

DEPARTMENT OF MICROBIOLOGY



Dr. Alison Nicholson, MBBS; DM
Head of Department

WORK OF THE DEPARTMENT

Accreditation of the Laboratory

One of the most significant achievements for the year 2016–17 was the accreditation of the Microbiology laboratory. The award ceremony was held on June 7, 2017. The Department was accredited by the Jamaica National Agency for Accreditation (JANAAC), effective May 10, 2017 for 4 years with yearly surveillance visits to the Department by JANAAC assessors. The medical laboratory services provided by the department, received ISO 15189 certification. JANAAC is the national accreditation body of Jamaica and is a signatory to the International Laboratory Accreditation Cooperation (ILAC), Mutual Recognition Arrangement (MRA) which promotes international confidence and acceptance of results from accredited laboratories. The scope of this accreditation covers all major areas of diagnostic testing spanning the



Accreditation Certificate presented to The UWI, Mona Campus' Microbiology Laboratory. From left: Randy Dougherty (Chairman of the Inter-American Accreditation Co-operation), Dr Alison Nicholson (Head, Microbiology Department, The UWI), Professor Monica Smikle (Manager, Accreditation Committee), Simon Roberts (JANAAC Chairman) and Sharonmae Shirley (CEO, JANAAC)

Microbiology sub-disciplines of bacteriology, virology, immunology, mycology and parasitology.

As an accredited laboratory, the department is now able to use the JANAAC logo and accreditation symbol on its reports and certifications. This certification holds important benefits for all stakeholders including increased international research collaboration by The University of the West Indies and greater prospects for medical tourism by the University Hospital of the West Indies. The department achieved this after years of intense work with excellent support from the University.

The National Influenza Centre (NIC)

In its capacity as the National Influenza Centre (NIC) the Department of Microbiology is a part of the Global Influenza Surveillance and

Response System (GISRS) and the Pandemic Influenza Preparedness (PIP) Framework for the sharing of Influenza viruses and access to vaccines and other benefits in accordance with the terms of reference (TOR). As at September 2016 the NIC collaborated with the Ministry of Health (MOH) in a cooperative agreement with the Centers for Disease Control, Prevention (CDC) in Atlanta, Georgia. This collaborative project is entitled, “Surveillance and Response to Avian and Pandemic Influenza in Jamaica” and aims to strengthen influenza surveillance capacity in Jamaica. During the period June 2016 –June 2017 the NIC laboratories had three onsite external assessments conducted by expert teams of assessors from PAHO/WHO and CDC and participated, successfully, in three external quality assurance programmes (EQAP). Participation in the WHO National Influenza Centres Meeting (Geneva, Switzerland, July 2017 – marked the 65th year of the GISRS) and Severe Acute Respiratory Infection Network (SARINet) 4th Annual Meeting (Punta Cana, Dominican Republic, May, 2017) provided pertinent recommendations for the way forward. The Department is expected to benefit from training in Biosafety (Panama, August 2017).

Infection Prevention & Control

The Microbiology department continues to lead the Infection Prevention and Control (IPC) programme. A training programme that includes the use of an IPC DVD has been developed by Dr Alison Nicholson and team. The DVD was launched at the UHWI on February 7, 2017.

Hundreds of employees at the University Hospital of the West Indies have so far been trained. The Department facilitated a visit to the UHWI from January 27–February 9, 2017 by Dr S Haessler, Infectious Diseases Specialist and Hospital Epidemiologist at the University of Massachusetts, USA. During her 10 day visit, she delivered lectures on IPC to both staff and students and participated in the Caribbean Neurosciences Symposium.

Antimicrobial Resistance

The UWI is partnering with the MOH in its fight against antimicrobial

resistance. Dr A Nicholson is a member of the team developing a National Action Plan (NAP) against Antimicrobial Resistance. This is part of a Global Action Plan being driven by WHO. The NAP includes a national campaign to educate healthcare workers as well as members of the public on antimicrobial resistance.

Sexually Transmitted Infections (STI's)

Dr Magnus Unemo, a world-leading WHO expert of laboratory diagnosis of STI's and associated antimicrobial resistance, was invited by Dr Joshua Anzinger to further STI research activities in the Department of Microbiology to provide a distinguished lecture at The University of the West Indies; and to provide expert advice for the routine diagnostic microbiology laboratories of UHWI and NPHL. This collaboration will result in future publications and the potential for reintroduction of antimicrobial resistance surveillance in Jamaica.

Mycology

The Mycology Laboratory (UWI) continues to offer its services to the University Hospital of the West Indies (UHWI) and other health care institutions in providing health care delivery in the laboratory diagnosis of fungal infections. The aim is to upgrade the section to a reference laboratory for the Caribbean region. Incoming specimens including environmental samples have increased by about 15–20%. There has also been improvement in the quality of specimens taken. This is as a result of efforts made by the section to guide sample collection by clinicians and other health care providers.

There has also been increased income generating requests for investigating environmental mould contamination and remediation solutions.

Continuing Medical Education

The Department has started a series of presentations on a range of scientific topics by distinguished speakers. This initiative was led by Mrs

Joyce Jones, Senior Medical Technologist. Other disciplines in the Faculty of Medical Sciences are invited. CME credits are awarded for these presentations.

Capacity Building

Dr Sandra Jackson facilitated the recruitment of UWI MPH student for internship at WHO, Geneva. This was done in collaboration with the Global Influenza Program manager, Wenqing Zhang, and the Global Influenza and Surveillance Team, Terry Besselaar, Christian Fuster and Magdi Samaan. Dr Jackson also facilitated the collaboration between WHO and MOH, Jamaica and The UWI on the study assessing the Global Burden of Influenza. Collaborators include Julia Fitzner (WHO), Monica Smikle, Sandra Jackson and Karen Webster.

Micro Moves

In keeping with the national mandate to encourage physical exercise as demonstrated in Jamaica Moves, the department, led by Ms Alcia Jones, has started a 30 minute lunch time aerobic exercise programme. It is hoped that the losses shown by participants will encourage others to join the movement.

PUBLICATIONS

Refereed Journal Articles

- **Reynolds-Campbell G, Nicholson A, Thoms-Rodriguez CA.** Oral Bacterial Infections: Diagnosis and Management. *Dent Clin North Am.* 2017 Apr; 61(2):305-318. doi: 10.1016/j.cden.2016.12.003.
- **Nicholson AM,** Tennant IA, Martin AC, Ehikhametalor K, **Reynolds G, Thoms-Rodriguez C,** Nagassar R, Hoilett T, Allen R, Redwood T, Crandon I. *Hand Hygiene Compliance by Health Care Workers at a Teaching Hospital, Kingston, Jamaica. J Infect Dev Ctries* 2016; 10(10):1088-1092. doi:10.3855/jidc.7083

- **Anzinger JJ**, Jin X, Palmer CS, Dagur P, Barthwal MK, Kruth HS. *Measurement of Aortic Cell Fluid-Phase Pinocytosis in vivo by Flow Cytometry. J Vasc Res.* 2017; 54:195–199.
- Metsky HC, Matranga CB, Wohl S, Schaffner SF, Freije CA, Winnicki SM, West K, Qu J, Baniecki ML, Gladden-Young A, Lin AE, Tomkins-Tinch CH, Ye SH, Park DJ, Luo CY, Barnes KG, Shah RR, Chak B, Barbosa-Lima G, Delaorre E, Vieira YR, Paul LM, Tan AL, Barcellona CM, Porcelli MC, Vasquez C, Cannons AC, Cone MR, Hogan KN, Koppy EW, **Anzinger JJ**, Garcia KF, Parham LA, Ramirez RMG, Montoya MCM, Rojas DP, Brown CM, Hennigan S, Sabina B, Scotland S, Gangavarapu K, Grubaugh ND, Oliveira G, Robles-Sikisaka R, Rambaut A, Gehrke L, Smole S, Halloran ME, Villar L, Mattar S, Lorenzana I, Cerbino-Neto J, Valim C, Degraeve W, Bozza PT, Gnirke A, Anderson KG, Isern S, Michael SF, Bozza FA, Souza TML, Bosch I, Yozwiak NL, MacInnis BL, Sabeti PC. *Zika virus evolution and spread in the Americas. Nature.* 2017; 546:411–415.
- Butterfield TR, Hanna DB, Kaplan RC, Kizer JR, Durkin HG, Young MA, Nowicki MJ, Tien PC, Golub ET, Floris-Moore MA, Titanji K, Fishcl MA, Heath SL, Martinson J, Crow SM, Palmer CS, Landay AL, **Anzinger JJ**. “Increased glucose transporter-1 expression on intermediate monocytes from HIV-infected women with subclinical cardiovascular disease” *AIDS.* 2017; 31:199-205.
- Uhrlaub JL, Pulko V, DeFilippis VR, Broeckel R, Streblow DN, Coleman GD, Park BS, **Lindo JF**, **Vickers I**, **Anzinger JJ**, Nikolich-Zugich J. “Dysregulated TGF- β Production Underlies the Age-Related Vulnerability to Chikungunya Virus” *PLoS Pathog.* 2016:e1005891.
- **Vickers IE**, Nelson K, Brown M, **Lindo JF** et al “Evaluation of OneStep Dengue NS1 RapiDip™ InstaTest and OneStep Dengue Fever IgG/IgM RapiCard™ InstaTest during the course of a dengue type 1 epidemic” *Diagnostic Microbiology and Infectious Disease* 2017
- Waugh CA, **Lindo JF**, Lorenzo-Morales J, Robinson RD (2016). An epidemiological investigation into the situation and events following emergence of *Angiostrongylus cantonensis* in Jamaica.

- Parasitology* 143(9):1211-7. doi: 10.1017/S0031182016000640
- Uhrlaub JL, Pulko V, DeFilippis VR, Coleman GD, **Lindo JF**, **Vickers IE**, **Anzinger JJ**, Nikolich-Zugich J (2016). Dysregulated TGF- β production underlies the age-related vulnerability to chikungunya virus. *PLoS Pathog.* 12(10), p.e1005891.
 - Lee MF, Cadogan P, Eytel S, Copeland S, Walochnik J, **Lindo JF** (2017). Molecular epidemiology and Multilocus sequence analysis of potentially zoonotic *Giardia* spp. from humans and dogs in Jamaica. *Parasitology Research* 116: 409–414.
 - Lee MF, Herbert Auer H, **Lindo JF** and Walochnik J (2017). Multilocus sequence analysis of *Giardia* spp. isolated from patients with diarrhea in Austria. *Parasitology Research* 116(2), 477–481).
 - L Campbell, **G Reynolds**, R Stevens: “Knowledge, attitudes and practice regarding personal cervical cancer screening among clinical staff working in obstetrics and gynaecology at two tertiary institutions in Jamaica”. *West Indian Medical Journal* (2017). doi:10.7727/wimj.2016.280 2.
 - **G Reynolds-Campbell**, L Campbell, T Williams, **O Heslop**; “Microbiological profile of mycotic eye infections at a tertiary care centre in the Caribbean: A retrospective analysis”. *International Journal of Infectious Diseases* 45, 1 (2016): 316-317. ISSN1201- 9712 (POSTER PRESENTATION 17th Annual International Congress on Infectious Diseases Conference, Hyderabad India (2016)
 - CDC Christie, R Melbourne-Chambers, J Ennevor, S Young-Pearl, T Buchanan, P Scott-Brown, N McNeil-Beecher, T Fulford-Ramdial, M Richards-Dawson, T James-Powell, **ST Jackson**. *Chikungunya in Jamaica – Public Health Effects and Clinical Features in Children*. *West Indian Med J.* (2016) doi:10.7727/wimj.2016.529

Technical Report

- Jackson ST (2017). WHO Global RSV Surveillance Based on GISRS, a strategy for a Pilot. (29 pages)

INCOME GENERATION

- **Source:** The University of the West Indies Research and Publication Grant

Title: Glucose Immunometabolism during Combination Antiretroviral Therapy Treated HIV Infection

Grant Period: 2017 (1 year)

Total Amount: US\$2,975.00

Principal Investigator: J Anzinger

- **Source:** Centers for Disease Control

Title: Surveillance and Response to Avian and Pandemic Influenza

Grant Period: 2016–2021

Total Amount: US\$2,000,000.00

Principal Investigator: J Anzinger

- **Source:** Ministry of Health, Jamaica

Title: The Antimicrobial Sensitivity Testing of Positive STI Samples: To Determine the Sensitivity of Gonorrhea Samples to Produce Findings to Inform Updated STI Treatment Guidelines

Grant Period: 2016–2017

Total Amount: JA\$2,080,000.00

Principal Investigator: J Anzinger

PUBLIC SERVICE

Professor J Lindo

- Acting Director, National Laboratory Services, Ministry of Health, Jamaica

Department of Microbiology

- Member, Board of Management, University Hospital of the West Indies
- Member, Rotary Club of New Kingston

Dr. ST Jackson

- Member, WHO Secretariat. WHO Global Influenza Program and WHO Global Influenza Surveillance and Response System
- Laboratory Focal Point for WHO Respiratory Syncytial Virus Global Surveillance Pilot for 14 countries in the 6 WHO regions. Global Influenza Programme

STUDENTS

Candidate	Mentor(s)	Programme
Christie, Olivene	Nicole Christian	MSc
Daley, Alyair	Nicole Christian	MSc
Henry, Jenille	Nicole Christian	MSc
Record, Norella	Nicole Christian	MSc
Williams-Lemonius, Rosalee	Nicole Christian	MSc
Alcia Jones (current)	John Lindo	MPhil
Simmoy Noble	John Lindo	MPhil
Felicia Bailey	John Lindo	MPhil
Tiffany Butterfield	Joshua Anzinger	PhD
Suzette Cameron	Joshua Anzinger	PhD
Rohan Willis	Monica Smikle	PhD
Anique Chin	John Lindo	DM
Kathryn Pearson	John Lindo	DM
Ynolde Leys	Dr C Thoms-Rodriguez	DM
Kereann Lindsay	Ivan Vickers	DM
Jerome Walker	Alison Nicholson	DM
Jessica Edwards	Ivan Vickers	DM
Camille Blake	Alison Nicholson	DM
Inshan Ali	Alison Nicholson	DM
Nakeisha Otto-Stewart	Alison Nicholson	DM