

# TROPICAL MEDICINE RESEARCH INSTITUTE



Professor Susan Walker, BSc *Bristol*, MSc, PhD *Lond*  
Director

## OVERVIEW OF THE DEPARTMENT

The Institute comprises the Epidemiology Research Unit (ERU), Sickle Cell Unit (SCU) and Tropical Metabolism Research Unit (TMRU) on the Mona campus, and the Chronic Disease Research Centre (CDRC) on the Cave Hill Campus. This report covers the Mona units with the report for CDRC submitted to the Cave Hill Principal. The primary goal of the TMRI is to conduct globally relevant research of internationally recognised quality that addresses health priorities of the Caribbean region. The TMRI continues to contribute substantially to the 2012–17 Strategic Objectives of the UWI with key areas being Research and Innovation, Graduate Studies, income source diversification and Outreach through Clinical services.

## GRADUATE STUDIES AND OTHER ACADEMIC PROGRAMMES

The Institute offers Masters and Doctoral Programmes in Nutrition and in Epidemiology. In the 2014–15 Academic Year, the MSc in Nutrition was offered and the MSc in Epidemiology will be offered in the coming year. Recent graduates from these programmes have been employed by regional Ministries of Health, the private sector, Caribbean Public Health Agency (CARPHA), and in tertiary education and research.

We teach the nutrition module for the MBBS programme and also collaborate with the Department of Community Medicine and Psychiatry to teach the 3rd year MBBS and Dentistry students the ‘Understanding Research’ module. TMRI staff also teach research methods, epidemiology and statistics on several other courses within the MPH, DrPH, MSc Forensic Science and BSc Physiotherapy programmes. Short courses in Evidence Based Medicine have been offered and faculty supervised research projects for candidates in DM Programmes.

Members of our staff also contribute to undergraduate and post graduate clinical training in the MBBS and several DM programmes. We also assist other Faculties with rotations and guest lectures including candidates in the Social Work Programme by facilitating Practicum placement in the Sickle Cell Unit (SCU). The Sickle Cell Unit also facilitates rotations of practical nurses and other nurse training programmes outside of UWI.

We have active collaboration with the Faculty of Medical Sciences (FMS) in research training for staff through the FMS-TMRI research fellowships. This involves a two-year placement of FMS faculty in the TMRI for training in research with the objective of conducting and publishing a research project during the fellowship. The fellowships continue to be successful which helps to strengthen research capacity and build collaborations with the departments.

Annual Research Skills Workshops (Basic and Advanced) are offered over the summer to persons who are interested in learning more about basic research. Attendees have included UWI Faculty & Staff Members, employees of the Ministry of Health (MOH), Health Care Providers and workers in other Government and Academic Institutions.

## CLINICAL SERVICE

The Institute provides significant outreach to communities through clinical services. The Sickle Cell Unit operates the only comprehensive facility for the care of persons with Sickle Cell Disease (SCD) in the English speaking Caribbean, as well as monthly clinics in Black River and Montego Bay. The SCU is a part of the Sickle Cell Working Group together with the MOH and the Sickle Cell Trust. Work to expand neonatal screening is in progress with the support of the National Health Fund. The goal is to establish island-wide screening and to provide the training needed to improve access to quality early childhood care for SCD patients. The Sickle Cell Unit also conducts a summer Teen Camp for children with SCD, aimed at increasing knowledge of the disease and the ability to cope with living with a chronic disease.

The TMRU provides in-patient care for children with severe under-nutrition, foer subject volunteers of various clinical trials and experimental studies. They also provide nutritional consultations for hospitalized patients. This consultation service is currently being expanded to include fee paying services in areas such as body composition analysis and weight management. Staff from all three units provide specialist clinical services to the UHWI serving in several outpatient clinics such as internal medicine, hypertension, diabetes, endocrinology and pulmonology.

## RESEARCH AND INNOVATION

Our Annual Scientific Meeting was held October 28-30, and was attended by two members of our advisory group, Professor Isaac Odame (Global Sickle Cell Disease Network, The Hospital for Sick Children, Toronto) and Dr Peter Bennett (NIDDK Division of Intramural Research, Phoenix Epidemiology and Clinical Research Branch). These meetings are used to review the quality of our research programmes and assist with identifying opportunities for further collaborations. The main research programmes were Human Nutrition and Metabolism, Endocrinology, Genetic underpinnings of disease susceptibility and severity, Sickle Cell Disease, Child Development, Chronic Non-Communicable Diseases –

Surveillance, Epidemiology and Interventions, Inflammation and Wound Healing. Collaborations and partnerships across units and research programmes have been emphasized over the past 3 years and has increased and continues to grow. Examples include the USA-Caribbean Alliance for Health Disparities Research (USCAHDR); collaborations on parenting practices and early life weight gain; neuro-cognition in Sickle Cell Disease (SCD); and metabolic aspects of SCD. As part of our efforts to promote collaboration across units and research programmes, we are working to increase joint research between Barbados and Jamaica; we have improved our video conferencing capacity which facilitates interaction by collaborators in the two countries. We are also seeking to increase projects which involve other countries in the region (e.g. Pilot of parenting interventions in the Caribbean; Implementation of a culturally sensitive peer/lay diabetes education programme for adults with type 2 diabetes in six English-speaking Caribbean countries).

Staff and students have presented their findings at several regional and international meetings, including specially invited presentations. A list of publications and presentations follows.

Staff of the Institute have obtained grant funds to support research from a variety of agencies, with significant funding from Grand Challenges Canada, NIH, the Wellcome Trust, MRC (UK), Sagicor and the National Health Fund. Additional training and mentorship for staff in writing grant proposals is needed as well as continued strengthening of UWI's grant administration support. Investment in this by the UWI will be critical in achieving the Strategic Objective, "Income source diversification".

## **PUBLIC SERVICE**

Staff members hold leadership positions in numerous professional organisations and provide technical advice to the Ministries of Health and Education. Several staff members also serve on committees in national and regional institutions and international agencies. Details are listed under Public service below.

## PUBLICATIONS

- Abdulkadri AO, **Tulloch-Reid MK**, Francis DK, Gordon-Strachan GM, **Younger-Coleman NO**, Rocke KD, **McFarlane SR**, Cunningham-Myrie CA, **Ferguson TS**, Wilks RJ, Anderson SG. WHO/ISH total risk approach for primary prevention of cardiovascular disease shows greater decrease in costs for women but not the elderly in Jamaica. *J Clin Epidemiol.* 2015; DOI: <http://dx.doi.org/10.1016/j.jclinepi.2014.11.027>
- **Asnani MR**, **Quimby KR**, **Bennett NR**, **Francis DK**: Interventions for patients and caregivers to improve knowledge of sickle cell disease and recognition of its related complications. *The Cochrane Library* 2014.
- **Asnani M.**, **Reid M.** “Cystatin C: A useful marker of sickle glomerulopathy?” *Blood Cells, Molecules and Disease.* DOI: 10.1016/j.bcmd.2014.07.018.
- **Asnani M.**, Anderson M. ‘The white blood cell always eat the red’: What Jamaicans with sickle cell disease know about their illness. *Ethnicity & Health* Apr 2015; Volume 2: Pages 1-15
- **Asnani M**, **Reid, M.** ‘Renal function in Adult Jamaicans with Homozygous Sickle Cell Disease’. *Hematology.* Volume 20, Issue 7 (August, 2015), pp. 422–428. Appeared Online Nov 28, 2014. DOI: <http://dx.doi.org/10.1179/1607845414Y.00000000213>
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- **Baker-Henningham H.** “Targeted, preventive interventions in primary school prevent mental health problems in adolescence.” *Evidence Based Mental Health* 2014-101864. Published online first 30 July 2014.

- **Baker-Henningham H.** “The role of early childhood education in the prevention and promotion of child and adolescent mental health.” *International Journal of Epidemiology* 43, 2(2014):407-433.
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- **Bennett NR, Ferguson TS, Bennett FI, Tulloch-Reid MK, Younger-Coleman NO, Jackson MD, Samms-Vaughan ME and Wilks RJ** (2014). High sensitivity C-reactive protein is related to central obesity and the number of metabolic syndrome components in Jamaican young adults. *Front. Cardiovasc. Med.* 1:12. doi: 10.3389/fcvm.2014.00012 Available at <http://journal.frontiersin.org/Journal/10.3389/fcvm.2014.00012/abstract>
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- **Bhaumik S, Rana S, Karimkhani C, Welch V, Armstrong R, Pottie K, Dellavalle R, Dhakal P, Oliver S, Francis DK, Nasser M, Crowe S, Aksut B, Amico RD.** Ethics and equity in research priority-setting: stakeholder engagement and the needs of disadvantaged groups. *Indian J Med Ethics.* 2015 Apr-Jun;12(2):110-3. Epub 2015 Mar 16
- **Bowers AS, Francis DK, Bennett NR.** Interventions for treating pulmonary hypertension in people with sickle cell disease or thalassaemia (Protocol). *Cochrane Database of Systematic Reviews* 2015, Issue 6. Art. No.: CD011752. DOI: 10.1002/14651858.CD011752.
- **Boyne M.S., Thame M., Osmond C., Fraser R.A., Reid M., Gabay L., Forrester T.E.** “The association of puberty with cardiometabolic risk factors in Afro-Caribbean children.” *Journal of Pediatric Endocrinology and Metabolism*, 27(2014):453-60.

- **Chang S.M.**, Grantham-McGregor S.M., **Powell C.A.**, Vera-Hernández M., Lopez-Boo F., **Baker-Henningham H.**, & **Walker S.P.** (2015) Integrating a Parenting Intervention with Routine Primary Health Care: A Cluster Randomized Trial. *Pediatrics* published online: July 6, 2015 (doi: 10.1542/peds.2015-0119).
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- Francis KK, **Younger-Coleman NO, Tulloch-Reid MK, Wright-Pascoe RA, Boyne MS, Wilks RJ, Ferguson TS.** Relationship between Self-Monitoring of Blood Glucose and Glycaemic Control among Patients Attending a Specialist Diabetes Clinic in Jamaica. *International Journal of Diabetes in Developing Countries*, (2015) 35:26-32
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- Melbourne-Chambers R, Clarke D, Gordon-Strachan G, Tapper J, **Tulloch-Reid MK**. The UWIMONA Pediatric Epileptic Seizure Screening Questionnaire was equivalent to clinical assessment in identifying children with epilepsy. *J Clin Epidemiol.* 2015 Mar 12. pii: S0895-4356(15)00124-9. doi: 10.1016/j.jclinepi.2014.10.014. [Epub ahead of print]

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## PUBLICATIONS – SPECIAL ISSUE

Special issue of the *Journal of Clinical Epidemiology*, highlights the work of the UWI Clinical Epidemiology Unit. The issue features a historical perspective of epidemiology and the future of clinical epidemiology by **Professor Rainford Wilks**; the role of early life determinants of adult blood pressure, and how that critical period may impact the region's chronic non-communicable diseases epidemic by **Dr Trevor Ferguson** and **Professor Marshall Tulloch-Reid** served as one of the guest editors for this issue. The issue will be in press in the next few months but articles from this issue are available online at <http://www.jclinepi.com/inpress>

## PRESENTATIONS

### Susan Walker

- Reaching more children and families with evidence based parenting interventions. Scaling program investments for young children globally: Evidence from Latin America and the Caribbean and other developing regions. Forum on Investing in Young Children Globally, Sao Paulo, Brazil, November 10–11, 2014
- Bundling services for young children. Early childhood development Costing Workshop. The Brookings Institution, Washington DC, December 2–3, 2014
- The Jamaica Early Child Development Intervention: Efficacy to Global Impact. Plenary address; Conference on Investing in Early Child Development for a Better World. Institute for Human Development, Nairobi, Kenya, February 12–14, 2015

### Monica Asnani

- Quality of life and knowledge of Jamaican adolescents with Sickle Cell Disease. Oral presentation in 'Quality of Life' workshop. 2nd Global congress on sickle cell disease held Rio de Janeiro, Brazil. November 11–14, 2014.
- Determinants of Renal Decline in Sickle Cell Disease. Oral presentation

at 7th Caribbean Institute of Nephrology conference held in Montego Bay, Jamaica. January 29–31, 2015.

- Sickle Cell Disease in Jamaica. Invited lecture to Bass Connections faculty & students at Duke University, USA. Delivered via Skype. November 20, 2014.

### **Angela Rankine-Mullings**

- SCATE the Jamaican Experience, Haematology Grand Rounds - Cincinnati Comprehensive Sickle Cell Centre, Division of Haematology, Cincinnati Children's Hospital Medical Centre, September 3, 2014

### **Lesley-Gaye King**

- Sickle Cell Association of Austin, Texas – “Continuum of Care 2014: Clinicians Role in Transforming the Quality of Life for Patients with Sickle Cell Disease” April 26th, 2014. Sickle Cell Disease: The International Perspective
- Caribbean Association of Oncology & Haematology Conference (Barbados) 2015 – “Challenges in Cancer Care/Treatment: the Caribbean Perspective” April 24–25th, 2015. Newborn Screening Programme for Sickle Cell Disease

### **Michael Boyne**

- Early childhood malnutrition and glucose dysregulation in West Indian adults. American Diabetes Association 75th Scientific Sessions, Symposium on “Global Challenges and Disparities in Diabetes,” June 5, 2015, Boston, MA.

## **PUBLIC SERVICE**

### **Susan Walker**

- Board of Trustees, Environmental Foundation of Jamaica Trust Fund.
- Contributor, USAID Global Classroom on Childhood Adversity.



## **Tropical Medicine Research Institute**

- Member, Public Health Nutrition Advisory Committee, Caribbean Public Health Agency (CARPHA)
- Member, Advisory Committee on Health Research, Pan American Health Organization

### **Marshall Tulloch-Reid**

- Jamaica Ministry of Health - Chickungunya Research Committee and Clinical Research Subcommittee

### **Jennifer Knight-Madden**

- Vice President of Caribbean Network of Researchers in Sickle Cell Disease and Thalassemia
- Member of Ministry of Health Sickle Cell Disease working group
- Co-chair of Sickle Cell Disease Working Group, SickKids Caribbean Initiative
- Member, Ministry of Health, Scientific and Technical Working Group

### **Suzanne Soares-Wynter**

- Audit Committee Member and Operations Committee Member, Board of Directors, Nutrition Products Limited. Ministry of Education, Youth and Culture (Government of Jamaica) School Feeding Division.

### **Monica Asnani**

- Caribbean Representative: Worldwide Initiative on Social Studies in Hemoglobinopathies (WiSSH)
- Caribbean College of Family Physicians:
- Honorary Secretary
- Co-Chair, CME Committee
- Member, Accreditation & Certification Committee.
- Board Member of Caribbean Network of Researchers in Sickle Cell Disease and Thalassemia

- Planning and execution of Medical Seva Camp of Shri Satya Sai Baba Organization in Jamaica. Brought in 10 doctors and 9 volunteers to assist from USA along with medications. Clinics in rural areas: April 19–25, 2015.

**Angela Rankine-Mullings**

- Member of Jamaica Pain Collaborative (representing TMRI) November
- Member of the District Health Committee

**Michael Boyne**

- First Vice-President, Association of Consultant Physicians of Jamaica
- Member, Board of Diabetes Association of Jamaica
- Member, DOHAD Council
- Panel Advisor, PAHO/CARPHA Technical working group, Guidelines for the management of diabetes
- Scientific Committee, Mona Office for Research and Innovation
- Member, National Health Fund Expert Panel of Physicians
- Reviewer for the following medical journals:

*Journal of DOHAD*

*Journal of Clinical Endocrinology Metabolism*

*Diabetes Care*

*West Indian Medical Journal*

*Diabetology & Metabolic Syndrome*

*Journal of Pediatrics*

*Endocrine*

*PlosOne*

- Member, National Health Fund Expert Panel of Physicians

## INCOME GENERATION

1. Title: **Developing, implementing and evaluating a teacher-training intervention to promote child mental health in the early grades of primary school in Jamaica**  
Funding Agency: Grand Challenges Canada: Global Mental Health  
Period of Award: Oct 2014–Sep 2016  
Investigators: Helen Baker-Henningham, Yakeisha Townsend  
Value of Award: CAD \$268,922
2. Title: **The “IRIE Classrooms Toolbox”: A cluster randomized trial of a universal violence prevention programme in Jamaican preschools**  
Funding Agency: Medical Research Council  
Period of Award: Oct 2014–Sep 2018  
Investigators: Helen Baker-Henningham, Susan Walker  
Value of Award: GBP 1,197,664.65
3. Title: **SickKids-Caribbean initiative (SCI): Enhancing Capacity for Care in Paediatric Cancer and Blood Disorders**  
Funding Agency: The Hospital for Sick Children (SickKids)  
Period of Award: 2014–2019 (subject to approval)  
Investigators: Jennifer Knight-Madden  
Value of Award for 2014/2015: CAD \$41,000
4. Title: **Decreasing preventable Childhood Mortality due to Sickle Cell Diseases in Jamaica (MDG4)**  
Funding Agency: National Health Fund  
Period of Award: Feb 2015–Jan 2016  
Investigators: Jennifer Knight-Madden  
Value of Award: JMD \$10,000,000

5. Title: **Expanding Treatment for Existing Neurological Disease (EXTEND) Clinical Trial**  
Funding Agency: Children's Hospital Medical Center (CHMC)  
Principal Investigator: Marvin Reid, Jennifer Knight-Madden  
Period of Award: December 2014–November 2017  
Value: USD\$80,000 (Based on enrolment)
6. Title: **Integrating a parenting intervention with routine care to improve early developmental outcomes in children with sickle cell disease**  
Funding Agency: Grand Challenges Canada  
Period of Award: 2014–2016  
Investigators: J. Knight-Madden, S. Chang-Lopez, M. Asnani, L. King, S Walker  
Value of Award: CAD \$178,101  
Value for 2014/2015: CAD \$77,089
7. Title: **Promoting global child development: A web based intervention package for parents and children, for use by community workers in low resource settings**  
Funding Agency: Grand Challenges Canada: Saving Brains  
Period of Award: 2013–2016  
Investigators: Susan Walker, Christine Powell, Sally McGregor, Susan Chang, Helen Baker-Henningham, Marta Rubio-Codina & Jena Hamadani  
Value of Award: CAD\$2 million  
Value for 2014/2015: CAD \$791,797
8. Title: **Home Visiting Programs to Improve Early Childhood Development and Maternal Mental Health – Evidence from the Western Region Project**  
Funding Agency: Grand Challenges Canada  
Investigators: A. Brentani, S. Grisi, M. Simões, G. Fink, S. Chang-Lopez, C. Powell.

Period of Award: 2014-2016

Value of Award: CAD \$250,000

9. Title: **USA-Caribbean Alliance for Health Disparities Research (USCAHDR)**

Funding Agency: Sullivan Alliance

Investigator: Rainford Wilks

Period: 2011–2016

National Institute on Minority Health and Health Disparities  
Cooperative Agreement No.1U24MD006959-01, NIH –  
US\$4,799,063.00

9. Title: **Integrative Global Research on Sickle Cell Disease**

Funding Agency: Bass Connections Grant, Duke University

Co-Investigator: Jennifer Knight-Madden

Value: US\$ 25,000.00

Period: July 1, 2014–June 30, 2015

10. Title: **‘CIJA Study’. Chronic Illness in Jamaican Adolescents**

Funding Agency: UNICEF

Co-Investigator: Jennifer Knight-Madden

Value: US\$ 35,000

Period: June 2014–2015.

11. Title: **A Phase II, Multicenter, Randomized, Placebo-Controlled, Double-Blind, 12-Month Study to Assess Safety and Efficacy of SelG1 With or Without Hydroxyurea Therapy in Sickle Cell Disease Patients with Sickle Cell-Related Pain Crises. (SUSTAIN)**

Funding Agency: Selexys Pharmaceuticals

Investigators: Jennifer Knight-Madden, Angela Rankine-Mullings

Period of Award: 2013–2016

Value: USD\$100,000.00 (estimated, depends on patient enrolment)