2nd Annual
GU BioBank Conference: Next Generation BioBanking
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Dr. Neil Fleshner is a clinician scientist and uro-oncologist within the Division of Urology at UHN. He is the Founder and Director of the UHN GU BioBank, the recipient of the inaugural Princess Margaret Hospital Foundation Love Chair in Prostate Cancer Prevention and is the Martin Barkin Chair in Urological Research in conjunction with the appointment of Chair for the Division of Urology at the University of Toronto. Dr. Fleshner’s current research priorities include translational, clinical and health services research. His clinical research interests have involved evaluating the role of micronutrients and pharmaceutical grade compounds in prostate cancer pathogenesis, progression, and prevention and the role of metabolism in the development of prostate cancer. Translational work in progress includes evaluating the role of a multiple factors in the development and progression of prostate cancer, including obesity and micronutrient use; the discovery of proteomic and genetic biomarkers that will aid in the diagnosis of prostate cancer; and work to differentiate indolent from aggressive prostate cancer.

Ms. Monique Albert is the Director of the Ontario Tumour Bank at the Ontario Institute for Cancer Research (OICR) in Toronto, Canada. She has nearly 20 years of professional experience in the biobanking, health research and pharmaceutical sectors. A believer in the importance of biobanking to the research community, she serves on the International Society for Biological and Environmental Repositories (ISBER) BOD as the Director-at-Large, Americas, and volunteers in a number of additional roles, including as Chair of the ISBER Internal Audit Tools Taskforce reporting to the Standards Committee. She also had the privilege of co-chairing the Program Committee for the ISBER 2017 Annual Meeting in Toronto. Further, she is a voting member on the Standards Council of Canada ISO TC276 Biotechnology mirror committee, which has special provisions for biobanks. Ms. Albert has held a number of leadership and research roles at OICR, MaRS, the STTARR Innovation Centre at the Princess Margaret Cancer Centre and the Microarray Centre (both at UHN) and in the corporate sector at Cangene Corporation and Affinium Pharmaceuticals.

Ms. Marianna Bledsoe is an independent biobanking consultant and Associate Editor for Biopreservation and Biobanking. Involved in biobanking for more than 20 years, Marianna provided oversight of biobanks at the National Institutes of Health and the Department of Veterans Affairs. In the Office of Science Policy, Office of the Director, NIH, she participated in the development of national and international policies related to biobanking. Marianna was the president of the International Society for Biological and Environmental Repositories (ISBER) from 2007 – 2008 and chairs the ISBER Science Policy Committee. She received the ISBER 2019 Outstanding Achievement in Biobanking Award.
Invited Speakers:

**Phedias Diamandis, MD, PhD, FRCPC**  
*Princess Margaret Cancer Center*

Dr. Phedias Diamandis completed his combined MD/PhD and residency training in neuropathology at the University of Toronto. His graduate work focused on designing high-throughput screening platforms to chemically profile neural precursors. This research resulted in the identification of novel regulators of neural and cancer stem cell function. Following completion of his training in 2016, he was hired as a Neuropathologist at the UHN. Here, his research team focuses on using chemical biology, deep learning and mass spectrometry-based proteomics to resolve phenotype-level heterogeneity in different brain and glioblastoma niches.

**Trevor Pugh, PhD, FACMG**  
*Princess Margaret Cancer Center, Ontario Institute of Cancer Research*

Dr. Trevor Pugh, PhD, FACMG is a Senior Scientist at the Princess Margaret Cancer Centre, Genomics Director at the Ontario Institute for Cancer Research, and holder of the Canada Research Chair in Translational Genomics. His research program is focused on understanding clinical implications of clonal shifts in cancer and non-cancerous cell populations during treatment, most recently using cell-free DNA, immune repertoire, and single cell RNA-seq sequencing. In addition to translational research projects, his genomics program develops software tools and data analysis systems required to federate and share these data across research groups.

**Johnathan Yeung, MD, PhD**  
*Toronto General Hospital, University of Toronto*

Dr. Jonathan Yeung is a thoracic surgeon at Toronto General Hospital and Assistant Professor of Surgery at the University of Toronto. He completed medical school and residency in Toronto and fellowships in Lung Transplantation with the Toronto Lung Transplant Program and Thoracic Surgical Oncology at Memorial Sloan-Kettering Cancer Center. He currently has an academic and clinical focus on esophageal cancer and lung transplantation.

**George Yousef, MD, FRCP, PhD, MSc.**  
*The Hospital for Sick Children*

Dr. George Yousef is Chief of the Department of Paediatric Laboratory Medicine & Senior Associate Scientist at The Hospital for Sick Children. He is a Professor and Vice-Chair of the department of Laboratory Medicine at the University of Toronto and a Scientist at the Li Ka Shing Knowledge Institute of St. Michael’s Hospital. His research laboratory is one of the leading laboratories focusing on the cancer biomarkers in urologic malignancies using an integrated genomic approaches. He has over 250 published research papers & review articles, and 15 book chapters. He is the editor of a book on Molecular Pathology in Cancer.

Conference Planning Committee:

Heidi Wagner BSc PA, Karen Hersey RN, Miran Kenk PhD, Sangita Paul MSc, Alisha Bhimani BSc, Susan Nguyen BSc, Ana Bolanos MD

*Speakers are subject to change.*
The GU BioBank annual meeting brings together technical experts, scientists, clinicians, and leaders in pharmaceutics and biotechnology for exchange of expertise and ideas through presentations and interactive sessions. Attendees will learn about state-of-the-art in the collection & management of samples from recognized authorities, and they will have the opportunity to learn about research possibilities afforded by biospecimens collected & curated by GU BioBank and similar large-scale biorepositories.

**Morning Agenda:**

**7:30 |** REGISTRATION & BREAKFAST

**8:00 |** WELCOME & INTRODUCTION

**8:15 |** KEYNOTE LECTURE: FROM “BIOVAULT” TO BIORESOURCE: OPTIMIZING BIOSPECIMEN UTILIZATION TO ENSURE BIOBANK SUSTAINABILITY
Marianna Bledsoe - Independent Consultant

Optimal biospecimen utilization from biobanks maximizes the value of the biobank by demonstrating its contributions to scientific and medical advancements and ensures financial and social sustainability. However, several recent surveys suggest that underutilization of biospecimens from biobanks is a significant concern. This presentation will discuss the importance of biospecimen utilization in ensuring biobank sustainability and the various factors that affect biospecimen utilization. A variety of different strategies and approaches for optimizing biospecimen utilization will also be suggested.

**10:00 |** NETWORKING BREAK

**10:15 |** ARTIFICIAL INTELLIGENCE FOR BIOBANKING
Dr. Phedias Diamandis – Princess Margaret Cancer Center

An overview of deep learning for histopathologic image analysis & discuss exciting applications for advanced biobanking. This will include automation of annotating regions of interest, detailed catalog development and large-scale hypothesis-free grouping of samples of potentially high interest.

**10:45 |** ORAL ABSTRACT PRESENTATIONS:

1. SPECIMEN PREPARATION & TISSUE SAMPLING TECHNIQUE
Martin Grealish - UHN

2. CYTOLOGY SPECIMENS ARE ABLE TO DETERMINE POTENTIAL MOLECULARLY-GUIDED THERAPY OPTIONS FOR PATIENTS WITH PANCREATIC ADENOCARCINOMA
Dave Chesla – Spectrum Health Universal Biorepository

3. CHALLENGES FOR A STILL-GROWING BUT MATURING BIOREPOSITORY
Shana Lamers - Hamilton Health Sciences

4. EVALUATING CURRENT BIOBANKING PROCESSES IN GENITO-URINARY (GU) ONCOLOGY SURGICAL PATIENTS AT UHN
Dianne Chadwick and Heidi Wagner - UHN

*Speakers are subject to change.*
**LUNCH**

**SPECIAL REMARKS**
Dr. Brad Wouters - UHN

**KEYNOTE LECTURE:**
**UTILIZATION AND COST RECOVERY: CONSIDERING REALISTIC EXPECTATIONS**
Monique Albert - Ontario Institute of Cancer Research

Can a great biobank look like a total failure? Insights from experiences at the Ontario Tumour Bank will be used to show that the first step to success is setting realistic (and meaningful) goals. Utilization and cost recovery expectations may be set outside of what is possible for a “classic biobank” (e.g., self-sustainability), making it difficult to communicate the genuine value of the biobank and secure continued sponsorship to assure ongoing sustainability. Utilization and cost recovery targets will be scrutinized using real-world data. Some discussion will include optimization of related factors to maximize utilization and cost recovery.

**CELL-FREE DNA SEQUENCING ENABLED BY RAPID, ROBUST, AND STANDARDIZED BIOBANKING**
Trevor Pugh, PhD - Princess Margaret Cancer Center, Ontario Institute of Cancer Research

Cell-free DNA sequencing has emerged as a robust method to detect cancer-specific genetic alterations. This talk will provide an overview of protocols & procedures to ensure collection of high quality plasma for cell-free DNA sequencing, as well as some of the experimental design features that influence type & quantity of blood collected. Data from a variety of studies utilizing different genomic strategies to detect circulating tumour DNA & potential clinical applications will be presented.

**NETWORKING BREAK**

**SPECIAL ANNOUNCEMENT**
Dr. Neil Fleshner - Princess Margaret Cancer Center

**PRESENTATION BY U OF T – SCARBOROUGH**
Maryam Irshad

**ORAL ABSTRACT PRESENTATIONS:**

1. **ENSURING SUSTAINABILITY OF A BIOREPOSITORY THROUGH STRATEGIC PLANNING: OUR EXPERIENCE AT THE GU BIOBANK**
Miran Kenk and Ana Bolanos - Princess Margaret Cancer Center

2. **WIDESPREAD AND FUNCTIONAL RNA CIRCULARIZATION IN LOCALIZED PROSTATE CANCER**
Sujun Chen - UHN

**BIOBANKING IN THORACIC SURGERY**
Dr. Jonathan Yeung - Toronto General Hospital, University of Toronto

A review of biobanking in thoracic surgery, including oncology and transplantation biobanks.

**PANEL DISCUSSION:**
**HOW BIOBANKS ARE REVOLUTIONIZING CLINICAL TRIALS & PRECISION MEDICINE**

**BEST POSTER AWARD**

**POSTER RECEPTION & EXHIBIT NETWORKING**

**END OF CONFERENCE & OPTIONAL LAB TOUR**

*Speakers are subject to change.*

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