

Friday, June 5: 945-1100

P01: The Pursuit of Innovation and Discovery at Canada's National Microbiology Laboratory (NML)

Dr. Matthew Gilmour, PhD

Learning Outcomes

- Know the mandate of NML and the Canadian Science Centre for Human and Animal Health: who works here, what do we study, and why does it matter?
- Understand the role and purpose of Canada's only level 4 laboratory within a Canadian and global perspective
- Describe modern technological advances in the laboratory (specifically, bioinformatics and genome sequencing) and its impact on research, program delivery, and policy
- Understand the vision for NML's future: key areas of investment, where research trends are headed, and how we will grow to respond effectively to emerging infectious disease threats

Session Description

Learn about the important role that the NML plays within the sphere of Canadian public health. More specifically, how it serves Canadians; regarding surveillance, emergency response, research, and diagnostics. Hear stories of exciting and innovative research that takes place in Canada's only level 4 laboratory, while also delving into the details of modern laboratory technology and how it is used to inform ground-breaking systems and studies.

Speaker Bio

Dr. Matthew Gilmour is the Scientific Director General of Canada's National Microbiology Laboratory and is the chief executive for NML's facilities, based in Winnipeg, Guelph, and St. Hyacinthe. He works out of the Canadian Science Centre for Human and Animal Health, located here in Winnipeg. This facility is renowned for being Canada's only containment level 4 laboratory and is home to many exciting scientific innovations, such as the Ebola vaccine. These federal laboratories lead the national outbreak response and surveillance activities for both emerging and established infectious diseases. Dr. Gilmour leads a team of over 550 committed public servants, comprised of research scientists, technicians, engineers, epidemiologists, computational scientists, administrators, communicators, and biosafety specialists.

Friday, June 5: 1130-1245

A01: Von Willebrand Disease: A Comprehensive Review and Modern Diagnostic Methods

Terence Litavec, BSc, MLT, SH(ASCP)

Topic(s): Hematology

Learning Outcomes

- Provide a historical account of the discovery of von Willebrand Disease (vWD)
- List the different types and subtypes of vWD
- Describe the function of von Willebrand Factor (vWF)
- Outline the utility of the different laboratory assays currently used to diagnose and classify vWD subtypes
- Give modern genetic information about the abnormalities that give rise to the newly classified vWD subtypes

Session Description

In 1926, Dr. Erik Adolf von Willebrand first described an inherited bleeding disorder that afflicted an entire family in his native Finland. Since then, there have been several different types of von Willebrand Disease (vWD) identified which are all caused by abnormalities in the quantity or function of von Willebrand Factor (vWF), both named in honour of Dr. von Willebrand's pioneering work. This lecture will provide a comprehensive history of the discovery and classification of vWD subtypes, as well as a review of the modern laboratory methods that are used to identify and diagnose patients with all types of vWD.

Speaker Bio

Terence Litavec is the MLT Director of the BCSLS and he has worked as a medical laboratory technologist for the past 16 years. He currently works in the Hematology Department at LifeLabs in Burnaby, BC. Before that, worked at Kelowna General Hospital in BC and at Tacoma General Hospital and PhenoPath Laboratories, both in Washington State. He is certified by both the CSMLS and the ASCP. He is a certified specialist in hematology and coagulation, and he also has bench experience working in immunohistochemistry, flow cytometry, transfusion services, and some molecular methods such as FISH and PCR.

Friday, June 5: 1130-1245

A02-IGNITE: Moving to Molecular Assays to Detect Enteric Pathogens including E. coli O157 and non-O157 STEC

Rabindra Nepal, BSc, MLT

Topic(s): Microbiology

Learning Outcomes

- To learn about the prevalence of pathogenic E. coli in Canada
- To learn about methods of detection for STEC-O157 and non O157 STEC
- To learn about the Importance of quicker turn around time (TAT) for better patient and outbreak management

Session Description

Escherichia coli is normal intestinal flora of humans and animals. However, some E. coli are pathogenic and cause intestinal disease. There are six types of pathogenic E. coli; STEC, EPEC, ETEC, EIEC, EAEC and DAEC. The most common STEC is O157:H7, however non-O157 STEC are becoming more common as labs move to molecular detection methods and replace conventional culture. Traditional culture fails to detect non-O157 STEC if only SMAC is used and identification requires several days as isolates must be referred to a reference lab for confirmation. Molecular assays offer better TAT and in-house typing possibilities.

Speaker Bio

Rabindra was a medical laboratory technologist for 8 years in Nepal and has now been working in Virology/Molecular Biology for 8 years. He earned a BSc, MLT (Nepal), Certified Clinical Research Associate (CCRA) at McMaster University and Infection Prevention and Control (IPC) at Queen's University. Rabindra is a virology committee member at the Institute for Quality Management in Healthcare, Ontario.

Friday, June 5: 1130-1245

A02-IGNITE: Lessons Learned from Inadvertent Possession of Risk Group 3 Pathogens in a Regional Level 2 Laboratory

Rajan Dahal, MLT

Topic(s): Microbiology

Learning Outcomes

- To identify strategies to suspect risk group 3 organisms early in process for level 2 laboratories
- To develop strategies to mitigate exposure to risk group 3 organisms in level 2 laboratories
- To develop risk assessment strategies when inadvertent exposure occurs

Session Description

The session will be mainly focused on sharing our experience of inadvertently handling level 3 organisms in a high volume regional level 2 laboratory in Southern Ontario. The session will present interesting cases of *Brucella* with unusual presentation in blood cultures. Similarly a case of slow growing fastidious Gram negative coccobacilli which was identified as *Francisella tularensis* from lymph node biopsy culture, a fluffy dimorphic fungus "*Coccidioides immitis/posadesii*" from lung tissue culture in absence of pertinent clinical history of suspicious organism and a exposure to non-fastidious, rapidly growing level 3 organism "*Burkholderia pseudomallei*" will be reviewed in brief. We will share our prevention strategies for dealing with these organisms and outline a process for risk mitigation after possible exposure.

Speaker Bio

Mr. Dahal is currently working as a senior technologist in Microbiology lab at Hamilton Regional Laboratory Medicine Program (HRLMP). He had his bachelor's degree in medical laboratory technology and Masters in medical laboratory technology microbiology from Nepal. He has more than 15 years of experience in different microbiology and molecular lab settings in different countries including Canada, Japan and Nepal. He also has teaching experience in both class and medical laboratory settings, as well as working as a researcher in molecular epidemiology of Multi-Drug Gram negative organisms associated with hospital acquired infections.

Friday, June 5: 1130-1245

A03: Whole Blood, ROTEM, and the Walking Blood Bank

Sgt. Jeffrey Scott, BSc, MLT

Topic(s): Transfusion Science

Learning Outcomes

- Understand the role of MLTs in the Canadian Armed Forces
- Understand the history of whole blood usage
- Identify how a walking blood bank is employed in the Canadian Armed Forces
- Learn about the lived experience from Op IMPACT in Erbil, Iraq 2016-2017

Session Description

The Canadian Armed Forces are often deployed to austere environments around the world where resupply is difficult. In the event of massive transfusion or massive casualties, blood products may be exhausted quickly with resupply hours away, if ever at all. A Walking Blood Bank (WBB) is the donation of fresh whole blood specifically for a patient from a pre-screened donor and used during these extreme conditions. This lecture will discuss the history of whole blood, current use of low titre O whole blood, ROTEM and experiences in the activation of a WBB during Operation IMPACT in Erbil, Iraq.

Speaker Bio

Sgt. Jeff Scott is a medical laboratory technologist who joined the Canadian Armed Forces (CAF) in 2011 and is currently posted to 1 Canadian Field Hospital in Petawawa, ON. In his career, he has been tasked to Mongolia with the Alaska Air National Guard in 2014, deployed on Op SIRONA in Sierra Leone during the Ebola epidemic in 2015 and Op IMPACT to combat ISIS in Erbil, Iraq in 2016-17. Before joining the CAF, he obtained his BSc in Molecular Genetics and an MLT diploma. Sgt. Scott has two children, Elsie and Ethan, with his wife Samantha.

Friday, June 6: 1130-1245

A04: Preanalytical Truth or Myth

Richard Cleve, MD, FRCPC

Topic(s): Pre-Analytical

Learning Outcomes

- Give scientific rationale for or against common lab practices
- Learn to question things taken for granted

Session Description

An interactive session where we'll explore the science for or against some everyday activities.

Speaker Bio

A botanist turned physicist turned physician, Dr. Cleve has had an unusual journey to his position as medical director for both the chemistry department and the pre and post analytical departments in Fraser Health.

Friday, June 5: 1345-1500

B01: Syphilis Gone Wild!

Jared Bullard, MD, FRCPC

Topic(s): Microbiology, Virology

Learning Outcomes

- Review the basics and history of syphilis
- Interpret syphilis testing
- Discuss global and local epidemiology of syphilis
- Discuss what factors are contributing to the current syphilis outbreak in Manitoba
- Discuss what is being considered by public health to respond to syphilis

Session Description

Syphilis and the other sexually transmitted and blood-borne infections have been increasing in Manitoba in the past 15 years with a changing population dynamic. In the past 5 years, there has been a dramatic increase resulting in declaration of a concurrent outbreak in STBBIs. Syphilis, once thought to be an infectious disease of historical interest is at the forefront of the outbreak. This session will discuss diagnostic challenges and review how the epidemiology of syphilis can be used to implement public health policy to reduce its spread.

Speaker Bio

Dr. Jared Bullard is a product of Manitoba training, having completed his medical degree, Pediatric and Medical Microbiology residencies and a fellowship in Infectious Diseases all through the University of Manitoba. He is currently the Associate Medical Director at Cadham Provincial Laboratory (the public health laboratory for Manitoba) and helps direct key viral and sexually transmitted infections testing. Dr. Bullard is on the Manitoba STBBI Outbreak Response Committee that is addressing the concurrent STBBI outbreaks, is the provincial representative to the Canadian Public Health Laboratory Committee Network Working Group for syphilis testing and surveillance guidelines and is on the National Advisory Committee for STBBI (NAC-STBBI). Personally, Dr. Bullard enjoys high level sarcasm, his physician wife and future physician children.

Friday, June 5: 1345-1500

B02: The Science of Morals: Let's Talk Ethics!

Denise Neutel, BTech, MLT
Laura Zychla

Topic(s): Ethics, Dilemmas

Learning Outcomes

Session Description

Back by popular demand! Because ethical dilemmas are not a rarity in the workplace... CSMLS members told us that they want to talk more about ethical issues arising in the lab and so we are freshening our presentation with more topics. What do you do when there is pressure to conform? How do you react differently in a toxic environment? It is not only about ethical issues happening in the lab. It is also about how we fit into our local communities and the national health system. Topics such as diversity, gender and race are big discussion items in the news. There are also other topics such as whistleblowing and fighting to prove that an individual has made an ethical choice in an interdisciplinary environment.

Bring an ethical topic you find interesting and let's take time to talk about it with your peers.

Speaker Bios

Denise Neutel is the Director of Certification and Prior Learning Assessment at the Canadian Society for Medical Laboratory Science, joining CSMLS at the beginning of 2018. She has more than 25 years of experience in the clinical laboratory, research, and management fields. She has experience working in the profession both in Canada and overseas. Denise worked in a 150-bed bush hospital in Uganda as Chief of the Laboratory and Dean of the hospital's Laboratory Medicine Educational Program. She also worked as a laboratory consultant, shipping up to 500 pounds of laboratory equipment and supplies, and training the laboratory personnel in Romania, Cameroon, and Haiti. In Canada, Denise has worked in the public and private sector, most recently with McMaster University's Platelet Immunology Diagnostic Laboratory, under the HRLMP, and the Population Health Research Institute, Hamilton Health Sciences, before taking on her current position with the CSMLS.

Laura Zychla holds research positions with the CSMLS and Cancer Care Ontario. She has an extensive consulting background in research and analysis, with a focus on creating evidence-based health and education policy for the applied health professions. She has been highly involved in the creation of competencies for the Clinical Specialist Radiation Therapist and Personal Support Worker professions.

Friday, June 5: 1345-1500

B03: Comprehensive Drug Surveillance in an Era of Polypharmacy: Tools to Tackle the Opioid and Mental Health Crisis

Philip Britz-McKibbin, PhD

Topic(s): Chemistry, Information Technology, Pre-Analytical, Quality, Drug screening

Learning Outcomes

- Understand conventional methods used for drug screening and their limitations
- Appreciate the public health impact of the alarming opioid and mental health crisis
- Learn new methods that allow for comprehensive drug surveillance as required in an era of polypharmacy
- Understand principles of capillary electrophoresis and mass spectrometry for rapid yet unambiguous drug screening in urine
- Learn how urine drug profiling can improve the therapeutic efficacy of prescribed medicinal cannabis

Session Description

New methods are urgently needed for comprehensive drug monitoring in an era of polypharmacy, legalized recreational cannabis, and widespread prescription of drugs prone to abuse. Herein, we describe new advances in non-targeted screening of a broad spectrum of prescribed and illicit drugs based on multisegment injection-capillary electrophoresis-mass spectrometry. This method offers a rapid yet accurate method for simultaneous detection and unambiguous identification of a plethora of drugs and their metabolites in human urine. Recent applications to confirm drug adherence and reveal self-medication use in high-risk patient populations will be discussed, including comparisons to self-reported data and standard drug screening methods.

Speaker Bio

Philip Britz-McKibbin is a Professor at the Department of Chemistry and Chemical Biology and Cystic Fibrosis Canada Researcher at McMaster University in Hamilton, Canada. Dr. Britz-McKibbin obtained his BSc in Chemistry (U. Toronto, 1994), and PhD in Analytical Chemistry (UBC, 2000) and a Japan Society for Promotion of Science PDF position in Japan (Himeji Institute of Technology, 2001-2003) prior to starting his academic position at McMaster. His research interests in bio-analytical chemistry, separation science, mass spectrometry and metabolomics include the design of novel analytical strategies to quantify and identify metabolites of clinical significance in biological samples. Philip's laboratory aims to discover novel biomarkers that support early detection of human diseases relevant to population health and preventative medicine with emphasis on inherited metabolic disorders, and chronic human diseases.

Friday, June 5: 1345-1500

B04: The Cutting Edge: Histology's Role in Pathology Research

Melanie Macasaet-Peralta, MLT

Topic(s): Histotechnology, Research

Learning Outcomes

- Understand the diversity of MLT skills
- Understand how research markers become part of a diagnostic panel
- Understand relationship between IHC and ISH or Molecular genetics
- Collaborate with other skilled professionals in research and be part of a solution for early diagnosis and perhaps prevention of disease and cancer.

Session Description

Let's do a deep dive into the Pathology Research lab at UHN and its daily operations. Discover how histology is used to paint the picture published in medical journals or presented at seminars globally. Learn how MLTs can work in a non-diagnostic setting and contribute to research and discuss the use of immunohistochemistry and In Situ hybridization in research.

Speaker Bio

Melanie is a product of Winnipeg. She graduated in 1997 from the Medical Laboratory Program at Red River College. After moving to Toronto in 1998, she spent 4 years in a diagnostic Histology Lab before moving to a research lab position. Melanie has worked part-time teaching Histology at the Michener Institute for 3 years and for the last 10 years, has held a position as Team lead and Resource Technologist for Pathology Research Program at UHN.

Friday, June 5: 1530-1645

C01: The Lab's Role in Successful Organ Transplants

Erin Siwanicz, MLT

Peter Nickerson, MD, FRCPC, FCAHS

Denise Pochinco, MLT

Topic(s): Serology/Transplant Immunology

Learning Outcomes

- Explain Cadham Public Laboratory's role in organ donor testing (paging to testing to reporting)
- List the NAT and Serological testing analysis and describe methodologies performed at CPL for organ donor testing
- Understand the role of the Transplant Immunology Laboratory in the organ allocation process
- Describe laboratory methodologies used for histocompatibility assessment of organ donors and transplant recipients

Session Description

The Transplant Immunology Laboratory and the Serology Department at Cadham Provincial Laboratory (CPL) are some of the key players that come together to assist in organ donor transplants. This session will explore the role of medical laboratory professionals in the process of an individual receiving a lifesaving organ transplant.

Speaker Bios

Erin Siwanicz is a Technical Specialist in the Hepatitis Testing area in the Serology Department at Cadham Provincial Laboratory and mother to one second grade aspiring scientist. She graduated from Red River College's Medical Laboratory Sciences Program in 2005. She has worked in the Provincial Laboratory for almost 15 years in the areas of Nucleic Acid Testing, Bacterial and Viral Serology, and Hepatitis testing. She is a member in good standing with the College of Medical Laboratory Technologists of Manitoba and the Canadian Society for Medical Laboratory Science since graduation. Passion about her field is what drives her to share her knowledge, skills, and experiences regarding CPL's role in organ transplants.

Denise Pochinco is the Charge Immunogenetics Technologist in the Transplant Immunology Lab. She is also a member of the National HLA Advisory Committee which provides a forum to improve and standardize HLA Laboratory practices in support of Canada's organ transplant registries.

Peter Nickerson is a Transplant Nephrologist and Medical Director of Transplant Manitoba and the Transplant Immunology Lab. He is also the Vice-Dean (Research) and Distinguished Professor for the Rady Faculty of Health Sciences, University of Manitoba and holds the Flynn Family Chair in Renal Transplant. In his role for Canadian Blood Services, Dr. Nickerson is the Medical Advisor for Donation & Transplantation which supports organ and tissue donation and transplantation in Canada.

Friday, June 5: 1530-1645

C02: Biosafety and Infection Prevention Control (IPC) - Same destination, different roads

Tom Walus, BSc, MLT

Topic(s): Microbiology, Safety

Learning Outcomes

- Be aware of basics of biosafety
- Be aware of basics of infection prevention and control (IPC)
- Know some similarities and differences between biosafety and IPC
- Be aware of Laboratory Acquired Infections and Hospital Acquired Infections

Session Description

Biosafety and IPC have a lot more in common than we may think. This presentation will highlight some of the shared components to achieve the same goal for patients and laboratory staff; safety.

Speaker Bio

Tom graduated from the University of Winnipeg and did his medical laboratory training at Health Sciences Centre (HSC). He worked at HSC for over 20 years as a senior technologist responsible for mycobacteria and as the clinical instructor for MLTs and infectious disease residents. He left Winnipeg for 2.5 years to go to Saskatoon to be the laboratory manager for clinical microbiology. He returned to Winnipeg to work at St. Boniface Hospital as the clinical instructor. In 2014 he worked at the International Centre for Infectious Diseases as the program manager for biosafety. His current position is biosafety and biosecurity officer for Shared Health in Winnipeg and is President of the Canadian Association for Biological Safety.

Friday, June 5: 1530-1645

C03: Testing Services at Canadian Blood Services

Nancy Angus, MLT, ART

Topic(s): Transfusion Science

Learning Outcomes

- Understand the types of testing services provided at Canadian Blood Services
- Understand the donor testing services and testing menu
- Understand the new services being introduced at Canadian Blood Services such as Next Generation Sequencing and Fetal DNA testing

Session Description

The session will describe the current testing services at Canadian Blood Services, including donor testing, prenatal testing, reference testing and HLA testing. Introduction of new technology and testing will be presented on Next Generation Sequencing for HLA testing and Fetal DNA testing.

Speaker Bio

Nancy Angus is currently the Director of Testing at Canadian Blood Services, and has been at CBS for 15 years. Previous to this role, she was the laboratory manager for the Blood Transfusion Services at University Health Network (UHN), Toronto. In Nancy's current role, she is accountable for donor testing, diagnostic services, prenatal testing, reference laboratories and the HLA testing services.

Friday, June 5: 1530-1645

C04: Gender X: What Does it Mean for the Lab?

Richard Cleve, MD, FRCPC

Topic(s): Pre-Analytical

Learning Outcomes

- Define and understand what it means to be gender X
- Learn how to interact with these individuals
- Understand what challenges Gender X has for the lab, and some strategies to address these challenges

Session Description

The federal government and most provinces now recognize citizens identifying as male, female, or X. What does Gender X even mean? What impact does Gender X have for the lab? We'll explore what BC has been doing to address these concerns

Speaker Bio

A botanist turned physicist turned physician, Dr. Cleve has had an unusual journey to his position as medical director for both the chemistry department and the pre and post analytical departments in Fraser Health.