhood experiences on the development of their children

Investigators: S Walker, S Chang, S. Grantham-McGregor

US\$2887

2007-10 – The Wellcome Trust. Research Training Fellowship for Dr H Baker-Henningham. Promoting young children's social and emotional competence and preventing conduct problems.

Investigators: H Baker-Henningham, S Walker, S Scott (Institute of Psychiatry, UK)

£297,190

2006-2009 – Improving development of young children in children's homes through caregiver training.

Investigators: D Stephenson, C Powell, S Chang-Lopez, S Walker

Funding: Environmental Foundation of Jamaica Phase 1 **J\$3,419,340.00**; Phase 2 **J\$4,498,600.00**

2009-10 – HQP 2008-004 – A Randomized, Blinded, Placebo-controlled, Dose Escalation Study to Evaluate the Safety, Tolerability and Pharmacokinetics of HQK 1001 in Subjects with Sickle Cell Disease.

Investigator - Prof Reid/Dr. Cumming

Funding: Hemaquest (**J\$382,421** per patient)

2008-09– Pneumococcal Serotype and Resistance Patterns in Children with Sickle Cell Disease: A comparative study between a developing country and a developed country.

Investigators - Dr. Knight-Madden, Wyeth (**US\$19,100**)

2009-10 – Sickle cell disease: modulators of severity and morbidity

Investigators - Dr. Knight-Madden/Prof Reid

Funding: Government of France (£3900)

2009-10 – Quality of life of patients with Sickle Cell Disease: Rural-urban differences

Investigators - Dr. Asnani /Dr. Anderson

Funding: CHRC (US\$5637)

2009-10 – Measuring Glomerular Filtration in Sickle Cell Disease: 99m-Tc DTPA scan vs. Cr51- EDTA measurement.

Investigators - Dr. Asnani/Prof Reid

CHRC (US\$5,475)

2009-10 – Prevalence of Microalbuminuria in Jamaican Children with Sickle Cell Disease.

Investigators - Dr. King/Prof Reid

Funding: CHRC (US\$4000)

2009-10 – Spraying Conversion to Abnormal TCD Elevation

Investigators - Prof Reid/ Dr. Ali/Prof Ware

Funding: NIH

Research Grants

Epidemiology Research Unit

Epidemiology

(PI) Hossein Rahbar (PI), Roxanne Melbourne-Chambers, Judy Leiba, Wayne McLaughlin, Prostate Cancer in Jamaican men: Are there associations with inflammation, infection and genetic predisposition

PI: Maria Jackson, Marshall Tulloch-Reid, Professor Norma McFarlane-Anderson, Culture, Health, Arts, Sports and Education (CHASE) Fund, \$J6,500,000.00

Evaluation of Cardiovascular Disease Risk Factor in the Jamaican Population Phase 2

Investigators: Rainford Wilks, Trevor Ferguson, Marshall Tulloch-Reid, Novie Younger, Culture Health Arts Sports Education (CHASE) Fund - **J\$3,636,360.00**

The burden and cost of diabetic foot complications among patients attending a specialist diabetic clinic in Jamaica

Investigators: Trevor Ferguson, Rainford Wilks, Marshall Tulloch-Reid, Novie Younger, Michael Boyne, Rosemarie Wright-Pascoe, Caribbean Health Research Council (CHRC) - **US\$4903.00**

High Sensitivity C - reactive protein and its Relationship to Cardiovascular Disease Risk in Jamaican Youth

Investigators: Franklyn Bennett, Trevor Ferguson, Rainford Wilks, Marshall Tulloch-Reid, Novie Younger, Maria Jackson, Maureen Samms- Vaughan, UWI New Initiative Grant - **J\$1,481,000.00**.

The Impact of Diabetes on Morbidity and All-Cause and Cardiovascular Mortality in the Caribbean and an Evaluation of Health Provider Practice in Respect of CVD Risk Reduction in Diabetic Patients

Investigators: Rainford Wilks, Trevor Ferguson, Marshall Tulloch-Reid, Novie Younger, Anselm Hennis, Michael Boyne, Initiative for Cardiovascular Health in Developing Countries/ Centre for Chronic Disease Control (ICHEALTH/ CCDC) - **US \$10,000.00**

Health Human Resources Information Datasets in the Americas: The Jamaican Database on Human Resources in Health

Investigators: Rainford Wilks, Jan Van den Broeck, Douladel Willie.
Funding: Pan American Health Organization - **US\$18,000.00**

Epidemiological Research on Autism in Jamaica.

Investigators: Maureen Samms-Vaughan Gerald Lalor, Kevin Brooks. Dr. Loveland, Nigel Paneth, Eric Boerwinkle et al. USA National Institutes of Health (NIH) R21, **US\$104,000.00**

Child Development

2008-09 - The CHASE Fund. Early childhood stunting and participation in an intervention: Impact of parents' early childhood experiences on the development of their children

Investigators: S Walker, S Chang - **J\$450,000**

2008-09 - Caribbean Health Research Council. Early childhood stunting and participation in an intervention: Impact of parents' early childhood experiences on the development of their children.

Investigators: S Walker, S Chang, S. Grantham-McGregor - **US\$ 2887**

2007-08 - The World Bank. The Jamaica ECD 22 years follow-up study.

Investigators: S. Walker, S. Chang, S. Grantham-McGregor, P. Gertler, C. Vermeersch - **US\$179,775**

2007-10 - The Wellcome Trust. Research Training Fellowship for Dr H Baker-Henningham. Promoting young children's social and emotional competence and preventing conduct problems.

Investigators: H Baker-Henningham, S Walker, S Scott (Institute of Psychiatry, UK) - **£297, 190**

2006-2009 - Improving development of young children in children's homes through caregiver training.

Investigators: D Stephenson, C Powell, S Chang-Lopez, S Walker, Environmental Foundation of Jamaica Phase 1 **J\$3,419,340.00**; Phase 2 **J\$4,498,600.00**

Sickle Cell Unit

2009-2010 - HQP 2008-004

A Randomized, Blinded, Placebo-controlled, Dose Escalation Study to Evaluate the Safety, Tolerability and Pharmacokinetics of HQK 1001 in Subjects with Sickle Cell Disease

Investigators: Prof Reid/Dr. Cumming
Hemaquest (**J\$382,421** per patient)

2008-2010

Pneumococcal Serotype and Resistance Patterns in Children with Sickle Cell Disease: A comparative study between a developing country and a developed country

Investigators: Dr. Knight-Madden Wyeth (US\$19,100)

2009-2010

Sickle cell disease: modulators of severity and morbidity

Investigators: Dr. Knight-Madden/Prof Reid

Government of France (£3900)

2009-2010

Quality of life of patients with Sickle Cell Disease: Rural-urban differences

Dr. Asnani /Dr. Anderson CHRC (US\$5637)

2009-2010

Measuring Glomerular Filtration in Sickle Cell Disease: 99m-Tc DTPA scan vs. ^{Cr51}- EDTA measurement.

Dr. Asnani/Prof Reid CHRC (US\$5,475)

2009-2010

Prevalence of Microalbuminuria in Jamaican Children with Sickle Cell Disease.

Investigators: Dr. King/Prof Reid CHRC (US\$4000)

2009-2012

Sparing Conversion to Abnormal TCD Elevation

Investigators: Prof Reid/ Dr. Ali/Prof Ware NIH

Tropical Metabolism Research Unit

Grants Held

Developmental adaptation to an obesogenic environment (Health Research Council of New Zealand)

Investigators: Peter Gluckman (University of Auckland)

CO-PI: Terrence Forrester (US\$365,090)

Modelling the epidemiologic transition: energy expenditure, obesity and diabetes (NIH)

Investigators: Amy Luke. Co-Investigator: Terrence Forrester (US\$2,675,431)

Glutathione homeostasis and oxidant damage in kwashiorkor (NIH)

Investigators: Terrence Forrester (UWI)/Farook Jahoor (Baylor College). US\$1,125,000

Glutathione homeostasis and oxidant damage in kwashiorkor (NIH Grant Extension)

Investigators: Terrence Forrester (UWI)/Farook Jahoor (Baylor College). US\$1,570,000

Aromatic amino acid metabolism in the pathogenesis of kwashiorkor (NIH)

Investigators: Terrence Forrester (UWI)/Farook Jahoor (Baylor College). US\$1,700,000

Non-exercise activity thermogenesis in rural and urban dwellers in Jamaica (NIH)

Investigators: Terrence Forrester (UWI)/James Levine (Mayo Clinic). US\$150,000

An in vitro cellular model to investigate the biological basis of associations between genetic variation and risk of oedematous severe childhood malnutrition. (CHRC)

Investigator: Kwesi Marshall. US\$8,609

Exploration of genetic admixture in German Town, Westmoreland, Jamaica (CHRC)

Investigator: Colin McKenzie. US\$3,609

Genetics of Hypertension in Blacks (NIH/NHLBI)

Investigators: Richard Cooper (Loyola)/Colin McKenzie, Consultant. US\$2,584,073

Selection patterns of the Sickle Allele in Jamaica (CHRC)

Investigators: Neil Hanchard/Colin McKenzie, Consultant US\$3,400

The impact of nutrition intervention on HIV-infected patients (CHRC)

Investigators: Colin Mckenzie/ S. Dawson (MOH)
US\$18,750

Candidate genes for blood pressure: family-based association studies and meta-analyses (British Heart Foundation)

Investigators: B. Keavney (Univ. of Newcastle)/
Colin McKenzie (Co-Investigator) **GBP 113,447**

Impact of Jamaica National Micro Credit Programme on Health and Development in Jamaica. (Jamaica National Building Society)

Investigator: Terrence Forrester **J\$16,726,200**

Energy requirements, body composition, and cardiovascular risk in older adults from urban and rural Jamaica (IAEA)

Investigator: Terrence Forrester **US\$212,600**

Non-exercise activity thermogenesis and weight gain in urban and rural adults in Jamaica, a low-middle income country (IAEA)

Investigator: Terrence Forrester **US\$170,000**

Carotid Stenosis Study (UWI New Initiative Grant)

Investigators: Marilyn Lawrence-Wright/Hilary Brown
(Dept of Surgery) **J\$250,000**

The Jamaican School and Home based Nutrition Intervention Pilot Project (PAHEF)

Investigators: Rainford Wilks/Colin McKenzie (Collaborator)
US\$50,000

Optimization of extraction of DNA from archived formalin-fixed paraffin-embedded (FFPE) breast and lymph node tissues from surgical specimens in Jamaican patients (UWI New Initiative Grant)

Investigators: Tracey Gibson/Colin McKenzie
(Co-Investigator) **US\$10,000**

Glutathione metabolism in type 2 diabetes

Investigator: Michael Boyne **US\$4,992.00**
(CHRC 06/08 – 02/10).

This is a supplementation of existing grant.

PUBLICATIONS

EPIDEMIOLOGY RESEARCH UNIT

Epidemiology

Books

- * Wilks R, Willie D and Van den Broeck J. Health Human Resources Information Datasets in the Americas: The Jamaican Database on Human Resources in Health. PAHO 2009. ISBN # 978-92-75-13288-3 (Electronic); 978-92-75-12965-4 (Printed)

Technical Reports

- * Wilks R, Younger N, Tulloch-Reid M, McFarlane S, and Francis D. Jamaica Health and Lifestyle Survey II 2007-8. Website: <http://www.nhf.org.jm>;
http://www.mona.uwi.edu/reports/health/JHLSH_final_may09.pdf

Journal Articles

- * Tulloch-Reid MK, Boyne MS, Choo-Kang EG, Parkes RH, Wright-Pascoe RA, Barton EN, Wilks RJ, Palmer-Levy ML, Smikle MF. Autoantibodies in Caribbean youth with diabetes mellitus. *Hum Antibodies*. 2008; 17(3-4):57-62.
- * Ferguson TS, Younger NO, Tulloch-Reid MK, Wright MB, Ward EM, Ashley DE, Wilks RJ. Prevalence of Prehypertension and its Relationship to Risk Factors for Cardiovascular Disease in Jamaica: Analysis from a Cross-sectional Survey. *BMC Cardiovasc Disord*. 2008 Aug 28; 8:20.
- * Hunte S, Tulloch-Reid MK. Weight Loss of Black, White, and Hispanic Men and Women in the Diabetes Prevention Program, *Clinical Trials Reports* 2009 (3) 157-8.
- * Sumner AE, Luercio MF, Frempong BA, Ricks M, Sen S, Kushner H, Tulloch-Reid MK. Validity of the reduced-sample insulin modified frequently-sampled intravenous glucose tolerance test using the nonlinear regression approach. *Metabolism*. 2009 Feb; 58(2):220-5

- * Francis DK, Van den Broeck J, Younger N, McFarlane S, Rudder K, Gordon-Strachan G, Grant A, Johnson A, Tulloch-Reid M, Wilks R. Fast-food and sweetened beverage consumption: association with overweight and high waist circumference in adolescents. *Public Health Nutr.* 2009 Aug 12(8):1106-14.
- * Van den Broeck J, Willie D, Younger N. The World Health Organization child growth standards: expected implications for clinical and epidemiological Research. *Eur J Pediatr.* 2009 Feb; 168(2):247-51. Epub 2008 Aug 1.
- * Pottinger AM, Trotman- Edwards H, Younger N. Detecting depression during pregnancy and associated lifestyle practices and concerns among women in a hospital-based obstetric clinic in Jamaica. *Gen Hosp Psychiatry* 2009 (May-June); 31(3):254 -61. Epub 2009 Mar 27.
- * Ragin CC, Watt A, Markovic N, Bunker CH, Edwards RP, Eckstein S, Fletcher H, Garwood D, Gollin SM, Jackson M, Patrick AL, Smikle M, Taioli E, Wheeler VW, Wilson JB, Younger N, McFarlane –Anderson N. Comparison of high-risk cervical HPV infections in Caribbean and US populations. *Infect Agent Cancer* 2009 Feb 10; 4 Suppl 1:S9
- * Watt A , Garwood D, Jackson M, Younger N, Ragin C, Smikle M, Fletcher H, Mc-Farlane- Anderson. High Risk and Multiple Human Papilloma Virus (HPV) infection in Cancer-free Jamaican Women. *Infect Agent Cancer* 2009 Feb 10; 4 Suppl 1: S11

Child Development

Chapters

- * Baker-Henningham H, Walker S, Younger N. (2008) Investigation of Children’s Performance on the Grade 1 Readiness Inventory. In: Henry-Lee A, Meeks-Gardner J (Eds.) Promoting child rights through research: Proceedings of the Caribbean Child Research Conference 2006. SALISES, UWI, Kingston, Jamaica, pp: 3-29.

- * Meeks Gardner J, Henry-Lee A, Chevannes P, Thomas J, Baker-Henningham H, Coore C. (2008) Violence Against Children in the Caribbean: A Desk Review. In: Henry-Lee A, Meeks-Gardner J (Eds.) Promoting child rights through research: Proceedings of the Caribbean Child Research Conference 2006. SALISES, UWI, Kingston, Jamaica, pp: 149-165.
- * Walker SP, Meeks Gardner JM. (2009) Effects of Growth Retardation and Nutrient Deficiencies on Cognitive Function and Behavior in Infants and Children. In: Pond WG, Nichols B, Brown, D (Eds) Adequate food for all: Culture, science and technology of food in the 21st century. CRC Press, Boca Raton, FL. pp 163-181.

Peer reviewed journal articles

- * Baker-Henningham H, Meeks-Gardner J, Chang S, Walker S. (2009) Experiences of violence and deficits in academic achievement among primary school aged children in Jamaica. *Child Abuse and Neglect* 33(5): 296-306.
- * Baker-Henningham H, Hamadani J, Huda S, Grantham-McGregor S. (2009) Undernourished children have different temperaments than better nourished children in rural Bangladesh. *Journal of Nutrition* doi: 10.3945/jn.109.106294.
- * Jackson M, Walker S, Simpson C, McFarlane-Anderson N, Bennett F. (2009) Are food patterns associated with prostate cancer in Jamaican men: a preliminary report. *Infect Agent Cancer* 4 (Suppl 1) S5.
- * Walker S (2009) Loss of children's developmental potential: Risks in the Caribbean *West Indian Medical Journal* 58 (Suppl 2) 71-73.

Sickle Cell Unit

- * Asnani, M.R., et al., Quality of life in patients with sickle cell disease in Jamaica: rural-urban differences. *Rural Remote Health*, 2008. 8(2): p. 890.
- * Cumming, V., et al., Venous incompetence, poverty and lactate dehydrogenase in Jamaica are important predictors of

leg ulceration in sickle cell anaemia. *Br J Haematol*, 2008. 142(1): p. 119-25.

- * Harris, O.A., et al., Examination of the management of traumatic brain injury in the developing and developed world: focus on resource utilization, protocols, and practices that alter outcome. *J Neurosurg*, 2008. 109(3): p. 433-8.
- * Knight-Madden, J. and R. Gray, The accuracy of the Jamaican national physician register: a study of the status of physicians registered and their countries of training. *BMC Health Serv Res*, 2008. 8: p. 253.
- * Soares, D., et al., Sociocultural deterrents to mammographic screening in Jamaica. *West Indian Med J*, 2009. 58(1): p. 28-32.

Book Chapters/Books

- * Knight-Madden J. Contraceptive usage among Jamaican women with sickle cell disease. In: Contraception
- * S. Ali M Asnani, K Bhatt, V Cumming, L King, J Knight-Madden, M Moo Sang, M Reid, A Small-Williams. In: Sickle Cell Disease: The Clinical Care Guidelines of the Sickle Cell Unit. Editor: S. Bortolusso Ali.

Tropical Metabolism Research Unit

- * Bennett NR, Boyne MS, Cooper RS, Royal-Thomas TY, Bennett FI, Luke A, Wilks RJ, Forrester TE. The impact of adiponectin and ghrelin on incident glucose intolerance and on weight change. *Clin Endocrinol (Oxf)*. 2008 Jul 7.
- * Cappuccio FP, Kerry SM, Adeyemo A, Luke A, Amoah AG, Bovet P, Connor MD, Forrester T, Gervasoni JP, Kaki GK, Plange-Rhule J, Thorogood M, Cooper RS. Body size and blood pressure: an analysis of Africans and the African diaspora. *Epidemiology*. 2008 Jan; 19(1):38-46.
- * Durazo-Arvizu RA, Luke A, Cooper RS, Cao G, Dugas L, Adeyemo A, Boyne M, Forrester T. Rapid increases in obesity in Jamaica, compared to Nigeria and the United States. *BMC Public Health*. 2008; 8:133.

- * Jahoor F, Badaloo A, Reid M, Forrester T. Protein metabolism in severe childhood malnutrition. *Ann Trop Paediatr.* 2008 Jun; 28(2):87-101.
- * Kalra L, Iveson E, Rambaran C, Sherwood R, Chowienczyk P, Ritter J, Shah A, Forrester T. Homocysteine, migration and early vascular impairment in people of African descent. *Heart.* 2008 Sept; 94(9):1171-4.
- * Kalra L, Iveson E, Rambaran C, Sherwood R, Chowienczyk P, Ritter J, Shah A, Forrester T. An international matched cohort study of the contribution of metabolic impairments to subclinical atherosclerosis in United Kingdom and Jamaican African-Caribbeans. *Atherosclerosis.* 2008 Jul; 199(1):95-101.
- * McKenzie CA, Zhu X, Forrester TE, Luke A, Adeyemo AA, Bouzekri N, Cooper RS. A genome-wide search replicates evidence of a quantitative trait locus for circulating angiotensin I-converting enzyme (ACE) unlinked to the ACE gene. *BMC Med Genomics.* 2008; 1:23.
- * McKenzie CA, Hanchard NA, Harding R, Hambleton I, Modell B. Rate of change of sickle allele frequency may be influenced by total fertility rate: a sesquicentenary reflection on human microevolution. *Br J Haematol.* 2009 August 2.
- * Durazo-Arvisu RA, Luke A, Cooper RS, Cao G, Dugas L, Adeyemo A, Boyne M, Forrester T. Rapid increases in obesity in Jamaica compared to Jamaica and the United States. *BMC Public Health* 2008. April 23. 8: 133
- * Brown HA, Lawrence Wright MB, Shah S, Lawrence SG, Gilbert D, Crandon I. A prospective observational study of the prevalence of carotid stenosis in a high-risk Caribbean population. *Stroke.* 2009 May; 40 (5):1892-3.
- * Jahoor F, Badaloo A, Reid M, Forrester T. Protein metabolism in severe childhood malnutrition. *Ann. Trop. Pediatr.* 2008 June; 28 (2): 87-101
- * McKenzie CA, Zhu X, Forrester TE, Adeyemo AA, Bouzekri N, Cooper RS. A genome wide search replicates evidence of a quantitative trait locus for circulating angiotensin 1-converting enzyme (ACE) unlinked to the ACE gene. *BMC Med. Genomics.* 2008 June 10; 1: 23

- * Bennett NR, Boyne MS, Cooper RS, Royal-Thomas TY, Bennett FI, Luke A, Wilks RJ, Forrester TE. Impact of adiponectin and ghrelin on incident glucose intolerance and on weight change. *Clin. Endocrinol (Oxf)*. 2009 March; 70 (3): 408-414
- * Creary LE, McKenzie CA, Menzel S, Hanchard NA, Taylor V, Hambleton I, Spector TD, Forrester TE, Thein SL. Ethnic differences in F Cell level in Jamaica: a potential tool for identifying new genetic loci controlling fetal haemoglobin. *Br J Haematol* 2009. March; 144(6): 954-960
- * Creary LE, Ulug P, Menzel S, McKenzie CA, Hanchard NA, Taylor V, Farrall M, Forrester TE, Thein SL. Genetic variation on chromosome 6 influences F Cell levels in healthy individuals of African descent and HbF levels in sickle cell patients. *PLoS One*. 2009; 4(1): e4218
- * Boyne MS, Wollard TA, Phillips DI, Taylor-Bryan C, Bennett FI, Osmond C, Thomas TY, Wilks RJ, Forrester TE. The association of hypothalamo-pituitary-adrenal axis and blood pressure in Afro Caribbean children. *Psychoneuroendocrinology*. 2009 June; 34(5):763-742
- * Gluckman PD, Hanson MA, Law CM, Bateson P, Beedle AS, Bhutta ZA, Anokhin KV, Bougeres P, Chandak GR, Dasgupta P, Smith GD, Ellison PT, Forrester TE, Gilbert SF, Jablonka E, Kaplan H, Prentice AM, Simpson SJ, Uauay R, West-Eberhard MJ. Towards a new developmental synthesis; adaptive developmental plasticity and human disease. *Lancet*. 2009 May 9; 373 (9675): 1654-1657
- * Cunningham-Myrie C, Reid M, Forrester TE. A comparative study of the quality and availability of health information used to facilitate cost burden analysis of diabetes and hypertension in the Caribbean. *West Indian Med J*. 2008 Sep; 57(4): 383-392