

Chair's Report

Department of Laboratory Medicine & Pathology
 Faculty of Medicine & Dentistry
 University of Alberta

Letter from the Chair

Dear Colleagues, Learners & Friends!

Welcome to the pre-summer 2023 Chair's report. We are half way through the year and I think all of us look forward to a well-deserved summer break.

In this Chair's report we are highlighting our graduating learners and are welcoming our new trainees and learners. On June 13, 2023, we held our annual Graduation Celebration at the University Club, where we wished our graduates all the best (check out the photos!), celebrated their successes and achievement, and recognized our outstanding preceptors, instructors, and teachers. Please join me in congratulating our graduates, and if you have a chance giving them a warm farewell in person, please do so – many of them will join our local teams in their next career steps.

I would like to take the opportunity to express my gratitude to all our departmental members for your support to our education and teaching mission. Without your countless hours and relentless teaching efforts we would not be able to sustain our training programs. Our education mission is at the core of the department and represents a crucial contribution we make to training our future colleagues and health professionals. Thank you very much to all of you!

In this Chair's Report the **Spotlight on Education** is an up-date from our **Clinical Biochemistry Fellowship Program**. Dr. Anna Fuezery and Dr. Miranda Brun are the Co-Directors for the program and provide a wonderful overview of the history and current state of the program. This program fulfills an essential postdoctoral training need for the Clinical Chemistry discipline locally and nationally. Our team of clinical Chemists from Alberta Precision Laboratories and DynaLife Medical Labs worked together to build, expand and sustain the program, which represent an attractive career path for graduate students.

I also would like to encourage you to review the impressive compilation of a very scholarly productive period over the first 6 months of this year with numerous presentations, publications, grants, and peer recognitions for our faculty.

I wish you a wonderful summer – take a break and recharge, so that we can start into the fall and winter semester with new energy to continue pursuing our core academic.

I look forward to reconnect in the new semester and hope to see many of you in person at our **2023 Banff Pathology Course**, which focuses on Gynecological Pathology (<https://banffpathologycourse.com/>) and will be held Aug 30 - Sept 2, 2023.

Michael



Dr. Michael Mengel, MD
 Professor and Chair
 Department of Laboratory Medicine & Pathology, University of Alberta
 North Sector Medical Director, Alberta Precision Laboratories (APL)

Inside this issue:

Spotlight on Education	2-3
New Appointments, Grants, & Awards	4
Promotions & Awards	5
DRIIVE Winners	6
Graduation Celebration	7
Graduate Studies	8
Presentations	10-12
Publications	13-14






Spotlight on Education

The Postdoctoral Clinical Biochemistry Fellowship Program

Dr. Anna Fuezery, Program Co-Director
& Associate Clinical Professor



What is a clinical biochemist?

Despite having worked as a clinical biochemist for 10 years now, I still struggle with describing my occupation in a succinct, accurate, and meaningful manner. The Canadian Society of Clinical Chemists, a national professional organization, defines a clinical biochemist as a *PhD level scientist with specialized postdoctoral training in laboratory medicine, that holds certification from the Canadian Academy of Clinical Biochemistry (CACB) or equivalent, and that maintains ongoing professional competence through participation in the Maintenance of Competence program offered by the CACB*. While this means something to me, my friends and family would probably find it less informative.

Based on what I learned from past and present colleagues, I would propose that a clinical biochemist is someone who:

- Fulfills all of the criteria set forth in the CSCC definition above
- Possesses a strong interest in the chemical and biochemical basis of health and disease
- Possesses a strong desire to improve the lives of others, especially through laboratory testing
- Is passionate about advancing laboratory testing through research and education
- Is very detail-oriented but can also see the big picture when necessary
- Enjoys collaborating with a variety of different individuals inside and outside of the laboratory
- Requires variety and new challenges in their job to stay happy and engaged
- Is a strong advocate of using high quality, peer-reviewed scientific evidence to make decisions
- Lacks a desire for direct patient interaction in their day-to-day work

How do I become a clinical biochemist?

The path to becoming a clinical biochemist in Canada involves completion of a four-year undergraduate degree, a doctorate degree in biochemistry, chemistry, or a related life-science, and a postdoctoral clinical biochemistry fellowship diploma. Most individuals complete their diploma at one of six Canadian training centres accredited by the CACB and then pursue board certification by the CACB. A smaller number of individuals head to the United States for training and become board-certified by the American Board of Clinical Chemistry. These individuals either end up working as clinical biochemists in the United States, or they return home to Canada for employment.

A bit of history

The oldest Canadian postdoctoral clinical biochemistry fellowship program was established in 1968 by the University of Toronto, and it still operates today. In 1992, programs also existed in Hamilton, Ottawa, Windsor, Vancouver, Winnipeg, and Halifax. The programs in Ottawa, Windsor, Vancouver, and Halifax have since ceased to exist, but those in Hamilton and Winnipeg continue to train highly competent and qualified clinical biochemists. More recently, the University of Alberta, University of Calgary, and University of Montréal have also established fellowship programs.

The University of Alberta fellowship program

A couple of years ago one of my colleagues found an undated, framed CACB fellowship certificate in the office that he inherited from a retired clinical biochemist (**Figure 1**). Some online sleuthing revealed that the certificate was probably issued in the 1990s, suggesting that the University of Alberta had previously established and successfully operated a fellowship program for some time. Unfortunately, none of the clinical biochemists that work in Edmonton today are old enough to remember that program or to be familiar with its details.



Figure 1. The undated, framed CACB fellowship certificate found by Dr. Josh Raizman in the office that he inherited from a retired clinical biochemist. The certificate was probably issued in the 1990s, suggesting that the University of Alberta had previously established and successfully operated a postdoctoral clinical biochemistry fellowship program for some time.

Spotlight on Education (cont'd)

The fellowship program in its present form was established in 2015. It is a two-year program that is offered jointly by the University of Alberta, Alberta Precision Laboratories (APL), and DynaLIFE Medical Labs. Trainees receive specialized training in clinical biochemistry with additional basic training in biochemical genetics, hematopathology, microbiology, and molecular diagnostics. The program is accredited by the CACB, and trainees that successfully complete it are eligible for CACB certification. The program has several key strengths relative to other fellowship programs in Canada including, but not limited to:

- A high faculty mentor to trainee ratio (~15:1)
- Exposure to a large variety of laboratory service models (urban vs suburban vs rural, acute care vs outpatient clinic vs community, public vs private, academic vs non-academic)
- Exposure to provincial standardization initiatives, with opportunities for direct involvement

To date, three trainees have successfully completed their diploma in the fellowship program and attained CACB certification (**Figures 2 and 3**). Dr. Albert Tsui (2015-2017) joined APL as a clinical biochemist and was recently promoted to Preanalytics Section Chief for the province. Dr. Miranda Brun (2017-2020) also joined APL as a clinical biochemist and was recently appointed co-director of the fellowship program. Dr. Ashley Newbigging (2020-2022) moved to Vancouver last summer to begin a clinical biochemist position with Dr. CJ Coady Associates and Fraser Health Authority. Our incoming trainee, Dr. Fahed Elian, comes to us from Entos Pharmaceuticals Inc (and previously the University of Alberta, Department of Medical Genetics) and will start his fellowship on July 1st of this year.

Want to learn more?

If you are interested in learning more about the clinical biochemist profession and postdoctoral clinical biochemistry training in Canada, please reach out to past and present program co-directors (Dr. Miranda Brun, Miranda.brun2@aplabs.ca; Dr. Anna Fuezery, anna.fuezery@aplabs.ca; Dr. Kareena Schnabl, Kareena.schnabl@aplabs.ca) or to one of the fellowship program mentors (**Figure 3**). You may also find the following resources of help:

- 1) University of Alberta Postdoctoral Clinical Biochemistry Fellowship Program webpage: <https://www.ualberta.ca/laboratory-medicine-and-pathology/programs/phd-fellowships/clinical-biochemistry.html>
- 2) Canadian Academy of Clinical Biochemistry postdoctoral training programs webpage: <https://cscs-sccc.ca/academy/training/>
- 3) Peter S. Bunting and David M. Golberg. "Education in clinical biochemistry: the Canadian scene". Clinica Chimica Acta (1994) 232, 63-84.
- 4) Commission on Accreditation in Clinical Chemistry training programs webpage: <https://comacc.org/training-programs/>



Figure 2. LMP graduation celebration in June 2022. From left to right: Dr. Ashley Newbigging (2020-2022), Dr. Miranda Brun (2017-2022), Dr. Kareena Schnabl (past co-director), and Dr. Michael Mengel. Dr. Brun was recently appointed as the new fellowship program co-director.



Figure 3. Mentor appreciation dinner in November 2016. Clockwise from left: Ms. Sharon Redel, Ms. Carol Shalapay, Dr. Don LeGatt, Dr. Kareena Schnabl (past co-director), Dr. David Wishart, Dr. Mathew Estey, Dr. Dylan Thomas, Dr. Karina Rodriguez-Capote, Dr. Graham Jones, Dr. Albert Tsui (2015-2017), Ms. Bobbi-Lynn Goudreau, Dr. Iveta Sosova, Dr. Josh Raizman, and Dr. Michael Mengel. Dr. Tsui is now the provincial Preanalytics Section Chief for Alberta Precision Laboratories.

New Appointments

The Department welcomes:

- **Dr. Rajni Chibbar** – Associate Clinical Professor – Pathologist, DynaLife
- **Ms. Joanna Pearce** – Clinical Lecturer – Pathologists' Assistant (PA Program)
- **Ms. Dominique Drouin** – Clinical Lecturer – Pathologists' Assistant, UAH & RAH (PA Program)
- **Mr. Xiaoyu (Jason) Jiang** – Clinical Lecturer – Pathologists' Assistant (PA Program)
- **Dr. Bonnie Tong** – Assistant Clinical Professor – Pathologist, RAH
- **Dr. Marcia Abbott** – Assistant Clinical Professor – General Pathologist/Cytopathologist, Red Deer Hospital
- **Dr. Khaldoun Algerian** – Clinical Professor – Pathologist, UAH
- **Dr. Brendon Parsons** – Assistant Professor – Program Leader, Public Health Laboratory (ProvLab), APL
- **Dr. Karim Khetani** – Assistant Clinical Professor – Staff Pathologist, Grande Prairie Hospital

Dr. Susan Nahirniak

New Appointment:

- Chair of the Knowledge Translation Working Group of the Canadian Transfusion Trials Group (CTTG)

Grants

Dr. Jason Acker

- Alberta Innovates – Advance Program; “Enabling the cryopreservation of embryos from aquatic species using ice recrystallization inhibitors”, \$40,000 total funding, 2-year funding.

Dr. Ben Adam

- New Frontiers in Research Fund. \$242,500. 03/2023 – 03/2025. Co-PI (PI: Carlos Cervera). Intracellular uropathogenic bacteria biofilm-like aggregates: A new paradigm in the pathophysiology of urinary tract infections.

Dr. Elona Turley

- Northern Alberta Viscoelastic-Informed Guidance in Acute Trauma: Evaluation (NAVIGATE). Bradley, N (lead PI), Lester, E (co-PI), Turley, E (co-PI). Kaye Fund Competition, UHF. Total amount: \$104,491 (2023-2024)

Awards

Dr. Linda Chui

- Distinguished Microbiologist awarded by the Canadian College of Microbiologists at the 2023 AMMI Canada-CACMID Annual Conference in Toronto (May 28-31)

Dr. Victoria Higgins

- American Association of Clinical Chemistry (AACC) Outstanding Scientific Achievements by a Young Investigator (May 2023)

Dr. Kathleen Wong

- Honourable Mention - 2022-2023 PARA Clinical Teaching Award for the University of Alberta

Congratulations!!

Promotions

Please join us in congratulating the following on their promotions effective July 1, 2023.

- ◆ **Dr. Matthew Croxen** to Associate Professor
- ◆ **Dr. Steven Drews** to Professor
- ◆ **Dr. Albert Tsui** to Associate Professor

Summer Studentship Stipend Recipients 2023

- **Sarjana Alam** (supervisor Dr. Esmé Dijke)
- **Ashley Beauchamp** (supervisors Dr. David Olson and Ms. Lisa Purdy)
- **Paula Mengel** (supervisor Dr. Susan Nahirniak)

2023 PGME Awards

Dr T A Kasper Resident Excellence Scholarship

- Heather Glassman
- Haogang (Eric) Chen
- Devin Godfrey
- Sima Zolfaghari

Dr Theodor K Shnitka Memorial Award

- Rebecca Phillips
- Charles Yin
- Rohan Mittal

Congratulations!!

DRivE 2023 Presentation Winners

Bell McLeod Educational Fund

Graduate Research Prize

- **Teresa Kumblathan**
- **Nicholas Wawryk**

Citizenship Award

- **Teresa Kumblathan**

DRivE Research Posters

Best Grad Student - MSc

- **Chester Lau**

Best Grad Student - PhD

- **Tetiana Davydiuk**

Best Postdoctoral Research Fellow

- **Surangi Thilakarathna**

Best Summer Student

- **Jenny Chau**

Best MLS Student

- **Rebeca Duran**

Oral Research Presentations

Best Grad Student - MSc

- **Kristin Carroll**

Best Grad Student - PhD

- **Teresa Kumblathan**

Best Resident

- **Rebecca Phillips**

Best Fellow

- **Ashley Williams**



Left to Right: Michael Mengel, Teresa Kumblathan, Nicholas Wawryk, and Xing-Fang Li (supervisor of Teresa and Nicholas)



Left to Right: Rebeca Duran, Jenny Chau, Surangi Thilakarathna, Tetiana Davydiuk, Chester Lau



Left to Right: Kristin Carroll, Teresa Kumblathan, Rebecca Phillips, Ashley Williams

Congratulations!!

LMP Graduation Celebration June 2023



Anatomical Pathology Graduates:
Dr. Devin Godfrey and Dr. Rohan Mittal with
Program Director Dr. Kerri Chung (right)



PA Program Graduate: Gabrielle Mendler with
previous Program Director Dr. Erin Chapman (right)



Hematological Pathology: Left to Right—
Dr. Kathleen Wong—Teacher Award
Recipient, Dr. Nancy Hua—Resident of the
Year, and Dr. Bryony Walker, Program
Director



Hematological Pathology: Left to Right—
Dr. Charles Yin (Recipient of Dr T A Kasper
Residential Excellence Scholarship) and
Dr. Bryony Walker, Program Director



Medical Microbiology Graduate—
Dr. Heather Glassman and
Dr. Nathan Zelyas , Program Director (right)



Gastrointestinal Pathology Fellow -
Dr. Matthew Di Capite and Dr. Justin Bateman,
Program Director (left)



Lymphoproliferative Disorders Fellow—
Dr. Dalila Villalobos Nieto and
Dr. Jean Deschenes, Program Director
(right)



Left to Right: Dr. Soufiane El-Hallani,
Dr. Cheryl Mather, Dr. Sumaih Ahmed A Shinawi,
Molecular Genetic Pathology Fellow, and
Dr. Remegio Maglantay Jr., Program Director



Left to Right: Gabrielle Mendler, Current LMP
Graduate Students, and Dr. Jelena Holovati,
Program Director Graduate Studies

Graduate Studies

New Students

We are pleased to welcome **1 new student** this May.

Milestones

Congratulations to **Yasmine Rais** (supervisors Andrei Drabovich, Chris Le) and **Teresa Kumblathan** (supervisor Xing-Fang Li) on their successful doctoral Candidacy exams.

Presentations and Awards

Congratulations to these students who received awards acknowledging their research and/or supporting their graduate programs:

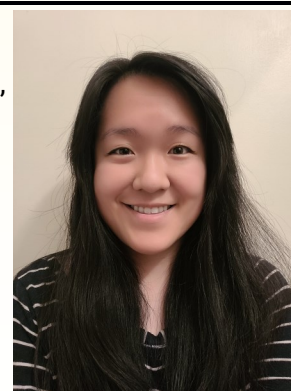
Serena Li delivered an oral presentation at the American Society of Pharmacology and Experimental Therapeutics 2023 Annual Meeting (ASPET 2023) held in St. Louis, Missouri, May 18-21, 2023. Congratulations to Serena for winning the ASPET Toxicology Graduate Poster Award - 1st Place.

Mahsa Yazdanbakhsh, Wenhui Li, and Rafay Osmani attended the Canadian Society for Transfusion Medicine Annual Conference (CSTM 2023) in Montréal at the end of May and delivered 1 oral presentation and 2 poster presentations.

Taryn Stokowski awarded 2nd prize for her oral presentation at the 11th International Symposium on Shiga Toxin (Verocytotoxin) Producing *Escherichia coli* (VTEC 2023, May 7-10 at Banff, Canada). Title of her talk: Development and application of a direct-from-stool viability real-time PCR assay for STEC microbiological clearance testing

Welcome

As of May 29, 2023, **Ms. Lillian Feng** is the new Director for the Pathologists' Assistant (PA) Program. Welcome Ms. Feng to your new role!



Congratulations to All!

Welcome!!

2023 New Residents and Fellows at the University of Alberta and APL North Sector

Anatomical Pathology

- Dr. Andrey Gorbunov
- Dr. Daniel Finlaison
- Dr. Jonas Szelewicki

General Pathology

- Dr. Alexander Szczotka

Hematological Pathology

- Dr. Isaac Bouliane

Medical Microbiology

- Dr. Cecilia (Zhan) Shi

Clinical Chemistry

- Dr. Fahed Elian

Clinical Genetics

- Dr. Matthea Sanderson

Pathologists' Assistant Students

- Markian Zmewsky
- Yolanda Warkentin

Presentations

Dr. Jason Acker

Presentations/Abstracts:

1. *Himmat, S., Ma, I.J., Wang, X., Forgie, K., Hatami, S., Mainardi Aquiar da Silva, Acker, J.P., Dyck, J.R., Freed, D. and Nagendran, J. "Airway adipon reduces edma in a rat model of prolonged cold ischemia and normothermic ex situ lung perfusion". *Journal of Heart and Lung Transplantation* 42 (4): S178-S179 (2023).
2. Ning S, Li N, Liu Y, Acker JP, Arnold D, Hillis C, Lucier K, Rochweg B, Syed S, Zeller M, Heddle NM. "Consolidation of blood product production in Ontario and impact on transfusion-related immune modulation (TRIM) outcomes". Canadian Society for Transfusion Medicine Annual Meeting, Montreal, QC; May 26-28, 2023. ORAL
3. Zeller, M.P., Cook, R., Arnold, D.M., Callum, J., Rochweg, B., Acker, J., Alhomsi, N., Lin, Y., Liu, Y., Lucier, K., Ning, S., Park, J.Y., Principato, J., Solh, Z., Warkentin, T., Webert, K. and Heddle, N., "Sex-matched compared to sex-mismatched red blood cell transfusion: a pilot randomized controlled trial". Canadian Society for Transfusion Medicine Annual Meeting, Montreal, QC; May 26-28, 2023. ORAL
4. Ning, S., Li, N., Liu, Y., Acker, J., Arnold, D., Hillis, C., Lucier, K., Rochweg, B., Syed, S., Zeller, M. and Heddle, N. "Transfusion-related immune modulation and the use of big data analytics". ISBT Regional Congress, Gothenburg, Sweden, June 17-21, 2023. ORAL
5. Labrecque, M-M. et al. "Development of a storage solution for granulocyte concentrates used as a treatment for life-threatening infections". Canadian Society for Transfusion Medicine Annual Meeting, Montreal, QC; May 26-28, 2023.
6. Yazdanbakhsh, M., Eid, H., Rabi, Y., Acker, J.P. "Titration of adult red cell concentrates (RCCs) reduces the oxygen affinity of cord blood from preterm infants". Canadian Society for Transfusion Medicine Annual Meeting, Montreal, QC; May 26-28, 2023. ORAL
7. Brandon-Coatham, M. Kurach, J., Olafson, C., Turner, T., Clarke, G., Acker, J.P. "Hold on to your units: Freezer failures or improper storage conditions only affect RCC quality after multiple transient warming events". Canadian Society for Transfusion Medicine Annual Meeting, Montreal, QC; May 26-28, 2023. POSTER
8. Phan, C., Kurach J., Foxcroft, M., Olafson, C., Xu, D., Durand, K., Clarke, C. and Acker, J.P. "Modification of deglycerolization procedure improves processing and post-thaw quality of cryopreserved sickle trait red cell concentrates". Canadian Society for Transfusion Medicine Annual Meeting, Montreal, QC; May 26-28, 2023. ORAL
9. Olafson, C., Kurach, J., Clarke, G. and Acker, J.P. "A quality conundrum: Investigating the unintentional warming of a cryopreserved red cell concentrate". Canadian Society for Transfusion Medicine Annual Meeting, Montreal, QC; May 26-28, 2023. POSTER
10. Kurach, J., Olafson, C., Brandon-Coatham, M., Turner, T.R., Clarke, G., and Acker, J.P. "A Negligible Impact of Real-World Transient Warming Exposures on the Quality of Cryopreserved Red Cell Concentrates". Canadian Society for Transfusion Medicine Annual Meeting, Montreal, QC; May 26-28, 2023. Submitted March 24, 2023. ORAL

Dr. Jason Acker cont'd:

11. Durand, K., Hatami, S., William, N., Phan, C., Kurach, J., Hemmatibardehshahi, S., Yzandanbakhsh, M., Osmani, R., Freed, D. and Acker, J.P. "Porcine Red Cell Concentrate Derived Perfusate has Improved Quality and Function Compared to Whole Blood During Ex Vivo Heart Perfusions". Canadian Society for Transfusion Medicine Annual Meeting, Montreal, QC; May 26-28, 2023. POSTER
12. Osmani, R., Eisa, K., Durand, K., Pha, C., Ning, S., Heddle, N., Liu, Y., Travis, G. and Acker, J.P. "Characterizing the impact of donor clinic consolidation on blood product quality". Canadian Society for Transfusion Medicine Annual Meeting, Montreal, QC; May 26-28, 2023. POSTER
13. Li, W. and Acker, J.P. "CD71+ RBCs mediate increased erythrophagocytosis and reduced monocytes in human suspension assay". ISBT Regional Congress, Gothenburg, Sweden, June 17-21, 2023. ORAL

Dr. Linda Chui

Oral presentation:

1. Invited speaker for VTEC2023 May 7-10 at Banff, Canada. Title of the talk: STEC: Challenges Arising from an Evolving Pathogen in the Diagnostic world as seen in Alberta, Canada

Poster presentations at VTEC2023 May 7-10 at Banff, Canada:

1. "Clinical outcomes and virulence factors of Shiga toxin-producing Escherichia coli (STEC) from Southern Alberta, Canada from 2020-2022" (Heather Glassman, Vivien Sutorp, Theron White, Kim Ziebell, Ashley Kearney, Kyrlo Bessonov, Linda Chui)
2. "Kimchi as a vehicle for exposure to Shiga toxin-producing Escherichia coli" (Alex Gill, Tanis McMahon, Christina Ferrato and Linda Chui)
3. "Phylogenetic examination of the risk of persistent local clusters of E. coli O157". (Gillian A.M. Tarr, Linda Chui, Emmanuel W. Bumunang, Rahat Zaheer, Kim Stanford, Tim A. McAllister)

Dr. Matthew Croxson

Invited Speaker:

1. Matthew Croxson. "Modernizing Alberta's Public Health Laboratory Using Genomics". The 3rd Annual BioNet Conference (May 31 – June 1, 2023, Edmonton Alberta)

Poster Presentations:

1. Kara Gill, Kanti Pabbaraju, Anita A. Wong, Paul Dieu, Matthew Croxson, Graham A. Tipples, Tarah Lynch. "The Evolution of pathogen testing and reporting during a pandemic: Incorporating bioinformatics and high throughput sequencing into public health surveillance". The 3rd Annual BioNet Conference (May 31 – June 1, 2023, Edmonton Alberta)
2. Naomi le, Xiaoli Dong, Linda Lee, Kanti Pabbaraju, Alex Presbitero, Tarah Lynch, Matthew Croxson. "Development of Tools for the Interpretation of Influenza Next Generation Sequencing Analysis Data"

Presentations continued

Dr. Mathew Croxen cont'd:

3. Andrew Lindsay, Stefan Gavriluc, Xiaoli Dong, Vincent Li, Tarah Lynch, Matthew Croxen. "Development/adoption of bioinformatics tools for pathogen surveillance systems. The 3rd Annual BioNet Conference (May 31 – June 1, 2023, Edmonton Alberta)
4. Colin Lloyd, Ashwin Deo, Silas Rotich, Vincent Li, Sandra Shokoples, Cary Shandro, Gregory J. Tyrrell, Matthew Croxen. "Validation of a Mycobacterium tuberculosis bioinformatic pipeline for genomic surveillance". The 3rd Annual BioNet Conference (May 31 – June 1, 2023, Edmonton Alberta)
5. Silas K. Rotich, Petya Koleva, Vincent Li, Ashwin Deo, Colin Lloyd, Sandy Shokoples, Gregory J. Tyrrell, Mathew Croxen. "Genomic investigation of increased Streptococcus pyogenes infection in Alberta". The 3rd Annual BioNet Conference (May 31 – June 1, 2023, Edmonton Alberta)

Dr. Andrei Drabovich:

1. Invited speaker. Talk: "Rational Design and Development of SARS-CoV-2 Serological Diagnostics by Immunoaffinity Proteomics", The Government of Canada COVID-19 Immunity Task Force Scientific Meeting, Vancouver, BC, March 8, 2023.
2. Speaker. Talk: "Redefining serological diagnostics with immunoaffinity proteomics". 13th Conference of the Association for Mass Spectrometry & Advances in the Clinical Lab (MSACL2023), Monterey, CA, USA, April 5, 2023.
3. Speaker. Talk: Redefining Serological Diagnostics with Immunoaffinity Proteomics", Canadian National Proteomics Network meeting, Regina, SK, May 16, 2023.

Dr. Steven Drews

Abstracts:

1. Lin, Y.-C., Evans, D.H., Robbins, N.F., Orjuela, G., Abe, K.T., Rathod, B., Colwill, K., Gingras, A.-C., Tuite, A., Yi, Q.-L., O'Brien, S.F., Drews, S.J. "Diminished neutralization capacity of SARS-CoV-2 Omicron BA.1 in donor plasma collected January-March 2021". AMMI/CACMID, Toronto, ON, March 28-31, 2023.
2. Tordon, B., Drews, S.J., Flahr, F., Bennett, K., Gaziano, T., Anderson, D., Nahirniak, S., Gerges, H., Tyrrell, G.T., Ndao, M., Bigham, M., Seftel, M., "Traceback investigation of a suspect case of transfusion-transmitted malaria". AMMI/CACMID, Toronto, ON, March 28-31, 2023.
3. "Donor re-entry following deferral for false reactive human immunodeficiency virus, hepatitis B virus and hepatitis C virus markers – Is it effective?" Drews, S., Bigham, M., Uzicanin, S., Huppe, P., MacDonald, K., O'Brien, S. CSTM, Montreal, PQ, May 25-28, 2023.
4. "Patterns in unconfirmed syphilis repeat-reactive serology and potential confounders". Drews, S., Bigham, M., Hawes, G., Gill, B., Huppe, P., Ng, M., Uzicanin, S., O'Brien, S. CSTM, Montreal, PQ, May 25-28, 2023.
5. "Blood donor eligibility of sexual partners of successfully treated or spontaneously resolved hepatitis C infection". Drews, S., Bigham, M. CSTM, Montreal, PQ, May 25-28, 2023.

Dr. Steven Drews cont'd:

6. "Descriptive analysis of post vaccination anti-SARS-CoV-2 antibody levels among long-term care facilities (LTCF) residents and incidence of COVID-19". Lee, B.E., Li, Q., Sikora, C., Risling, E., Little, L.A., Faulder, D., Gingras-A.-C., Charlton, C., Kim, J., Wood, H., Robinson, A., O'Brien, S.F., Drews, S., Qu, Y., Pang, X. CITF Scientific Meeting, Vancouver, BC, Canada, March 6-9, 2023.
7. "SARS-CoV-2 seroprevalence in blood donors: Three years of Canada-wide monitoring". O'Brien, S., Yi, Q.-L., Caffrey, N., Pambrun, C., Drews, S. CSTM, Montreal, PQ, May 25-28, 2023.

Presentations:

1. "Transfusion-Transmitted Infectious Disease Prevention at Canadian Blood Services." Undergraduate student project, Carlton University, Ottawa, ON. Online March 15, 2023.
2. "Anti-retroviral dosage in blood donors – Monitoring blood donor compliance." End of selection criteria based on sexual orientation International symposium on alternatives to donation deferral. Online Conference. April 20, 2023. <https://profedu.blood.ca/en/end-selection-criteria-based-sexual-orientation-international-symposium-alternatives-donation>
3. "Malaria and blood transfusion." Canadian Blood Services Scientific Research and Advisory Committee (SRAC). Toronto, ON, Canada, May 24, 2023.
4. "Using residual plasma to study SARS-CoV-2 serology: Lessons learned at Canadian Blood Services." Drews, S.J., Pambrun, C., O'Brien, S.F. CITF Workshop: Towards developing a high performing and sustainable pan-Canadian surveillance platform drawing on diverse sources of residual or donated blood, Vancouver, BC. March 7, 2023.
5. "Sample storage and human resources: Lessons learned at Canadian Blood Services." Drews, S.J., Pambrun, C., O'Brien, S.F. CITF Workshop: Towards developing a high performing and sustainable pan-Canadian surveillance platform drawing on diverse sources of residual or donated blood, Vancouver, BC, March 7, 2023.
6. "Introduction and general goals and objectives: What blood services do and how we can contribute to public health research." One Health and Blood Operator Workshop, AMMI/CACMID, Toronto, ON, March 27, 2023.
7. "A possible transfusion transmitted case of malaria in Canada: what we know, what we don't know and what we wish we knew (9:15-9:35)." With Christian Renaud. One Health and Blood Operator Workshop, AMMI/CACMID, Toronto, ON, March 27, 2023.
8. "The role of blood donors in public health research and sero-epidemiology." Canadian Immunization Conference, Ottawa, ON, April 26, 2023.
9. "Parasites- focus on malaria." Canadian Blood Services/ Hema-Quebec meeting at Canadian Society of Transfusion meeting, Montreal, PQ, May 25, 2023.
10. "Emerging Pathogens Report (Q3 FY22-23)" Canadian Blood Services Executive Management Team, Online, January 31, 2023.
11. "Emerging Pathogens Report (Q4 FY22-23)" Canadian Blood Services Executive Management Team, Online, April 25, 2023.

Presentations continued

Dr. Steven Drews cont'd:

12. "Deferral following Hepatitis A vaccination" Canadian Blood Services and Hema-Quebec, Donor Selection Criteria Working Group. Online, May 1, 2023.
13. "Transfusion-Transmitted Infectious Disease Prevention at Canadian Blood services: Where does HAV testing fit?" Infectious Diseases Rounds, University of Alberta, Virtual, February 16, 2023.
14. Session Chair: "The under-recognized burden of Respiratory Syncytial Virus (RSV) in older adults." Canadian Immunization Conference, Ottawa, ON, April 26, 2023
15. Session organized: "Brainstorming practical one health knowledge generating activities that will engage blood operator, infectious diseases experts, medical/clinical microbiologists and public health laboratorians." AMMI/CACMID, March 28, 2023. Education; half-day. The session was accredited by the Royal College of Physicians and Surgeons, Canada

Dr. Victoria Higgins

Poster presentation:

1. American Association of Clinical Chemistry (AACC) Rocky Mountain Local Section Spring Meeting; 2023 May 15-16; Albuquerque, NM, USA. Higgins V, White-Al Habeeb NMA, Venner AA, Bailey D, Beriault DR, Collier C, Blasutig IM, Adeli K. "Harmonized Pediatric Lipid Reporting Recommendations for Canadian Clinical Laboratories"

Ms. Kristi Lew:

1. Lew K, VanSpronsen A, Shiledarbaxi J. "Finding the middle ground: the evolution of hematology practice and developing new ways to engage students". LABCON 2023 Whistler, BC. May 26-28, 2023 (oral presentation)

Ms. Roberta Martindale

Invited Presentation:

1. Martindale, R., Nevesinjac, A. The Larry Jewell Pathology Museum: Welcome to Our "Jewell". Canadian University Medical Collections: Status, Successes, and Challenges 2023 Symposium; Virtual (May 18, 2023). Oral

Dr. Susan Nahirniak

Abstracts:

1. Sekla S, Lyon B, Doepker R, Duke J, Nahirniak S, Radwi G. "Characterization of Ordering Practices and Testing Appropriateness of Cold Agglutinin Titres". Poster Presentation CSTM Annual Meeting, Montreal QC May 26th-27th
2. Malcom H, Frankiw A, McCarthy J, Mueller K, Nahirniak S. "Health Canada Inspections from a Quality Perspective." Poster Presentation CSTM Annual Meeting. Montreal, QC May 26 -27th
3. Gupta A, Storek J, Rickards N, Seftel M, Sidhu D, Wang P, Nahirniak S. "Finding Rare HLA matched platelets for a high risk stem cell transplant". Poster Presentation CSTM Annual Meeting. Montreal, QC May 26-27th
4. Felske A, McCarthy J, Gosling J, Nahirniak S, Sidhu D. "Validation of a Cabinet X-Ray Irradiator for On Demand Irradiation". Poster Presentation CSTM Annual Meeting.

Dr. Susan Nahirniak cont'd:

5. Nahirniak S, Lyons B, Versailles G. "Validation of J82 container for transport of refrigerated stock using corrugated plastic overwrap and biodegradable insulated cooler". Poster presentation CSTM Annual Meeting. Montreal QC, May 26-27th

Dr. Albert Tsui

Abstracts:

1. Tsui AKY, Newbigging A, Landry N, Brun M, Proctor D, Parker M, Zimmer C, Thorlacius L, Raziman JE. "Using simple algorithm of commonly requested chemistry tests to identify intravenous fluid contamination samples in the clinical laboratory". Worldlab-Euromedlab, Rome, Italy, May 2023 (Oral presentation; Symposium 6 - Preanalytical phase and patient outcome)
2. Brun M, Kunst A, Tsui AKY. "A severe hypernatremia case demonstrates the need to validate beyond the analytical measuring range for sodium. Worldlab-Euromedlab, Rome, Italy, May 2023
3. Bohn MK, Dailey D, Cembrowski G, Collier C, De Guire V, Higgins V, Jung B, Mohammed Ali Z, Seccombe D, Taher J, Tsui AKY, Venner A, Adeli K. "Reference Interval Harmonization: Harnessing the Power of Big Data Analytics to Derive Common Reference Ranges Across Populations and Testing Platforms. Worldlab-Euromedlab, Rome, Italy, May 2023



Recent Publications

Dr. Jason Acker:

1. *Li, W. and Acker, J.P. "CD71+ RBCs: A potential immune mediator in transfusion". *Transfusion and Apheresis Science* (2023). <https://doi.org/10.1016/j.transci.2023.103721>
2. *William, N., Mangan, S., Ben, R.N. and Acker, J.P. "Engineering compounds to control ice nucleation and recrystallization". *Annual Review of Biomedical Engineering* 25: 333-362 (2023).
3. Chassé, M., Fergusson, D.A., Timmouth, A., Acker, J.P., Tuttle, A., Perelman, I., Roshanak, M., English, S., Forster, A.J., Hawken, S., Shehata, N., Thavorn, K., Wilson, K., Cober, N., Maddison, H. and Tokessy, M. "An innovative trial assessing donor sex on recipient mortality (iTADS): A randomized controlled trial". *New England Journal of Medicine* 388 (15): 1386-1395 (2023).
4. Ning, S., Gabarin, N., Li, N., Liu, Y., Lucier, K., Barty, R., Acker, J.P., Webert, K., Warkentin, T.E., Arnold, D.M. and Hedde, N.M. "An evaluation of the clinical impacts of 7-day platelets". *Transfusion* 63 (3): 480-493 (2023).
5. *William, N., Coatham, M. and Acker, J.P. "Taking lessons from nature to improve cell therapy cryopreservation". *Cell & Gene Therapy Insights* 9 (2): 255-264 (2023).
6. *Patel, P.K., Hoffman, W.R., Aden, J. and Acker, J.P. "Widespread healthcare avoidance amongst Canadian pilots: A Cross-Canada survey study". *Journal of Occupational and Environmental Medicine* (2023).
7. *Alshalani, A., Beuger, B.M., van Bruggen, R., Acker, J.P. and Juffermans, N.P. "Cultured CD71+ erythroid cells modulate the host immune response". *Transfusion Medicine* (2023). doi: 10.1111/tme.12964
8. *Li, W., *William, N. and Acker, J.P. "Donor sex, pre-donation hemoglobin and manufacturing method affect the CD71+ cells in red cell concentrates". *Transfusion* 63 (3): 601-609 (2023).

Dr. Ben Adam

Peer-reviewed papers:

1. Kikic Z, Adam BA, Buxeda A, Lefaucheur C, Loupy A, Regele H, Cejka D, Haas M, Colvin RB, Mengel M. "Quantitative scoring of progression in transplant glomerulopathy using digital pathology is superior to Banff cg scoring". *Kidney Int.* 2023 Feb;103(2):365-377. PMID: 36436680

Abstracts:

1. Buxeda A, Fixsen I, Gibson I, Wiebe C, Nickerson P, Campbell P, Polanco N, Crespo M, Mengel M, Adam BA. "DSA-Negative Microvascular Inflammation in Kidney Transplant Biopsies: Gene Expression Comparison with Native and Transplant Kidney Controls" [abstract]. *Am J Transplant.* 2023; 23(6): S626.
2. Buxeda A, Pérez-Sáez M, Chamoun B, Gimeno J, Torres I, Pascual J, Mengel M, Adam BA, Crespo M. "Clinical and Molecular Spectrum of V-Lesion" [abstract]. *Am J Transplant.* 2023; 23(6): S371.
3. Mittal R, Adam BA. "The Utility of Congo Red Fluorescence Microscopy for Diagnosing Amyloidosis in Kidney Biopsies" [abstract]. *Lab Invest.* 2023; 103(3): S1443-1445.

Dr. Ben Adam cont'd:

4. Buxeda A, Fixsen I, Gibson I, Wiebe C, Nickerson P, Campbell P, Pascual J, Crespo M, Mengel M, Adam BA. "DSA-Negative Microvascular Inflammation in Kidney Transplant Biopsies: Gene Expression Comparison with Native and Transplant Kidney Controls" [abstract]. *Lab Invest.* 2023; 103(3): S1431-1432.

Dr. Linda Chui:

1. Jianling Xie, Kelly Kim, Byron M Berenger, Linda Chui, Otto G Vanderkooi, Silviu Grisaru, Stephen B "Freedman Comparison of a Rapid Multiplex Gastrointestinal Panel with Standard Laboratory Testing in the Management of Children with Hematochezia in a Pediatric Emergency Department: Randomized Controlled Trial" *Microbiol Spectr.* 2023 Apr 11:e0026823. doi: 10.1128/spectrum.00268-23.
2. Monica Dahiya, Juan Jovel, Tanya Monaghan, Karen Wong, Wael Elhenawy, Linda Chui, Finlay McAlister, Dina Kao. "In Silico Analysis of Changes in Predicted Metabolic Capabilities of Intestinal Microbiota after Fecal Microbial Transplantation for Treatment of Recurrent *Clostridioides difficile* Infection" doi: 10.3390/microorganisms11041078. PMID: 37110500 PMCID: PMC10143790 PMID: 37039648

Dr. Matthew Croxen:

1. Leal J, O'Grady HM, Armstrong L, Dixit D, Khawaja Z, Snedeker K, Ellison J, Erebor J, Jamieson P, Weiss A, Salcedo D, Roberts K, Wiens K, Croxen MA, Berenger BM, Pabbaraju K, Lin YC, Evans D, Conly JM. "Patient and ward related risk factors in a multi-ward nosocomial outbreak of COVID-19: Outbreak investigation and matched case-control study". *Antimicrob Resist Infect Control.* 2023 Mar 22;12(1):21. doi: 10.1186/s13756-023-01215-1. PMID: 36949510; PMCID: PMC10031162.

Dr. Sumit Das

Peer-reviewed publication:

1. Das S. "Clasmatodendrosis: Brief review of an underreported neuropathological finding". *Clin Neuropathol.* 2023; 42(3): 122-124.

Dr. Andrei Drabovich:

1. Zhang, J.; Kanoatov, M.; Jarvi, K.; Moskovtsev, S.; Gauthier-Fisher, A.; Librach, C; Drabovich, A.P. "Germ cell-specific proteins AKAP4 and ASPX facilitate identification of rare spermatozoa in non-obstructive azoospermia". *Molecular & Cellular Proteomics*, 2023, 22, 100556. doi: 10.1016/j.mcpro.2023.100556

Dr. Steven Drews

Manuscripts:

1. O'Brien, S.F., Reedman, C.N., Osiowy, C., Bolotin, S., Yi, Q-L., Lourenço, L., Lewin, A., Binka, M., Caffrey, N., Drews, S.J. "Hepatitis B Blood Donor Screening Data: An Under-Recognized resource for Canadian public health surveillance". *Viruses.* 2023; 15(2):409. <https://doi.org/10.3390/v15020409>.

Recent Publications continued...

Dr. Steven Drews cont'd:

- O'Brien, S.F., Drews, S.J., Yi, Q.L., Osmond, L., Tran, V., Zhou, H.Y., Goldman, M. "Monitoring syphilis serology in blood donors: Is there utility as a surrogate marker of early transfusion transmissible infection behavioral risk?" *Transfusion*. 2023 May 9. doi: 10.1111/trf.17393. Epub ahead of print. PMID: 37158235.

Dr. Victoria Higgins

Peer-reviewed papers:

- Higgins V, MacNeil L, Sosova I, Ridsdale R, Bruce A, Brinc D, David W, Rara J, Bordeleau P, Estey MP, Parker ML, Ismail OZ, Agbor T. "Hemoglobin Variant in Disguise". 2023 May;110589
- Di Meo A, Yazdanpanah, M, Higgins V, Nichols M, Bohn MK, Steele S, Tan A, Zainab S, Sepiashvili L, Adeli K. "Highly sensitive tandem mass spectrometric measurement of serum estradiol without derivatization and pediatric reference intervals in children and adolescents". *Clin Chem Lab Med*. 2023 Apr; Online ahead of print
- White-Al Habeeb N*, Higgins V*, Wolska A, Delaney SR, Remaley A, Beriault DR. "The present and future of lipid testing in cardiovascular risk assessment". *Clin Chem*. 2023 Apr;69(5):456-469 *co-first authors
- Miller J*, Higgins V*, Melamed N, Hladunewich M, Ma L, Yip PM, Fu L. "Clinical Validation of the sFlt-1:PIGF Ratio As A Biomarker For Pre-Eclampsia Diagnosis In A High-Risk Obstetrics Unit". *J Appl Lab Med*. 2023 May;8(3):457-468 *co-first authors

Dr. Ruwandi Kariyawasam:

- Ruwandi Kariyawasam, Mark Lachman, Saniya Mansuri, Sumontra Chakrabarti, Andrea K. Boggild. "A dengue vaccine whirlwind update" *Therapeutic Advances in Infectious Diseases*, 2023, 10: 1-6

Dr. Susan Nahirniak:

- Van Remoortel H, Scheers H, Avau B, Georgsen J, Nahirniak S, Shehata N, Stanworth SJ, De Buck E, Compennolle V, Vandekerckhove P. "Cost Effectiveness of Thrombopoietin Mimetics in Patients with Thrombocytopenia: A Systematic Review". *Pharmacoeconomics*. 2023 May 5. doi: 10.1007/s40273-023-01271-w. Online ahead of print. PMID: 37145291
- Krauss A, West LJ, Conway J, Khoury M, Nahirniak S, Halpin A, Al Aklabi M, Urschel S. "Successful ABO incompatible heart transplantation after desensitization therapy in an older child." *Pediatr Transplant*. 2023 May;27(3):e14459. doi: 10.1111/petr.14459. Epub 2023 Jan 3. PMID: 36597218
- Garcia Guerra A, Ryerson L, Garros D, Nahirniak S, Granoski D, Calisin O, Sheppard C, Lequier L, Garcia Guerra G. "Standard versus restrictive transfusion strategy for pediatric cardiac ECLS patients: Single Center Retrospective Cohort Study". *ASAIO J*. 2023 Apr 24. doi: 10.1097/MAT.0000000000001917. Online ahead of print. PMID: 37084290

Dr. Albert Tsui

Peer-reviewed papers:

- Kavsak PA, Clark L, Arnoldo S, Lou A, Shea JL, Eintracht S, Lyon AW, Bhayana V, Thorlacius L, Raizman JE, Tsui AKY, Djiana R, Chen M, Huang Y, Booth RA, McCudden C, Lavoie J, Beriault DR, Blank DW, Fung AWS, Hoffman B, Taher J, St-Cyr J, Yip PM, Belley-Cote EP, Abramson BL, Borgundvaag B, Friedman SM, Mak S, McLaren J, Steinhart B, Udell JA, Wijesundera HC, Atkinson P, Campbell SG, Chandra K, Cox JL, Mulvagh S, Quraishi AU, Chen-Tournoux A, Clark G, Segal E, Suskin N, Johri AM, Sivilotti MLA, Garuba H, Thiruganasambandamoorthy V, Robinson S, Scheuermeyer F, Humphries KH, Than M, Pickering JW, Worster A, Mills NL, Devereaux PJ, Jaffe AS. "Analytic result variation for high-sensitivity cardiac troponin: Interpretation and consequences". *Canadian Journal of Cardiology*. 2023 Apr 23:S0828-282X(23)00361-6
- Gouda P, Kay R, Gupta A, Yuen T, Elharram M, Breau J, Giani S, Lau D, Senarate J, Tsui AKY, Tsuyuki R, Graham M. "Anticoagulation in type 2 myocardial infarctions: Lessons learned from the rivaroxaban in type 2 myocardial infarctions feasibility trial". *Contemporary Clinical Trials Communications*, 2023 Apr 22;33:101143
- Wolan V, Kunst A, Gauvreau C, Zimmer C, Ly E, Higgins T, Tsui AKY. "The importance of verifying manufacturer's claim on specimen stability: An example in serum angiotensin converting enzyme testing". *Clinical Biochemistry*. 2023 May;115:103-106

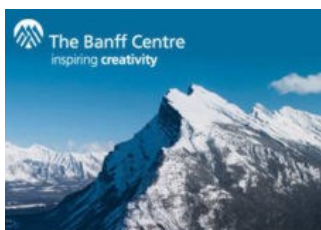


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