WORK OF THE DEPARTMENT

Service

The Department of Microbiology provide laboratory diagnostic services to the University Hospital of the West Indies as its main client and as part of undergraduate and postgraduate teaching in the Faculty of Medical Sciences. Further, it serves a number of private hospitals, laboratories and medical centres. The total number of clinical specimens processed increased by 8.9% over the year from 56,393 to 61,398 when compared to 2011/2012. However, the total number of units decreased by 6.27%.

BIOSAFETY LEVEL III LABORATORY

The department received funding from the National Health Fund to complete the furnishing and equipping of the Biosafety Level III (BSL3)
laboratory. Work will be completed in academic year 2013–2014 and Jamaica will have its first BSL3 laboratory as recommended by the World Health Organisation several years ago. This will allow the department to handle highly infectious material in a safe manner.

Caribbean Medical Mycology Reference Laboratory

The upgrade of the Mycology Services towards the establishment of the Caribbean Medical Mycology Reference Laboratory has continued with work being focussed on drafting of Standard Operating Procedures for fungal diagnosis and antifungal susceptibility testing. The laboratory will offer testing for antifungal resistance in clinical samples, identify new and emerging fungal infections and test new drugs in those in development.

National Influenza Centre

The National Influenza Centre (NIC) working with the Pan American Health Organization and the Ministry of Health contributed to the following national and regional publications as part of its mandate on influenza surveillance:

- Weekly CARPHA reports – (EW 1 to 52, 2012)

The NIC Jamaica successfully participated along with a total of 181 laboratories from 141 countries in six WHO regions in the World Health Organization (WHO) External Quality Assessment Programme (EQAP) for the Detection of Influenza Viruses with a turnaround time of 24 hours.
LABORATORY INFORMATION SYSTEM

The department continued the roll out of the Laboratory Information System although the project faced major challenges with the location of a central accessing area. The area has been identified and work will be undertaken to facilitate a 2014 Go-live date.

Research

During the period under review the department spent considerable effort in developing the research capacity of its graduate students. The aim was to have all research projects conducted in the department be of a high enough standard for publication in a peer reviewed journal. Students were encouraged to present an abstract to at least one conference and then to convert this into a full paper for publication. This has borne fruit and 16 of the 29 papers presented this year were led by graduate students. The students have now embarked on the second phase of publishing by writing manuscripts for peer-reviewed journals.

The department places great value on its international collaborations and Ms Nicole Christian continued to conduct research on molecular and genetic basis of antibiotic resistance with Professor Tim McHugh at University College, London. Further, Ms Cheridah Todd is conducting collaborative research on free living amoebae with Dr Jacob Lorenzo Morales at the Universidad de La Laguna, Spain. During the year under review Dr Alison Nicholson established collaborative research with Case Western Research University, Ohio, USA (Professor Michael Jacobs and Dr Altreisha Foster) to study pneumococcal disease. In addition, Dr Joshua Anzinger established collaborations with Rush University (Professor Greg Spear) and the University of Nevada, Reno (Professor Buxton) to study bacterial vaginosis in HIV-infected patients and premature labour, respectively.

The National Influenza Centre (NIC) continued its collaboration with the Pan American Health Organization, the Centers for Disease Control and Prevention (CDC), Atlanta and the Caribbean Public Health Agency.
Dr. Sandra Jackson who is Director of the NIC established collaborative studies on influenza with Dr. Jonathan Gubbay of the Public Health Ontario Laboratory of Canada. The Departments of Medicine, Child Health and Microbiology participated in the establishment of the first Caribbean Infectious Disease Fellowship training programme in collaboration with the University of South Carolina’s School of Medicine, USA.

Dr. Orville Heslop established collaborative research on molecular typing of Clostridium difficile in hospital acquired infections with Dr. Michael Mulvey at the National Microbiology Laboratory, in Manitoba, Canada. Further he is working with Dr. Mary Brandt of the Mycology Branch, CDC, on the molecular epidemiology of new and emerging fungal infections.

The department welcomed several distinguished visitors who are part of our collaborative studies. These included Ms Chika Ozongwu (UCL), Professor Michael Jacobs and Dr Altreisha Foster (Case Western), Professor Gregory Spear (Rush, Chicago).

**NEW ACADEMIC STAFF MEMBERS**

The capacity of the department to carry out its tasks was advanced significantly in the year under review by the recruitment of new academic staff members including, Dr Joshua Anzinger who was recruited as a Lecturer. Dr Anzinger holds the PhD in Microbiology and Immunology from Rush University and joined the staff after postdoctoral work at the National Institutes of Health. His area of interest is in the immunology and pathophysiology of HIV infections and its relationship with chronic diseases. Dr Yohann White who holds the MBBS from the UWI, PhD in Immunology from Kagoshima University and the DTM&H from the London School of Hygiene and Tropical Medicine was appointed jointly between the Departments of Medicine and Microbiology. He will focus on research in human retrovirology and cellular immunology. In addition Dr Kristian Angeby who holds MD and PhD degrees from the Karolinska Institute in Stockholm, Sweden was appointed Honorary Research Fellow. Dr Angeby who was manager of the Tuberculosis laboratory at
the Karolinska Institute has an interest in mycobacterial infections of importance to human health. Ms Cheridah Todd was appointed Research Assistant and will focus of developing the area of molecular parasitology. The main thrust of her research is on the distribution and characteristic free-living amoebae in the Jamaican environment and in clinical samples.

**NON ACADEMIC APPOINTMENTS**

– Ms Alcia Jones Chief Medical Technologist – January 1, 2013
– Mr Evan Edwards Chief Medical Technologist – June 1, 2013
– Ms Monique Miller Senior Medical Technologist – June 1, 2013
– Ms Rochelle Meyler Senior Medical Technologist – June 1, 2013
– Mrs Sandra Jackson Records Management Assistant I – June 1, 2013

**POSTGRADUATE TRAINING**

The following candidates successfully completed the DM (Medical Microbiology) programme:

1. Dr Camille-Ann Thoms-Rodriguez
2. Dr Glendee Reynolds-Campbell
3. Dr Rohan Willis

The department currently has seven DM, one PhD, four MPhil and 14 MSc candidates.

**PAPERS PRESENTED**


Jones A, Christian N, Anscombe C, Fletcher HM, McHugh TD, Lindo JF Molecular detection of Trichomonas vaginalis infection in women at the University Hospital of the West Indies. West Indian Medical Journal 2012; 61 (Suppl): 54. Faculty of Medical Sciences 21st Annual Research Conference, University of the West Indies, Mona, Kingston 7, Jamaica in November 2012.


Jackson S, Nagassar R, James K, Gibson R and Rhoden T. Evaluation
of rapid HIV antibody assays in the diagnosis of neurological HIV. 


- **Jackson S**. Melbourne-Chambers R. Childhood chorea-encephalopathy. City-Wide ID Case Conference, University of South Carolina’s School of Medicine. SC, USA. February 2012.


- **Lawrence DA, Stott BR, Herbein JF, Lindo JF.** Diagnosis of intestinal protozoan infections using antigen detection at the University
Hospital of the West Indies. West Indian Medical Journal 2012; 61 (Suppl): 54. Faculty of Medical Sciences 21st Annual Research Conference, University of the West Indies, Mona, Kingston 7, Jamaica in November 2012.

- Thoms-Rodriguez CA, Nicholson AM, Christian N, Willey B, Mazzulli T. Antibiotic resistance profile and the investigation of meropenem (MEM) efflux in multidrug-resistant (MDR) Acinetobacter spp. at the University Hospital of the West Indies. *West Indian Medical Journal* 2012; 61; Suppl. 6: 57–58. (Poster Presentation at the 21st Annual Faculty of Medical Sciences (FMS) Research Conference, Kingston, Jamaica, November 2012.)


- Cheung D, Nicholson AM, DaCosta M. Epidemiology, Antimicrobial Susceptibility and Co-infection of Escherichia coli in Blood and
Urine Poster Presentation American Society for Microbiology (ASM) 2013 Boston, USA.

- G Reynolds, Nicholson AM, Christian N, Willey B, Mazzulli T. 16s rRNA methyltransferases in Gram negative bacilli from the Caribbean (Poster ICAAC Conference 2013)


- Willis R*, Bodonaik N, McMorris N. Epidemiology and Microbial Aetiology of Culture-Proven Meningitis Cases at the University Hospital of the West Indies. West Indian Medical Journal 2012; 61

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(Suppl. 6):58. (Poster Presentation at the 21st Annual Faculty of Medical Sciences (FMS) Research Conference, Kingston, Jamaica, November 2012.)

PUBLICATIONS

Books and book chapters


Refereed Journal Articles


INCOME GENERATION/GRANTS

Grants Obtained

Anzinger JJ.

Vaginal Lactobacilli capture of HIV

• US$10,000.00, Caribbean Health Research Council, 2013–2015
• US$15,000.00, UWI New Initiative, 2013–2015

Christian NC.

Molecular epidemiology of quinolone resistance among clonal types of Escherichia coli, Klebsiella pneumoniae and Acinetobacter spp


Lindo JF, Copeland S and Jackson ST

Establishing a Biosafety Level III laboratory and strengthening viral diagnosis for Jamaica

• US$263,193.79, National Health Fund

Jackson ST

Influenza surveillance

• US $13,696.00 – Pan American Health Organisation
Vickers IE, Brown MG, Ducasse M, Harvey K, Lindo JF

Laboratory Evaluation of a Commercial Rapid Dengue Diagnostic Test Kit for the Detection of NS1 Antigen, IgM and IgG Antibodies in Jamaica.

- $1,398,500.00 (Ministry of Health)

White YH.

Effects of exogenous interleukin-7 on CD8(+) cytotoxic T-lymphocyte survival and function in Jamaican patients with human T-cell lymphotropic virus type 1 infection.

- $ 957,255.00 UWI New Initiative, 2013–2015

Opportunities for advancing policy in the scale up of a robust multisectoral response to HIV and sex work in Jamaica – UNFPA (to The Grata Foundation on research project)

- US$22,000; April 2013, role: co-investigator; Principal investigator – Professor Russell Pierre.

Positive MSM intervention – UNFPA to The Grata Foundation on project

- US$12,750; December 2012; role: co-investigator; Principal investigator – Professor Russell Pierre.

PUBLIC SERVICE

Dr. Kristian Angeby
- Member, International Union Against Tuberculosis and Lung Disease
- Member, European Society of Mycobacteriology
- WHO TBTEAM expert in the field of laboratory strengthening.

Professor John Lindo
- Membership Chair, Rotary Club of New Kingston
- Member, American Society of Tropical Medicine and Hygiene
– Member, Inter-American Development Bank Civil Society Consulting Group (ConSOC)

**Dr. Sandra Jackson**
– Member, Ministry of Health’s IHR Technical Advisory Group of Experts
– Member, Pandemic Preparedness Committee

**Professor Monica Smikle**
– Member, Lions Club of Mona