

## LABORATORY MEDICINE

Saskatchewan Health Authority

## PATHOLOGY & LABORATORY MEDICINE

College of Medicine

# A N N U A L REPORT

## 2021/22

CLINICAL CARE, PUBLIC HEALTH, ACADEMICS

# C O N T E N T S

ABOUT US .....	1
MESSAGE FROM THE PROVINCIAL DYAD LEADERSHIP .....	4
EDUCATION .....	5
PEOPLE .....	19
PUBLIC HEALTH .....	23
LABORATORY PRACTICE .....	25
RESEARCH .....	64
HUMANITIES .....	96
SASKATCHEWAN ASSOCIATION OF LABORATORY MEDICINE (S.A.L.M) .....	99
HOSPITAL FOUNDATIONS .....	101

LABORATORY PHOTOS BY: DAVID STOBBE

[stobbephoto.ca](http://stobbephoto.ca)

# ABOUT US

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## DEPARTMENT VISION

We will deliver high quality services that are integrated, accessible and appropriate for all patients in Saskatchewan.

## DEPARTMENT MISSION

We work as a respectful, collaborative and committed team which values transparency and inclusion to ensure a patient-centered and sustainable laboratory medicine service.

*Laboratory Medicine is an integrated provincial organization with a membership that includes clinicians (MD and PhD specialists) who are faculty of the College of Medicine and staff of the Saskatchewan Health Authority. Membership also includes medical laboratory technologists (MLTs), medical laboratory assistants (MLAs), combined X-ray/laboratory technologists (CXLTs), scientists, phlebotomists and staff in LIS and Regulatory Affairs among others.*

*The Department members work collaboratively, in 200 locations across the province and serve three mandates – clinical care, public health and academics. The entire Department is dedicated to excellence in patient care as expressed in the Department vision, mission and values, articulated above.*

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We would like to acknowledge that we are gathering on treaty 2,4,5,6,8, & 10 territory and the Homeland of the Metis. Recognizing this history is important to our future and our efforts to close the gap in health outcomes between Indigenous and non-Indigenous peoples. We pay our respects to the traditional caretakers of this land.



UNIVERSITY OF SASKATCHEWAN

## College of Medicine

MEDICINE.USASK.CA

## VISION

We are leaders in improving the health and well-being of the people of Saskatchewan and the world.

## MISSION

As a socially accountable organization, we improve health through innovative and interdisciplinary research and education, leadership, community engagement, and the development of culturally competent, skilled clinicians and scientists. Collaborative and mutually beneficial partnerships with Indigenous peoples and communities are central to our mission.

## VALUES & PRINCIPLES

### We're committed to:

- collegiality
- fairness and equitable treatment
- inclusiveness
- integrity, honesty and ethical behaviour
- respect

### We believe in:

- academic freedom
- learning and being
- diversity, equality and human dignity
- excellence
- a healthy work and learning environment
- innovation, curiosity and creativity
- openness, transparency and accountability
- reconciliation
- sustainability, collaboration, commitment to community
- different ways of knowing,







## VISION

Healthy People, Healthy Saskatchewan.

## MISSION

We work together to improve our health and well-being. Every Day. For everyone.

## VALUES

Safety  
Accountability  
Respect  
Collaboration & Compassion  
Patient & Family Centred Care



# MESSAGE FROM THE PROVINCIAL DYAD LEADERSHIP

It is our pleasure to welcome you to the sixth Annual Report of the evolving Provincial Department of Laboratory Medicine (Saskatchewan Health Authority) and the Department of Pathology and Laboratory Medicine (University of Saskatchewan).

This is the fourth report to be produced under the auspices of a single health authority and provides a provincial lens of the three mandates (*clinical care, public health and academics*) of the integrated medical laboratory system for the period July 1st, 2021-June 30th, 2022.

This is the fourth annual report that attempts to provide a review of all those activities that have been the focus of our energies for the past twelve months. We thank all members of the Department for their unceasing hard work and innovation as we strive to implement an integrated provincial laboratory medicine diagnostic service.

Over the past twelve months we have continued to live with COVID-19, although public health measures are gradually being relaxed and hopefully, we can now look forward to happier times. We would like to take this opportunity to ask us all to celebrate the incredible work performed by this Department, whether it be in the area of COVID diagnostics or delivering all of the other diagnostic work necessary to ensure the safety of all patients in this province, particularly as we return to a more 'normal' practice.

The varied accomplishments featured in this report attest to an actively growing Department displaying increasing capacity in both the clinical and academic areas. These include, but are not limited to on-going success of residents in the Fellowship examinations, increasing diagnostic capacity in many laboratories- this report features articles dealing with Anatomic Pathology Biochemistry and Genomics in Saskatoon and selected laboratories in the north of the province. The department hosts a healthy grand round culture, while the academic productivity listed in this report is varied and remarkable.

We would like to take this opportunity to thank each and every member of Provincial Laboratory Medicine for their dedication, innovation and work ethic during these challenging times. And as always we would like to express our sincere thanks for the amazing on-going support we continue to receive for all our Foundations -(please see section on Foundation at the end of this report).

Lenore and I hope that you enjoy our Annual Report and we wish us all a bright future.

This Department has successfully responded to the needs of the COVID-19 pandemic and is now moving on to deal with the challenges of the on-going 'surgical initiative'



**J. FERGALL MAGEE**

MD FRCPC MHSc  
Provincial Head, U of S College of  
Medicine Department of Pathology  
& Laboratory Medicine



**LENORE HOWEY**

Executive Director,  
SHA Laboratory Medicine

# EDUCATION

## GRAND ROUNDS

SUBMITTED BY **DR. VIKTOR ZHEREBITSKIY**

Due to the COVID-19 pandemic, PALMGRs continue to be delivered virtually. Nevertheless, our faculty members and general pathology residents were quite active and the PALMGRs Committee did not have difficulty filling all presentation spots even six months or more ahead of the presentation time.

Responding to the request of Dr. Mary Kinloch, AP Division Head (Saskatoon), priority was given to newly recruited faculty members who joined Saskatoon AP service (e.g. Drs. Ryan Campbell, Katelynn Campbell, Glenda Wright, etc.). However, the PALMGRs Committee, led by Dr. Fergall Magee, Provincial Head, Pathology & Laboratory Medicine, with the participation of Dr. Viktor Zherebitskiy (anatomical and clinical pathology representative), Dr. Maruti Uppalapati (basic medical research representative) and Dr. Phillip Price (general pathology residency U of S program representative), tried to keep a healthy balance and provided an

opportunity to present more established faculty members from Saskatoon and Regina (e.g. Drs. Roland Auer, Ahmed Mustafa, Matthew Orde, Joseph Blondeau, etc.) as well as University of Saskatchewan general pathology residents (Drs. David Li and Phillip Price) and faculty members from other Canadian universities (e.g. UBC, etc.). Moreover, the Dr. Marc Omar Shokeir Memorial Lecture became a part of the PALMGRs program (this year the presenter was Dr. Debrah Wirtzfeld from the University of Manitoba).

To facilitate evaluations and record attendance, we implemented a new on-line feedback survey. Mr. Max Lyons from the College of Medicine IT support group was very helpful in providing us with on-line technical support and troubleshooting and secured a smooth transition from the WebEx on-line meeting platform to Zoom as a part of the general University of Saskatchewan transition in April 2022.

### During the 2021-2022 academic period of time, we had the following PALMGRs presentations and talks:



**DR. ANDREW CHURG** (SEPTEMBER 27, 2021 - PATHOLOGY, VGH/UBC, VANCOUVER, BC) a world leader in medical lung pathology and mesothelioma presented "The separation of benign from malignant mesothelial proliferations: lessons from radiology, morphology and molecular biopsy" where he talked about pitfalls related to benign mimickers of mesothelioma and diagnostic utility of traditional and new immunohistochemical and molecular markers including IMP3, Glut1, p53, BAP1, CDKN2A, MTAP, EZH2, 5-HMC, CD146, etc.

Dr. A. Churg also was kind enough to provide us with additional lecture "Pulmonary neuroendocrine tumors" and bonus practical session with case discussion related to his consultation practice including those cases of lung pathology which were sent to him by our faculty members for external consultations.

Saskatchewan Association of Laboratory Medicine (SALM) awarded Dr. A. Churg with Appreciation Award for Invited Speaker Lecture and honorarium (presented by Dr. F. Magee).



**DR. ROLAND AUER** (OCTOBER 25, 2021 - PATHOLOGY, RUH/ U OF S, SASKATOON, SK) and **DR. MATTHEW ORDER** (PATHOLOGY/U OF S/ CORONER'S SERVICE, REGINA, SK) gave a joint presentation "How doing medico-legal cases helps society get it right: court dummies – this is your brain in court (featuring a "moot court)". In their talk based on their experience with abusive child trauma and so-called, SBS syndrome they provided the audience with examples of right and wrong presentations of medico-legal cases in courts of different jurisdictions including those cases where lengthy wrong convictions were successfully overturned by expert pathologists' testimonies.



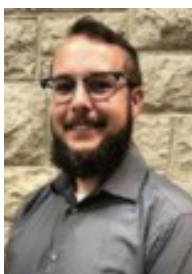
**DR. DEBRAH WIRTZFELD** (NOVEMBER 19, 2021 – SURGERY, HSC/U OF M, WINNIPEG, MB) provided us a 2-hour talk on "Leadership is a team sport". In her didactic session, she provided the audience with historical prospective of penultimate leader, transformational leadership concept, Maxwell's leadership pyramid, four self-awareness archetypes, communication styles including color mapping approach, strategies of communication improvement, stages of competence and many other useful tips on building healthy team based relationships between faculty members, administrations, staff, residents and other learners. The interactive part of her talk allowed our faculty members and residents to express their opinions and learn how appropriately respond on constantly changing and quite stressful work environment in clinical and laboratory medicine.



**DR. AHMED MOSTAFA** (NOVEMBER 29, 2021 - HLA/SPH/U OF S, SASKATOON, SK) did a presentation "History of transplantation immunology: ancient legends to modern practice". His presentation provided in depth discussion on myths and reality of transplantation before and after discovery of HLA system including first kidney transplantation performed by Dr. Voronoy in 1933 in Ukraine, Drs. Little, Jackson, Snell and Gorer's works on molecular genetic basis of HLA system in mid-20th century, key HLA nomenclature workshops in 60th and ever growing assortment and number of transplantations of various organs and tissues that has started in 70th of 20th century and continued in 21st century. Particular emphasis in his talk was put on the local provincial HLA & transplantation program including profound impact of Dr. Baltzan's family on kidney transplantation program in Saskatchewan and development of HLA laboratory in Saskatoon.



**DR. DAVID LI** (JANUARY 31, 2022 - PGY5 RESIDENT, GP RESIDENCY PROGRAM, U OF S) in his presentation "The correlation between American College of Thyroid Imaging Reporting and Data System (ACR TI-RADS) and Fine Needle Aspiration (FNA) cytology in predicting risk of thyroid malignancy: The Saskatoon Quality Assurance Project" shared local experience of use of ACR TI-RADS system and its correlation with Bethesda system of reporting thyroid FNAs for 2018-2020 period of time.



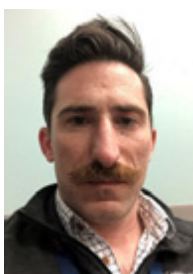
**DR. PHILLIPE PRICE** (JANUARY 31, 2022 - PGY3 RESIDENT, GP RESIDENCY PROGRAM, U OF S) shared in his talk "Pathology residents transitioning to practice – A short survey on the potential benefits and challenges of bringing forward the Royal College exam in Competency-Based Medical Education" the results of CBD survey among pathology residents including benefits and challenges of implementation of CBD curriculum in general pathology education.



**DR. KATELYNN CAMPBELL** (FEBRUARY 28, 2022 - PATHOLOGY, RUH/ U OF S, SASKATOON, SK) presented “When AP met CP: lessons learned at the Children’s Hospital” and using examples of arthropod bite, immature lymphoid cells in chylothorax, PCJ, *T. versicolor*/ *M. furfur* and myiasis fungal and parasitic infections, demonstrated a need for clear communication between anatomical and clinical pathology services in recognition of potential diagnostic pitfalls, particular in hectic settings of on-call hospital service. She also emphasized a need of clear communication of faculty members with pathology and non-pathology trainees.



**DR. GLENDA WRIGHT** (MARCH 28, 2022 - PATHOLOGY, RUH/ U OF S, SASKATOON, SK) in her talk “QI – dermpath edition” discussed examples of several newly described dermatologic conditions and unusual of well-established skin entities including cellular neurothekeoma, calcifying epithelioid dermal tumors, epithelioid fibrous histiocytoma variants, well-differentiated squamous proliferations on legs of older women, melanocytic acral nevus with intraepithelial ascents of cells, ectopic acanthosis nigricans, epidermodysplasia verruciformis, cutaneous oxalosis, cutaneous schistosomiasis and various cutaneous foreign bodies/ splinters.



**DR. RYAN CAMPBELL** (APRIL 25, 2022 - PATHOLOGY, RUH/ U OF S, SASKATOON, SK) presented “Diagnostic pitfalls & challenges within modern cytopathology”. His presentation was mainly devoted to unusual and rare presentations of malignant and premalignant conditions in gynecological cytology (e.g. metastatic melanoma, variants of endocervical AIC, etc.) and non-gynecologic cytology (e.g. echinococcal infection in hepatic cysts, adenoid cystic carcinoma variant in salivary gland FNA, PVJ in BAL, etc.). He also discussed a role of proper fixation of cytology specimens and various aspects of possible implementation of confocal microscopy, digital pathology and molecular studies and their impact on the future of cytopathology.



**DR. JOSEPH BLONDEAU** (MAY 30, 2022 - PATHOLOGY, RUH/ U OF S, SASKATOON, SK), world renowned microbiologist and SHA Provincial Clinical Lead in microbiology in his talk “ Zoonosis and zoo-anthroponosis: is “one health” the correct approach? Provided an overview of main zoonotic infections. Dr. Blondeau emphasized a pivotal role of one health strategy in dealing with animal to human and human to animal transmission of infectious agents. This included vector-borne infectious diseases (e.g. malaria, dengue, chikungunya, Zika, West Nile, etc.), viral mutations causing epidemic and pandemic outbreaks (e.g. influenza, SARS, MERS, H7N9 bird flu, COVID19, etc.), mechanisms of antibacterial resistance and epidemiologic situation with the current outbreak of monkey pox and its ability to infect humans (including provincial preparedness to diagnose, treat and prevent this zoonotic infection).

We are happy to report, that our presentation portfolio is filled up until the end of 2022 and also many presentation spots are taken by potential speakers from the local faculty members, general pathology residents and presenters from other Canadian and US medical and educational institutions.

Nevertheless, we are always open to new or last-minute presenters if they are going to present exciting and interesting material. In this case, we certainly will try to accommodate their needs. In one word (or sentence), all potential PALMGRs presenters are welcome!



# GENERAL PATHOLOGY RESIDENCY PROGRAM

## OUR YEARLY JOURNEY THROUGH MONTHLY TIMELINES

SUBMITTED BY

**DR. RANI KANTHAN**, RESIDENT PROGRAM DIRECTOR

**DEB QUIRION**, RESIDENT PROGRAM ADMINISTRATOR

### PATHOLOGY & LAB MEDICINE RESIDENTS 2021-2022 ACADEMIC YEAR



Alicia Andrews  
PGY5, Mat LOA, Nov 21



Jana Suresh  
PGY5



James Macpherson  
PGY5



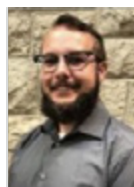
David Li  
PGY5



Suresh  
Tharmaradinam  
PGY5



James Macpherson  
PGY4



James Macpherson  
PGY3



Karan Vats  
PGY3



Ingrid Tam  
PGY2



Yayuan Zhao  
PGY2



Henry Pan  
PGY1



Daniel Markewich  
PGY1



Pramath Kakodkar  
PGY1

**JULY & AUGUST 2021:** The academic year began with the appointment of 'New' Interim Co-Program Directors [PD] – Dr. Louise Quenneville and Dr. Viktor Zherebitskiy who had to navigate through resident issues, to keep things moving. We also welcomed our three new PGY1 residents: Drs. Henry Pan, Daniel Markewich and Pramath Kakodkar.

**SEPTEMBER 2021:** Dr. Rani Kanthan was appointed as Program Director and was entrusted to sort out resident matters and assigned the daunting task of getting ready for an internal review of the program in December: thus, get all documentation prepped and uploaded onto a new digital portal - CanAMS by end of November –YIKES. Teaching faculty of each related division were involved in this process and over the next few months were consulted on sharing their views on the strengths and challenges of the program. These challenging tasks were tackled with the support of regular biweekly meetings of the Residency Program Committee (RPC) that established terms of reference/mission statements/reviewed and revamped many policies to include special COVID related concessions. The Competency Committee had its fall meeting and the resident reviews were discussed at individual meetings with myself and Deb.

**OCTOBER 2021:** As previously arranged, we welcomed guest speakers from Ottawa Drs. Christopher Milroy and Jacqui Parai, who spent an entire Friday at our Academic Half Day sharing their experiences as experts in Forensic Pathology. This was held digitally due to ongoing COVID restrictions. This provided a great opportunity for networking and building relationships for our PGY5 resident Dr James McPherson who had declared a career interest in Forensic Pathology and he has subsequently been successful in securing a Fellowship in Forensic Pathology in Ottawa. The program supported the resident's virtual attendance at the ASCP conference (Oct 27-29).RPC continued to work towards finalizing documentations and purchasing educational materials as requested by residents such as the Osler suite etc.

**NOVEMBER 2021:** The highlight of this month was the installation of 9 new computers at the resident rooms at Saskatoon City Hospital and 4 at Royal University Hospital to overcome the lack of computer resources that was cited as an area for improvement in the past. A total of 13 top of the line brand new computers and monitors with enhanced video cards were installed with relevant software to provide adequate resources to improve the learning environment.

**DECEMBER 2021:** This month saw the resurrection of our pathology newsletter under its new name of 'Paths Eye View' that shares and highlights resident related news/photographs etc. on a quarterly basis. Monthly wellness activities with a working budget were advocated by the Program and in this context Dr Phillippe Price-chief resident hosted the Resident holiday / Xmas Dinner. The Program also sent small goodies baskets to residents as a token of goodwill and holiday cheer. Routine educational activities such as the six-month exam were held under the auspices of the Exam Committee [led by Drs. Baniak and Wright] that was formed within the RPC to provide dedicated support in these activities.

**JANUARY 2022:** The New year began with the return of all residents to their various rotations and the RPC continuing with its bimonthly meetings to attend to all matters as needed in a timely fashion. As scheduled, the Internal Review of the program by Surveyor(s): Dr. Sarkis Meterissian, Dr. Jason Karamchandani and Dr. Nina Dhillon took place on January 19th. We survived a busy day with Deb doing a wonderful job in ensuring the entire digital process and document access etc. ran smoothly. Following this review, discussions regarding the upcoming CARMS interviews- including Committee membership / terms of reference etc. were begun. The exam going cohort [Five residents] were identified with dedicated PREEXAM review/ Prep sessions that were crafted for the months of Jan Feb and March. This year after validation at the RPC, the CAP Review Course January 11-15 was offered to all PGY3, PGY4 and PGY5s, who attended this virtual event as a global review towards examination prep –for some imminent and for others in a couple of years.

**FEBRUARY 2022:** The RPC continued its work to support exam going residents: in this context, Dr. Wright created and scheduled the AP exam dedicated review sessions for all PGY5 residents in addition to their study group preparations. Ongoing CBD issues continued to be addressed at the RPC and with the AP faculty at special meetings coordinated by the Dept. Head Dr Fergal Magee and Dr Saxena, PGME Dean. Dedicated time was spent on review of rotation goals and a Rotation Blueprint for the General pathology Program has been constructed incorporating the CBD –EPA framework and training requirements. The Friday Academic Half Day [AHD] curriculum for both Anatomical Pathology and Clinical Pathology is also being overhauled. Resident input is actively pursued at the regular weekly Resident /PD rounds held every Friday during/after Academic Half-day activities. The Competency meeting had its deliberations with interventional steps being taken to facilitate and help residents maintain their trajectory in their individual educational journey.

**MARCH 2022:** As COVID restrictions seemed to be easing up, Drs. Karan Vats and Ingrid Tam attended and presented their poster in-person at the USCAP in March 19-24 at Los Angeles, USA. Wellness activities this month included a visit to Escape City followed by supper at the Rook and Raven on March 4. The CARMS committee that included representation from Saskatoon and Regina conducted the Virtual CaRMS Interviews on March 14-15 with consensus and nominal group discussions to create the shortlist of candidates which were submitted for PGME approval. At the RPC, discussions continued with Dr. Murray exploring the proposed Fellowship training position at the anticipated new Victoria Hospital in Prince Albert in the near future.

**APRIL 2022:** An educationally tense month for our five PGY5 residents who wrote the written portion of the Royal College Exams. They were sent Cookies by George as comfort food while they prepped for the same. Following the Royal College written exam, the peer resident group shared a beverage or two at Thirsty Scholar as a morale booster wellness initiative. Following all the hard work of the CARMS committee, it was a delight to receive the April 12 CaRMS Match Day notification that we matched both positions in first iteration: Dr. Joel Scott [CMG] and Dr. Javera Tariq [IMG].

**MAY 2022:** The Exam fever of the PGY5 continued with ongoing OSCE and study preparations for the Practical component of the Royal College Exam which was held virtually in Saskatoon on May 17th. RPC and Competency meetings continued as per schedule with ongoing discussions with PD /PA team for timely educational interventions to attain goals as needed for each individual resident.

**JUNE 2022:** As an additional effort to address CBD issues we had a dedicated in-person visit with Dr. Marcia Gomes from University of Ottawa [June 8-10]. He had interactive discussions with the AP faculty and residents who also benefited from his thoracic expertise with microscopic slide rounds and digital workshop presentation. As an end of the year wellness activity, the residents had a program supported weekend break at Lost Creek, Waskesiu [June 10-12]. We are delighted to share the wonderful news that all five of our Exam going PGY5 residents have passed the Royal College Exam – glad all their hard work paid off. We wish them well as they are now off furthering their individual careers with fellowships in their chosen fields (Dr Alicia Andrews- Pediatric fellowship –Vancouver, Dr. David Li- Cytology Fellowship- McGill, Dr Jana Suresh- Surgical Pathology Fellowship-Toronto, Dr. James Macpherson- Forensic Pathology Fellowship –Ottawa and Dr. Suresh Tharmaradinam- Surgical Pathology Fellowship –Toronto). End of year resident exam was held on June 3rd with an introduction of digital OSCE stations to mimic the Royal College Exams-a work in progress.

As we return to pre COVID states of travel we saw the return of electives: the residents have resumed seeking out electives in other Canadian provinces that align with their future career plans: Dr Price visited Barrie, Dr Kakadekar to Calgary, Halifax and Montreal; Dr. Vats to UBC and Calgary, Dr Suresh to Toronto and McMaster, Dr. David Li- Toronto]. Additional electives are lined up for Drs. Vats, Price and Tam for the upcoming year. Our program encourages and has built in specific time blocks for electives in the resident educational journey.

Returning to our 'new normal', we continue to be committed to facilitate residents achieve their dreams and in this context, we are happy to share that our current PGY4 resident Dr Kakadekar has all the paperwork completed and has been accepted for a fellowship in Dermatopathology at Dalhousie. Revision of Program related objectives in CANMEDS framework incorporating the EPAs and their respective milestones is the next big project which we hope to complete by the end of summer. We look forward to our new PGY1 residents Drs. Scott and Tariq joining us in July and so the program rolls on –the cycle repeats, and as it does - the program seeks and looks forward to all your continued support in the training of our general pathology residents.

A big thank-you to one and all, for everything-past -present and future.



## INTERVIEWS WITH FIRST-YEAR RESIDENTS

QUESTIONS SUBMITTED TO RESIDENTS BY **DEB QUIRION**, RESIDENT PROGRAM ADMINISTRATOR



**DR. PRAMATH KAKODKAR (PGY1)**

### WHO IS YOUR HERO?

Tie between Nikolai Tesla and Da Vinci

### WHAT WOULD YOU CHANGE ABOUT YOURSELF IF YOU COULD?

My ability to not play any musical instrument

### WHAT IS YOUR ALL-TIME FAVORITE MOVIE?

The Dark Night

### DID YOU HAVE A FAVORITE BOOK AS A CHILD?

Murder on the Orient Express: A Hercule Poirot Mystery

### IT'S KARAOKE NIGHT...WHAT ARE YOU SIGNING?

American country love song – Jake Owens

### WHAT IS THE BEST GIFT YOU HAVE BEEN GIVEN?

Fossil smartwatch

### WHAT WOULD YOU DO IF YOU WON THE LOTTERY?

First, I would pay back my enormous loans and then invest the rest in real estate

### NAME ONE PLACE YOU WOULD NOT TRAVEL BACK TO.

Qatar

### WHAT IS YOUR FAVORITE FAMILY TRADITION?

Christmas Dinner

### IF YOU WERE THE RULER OF YOUR OWN COUNTRY WHAT WOULD BE THE FIRST LAW YOU WOULD INTRODUCE.

Free education for all

### IF YOU HAD A WARNING LABEL, WHAT WOULD IT SAY?

Who dares, wins

### WHO KNOWS YOU BEST?

A singular best friend

### IF YOU COULD JOIN ANY PAST OR CURRENT MUSIC GROUP, WHICH WOULD YOU WANT TO JOIN?

The Script

### WHAT WOULD BE THE SILLIEST FEATURE OF YOUR DREAM HOUSE?

A treadmill in the swimming pool

### WHAT FICTIONAL CHARACTER WOULD YOU BE BEST FRIENDS WITH IN REAL LIFE?

Rick from the show Rick and Morty

### WHAT GAME SHOW WOULD YOU LIKE TO BE ON?

Fictitious gameshow called 'Bamboozled' from the show Friends

### WHAT'S THE FARTHEST YOU'VE EVER BEEN FROM HOME?

**Distance:** 7,376 km in Maui for a medical conference

**Time:** 5 years in Ireland for medical school

### WHAT IS YOUR ULTIMATE DESSERT?

Russian honey cake

### BEST SANDWICH EVER...WHAT IS ON YOUR SANDWICH?

Classic spicy chicken sandwich from Chick-fil-A

### WHAT QUALITY DO YOU ADMIRE IN SOMEONE?

Curiosity and Integrity

## INTERVIEWS WITH FIRST-YEAR RESIDENTS

QUESTIONS SUBMITTED TO RESIDENTS BY **DEB QUIRION**, RESIDENT PROGRAM ADMINISTRATOR



**DR. HENRY PAN (PGY1)**

### WHO IS YOUR HERO?

My younger brother, Albert

### WHAT WOULD YOU CHANGE ABOUT YOURSELF IF YOU COULD?

Nothing, I'm happy the way I am!

### WHAT IS YOUR ALL-TIME FAVORITE MOVIE?

Pulp Fiction

### DID YOU HAVE A FAVORITE BOOK AS A CHILD?

The Redwall series by Brian Jacques

### IT'S KARAOKE NIGHT...WHAT ARE YOU SIGNING?

The Scientist – Coldplay

### WHAT IS THE BEST GIFT YOU HAVE BEEN GIVEN?

Computer parts for my first build

### WHAT WOULD YOU DO IF YOU WON THE LOTTERY?

Buy all the cars and travel everywhere

### NAME ONE PLACE YOU WOULD NOT TRAVEL BACK TO.

I've enjoyed all the places I've travelled to

### WHAT IS YOUR FAVORITE FAMILY TRADITION?

Chinese New Year

### IF YOU WERE THE RULER OF YOUR OWN COUNTRY WHAT WOULD BE THE FIRST LAW YOU WOULD INTRODUCE.

Universal Basic Income

### IF YOU HAD A WARNING LABEL, WHAT WOULD IT SAY?

Always smiling

### WHO KNOWS YOU BEST?

My roommates from undergrad

### IF YOU COULD JOIN ANY PAST OR CURRENT MUSIC GROUP, WHICH WOULD YOU WANT TO JOIN?

Beck

### WHAT WOULD BE THE SILLIEST FEATURE OF YOUR DREAM HOUSE?

A garage that rivals the size of the house

### WHAT FICTIONAL CHARACTER WOULD YOU BE BEST FRIENDS WITH IN REAL LIFE?

Fry from Futurama

### WHAT GAME SHOW WOULD YOU LIKE TO BE ON?

The British game show Taskmaster

### WHAT'S THE FARTHEST YOU'VE EVER BEEN FROM HOME?

Australia

### WHAT IS YOUR ULTIMATE DESSERT?

Cheesecake

### BEST SANDWICH EVER...WHAT IS ON YOUR SANDWICH?

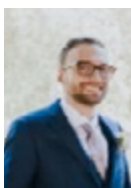
Smoked meat sandwich from Schwartz's  
(Montreal)

### WHAT QUALITY DO YOU ADMIRE IN SOMEONE?

People who treat others with respect regardless of  
race, status etc.

## INTERVIEWS WITH FIRST-YEAR RESIDENTS

QUESTIONS SUBMITTED TO RESIDENTS BY **DEB QUIRION**, RESIDENT PROGRAM ADMINISTRATOR



**DR. DANIEL MARKEWICH (PGY1)**

### WHO IS YOUR HERO?

My grandfathers

### WHAT WOULD YOU CHANGE ABOUT YOURSELF IF YOU COULD?

My eyesight, I would like to not need to wear glasses/contacts

### WHAT IS YOUR ALL-TIME FAVORITE MOVIE?

Stranger than Fiction

### DID YOU HAVE A FAVORITE BOOK AS A CHILD?

Harry Potter and the Philosophers Stone

### IT'S KARAOKE NIGHT...WHAT ARE YOU SIGNING?

I would not sing at a karaoke night, but my favourite song at the moment is Dancing in the Moonlight, covered by Toploader

### WHAT IS THE BEST GIFT YOU HAVE BEEN GIVEN?

My son

### WHAT WOULD YOU DO IF YOU WON THE LOTTERY?

Pay off my debt

### NAME ONE PLACE YOU WOULD NOT TRAVEL BACK TO.

Florida

### WHAT IS YOUR FAVORITE FAMILY TRADITION?

Making Christmas cookies

### IF YOU WERE THE RULER OF YOUR OWN COUNTRY

WHAT WOULD BE THE FIRST LAW YOU WOULD INTRODUCE.

Free childcare for everyone

### IF YOU HAD A WARNING LABEL, WHAT WOULD IT SAY?

Warning: I'm very tired

### WHO KNOWS YOU BEST?

My wife

### IF YOU COULD JOIN ANY PAST OR CURRENT MUSIC GROUP, WHICH WOULD YOU WANT TO JOIN?

Rush

### WHAT WOULD BE THE SILLIEST FEATURE OF YOUR DREAM HOUSE?

Movie theatre room made to look like a mini theatre

### WHAT FICTIONAL CHARACTER WOULD YOU BE BEST FRIENDS WITH IN REAL LIFE?

Abed from the TV show Community

### WHAT GAME SHOW WOULD YOU LIKE TO BE ON?

None, I don't really like game shows

### WHAT'S THE FARTHEST YOU'VE EVER BEEN FROM HOME?

China

### WHAT IS YOUR ULTIMATE DESSERT?

Anything with peanut butter and/or chocolate

### BEST SANDWICH EVER...WHAT IS ON YOUR SANDWICH?

Ham & cheese

### WHAT QUALITY DO YOU ADMIRE IN SOMEONE?

Honesty

# LOOKING BACK ON ROYAL COLLEGE EXAM PREP AND THE IMPORTANCE OF REVIEW BLOCKS

SUBMITTED BY **DR. JAMES MACCPHERSON** (PGY5)

First and foremost, I would like to thank all members of the Department. Everyone who participated in structured teaching and review sessions, and everyone who has shown us patience and guidance over these 5 years. I hope that you see our success as your success, and that the resident group can continue to count on you.

I was asked to write briefly about the review blocks which were implemented this year to help myself and the other PGY5s prepare for the Royal College Exam. The review blocks consisted of 3 4-week blocks (1 each for biochemistry, microbiology and hematopathology) where the residents were allowed to dedicate themselves fully to self-directed study supplemented by review sessions.

The freedom of scheduling that these review blocks allowed was very important. We were able to have mock written and oral exams, and expansive review lectures at the convenience of generous staff. It cannot be overstated how important these review sessions were to our success, but the time commitment required is not something that we could achieve with a full workload, and definitely not something we could ask staff to volunteer after-hours. It is also essential that exam going residents review large volumes of classic and testable microscopy. We owe a great deal to the staff who made their personal slide collections available to us and compiled mock slide exams. The review blocks gave us access to microscopes during the day, and the time necessary to work through these slides.

One month is obviously not enough to learn the complex concepts of our discipline, but it is a generous amount of time to review the most testable topics and consolidate the last 5 years of learning. Although a complete study plan is something that should be unique to each resident, I found it helpful to focus my attention on the topics dictated by the specific review block. While the interconnectedness of topics in general pathology is important, the exam is still divided into discipline

specific sections, and any organized review will be the same way. While my studying had begun well before the review blocks, and my review continued until the night before the exam, by the end of my biochemistry review block I felt that I had achieved my study goals for the subject. The same was true for hematopathology, and microbiology. This was achieved through teaching sessions around key concepts of each subspecialty, and the focused review that these blocks allowed.

Finally, the review blocks allowed the residents to make full use of a very important resource: each other. The fact that we were all able to be present at a single site allowed us to make effective use of a group study system during the day. Group study allowed us to efficiently review high volumes of information, share unique insights, and catch each others' mistakes. It allowed us to refine our individual study plans and kept us on schedule by making us accountable to one another. Our group was even able to connect with residents from some of the other general pathology programs in Canada, as well as local anatomical pathologists writing their exam. Each member brought unique insights, and undeniably contributed to our success.

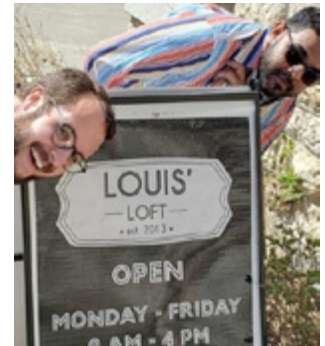
In conclusion, review blocks allowed us to schedule important educational sessions, engage in focused review, and participate effectively in group learning; all while respecting the time of our staff, and reducing the amount of resident vacation time used solely for studying. I would like to thank Dr. Kanthan, our program director, and all the members of the Residency Planning Committee for working to implement them. I would also like to give special thanks to Dr. Wright and Dr. Baniak, previous program graduates who acted as our exam preparation committee and helped to schedule numerous sessions. I hope our landslide success with such a large group of residents shows the value of review blocks as an educational tool. I would wholeheartedly recommend their implementation for future residents.

## RESIDENT SOCIAL EVENTS

### PATHOLOGY RESIDENT SCAVENGER HUNT

SUBMITTED BY **DR. INGRID TAM** (PGY2)

The evidence is mounting – nature is so beneficial to our overall health and well-being! As the days became longer and the snow starting melting, the goal was to spend more time outdoors. After a healthy brunch, we took advantage of the sunny, warm weather and broke off into two teams to complete a Saskatoon scavenger hunt on the nearby University grounds. Clues pointed us in the direction of landscapes, buildings, and sculptures; we ensured to take photographic evidence of each of our visits. With a Saskatchewanian on both sides, it was a tight race. In the end, it was a tie, with neither team trekking all the way to the koi pond for bonus points. Truthfully, with the summer sun beaming down on us, we got a little distracted by the Dairy Queen on College Drive. We celebrated our joint victory with ice cream in the sun!



### PATHOLOGY SUMMER GATHERING

SUBMITTED BY **DR. INGRID TAM** (PGY2)

After many months of being apart, we were finally able to come together for a Summer Gathering, kindly hosted by Dr. Mary Kinloch, in early July. Dr. Kinloch and I worked closely to organize a date and catering for the event. We welcomed our new first-year residents, Daniel, Henry, and Pramath, and new pathologists Drs. Katelynn and Ryan Campbell. We were so fortunate with the weather – the day was beautiful, bright, and warm! We made good use of Dr. Kinloch's brand-new patio, kitchen, and outdoor area. There was a large spread of delicious food, refreshing drinks, and great company. It was so nice to have a chance to get to know each other outside of the hospital environment! Thank you, Dr. Kinloch!!



## PATHOLOGY RESIDENT RETREAT

SUBMITTED BY **DR. INGRID TAM** (PGY2)



Our Resident Retreat finally took place in September 2021, after many years of hiatus. While we unfortunately couldn't get away for a weekend retreat, we spent a day in the beautiful Alt Hotel, overlooking the Saskatchewan River. We were generously sponsored by the Saskatchewan Medical Association (SMA) and The Binding Site – thank you so much for your support!

The day was filled with opportunities to gain insight about different topics that we don't usually hear about on a daily basis. A hearty breakfast and an icebreaker activity started the day. Dr. Henrike Rees then gave us an excellent talk about communication in the laboratory, and we were able to learn more about our own communication styles and how to best harness these when encountering various situations in our professional lives. Dr. Pouneh

Dokouhaki provided us with many useful tips and tricks on how to study General Pathology. Dr. Alysa



Poulin joined us to speak about completing electives and fellowships in the United States, particularly useful for those earlier in their training. We had a tasty lunch close by at OEB and enjoyed a short walk in the sun along the water. We then heard from Dr. Glenda Wright about interview skills, who gave us many helpful approaches to consider. Finally, Brenda Senger, Director of Physician Support Programs, Saskatchewan Medical Association, spoke to us about the ever-important topic of resiliency in residency.

All in all, it was a great opportunity to have dedicated time to reflect on topics that are crucial to a successful and fulfilling residency and career. Thank you to all the residents for participating, and to all the speakers for your enthusiasm and commitment to our program!

## PATHOLOGY RESIDENT HOLIDAY CELEBRATION

SUBMITTED BY **DR. INGRID TAM** (PGY2)

We celebrated the holidays together as a resident group with a Christmas dinner and exchanged gifts in a resident Secret Santa. Phil and Shaunagh opened their home to host us and took the reins on preparing a delicious holiday meal. We enjoyed leek and potato soup, turkey, glazed ham, and roasted vegetables – everything was made to perfection! James tried his hand at making a sticky toffee pudding for dessert and it was a big success. Alicia brought a tasty holiday cocktail to finish off the night. It was a wonderful evening, and I am sure Phil's dog, Beemo, enjoyed all the extra pats and new faces!



## ESCAPE ROOM

SUBMITTED BY

**DR. PHILLIPE PRICE** (PGY3)

One of our first-year residents, Daniel Markewich, took the position of Wellness Coordinator for the program in January. His first wellness even was to attempt an escape room at Escape City in Saskatoon.

I had never done an escape room, so I wasn't sure what to expect, but I would have never guessed what would happen next! Instead of a single room with a few puzzles, we were treated to an immersive experience with multiple increasingly bone-chilling rooms where we had to escape a crazed circus magician. This culminated in a truly shocking final room with a big jump scare! It was exhilarating to mix the pressure of beating the clock with this creepy atmosphere, and the puzzles were really satisfying to solve. All in all, it was a very memorable experience!



## GRADUATE CELEBRATION AT AMIGOS CANTINA

SUBMITTED BY **DR. PHILLIPE PRICE** (PGY3)

In late May, Dr. Katelynn Campbell organized a congratulatory and farewell dinner for the senior residents.

We went to Amigos Cantina, which is a popular Mexican-cuisine restaurant on Broadway Avenue. There were final year and other residents, attendings, and loved ones in attendance. We spent the night eating delicious nachos, burritos, chimichangas, and enjoying their assorted margaritas. It was a great opportunity to socialize with our staff and get to know them outside of work.

We exchanged interesting stories and had a lot of laughs; it was great fun! And congratulations to all five of our final years who passed the Royal College Exam!

## CONGRATULATIONS TO DR. KARAN VATS (PGY3)

We are pleased to announce Dr. Karan Vats is appointed as president of the Resident Doctors of Saskathewan.



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### 2021-2022 Board of Directors

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#### Executive Board Members

President	Karan Vats	General Pathology PGY3
Vice President	Kate Liu	Anesthesia PGY3
Past President	Amit Persad	Neurosurgery PGY5
Secretary Treasurer	Yuhao Wu	Diagnostic Radiology PGY3
Chief Negotiator	Tim He	Internal Medicine PGY3
Assistant Negotiator	Pramath Kakodkar	Pathology PGY1
Member at Large	Jake Allison	Family Medicine PGY1
Member at Large	Emmanuel Oduntan	Psychiatry PGY2
Member at Large	Ahmed Radwan	Internal Medicine PGY2

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# PEOPLE

## DEPARTURES



### DR. JANINE BENOIT 09 NOV 2021

While wishing Dr. Janine Benoit many happy returns for her retirement last JUL, the Department was able to entice her back for a long-term locum where we are blessed with her compassionate leadership and patient knowledge. We hope we can provide her with a wonderful work environment that she chooses to spend many more years with us between her trips to the lake and her painting classes.



### LINDSAY SELLAR

A farewell for Lindsay 29 OCT 2021. Though leaving her SHA position in our Department she was welcomed to her new role with ADRL through the University.

**DR. BARRY KYLE**, Clinical Biochemist

**DR. MARTHA LYON**, Clinical Biochemist

**DR. ESTEE BENADE**, Hematopathologist

## ARRIVALS

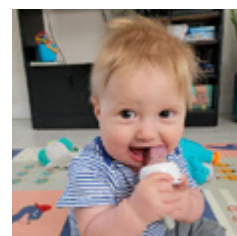
### DR. SYLVIE CLAIREFOND, PHD

Dr. Clairefond was born and raised in France. She obtained her baccalaureate as an assistant engineer in Biology-Biochemistry-Biotechnologies and her specialized master's degree in biobank management at the Catholic University of Lyon. She then flew to Canada to complete a doctorate in biomedical sciences at the Faculty of Medicine of the University of Montreal, joining the Gynecological Tumor Biobank in Saskatoon in the position of Coordinator in SEP 2021.



### DR. DANIEL MARKEWICH

welcomed "William" into the family OCT 2021.

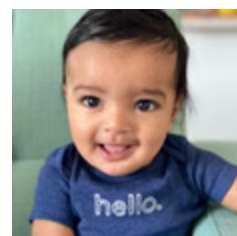


### DR. GLENDA WRIGHT

Welcomed back OCT 2021 from her Dermatopathology fellowship in Halifax.

### DR. NINAD MEHTA

welcomed "Ved", born mid-DEC 2021. Though spending his first week in NICU, he was able to come home 23 DEC. Ved is a very happy baby and really good at keeping both parents up all night!



**DR. NINAD MEHTA**, Clinical Microbiologist, Royal University Hospital

**DR. AYODELE AJAYI**, Medical Microbiologist, Regina General Hospital

**DR. LUKE BLOWER**, Anatomical Pathologist, Pasqua Hospital

**DR. KAYODE BALOGUN**, Clinical Biochemist, Regina General Hospital

**DR. KATELYNN CAMPBELL**, Anatomical Pathologist, Saskatoon City Hospital

**DR. RYAN CAMPBELL**, Anatomical Pathologist, Saskatoon City Hospital

**DR. JESSICA FORBES**, Clinical Microbiologist, Roy Romanow Provincial Laboratory

**DR. MATTHEW ORDE**, Associate Faculty, Forensic Pathologist with Coroners Service, Regina

**DR. HOMAN MIRALIKBARI**, Anatomical Pathologist, Moose Jaw

**DR. HISHAM ASSEM**, Anatomical Pathologist, Saskatoon City Hospital

**DR. KIMBERLY WOOD**, Anatomical Pathologist, Pasqua Hospital

## DEPARTMENT SOCIAL – 14 JUN 2022



Drs. A. Poulin, A. Freywald, D. Ravi, R. Kanthan,  
V. Zhrebetskiy, D. Diuidea, & R. Auer



The Campbell Family





Drs. E. & G. Torlakovic and M. Kinloch



Drs. Auer & Kanthan



Dr. C. Hamula



Drs. F. Magee, F. Wu, C. Hamula, A. Mostafa



Drs. F. Wu, Y. Xi, A. Mostafa, Z. Nawaz, J. Kalra



Drs. G. Torlakovic, A. Osmond & A. Lyon



Drs. H. Rees, C. Hamula, V. Zhrebetskiy



Drs. J. Kalra & N. Baniak



Drs. H. Rees, F. Magee & R. Sharma



Drs. R. Kanthan, A. Poulin, C. Wang



L. Howey & Dr. H. Rees

# PUBLIC HEALTH

SUBMITTED BY **DR. JESSICA MINION** MEDICAL/SCIENTIFIC DIRECTOR, PPHLN

## OVERVIEW

With the amalgamation of the Saskatchewan Disease Control Laboratory (now Roy Romanow Provincial Laboratory) into the Saskatchewan Health Authority (SHA) in 2018, the roles and responsibilities of the Provincial Laboratory were integrated into the new Health Authority. In order to ensure the continuity and organization of these important public health activities, and to leverage the strengths of being a part of a province-wide organization, the **Provincial Public Health Laboratory Network (PPHLN)** of Saskatchewan was created. Similar in vision to its corresponding national network, the Canadian Public Health Laboratory Network (CPHLN), the PPHLN of Saskatchewan provides a mechanism of collaboration between public health laboratory specialists and stakeholders.

The PPHLN of Saskatchewan is overseen jointly within the SHA by Laboratory Medicine and Population Health. Its core team includes the Provincial Clinical Lead of Public Health Laboratory Medicine, the PPHLN Epidemiologist, and the PPHLN Coordinator. However, the work of the network is primarily done by Specialty Leads throughout Laboratory Medicine who lead the diagnostic and surveillance strategies of their areas of expertise, collaborate with public health stakeholders on improving outcomes related to conditions of public health interest, and represent the PPHLN on external committees, interest groups, and interprovincial tables.

## CORE FUNCTIONS

The PPHLN is an integral part of the Saskatchewan public health system, and serves to maintain the core functions of a provincial public health laboratory. It supports and is connected to multiple components of Saskatchewan's public health infrastructure (e.g. disease control and prevention, environmental health, epidemiology, emergency preparedness and response) and serves stakeholders in the SHA, First Nations' and Inuit Health Branch, the Northern Intertribal Health Authority, Saskatchewan Cancer Agency, Saskatchewan Water Security Agency, Saskatchewan Ministry of Agriculture, Saskatchewan Ministry of Environment, the Saskatchewan Ministry of Health, and the Public Health Agency of Canada.

### CORE FUNCTIONS OF THE PPHLN

1. Disease Prevention, Control and Public Health Surveillance
2. Reference and Specialized Testing
3. Emergency Preparedness
4. Integrated Data Management
5. Partnerships and Communication
6. Laboratory Improvement and Regulation
7. Public Health Related Research
8. Food Safety
9. Environmental Health and Protection
10. Training and Education
11. Policy Development



## STRATEGIC HIGHLIGHTS

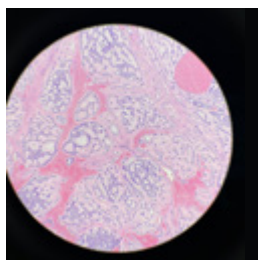
Over the last year, the PPHLN played a key role in the protection of the Province, through timely and efficient detection and monitoring of the COVID-19 pandemic in Saskatchewan. The success of the PPHLN's role and response during the pandemic can be attributed to extensive planning and emergency preparedness, close collaboration and open communication with other public health laboratories through the CPHLN, and the flexibility and nimbleness of many individuals throughout Laboratory Medicine in Saskatchewan.

## LOOKING AHEAD

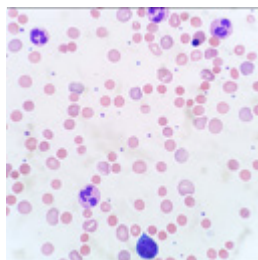
The COVID-19 pandemic is likely to continue being a significant focus of work for the PPHLN throughout 2022. Transitioning approaches to testing and surveillance towards a sustainable strategy, embedded in existing programs and structures will be important to return attention to other neglected priorities. Part of this transition includes collaborating in the design and implementation of a pan-respiratory virus surveillance framework, and contributing to the national vision for the role of genomics in Canada.

The uncertainties of the pandemic are anticipated to limit focused development of some PPHLN areas, however, progress on other priorities continues. Notably, 2022 will see a significant expansion of

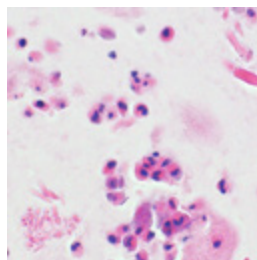
conditions tested for through the Newborn Screening Program in Saskatchewan. Updated provincial Cervical Cancer screening guidelines are planned for released in 2022, which will include changes and improvements to laboratory processes. Wastewater surveillance is emerging as an important stream of information that has the potential for multiple applications, and strategies to make use of this type of testing are being developed. Finally, it is anticipated that barriers to care during the pandemic may have exacerbated ongoing outbreaks of sexually transmitted infections such as syphilis, and blood-borne infections such as HIV and Hepatitis C Virus. Refocusing efforts to support the control of these infections will be critical.



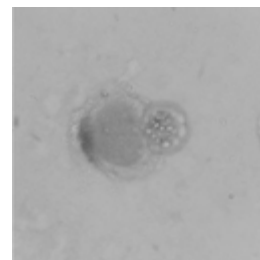
Adenoid cystic carcinoma



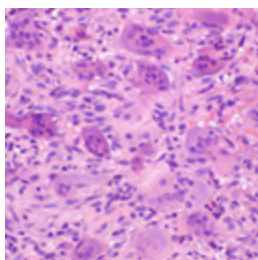
Autoimmune hemolytic anemia



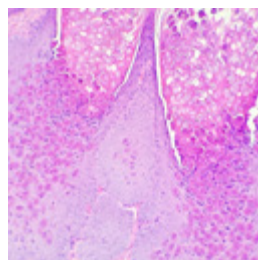
Charcot Leyden crystals



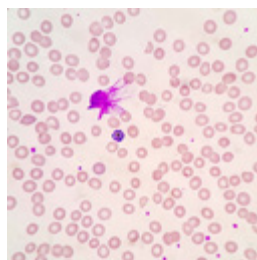
Echinococcus



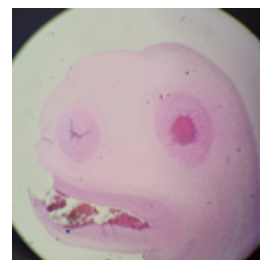
Giant cell tumour of bone



Molluscum



Schizont



Umbilical cord like a frog

# LABORATORY PRACTICE

## SASKATOON CITY HOSPITAL LABORATORY



Elena Zhrebetskaya embedding tissue in wax



Xinfeng Ma  
checking slides at  
the microscope



Torri Thompson  
scanning slides into the Cerebro  
tracking system

Block Filing area





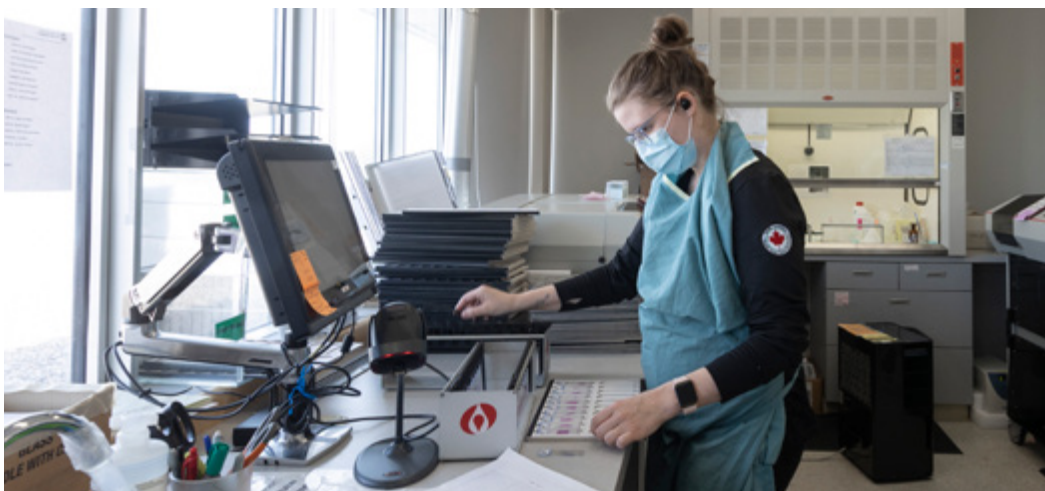


Evan Nault: Printing labels for Immunohistochemistry. Labels are then placed on a slide and a section is cut, then placed onto the slide.



Scanning a requisition at Case Distribution : Requisitions are scanned on CEREBRO tracking system to ensure a completed case.

Samantha Sather:  
Sorting slides onto  
trays according to  
case number,  
ensuring slides  
are stained and  
sections are  
acceptable.





Mohamed Hosni Salem:  
Performing gross  
dissection of a specimen,  
placing a section into a  
cassette to be sent for  
processing, embedding  
and microtomy.

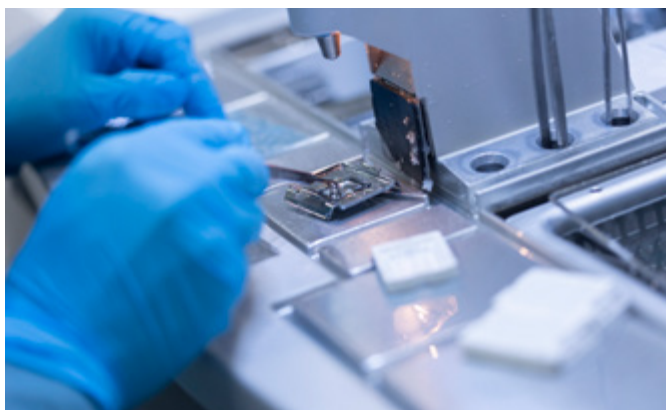


Immunohistochemistry Cryostat: Fresh  
tissue (Kidney, skin and muscle biopsies) cut  
at -23 degrees in order to prepare slides for  
Immunohistochemistry tests.





Dr. Brits and Torri Thompson: Performing gross dissection of a specimen, placing a section into a cassette to be sent for processing, embedding and microtomy.



Embedding a piece of wax infiltrated tissue into a mold, when hardened, the block will be sent for microtomy.

Xinfeng Ma: Embedding a piece of wax infiltrated tissue into a mold, when the block hardens, it will be sent for microtomy.





Evan Nault: Performing microtomy of a wax block after embedding.



Elena Zhrebetskaya: Performing microtomy on a block of tissue.

Microtome: used to cut sections at different microns, depending on where the slide will be stained.





Xinfeng Ma:  
Loading  
specimens from  
the gross room  
onto processors,  
processing involves  
dehydrating the  
tissue and then  
infiltrating it  
with wax.



Nichole Quiring:  
accessioning specimens  
into CEREBRO  
tracking system.



Nancy Korte: Preparing slides to be loaded onto Immunohistochemistry stainer, which will aid Pathologists in their diagnosis.



Checking a specimen to ensure that it matches the requisition and is in the correct fixative.

Xinfeng Ma: Reviewing slides that were cut in order to ensure the section is stained correctly and free from folds and staining artefact.



Samantha Sather: Sorting slides onto trays after they have been stained.

Kaili Wilkins: Performing gross dissection of a specimen, placing a section into a cassette to be sent for processing, embedding and microtomy.





# GYNECOLOGICAL TUMOR BIOBANK

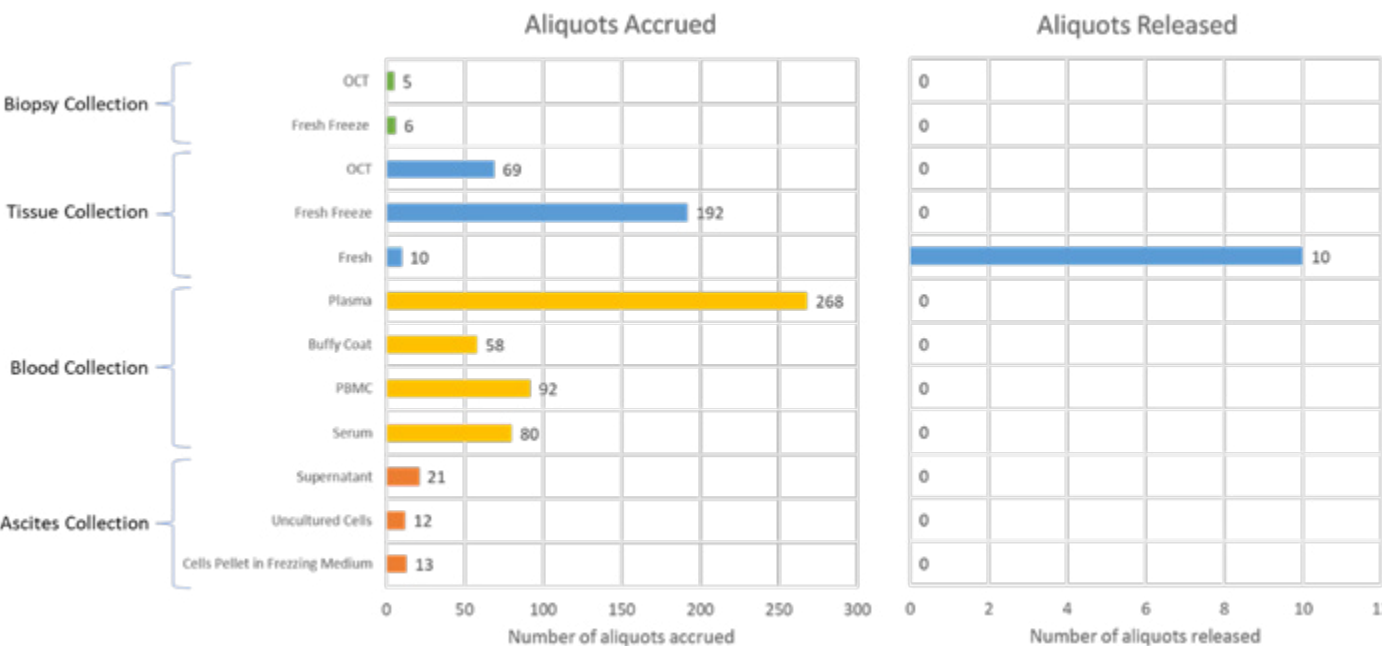
SUBMITTED BY **SYLVIE CLAIREFOND**, COORDINATOR

The Gynecological Tumor Biobank has been operational since the fall of 2021 thanks to the generous funding by Ovarian Cancer Canada and the College of Medicine at the University of Saskatchewan. The mission of the Gynecological Tumor Biobank is to provide ethically sourced, clinically validated samples to fundamental research from patients who have been diagnosed and undergo surgery for a gynecological problem in order to obtain information on new biomarkers for diagnosis and treatment of a gynecological problem. This biobank project is an exceptional collaboration between gyne-oncologists and the Department of Pathology & Laboratory Medicine.

The first patient recruited by the biobank was on October 22, 2021, and today it has 63 patients. The biobank allows for optimal preservation of tissue from biopsy or surgical intervention, blood and ascites samples which are separately aliquoted and stored at appropriate temperatures.

The biobank has already taken part in two research projects at the University of Saskatchewan: “Cryobiological evaluation of ovarian tissue for development of optimal preservation protocols” from Dr. James Benson and “Pilot study to characterize methods to process ovarian tumors to generate 3D tumor models” from Dr. Dean Chamberlain.

Here is a representation of the number of our aliquots that we have accrued and released in our biobank since its opening.





# PRECISION ONCOLOGY FOR SASKATCHEWAN

SUBMITTED BY **JOHN DECOTEAU, MD FRCP(C)**, MEDICAL DIRECTOR,  
ADVANCED DIAGNOSTICS RESEARCH LABORATORY (ADRL)

Cancer results when genetic changes occur in normal cells that causes them to grow uncontrollably. Recent improvements in the ability of researchers to identify the genetic changes that drive cancer growth has led to precision oncology, a new field of medicine that has assumed an increasingly important role in modern cancer care. Precision oncology improves cancer diagnosis and permits the delivery of new treatment approaches based on identifying specific genetic changes in the cancer cells of individual patients. In order to reap the benefits of precision oncology, it is essential to build local capacity needed for profiling and monitoring genetic changes in cancer tissue biopsy specimens and even blood samples.

The Advanced Diagnostics Research Laboratory (ADRL), located at the University of Saskatchewan, was created in 2012 to develop and perform state-of-the-art diagnostic and monitoring tests for Saskatchewan cancer patients using leading edge technologies. Recent innovations in genetic analysis instruments and methods now permit very detailed genetic profiles of cancer cells to be acquired quickly and at relatively low cost. Having access to this genetic information has made it possible for molecular pathologists to create new tests that can significantly improve their ability to diagnose and classify cancers. In addition, these new tests can identify which cancer patients are most likely to benefit from a new class of drugs called targeted therapies and detect residual or relapsed cancer during or after treatment.

While recent technology developments have simplified the analysis of single genes, much of the field of precision oncology involves rapidly surveying cancers for genetic changes in dozens to hundreds of genes at a time using complex protocols such as next generation sequencing. The value of high complexity diagnostics for cancer care is espe-

cially evident in two rapidly growing areas of precision oncology: companion diagnostics and high sensitivity monitoring.

Companion diagnostics involves the timely deployment of cancer tests capable of identifying which patients are most likely to benefit from an expanding list of targeted therapies directed at specific genetic abnormalities in their cancer cells. The first targeted therapy to be released for clinical practice was Gleevec, a drug that effectively shuts down the activity of an abnormal gene called BCR-ABL in leukemia cells. This drug revolutionized the treatment of chronic myeloid leukemia - it is so effective that almost all patients treated with Gleevec or related drugs now enjoy normal life expectancies.

Since Gleevec was released in 2001, there has been an explosion of new drugs targeting an array of genetic changes that drive the growth of many different types of cancer. A recent example is Piqray, a drug that is active against some forms of breast cancer that have mutations in the PIK3CA gene. Whenever a new drug is released, a new companion diagnostic test is needed to determine if a patient's cancer has the genetic abnormality being targeted by the drug. This requirement challenges cancer diagnostic labs like the ADRL to keep pace with the latest drug development information and test creation methods to avoid delays in launching essential new tests.

Advances in companion diagnostics have spurred the development of another domain of precision oncology called high sensitivity monitoring that allows molecular pathologists to detect imminent relapse in cancer patients days to weeks earlier than traditional diagnostic techniques. Identifying early cancer recurrence provides oncologists with opportunities to modify treatment plans before unmanageable disease progression occurs.

High sensitivity monitoring technology can be adapted to detect key genetic changes in cancers using minimally invasive biopsy procedures, like fine needle aspiration. These minimally invasive techniques allow pathologists to diagnose cancers and provide oncologists with vital information needed to formulate effective treatment plans from minute amounts of cancer tissue, potentially sparing patients the discomfort and risk of major surgery needed to obtain large tissue biopsies.

Perhaps most exciting is the latest discovery that high sensitivity monitoring approaches can also be used to obtain genetic profiles of cancer cells from blood samples. It has become apparent that many cancers release their DNA into the circulation. The cancer DNA can be isolated from patient blood samples and profiled to provide pathologists and

oncologists with essential diagnostic, monitoring, and treatment information that until recently required obtaining cancer tissue biopsies for analysis. This emerging area of precision oncology refers to blood-based cancer profiling as 'liquid biopsy', but it does not really involve a biopsy at all, just a routine blood sample.

Since its inception in 2012, the ADRL has developed and validated dozens of high complexity cancer tests to ensure that precision oncology solutions are available to oncologists managing the care of Saskatchewan cancer patients. The ADRL also continues to leverage its expertise in companion diagnostics and high sensitivity monitoring to introduce minimally invasive and liquid biopsy diagnostic techniques that are rapidly becoming essential elements of optimal cancer care.

## ANATOMICAL PATHOLOGY – SASKATOON

SUBMITTED BY **DR. MARILYN KINLOCH**, DIVISION HEAD, SASKATOON

This last year showed incredible resilience for the Anatomic Pathology Laboratory in Saskatoon with a number of changes that were embraced and adapted. With our staff largely avoiding COVID during the first three waves, the pandemic finally caught up to our staff of 24 with multiple small waves in our own department. The amount of co-operation and dedication meant that clinicians and patients did not notice any difference to their care.

We wished Dr. Janine Benoit many happy returns for her retirement last July but were able to entice her back to come and visit us for a long-term locum where we are blessed with her compassionate leadership and patient knowledge. We hope we can provide her with a wonderful work environment that she chooses to spend many more years with us between her trips to the lake and her painting classes.

We welcomed Dr. Glenda Wright back to the team from her dermatopathology fellowship in Halifax,

Nova Scotia where she joined Dr. Allison Osmond and Dr. Steve Angel, along with new recruit, Dr. Katelynn Campbell. This year showed tremendous growth and leadership within the new dermatopathology team. Their coalition has transformed the dermatopathology expertise, pushing boundaries with melanoma cancer care including decreasing the time to BRAF molecular results by 10 business days. Dr. Campbell has taken over the leadership role of this team and we are excited where their team goes in the next year.

Other new pathologists that joined our team in the last year is Dr. Ryan Campbell (yes, they are married) and Dr. Hisham Assem. Dr. Campbell has joined the cytopathology (both med and gyne), head and neck, and lung service. He has led the transition of our FNA service to formalin fixation to better use IHC with our cytology service. Dr. Assem joined in February of 2022 when it wasn't clear if spring would come and we would be in the polar vortex forever. Despite the first few difficult weeks of ques-



Anatomical Pathologists - Saskatoon

tioning his decision to come he has joined the GI and gyne team and enjoying the warmer weather.

Our provincial cancer reference laboratory continues to expand its testing for companion diagnostics and the read-out amongst our pathologists. Dr. Banerjee, Dr. Brits, Dr. Angel, and Dr. Poulin have all stepped-up to do additional training for PD-L1, ALK-1 and ROS-1 under our very own world expert, Dr. Torlakovic. All of our pathologists have been participating in cancer care in our province and our pathology department has supported more than 30 clinical trials this year.

Our year has seen Dr. Baniak transition into the IHC director and has brought on a new of diagnostic IHC to our lab including BAP-1, Glypican 3, SATB-2, MUC-6, INSM-1, arginase1, and NKX.2.

We thank all of our pathologists for their dedication to patient-care over the last year and looking ahead to the future.



Drs. Goran Torlakovic & Marilyn Kinloch

# CLINICAL BIOCHEMISTRY STRIVES TO EXCELLENCE: A TEAM EFFORT!

SUBMITTED BY

**DR. FANG WU**, DIVISION HEAD

**BELINDA DANIELS**, MANAGER, SASKATOON CLINICAL BIOCHEMISTRY DIVISION

## ABOUT SASKATOON CLINICAL BIOCHEMISTRY SERVICES

Saskatoon Clinical Biochemistry serves both in-patients from the four hospitals in Saskatoon, including Royal University hospital, Jim Pattison Children's Hospital, St. Paul's Hospital and Saskatoon City Hospital, and outpatients in Saskatoon Integrated Areas.

Saskatoon Biochemistry labs provide a wide range of lab testing with more than 130 in-house chemistry tests and over 10 million lab test results per year, including routine chemistry testing (e.g., electrolytes, liver and renal function testing), urinalysis, endocrinology (e.g. hormone testing), toxicology (e.g. volatile alcohols & ethylene glycol, acetaminophen), therapeutic drug monitoring (e.g. immunosuppressants), and special chemistry testing (e.g., tumor makers, protein electrophoresis for monoclonal gammopathies diagnosis). In addition, the Saskatoon Biochemistry division is largely involved in pre-analytics, including phlebotomy services & referral testing services and point-of-care (POCT) services.

## SASKATOON BIOCHEMISTRY WORKFORCE

Saskatoon Clinical Biochemistry division is striving for excellence by building a better workforce. We believe that a skilled and collegial workforce will enhance the quality of lab service and thus the sustainability of our laboratory system.

## SASKATOON BIOCHEMISTRY LEADERSHIP TEAM

### Clinical Staff Members

- Dr. Fang Wu (Division Head, Clinical Biochemist)
- Dr. Jay Kalra (Medical Biochemist)
- Dr. Andrew Lyon (Clinical Biochemist)
- Dr. Barry Kyle (Clinical Biochemist, Resigned in June 2022)
- Dr. Martha Lyon (Clinical Biochemist, Retired in March 2022)

Note: Dr. Andrew Lyon stepped down from Division head of Saskatoon Clinical Biochemistry in Sept 2021; Dr. Fang Wu was appointed as the Division Head of Saskatoon Clinical Biochemistry in Oct 2021. On behalf of the Division of Clinical Biochemistry, I would like to thank Dr. Andrew Lyon for his leadership over the past many years.

### Lab Operational Leadership Team

- Ms. Belinda Daniels (Interim Lab Manager)
- Ms. Megan William (Lab Manager, currently on maternal leave)
- Ms. Karen Nogier & Ms. Connie Neuberger (RUH Chemistry Supervisors)
- Rob Saunders (SPH& SCH Supervisor)

### Medical laboratory technologist workforce:

- Approximately 70 medical laboratory technologists (MLT I, II & III)
- Approximately 50 Laboratory Assistants (MLA) that support chemistry

## KEY ACHIEVEMENTS & CONTRIBUTIONS IN 2021-2022

### SASKATOON BIOCHEMISTRY WORKFORCE

#### Equipment Replacement

- Nine ALB 90 Flex plus blood gases instruments were validated and went live at the RUH, SPH & SCH laboratories.
- Two new osmometers were validated and went live at RUH & SPH biochemistry labs.

#### Biochemistry Testing Changes

- TSH receptor antibodies testing was implemented in-house to aid in the Grave Disease diagnosis and management.
- A new beta-ketone assay was implemented in Saskatoon
- Urine total Protein/Creatinine ratio & Urine Albumin/Creatinine ratio reporting were updated

#### Other Major Quality Improvement Initiatives& Projects completed & in progress

- Implementation of non-fasting lipid testing in North
- Supporting the provincial kidney health pilot project
- Working with the clinical team to update the sex-specific for cardiac troponin T and lab interpretative comments.
- Updating Saskatoon thyroid function testing algorithm to reduce the unnecessary testing
- Streamlined the method validation/evaluation process and policy across different sites in Saskatoon and implementation of the EP evaluator system for data review and summary report for the new test & instrument validation
- Initiating the reagent program to improve the operational efficiency

#### Lab Test Utilization Initiatives

- Choosing Wisely with Prostate-Specific Antigen (PSA) Testing in Saskatchewan
- Choosing Wisely: Thyroid Function Testing

#### Upcoming projects include

- RFP process for gas chromatography instruments for volatile alcohols and ethylene glycol testing.
- Validation and implementation of two new urinalysis instruments.

### PERSONNEL

Saskatoon Clinical Biochemistry division is striving for excellence by building a better workforce. We believe that a skilled and collegial workforce will enhance the quality of lab service and thus the sustainability of our laboratory system.

### PROCESS

Saskatoon biochemistry actively participated in and completed an external review of Clinical Biochemistry services in Saskatchewan.



## ACADEMIC ACTIVITIES (TEACHING, RESEARCH & OTHER SCHOLAR ACTIVITIES)

Besides the clinical services, the Saskatoon biochemistry division was heavily involved in teaching within and beyond the Department of Pathology and Lab Medicine. We take our teaching responsibility particularly seriously and consider teaching as our privilege and opportunity. We actively participate in General Pathology Resident teaching through Academic Half Day Didactic Lectures and supervising Resident Biochemistry Rotations and various biochemistry module teaching. In addition, the biochemistry division hosted resident biochemistry "Boot Camp" review sessions to prepare our residents for their challenge of the Royal College Exams. Division members have also participated in undergraduate medical student teaching, biomedical sciences teaching and graduate student teaching advisory committees.

Despite the busy clinical services and teaching duties, our division members have engaged in numerous research collaborations within and beyond the University of Saskatchewan. For details, please refer to our division member's scholarly activities in the annual report.

## HIGHLIGHTS OF DIVISION MEMBER'S ACHIEVEMENT & AWARDS

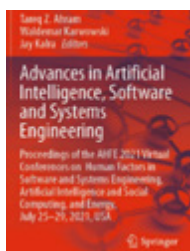
### DR. JAY KALRA

- Edited Books by Dr. Jay Kalra:



Kalra, J., Lightner, N. J., Redha Taiar, (Ed.) (2021).

**Advances in Human Factors and Ergonomics in Healthcare and Medical Devices.**  
Springer Nature Switzerland AG 2021. USA.



Ahram, T., Waldemar, K., Kalra, J., (Ed.) (2021).

**Advances in Artificial Intelligence, Software and Systems Engineering.**  
Springer Nature Switzerland AG 2021. USA.

- Life Fellow, Royal Society of Medicine, UK. SEP 2021.
- Member, Practitioner Staff Appeals Tribunal. Ministry of Health, Government of Saskatchewan
- Jewels of India: Leading 75 Indo-Canadian Personalities-an important and unique history of the successes achieved by a gifted group (among them Dr. Jay Kalra) of Indian scientists and physicians working in Canada., Presented by the Indian High Commissioner, Mr. Ajay Bisaria, to Canada on the 75th Independence Day of India. This book documents the struggles and success stories on Indian Professionals in Canada, celebrates righteousness and bilateral relations, and INSPIRES! Maneesh Media. APR 2022.



Mr. Ajay Bisaria (Indian High Commissioner to Canada) & Dr. Jay Kalra



Dr. Jay Kalra & Dr. Fergall Magee

### DRS. ANDREW LYON & MARTHA LYON

Dr. Andrew Lyon stepped down as Division Head of Saskatoon Clinical Biochemistry and Provincial clinical lead of clinical biochemistry in SEP 2021. We are immensely grateful for all the contributions and leadership that Dr. Andrew Lyon has made in the past many years.

Dr. Martha Lyon retired in MAR 2022. We would like to thank Dr. Martha Lyon for her incredible contributions to our Division. Her hard work, commitment, and dedication are worthy of admiration.

#### Research highlights of Drs. Andrew Lyon and Martha Lyon:

Drs. Andrew Lyon and Martha Lyon have used Monte Carlo simulations to study the influence of imprecision and bias on diagnostic error or patient misclassification. This simulation research predicts the risk of patient misclassification when new devices, such as point of care devices that generate test results with greater imprecision and susceptibility to bias or test interference, are utilized. Their studies have included simulations with glucose, cardiac troponin and INR. For details, please refer to their scholarly activities in the annual report.

#### MESSAGE FROM DR. FANG WU (DIVISION HEAD)

It is a great honor to serve as Division Head of Clinical Biochemistry in Saskatoon. I look forward to working with all division members to improve all areas of biochemistry, including clinical services, education and research. We will strive to build a skilled and collegial team and provide outstanding clinical biochemistry lab testing services to our patients through various quality improvement initiatives, including but not limited to management of lab test utilization, an enhanced quality assurance program, the introduction of artificial intelligence in the laboratory setting and updates of thyroid function reflex testing and other lab testing algorithms to improve the services in a cost-effective manner.

I would like to take this opportunity to express my acknowledgements to:

- Dr. Fergall Magee (Provincial Head, Pathology & Laboratory Medicine (CoM) & Saskatoon Area Department Lead (SHA) & Lenore Howey (Executive Director, Laboratory Medicine SHA) & Rhonda Hartz & Dianne Haugrud (Saskatoon Area Administrative Directors SHA) for their on-going strong support to the biochemistry division.
- All biochemists for their hard work, commitment & dedication
- All the medical laboratory technologists & assistants for their excellent work

## SASKATOON BIOCHEMISTRY DIVISION LAB STAFF PICTURES



RUH chemistry & pre-analytic staff  
(day shift on May 25, 2022)



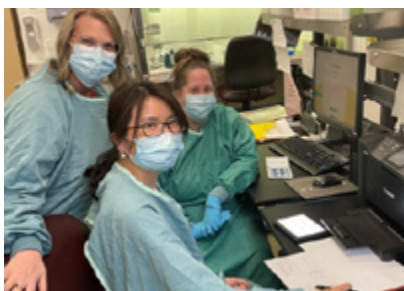
SPH chemistry & pre-analytic staff  
(day shift on May 26, 2022)



SCH chemistry staff  
(day shift on May 24, 2022)



SPH referral (May 26, 2022)



Protein Electrophoresis Bench@ RUH:  
Connie Neuberger, Kristen Weber, & Dr. Fang Wu



Belinda Daniels (Chemistry Manager)  
& Dr. Fang Wu (Division Head) @ RUH

## BIOCHEMISTS



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**DR. FANG WU**  
(Division Head)



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**DR. JAY KALRA**  
(Medical Biochemist)



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**DR. ANDREW LYON**  
(Clinical Biochemist)

## SO YOU THOUGHT YOU WERE HAVING A BAD DAY...

Cytogenetics RUH Laboratory – FRI, 29 OCT – a burst water line fitting in the Laboratory, fire alarms ringing for hours. Thanks to FES and Environmental Services staff who were on site immediately!





# LABORATORY MEDICINE: INTEGRATED NORTH



It has been an exciting, challenging and overall rewarding year for Laboratory Medicine in the Integrated North as we continue the transition into a single health authority and integrate into the Laboratory Medicine provincial program.

This year, we continued to focus on key priorities with COVID remaining at the forefront. We were faced with the challenging fifth wave in which we experienced the most extreme staffing shortages seen during the pandemic. Through these staffing challenges, we continued to move forward numerous projects and initiatives to improve patient care across the Integrated North. The successes in the North were realized through the continued support of the entire provincial program team and could not have been completed without the ability to collaborate and consult with numerous clinical staff, laboratory managers, supervisors, LIS, Lab Quality Regulatory, and the front line staff across the province. The value of becoming one provincial program is continual and Lab Medicine in the North is seeing the benefit of the SHA's transition to one health authority.

The most important success has been the full recruitment of a dedicated and determined management team across the North. Our team continues to build relationships within the Lab Medicine program, with stakeholders across the SHA and with our valued First Nation partners.

The North Laboratory managers, along with Dr. Bruce Murray as clinical dyad for the INH are proud to highlight the some of the successes from the year. We look forward to another impactful year as we get back on track and are able to refocus to meet our vision of providing the right test, to the right patient at the right time!



LaRonge CLXT staff

### Successful Accreditation LaRonge Laboratory

The LaRonge Lab received full accreditation from CPSS April in 2022!

*The staff worked very hard to see accreditation through with only one third of staffing levels preparing for and during the on site assessment.*

Shellbrook CLXT staff

### LIS Depots Implemented

Spiritwood, Big River, Shellbrook

*LIS depots provide the initial phase of full implementation and a starting point to improving efficiencies, reducing risk of error and improving the workflow for the larger receiving laboratory.*



LaRonge CLXT staff

### Successful Accreditation LaRonge Laboratory

The LaRonge Lab received full accreditation from CPSS April in 2022!

*The staff worked very hard to see accreditation through with only one third of staffing levels preparing for and during the on site assessment.*

Wakaw Lab staff

### New and Improved Instrumentation

**Routine Chemistry**  
Meadow Lake and Rosthern

**Hematology**  
Wakaw and Lloyd

**BD Max (high volume COVID testing)**  
North Battleford

**Microbiology ID and Susceptibility Platform**  
Prince Albert



Meadow Lake staff



Lloydminster Laboratory staff



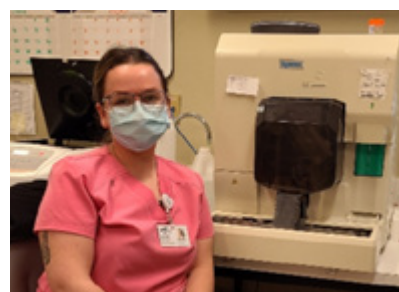
Students in Prince Albert, Tisdale and North Battleford

### Sask Polytechnic Partnership

Numerous sites welcomed additional students for clinical placements.

*CLXT seats have expanded to meet the workforce demands and include additional Northern sites.*

*MLT placements in North Battleford and Prince Albert.*



Pelican Narrows April 2022

### Implementation of TB testing on the first GeneXpert in the Remote North

#### *An idea to reality...*

*In collaboration with the National Microbiology Laboratory, PHAC, SHA, Peter Ballantyne Cree Nation and Northern Inter-Tribal Health Authority we are implementing TB testing in the first remote First Nation Community in Saskatchewan. Providing improved access to testing and better patient care as a result!*



## NORTHWEST HEALTH FACILITY: MEADOW LAKE HOSPITAL



Megan Dallyn: Operation of the Vitros 350 Chemistry Analyzer



Meadow Lake Hospital





Mandy Jellison: Operation of Vitros 5600  
Chemistry/Immunoassay Analyzer



Vitros 5600 Chemistry/Immunoassay Analyzer –  
Capital Purchase in 2021



Mandy Jellison – Delivering samples within  
the laboratory




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Chanese Beierle (front) – Labelling stool samples for referral to another laboratory  
Hilda Valero (back) – labelling tote for sending out samples




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Hilda Valero – Preparing samples for shipment




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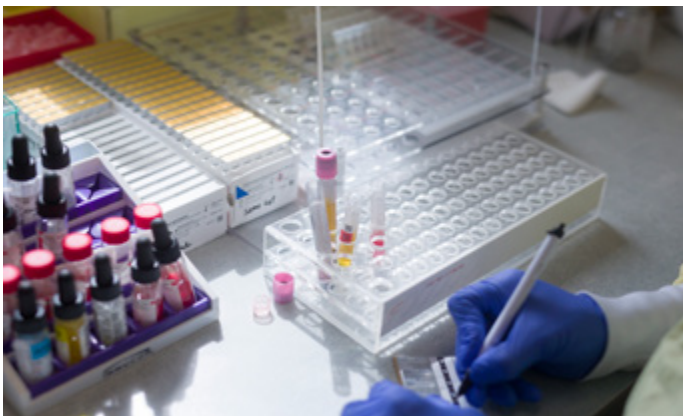
Megan Dallyn – Performing Maintenance on the Vitros 5600 Chemistry/Immunoassay Analyzer



Megan Dallyn – Pipetting



Pipetting sample into test Cartridge for GeneXpert testing



Labelling Gel Card for Transfusion Medicine testing



Pipetting Transfusion Medicine reagent red cells





Chanese Beierle – loading centrifuge



Chanese Beierle (front) – Operation of the Vitros 350 Chemistry Analyzer



Performing WBC Differential in Hematology



Mandy Jellison



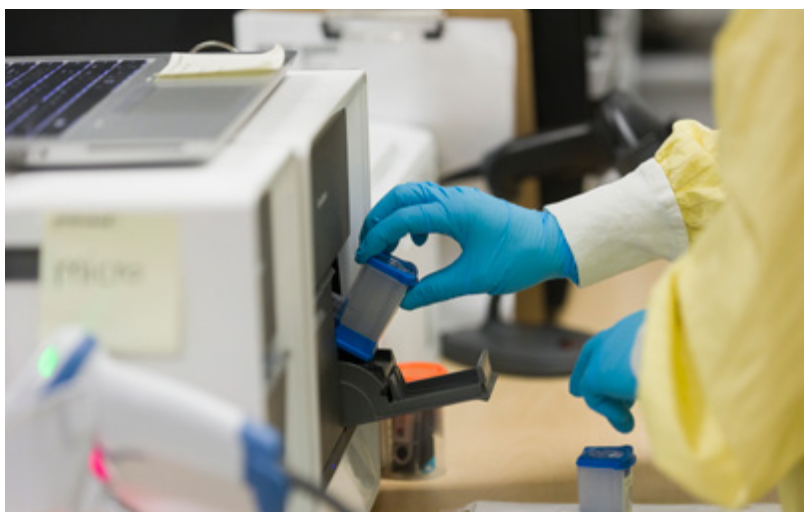
# NORTH BATTLEFORD LABORATORY



At the Biological Safety Cabinet (BSC) preparing COVID-19 sample for testing on the GeneXpert.



Battlefords Union Hospital



Loading COVID-19 sample for testing  
on the GeneXpert



Automated Urinalysis Analyzer



Brenda Donald, MLT in the Chemistry Department




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Coagulation Analyzer, purchased with funding provided by the Battlefords Union Hospital Foundation




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Terry Ring, MLT cutting pathology specimens




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Terry Ring, MLT making Pathology specimen slides

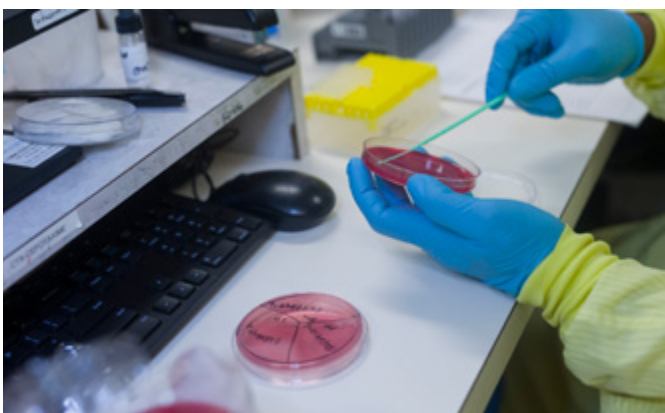




Courtney Allchurch, MLA (l),  
Tiffany Steeves, MLT (c), and  
Katrina Hurley, MLT II (r) in  
Microbiology



Katrina Hurley, MLT II  
scanning COVID-19 tests for  
processing on GeneXpert



Streaking plates in Microbiology






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Maricelle Plastina, MLA reviewing urine samples received in Urinalysis department




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Ismaila Amusat, MLT loading coagulation samples for testing




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Aliquoting QC material

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Loading COVID-19 sample for testing  
on the GeneXpert

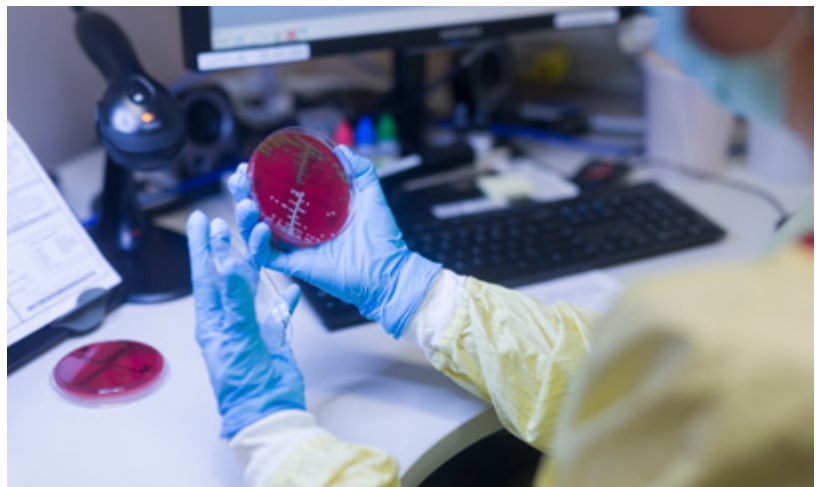


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Tiffany Steeves, MLT reviewing incubated  
plates in Microbiology

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Reviewing incubated plates in Microbiology






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Maricelle Plastina, MLA (l), Ismaila Amusat, MLT (c) and Korey Toy, MLT (r) in Coagulation/Chemistry area




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Maricelle Plastina, MLA heading out to do a blood collection




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Combined Lab & X-ray Technologist (CLXT student) unpacking incoming samples in Specimen Management



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Urinalysis Analyzer purchased with funding support from the Battlefords Union Hospital Foundation and the Battlefords Area Tribal Council (BATC) Community Development Corporation



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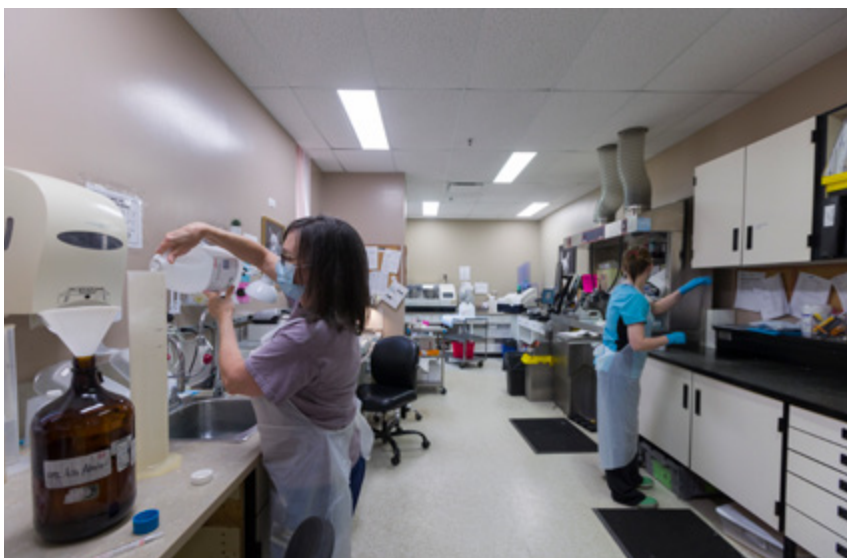
Ariana Arnold, MLT processing urine samples in Urinalysis dept

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Processing urine samples in Urinalysis Department



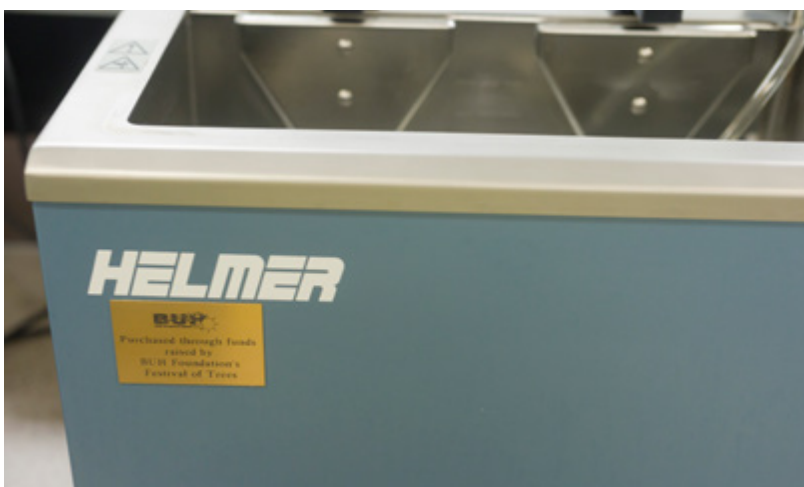




Terry Ring, MLT (l) and Laura Volk, MLT (r)  
in the Histology room



Ismaila Amusat, MLT streaking  
plates in Microbiology



Plasma Thawer purchased with support from the  
Battlefords Union Hospital Foundation

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Tiffany Steeves, MLT (l) and Courtney Allchurch, MLA (r) preparing phlebotomy cart for collections



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Katrina Hurley, MLT II scanning plates in Microbiology

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Reviewing analyzer results in Transfusion Medicine





Maricelle Plastina, MLA (l) and Korey Toy, MLT (r) in Hematology



Korey Toy, MLT reviewing slides in Hematology



Jayden Marciniuk, MLA reviewing a requisition



Tiffany Steeves, MLT loading Coagulation samples

# RESEARCH

## PUBLICATIONS, GRANTS & AWARDS

### OSAMA AL-AGHA, MD DABP

#### PUBLICATIONS

Balsam Arwini, MD, BSc; Ingrid S. Tam, MD, MSc; **Osama Al-Agha, MD, DABP**; Joohyun Shaina Lee, MD, MPH. *Clinical Conundrum: A Case of Cervical Giant Condyloma Acuminatum*. J Obstet Gynaecol Can 2022;44(3): 294-297 <https://doi.org/10.1016/j.jogc.2021.10.011>

### ROLAND AUER, PHD MD FRCPC

#### PUBLICATIONS

Fehr, Cassie M. & **Auer, Roland N**. *Simultaneous Presentation of Glioblastoma Multiforme in Divorced Spouses*. Case Reports in Oncology March 14, 2022; 15:231-237 DOI: 10.1159/000521201

**Auer, Roland N**. *In Memoriam: Stirling Carpenter, MD*. J Neuropathol Exp Neurol Vol. 81, No. 3, March 2022, pp. 236-238. DOI: 10.1093/jnen/nlac005

Ali H. Rajput, Aisha A. Khayyam, **Roland N. Auer**, Christopher A. Robinson, Alex Rajput *Evolving resting head tremor in parkinsonism: Clinicopathological study of a case*. [www.elsevier.com/locate/parkreldis](http://www.elsevier.com/locate/parkreldis) Elsevier Parkinsonism and Related Disorders 86 (2021) 1-4.

### NICHOLAS BANIAK, MD FRCPC

#### PUBLICATIONS

**Acosta A et al**. *Clinicopathologic Spectrum of Secondary Solid Tumors of the Prostate of Non-Urothelial Origin: Multi-Institutional Evaluation of 85 Cases*. Am J Surg Path. In Press.

Wang H, **Baniak N**, Wang C. *Mullerian glandular inclusions in axillary lymph nodes of patients with invasive breast carcinoma: A case report and literature review*. CJP. In Press.

Dhillon N, **Baniak N**, Nosib S. *Hypertensive crisis precatheter ablation for resistant atrial fibrillation: a case of undiagnosed bilateral pheochromocytomas*. BMJ Case. 2021 Oct 29;14(10):e244484.

**Baniak N**, Barletta J, Hirsch M. Key. *Renal Neoplasms with a Female Predominance*. Adv Anat Pathol. 2021 Jul 1;28(4):228-250.

**Baniak N**, Tsai H, Hirsch M. *The Differential Diagnosis of Medullary Based Renal Masses*. Arch Pathol Lab Med. 2021. 2021 Sep 1;145(9):1148-1170.



## POSTERS

Vats K, Tam I, **Baniak N**. *Grading Intraductal Carcinoma in the Presence of Concurrent Prostatic Adenocarcinoma and its Impact on Grade Group Assignment*. United States & Canadian Academy of Pathology's 111th Annual Meeting, March 19th-24th, 2022, in Los Angeles, CA

Kinloch M, **Baniak N**, Campbell K, Torlakovic E. *Her-2 Expression in p53 abn Endometrial Cancers compared to Serous Carcinomas*. United States & Canadian Academy of Pathology's 111th Annual Meeting, March 19th-24th, 2022, in Los Angeles, CA

Wyvekens N, Sholl L, Al-Obaidy K, Collins K, Idrees M, Gordetsky J, Wobker S, Matoso A, Maclean F, Fletcher C, Hornick J, **Baniak N**, Kao CS, Hirsch M, Dickson B, Acosta A. *Molecular Correlates of Male Germ Cell Tumors with Overgrowth of Components Resembling "Somatic" Malignancies: Multi-Platform Analysis of a Collaborative Series*. United States & Canadian Academy of Pathology's 111th Annual Meeting, March 19th-24th, 2022, in Los Angeles, CA

## ONLINE TOPICS

**Baniak N**. DOG1. *PathologyOutlines.com website*.  
<https://www.pathologyoutlines.com/topic/stainsdog1.html>. Sept 2021

**Baniak N**. Glypican 3. *PathologyOutlines.com website*.  
<https://www.pathologyoutlines.com/topic/stainsglypican3.html>. March 2022

**Baniak N**. Calretinin. *PathologyOutlines.com website*.  
<https://www.pathologyoutlines.com/topic/stainscalretinin.html>. June 2022

## KATELYNN CAMPBELL, MD

### PUBLICATIONS

**Campbell KK**, Bridge JA, DiMaio D, Wilson J, Shalin SC, Gardner JM. *Dermatofibrosarcoma protuberans with platelet-derived growth factor-D rearrangement; two cases with morphologically distinct presentations*. Journal of Cutaneous Pathology. 2022 Mar;49(3):274-277. doi: 10.1111/cup.14148. Epub 2021 Oct 19. PMID: 34628665.

Nedosekin D, Wilson KD, **Campbell K**, Shalin S, Wong HK. *Immunologic overlap in a case of linear IgG/IgA bullous dermatosis responsive to rituximab*. JAAD Case Reports, 2021; Volume 9, pp 57-60. <https://doi.org/10.1016/j.jdc.2020.12.029>

Numbere N, Pukhalskaya T, Bowman B, **Campbell K**, Smoller B. *Progressive Nodular Histiocytosis: Report of a Case and Review of the Literature*. Case Rep Pathol. 2021;2021:5531820. Published 2021 Sep 17. doi:10.1155/2021/5531820

Thapa P, Mohr K, **Campbell KK**, Saccente M. *Sweet Syndrome precipitated by Mycobacterium abscessus in a Laotian Man with Autoantibodies to Interferon Gamma*. J Investig Med High Impact Case Rep. 2021 Jan-Dec;9:2324709621990771. doi: 10.1177/2324709621990771. PMID: 33533284; PMCID: PMC7970678.

## PRESENTATIONS:

***The Spectrum of Cutaneous Spitzoid Lesions: Avoiding Erroneous Benign and Malignant Misdiagnoses.***  
Co-presenter with Osmond A, Naert K, Wright G, and DeCoste R for the Canadian Association of Pathologists (Association Canadienne des Pathologistes) (CAP-ACP) Virtual Learning Series, 2022.

***Clinical and Pathologic Correlation Recommended: Vulvar Disorders: Grand Rounds lecture for the International Society for the Study of Vulvar Disorders (ISSVD).*** Virtual presentation with Dr. Mary Luann Racher, 2022.

## **HARRY DENEER, PHD MSC BSC**

### PUBLICATIONS

LD Blondeau, M Deutscher, JE Rubin, **H Deneer**, R Kanthan, S Sanche, JM Blondeau. ***Urinary tract infection in a human male patient with Staphylococcus pseudintermedius transmission from the family dog.*** Journal of Chemotherapy, 2021. Vol 34, No 2, pp 133-136. DOI:10.1080/1120009X.2021.1995251

### SUPERVISION

Blondeau, Leah. PhD Candidate. "Use of novel technologies to characterize bacterial pathogens transmitted from animals to humans". Supervised by **Dr. H. Deneer** from 2018 - present.

## **JESSICA FORBES, PHD**

### PUBLICATIONS

Doshi S, **Forbes JD**, Mubareka S, Andany N. (2022). ***Disseminated hypervirulent Klebsiella pneumoniae causing endophthalmitis and lung and liver abscess.*** Canadian Medical Association Journal. May 9; 194:E645-8. doi:10.1503/cmaj.211413.

Mirza A, Zhu F, Knox NC, **Forbes JD**, Van Domselaar G, Bernstein CN, Graham M, Marrie RA, Hart J, Yeh A, Arnold D, Bar-Or A, O'Mahoney J, Zhao Y, Hsiao W, Banwell B, Waubant E, Tremlett H (2022). ***The metabolic potential of the paediatric-onset multiple sclerosis gut microbiome.*** Multiple Sclerosis and Related Disorders. 63: 103829.

Liang G, Zhu F, Mirza A, Bar-Or A, Bernstein CN, Bonner C, **Forbes JD**, Graham M, Hart J, Knox NC, Marrie RA, O'Mahoney J, Van Domselaar G, Yeh A, Zhao Y, Banwell B, Waubant E, Tremlett H (2022). ***Stability of the gut microbiota in persons with pediatric-onset multiple sclerosis and related demyelinating disease.*** Multiple Sclerosis Journal (in press; doi: 10.1177/13524585221079533)

Peterson CL, Alexander D, Chen J, Adam H, Walker M, Ali J, **Forbes JD**, Taboada E, Graham M, Knox NC, Reimer AR (2022). ***Clinical metagenomics is increasingly accurate and affordable to detect enteric bacterial pathogens in stool.*** Microorganisms. 10(2):441. doi: 10.3390/microorganisms10020441.

Abdulnoor M, Eshaghi A, Perusini S, Corbeil A, Cronin K, Fittipaldi N, [Forbes JD](#), Guthrie J, Kus JV, Majury A, Mazzulli T, Melano R, Sullivan A, Tran V, Patel S, Allen VG, Gubbay JB (2022). **Real-time RTPCR allelic discrimination assay for detection of the N501Y mutation in the spike protein of SARSCoV- 2 associated with B.1.1.7 variant of concern.** Microbiology spectrum. 10(1):e0068121. doi: 10.1128/spectrum.00681-21.

Pratt M, [Forbes JD](#), Knox NC, Van Domselaar G, Bernstein CN (2022). **Colorectal cancer screening in IBD – can characterization of GI microbiome signatures enhance neoplasia detection?** Gastroenterology. 162(5):1409-1423.e1. doi: 10.1053/j.gastro.2021.12.287.

Mirza A, Zhu F, Knox NC, [Forbes JD](#), Van Domselaar G, Bernstein CN, Graham M, Marrie RA, Hart J, Yeh A, Arnold D, Bar-Or A, O'Mahoney J, Zhao Y, Hsiao W, Banwell B, Waubant E, Tremlett H (2021). **Metagenomics analysis of the pediatric-onset multiple sclerosis gut microbiome.** Neurology. 98(10) doi: 10.1212/WNL.00000000000013245.

Tremlett H, Zhu F, Arnold D, Bar-Or A, Bernstein CN, [Forbes JD](#), Graham M, Knox NC, Marrie RA, Mirza A, O'Mahoney J, Van Domselaar G, Yeh A, Zhao Y, Banwell B, Waubant E and the US Network of Pediatric MS Centers and the Canadian Paediatric Demyelinating Disease Network (2021). **The gut microbiota in paediatric-onset multiple sclerosis, demyelinating syndromes.** Annals of Clinical and Translational Neurology. 8(12):2252-2269. doi: 10.1002.acn3.51476.

Gubbay JB, Rilkoff H, Kristjanson HL, [Forbes JD](#), Murti M, Eshaghi A, Broukhanski G, Corbeil A, Fittipaldi N, Hopkins J, Kristjanson E, Kus JV, Macdonald L, Majury A, Mallo GV, Mazzulli T, Melano R, Olsha R, Tran V, Allen VG, Patel SN (2021). **Impact of low pre-test probability for COVID-19 on positive predictive value of high cycle threshold SARS-CoV-2 real-time PCR test results.** Infection Control & Hospital Epidemiology. Aug 9; 1-5. doi: 10.1017/ice.2021.369.

Pratt M, [Forbes JD](#), Knox NC, Bernstein CN, Van Domselaar G (2021). **Microbiome-mediated immune signaling in inflammatory bowel disease and colorectal cancer: support from meta-omics data.** Frontiers in Cell and Developmental Biology 9:716604. doi: 10.3389/fcell.2021.716604

Charlton CL, Kanji JN, Tran V, Kus JV, Gubbay J, Osiowy C, Robinson JL, Sekirov I, Drebot M, Hatchette T, Stein DR, El-Gabalawy N, Lang A, Jiao L, Levett PN, Wood H, Therrien C, Lindsay RL, Morshed M, [Forbes JD](#), Dibbernardo A on behalf of the Canadian Public Health Laboratory Network (CPHLN) Serology Task Force (2021). **Practical guidance for clinical laboratories for SARS-CoV-2 serology testing.** Canada Communicable Disease Report. 47(4):171-83. doi: 10.14745/ccdr.v47i04a01

[Forbes JD](#), Kus JV, Patel SN (2021). **Antimicrobial susceptibility profiles of invasive isolates of anaerobic bacteria from a large Canadian reference laboratory: 2012-2019.** Anaerobe. May 25; 70:102386. doi: 10.1016/j.anaerobe.2021.102386

## INVITED SEMINARS

**Typhoid Fever.** University of Toronto Tropical Medicine Rounds. September 10, 2021. (invited speaker)

**Rapid diagnostics – is it a thing? 2021 National Microbiology & Infectious Diseases Retreat.** August 25, 2021 (invited speaker)



## ANDREW FREYWALD, PHD

### PUBLICATIONS

Sepehri Z, Banerjee A, Vizeacoumar FS, Freywald A, Vizeacoumar FJ, Dolinsky VW, Davie JR. ***Differential expression of HNF1A and HNF1A-AS1 in colon cancer cells.*** IUBMB Life. 2022 Feb 20. Online ahead of print.

Babikr F, Wan J, Xu A, Wu Z, Ahmed S, Freywald A, Chibbar R, Wu Y, Moser M, Groot G, Zhang W, Zhang B, Xiang. ***Distinct roles but cooperative effect of TLR3/9 agonists and PD-1 blockade in converting the immunotolerant microenvironment of irreversible electroporation-ablated tumors.*** J. Cell Mol Immunol. 2021 Dec 18 (12):2632-2647.

Bhanumathy KK, Abuhussein O, Vizeacoumar FS, Freywald A, Vizeacoumar FJ, Phenix CP, Price EW, Cao R. ***Computational Prediction of Chemical Tools for Identification and Validation of Synthetic Lethal Interaction Networks.*** Methods Mol Biol. 2021; 2381:333-358.

Dong SXM, Vizeacoumar FS, Bhanumathy KK, Alli N, Gonzalez-Lopez C, Gajanayaka N, Caballero R, Ali H, Freywald A, Cassol E, Angel JB, Vizeacoumar FJ, Kumar A. ***Identification of novel genes involved in apoptosis of HIV-infected macrophages using unbiased genome-wide screening.*** BMC Infect Dis. 2021 Jul 7;21(1):655.

### GRANTS RECEIVED:

2021/10 - 2026/9

Co-Principal Applicant (equal contribution)

***Identification of therapeutically relevant targets in telomerase overexpressing prostate cancers***

#### **Funding Sources:**

Canadian Institutes of Health Research (CIHR)

Project grant

Total Funding - \$983,026

Funding Competitive?: Yes

Co-applicant : Judy Wong; Yuzhuo Wang;

Principal Applicant : Franco Vizeacoumar

2021/12 - 2023/11

Co-Principal Applicant (equal contribution)

***Applying Synthetic Dosage Lethality to Develop Therapeutic Strategies for Ovarian Clear Cell Carcinoma***

#### **Funding Sources:**

Cancer Research Society (The)

OCC/OvCAN-CRS Grant Competition

Total Funding - \$222,930

Funding Competitive?: Yes

Co-applicant : Barbara Vanderhyden; Judy Wong; Laurie Ailles;

Principal Investigator : Franco Vizeacoumar

2022/04 – 2024/03

Principal Applicant

**Targeting EphB6 deficiency in breast cancer**

Funding Sources:

University of Saskatchewan CIHR Bridge Funding Program

Total Funding - \$40,000

Funding Competitive?: Yes

Co-Principal Applicant (equal contribution): Franco Vizeacoumar

## AWARDS

“Outstanding CIHR Reviewer” award in recognition of the exemplary contribution to peer review for the Fall 2021 Project Grant competition.

## **SHEILA RUTLEDGE HARDING, MD MA FRCPC**

### PUBLICATIONS

Bégin P, Callum J, Jamula E, Cook R, Heddle NM, Tinmouth A, Zeller MP, Beaudoin-Bussi res G, Amorim L, Bazin R, Loftsgard KC, Carl R, Chass  M, Cushing MM, Daneman N, Devine DV, Dumaresq J, Fergusson DA, Gabe C, Glesby MJ, Li N, Liu Y, McGeer A, Robitaille N, Sachais BS, Scales DC, Schwartz L, Shehata N, Turgeon AF, Wood H, Zarychanski R, Finzi A; **CONCOR-1 Study Group**, Arnold DM. **Convalescent plasma for hospitalized patients with COVID-19: an open-label, randomized controlled trial**. Nat Med. 2021 Nov;27(11):2012-2024. doi: 10.1038/s41591-021-01488-2. Epub 2021 Sep 9. Erratum in: Nat Med. 2022 Jan;28(1):212. PMID: 34504336; PMCID: PMC8604729.

**Harding SR**, for the Interprovincial Medical Expert Committee, Prairie Collaborative Immune Globulin Utilization Management Framework Project. **Criteria for the clinical use of immune globulin**. Alberta Ministry of Health, Shared Health Manitoba, and Saskatchewan Ministry of Health; 2022 Feb. Epub <https://www.ihe.ca/research-programs/guideline-adaptation-anddevelopment/immune-globulin-guideline>

Prokopchuk-Gauk O, Tehseen S, Anthony S, Thomson K, Lehto P, **Harding SR**; **The Landscape of Maternal Alloimmunization in Saskatchewan: Results of a 2 Year Audit**. [Abstract] CSTM 2022 May. Epub <https://www.transfusion.ca/getmedia/76222d26-965e-4fdd-96da-02b858b9cba0/CSTM2022AbstractBookletFinal.pdf.aspx>

Tehseen S, Prokopchuk-Gauk O, **Harding SR**, Anthony S, Lehto P, Thomson K; **Laboratory characteristics and transfusion requirements in neonates affected by alloimmunized gestation**. Results of the PRAMS program. [Abstract] CSTM 2022 May. Epub <https://www.transfusion.ca/getmedia/76222d26-965e-4fdd-96da-02b858b9cba0/CSTM2022AbstractBookletFinal.pdf.aspx>

Van Vliet P, **Harding SR**, Boutilier B, Sarkar KK; **The Saskatchewan Immune Globulin Stewardship Program**. [Abstract] CSTM 2022 May. Epub <https://www.transfusion.ca/getmedia/76222d26-965e-4fdd-96da-02b858b9cba0/CSTM2022AbstractBookletFinal.pdf.aspx>

**Harding SR**, Comeau J, Milne A; **Ensuring appropriate use of immune globulin in Saskatchewan**. [Abstract] Choosing Wisely Canada, 2022 May.

## JAWAHAR (JAY) KALRA, PHD MD FRCPC FCAHS

### GRADUATE STUDENT/ ADVISORY COMMITTEE

Advisory Committee Co-Chair

Babekar, Hanan, Ph.D. Student, *Development of small protein domain affinity reagents targeting biomarker*, MUC16/CA125, Health Sciences Graduate program, 2021-present

Chandrabose Prabakaran, Ph.D. Student, Committee Chair, Health Sciences Graduate Program, *Comparative oncology approach for radioimmunotherapy of osteosarcoma*, 2021-present

### SUMMER STUDENT

Chiamaka Okonkwo, College of Medicine 2nd year, *Medical Error and Disclosure: A Canadian Perspective for Best Practice Model*, 2021-22 (18 hours)

Patrick Seitzinger, 4th Year Medical Student/1st Year Pediatric Resident University of Saskatchewan, *Artificial Intelligence and its Impact on Healthcare Delivery*, 2021-22 (36 hours)

Zoher Rafid-Hamed, Master of Public Health Student/1st Year Medical Student University of Saskatchewan, *Medical Error Disclosure – A Global Perspective on Healthcare Delivery*, 2021-22 (26 hours)

Lily Wiebe, College of Law 1st Year student University of Saskatchewan, *Medical Error Disclosure – A Legal Perspective*, 2021-22 (14 hours)

### EDITED BOOKS

Kalra, J., Lightner, N. J., Redha Taiar, (Ed.) (2021). *Advances in Human Factors and Ergonomics in Healthcare and Medical Devices*. Springer Nature Switzerland AG 2021. USA.

Ahram, T., Waldemar, K., Kalra, J., (Ed.) (2021). *Advances in Artificial Intelligence, Software and Systems Engineering*. Springer Nature Switzerland AG 2021. USA.

### CHAPTERS IN BOOKS

Seitzinger, P., Rafid-Hamed, Z., Kalra J. (2021). *Global Trends in Clinical Practice and Healthcare Delivery: Opportunities for Growth and Innovation*. In: Kalra J., Lightner N., Taira, R. (Ed.) *Advances in Human Factors and Ergonomics in Health Care and Medical Devices*. Springer Cham, p 9-15.

Kalra J., Rafid-Hamed, Z., Seitzinger, P. (2021). *Artificial Intelligence and Humanistic Medicine: A Symbiosis*. In: Kalra J., Lightner N., Taira, R. (Ed.) *Advances in Human Factors and Ergonomics in Health Care and Medical Devices*. Springer Cham, p 3-8.

Seitzinger, P., Rafid-Hamed, Z., **Kalra J.** (2021). *Healthcare Delivery: Leveraging Artificial Intelligence to Strengthen Healthcare Quality*. In: Kalra J., Lightner N., Taira, R. (Ed.) *Advances in Human Factors and Ergonomics in Health Care and Medical Devices*. Springer Cham, p 16-21.

Seitzinger, P., Rafid-Hamed, Z., **Kalra J.** (2021). *Diagnostic Decision Making in the Face of Uncertainty: COVID-19 and Its Sequelae*. In: Kalra J., Lightner N., Taira, R. (Ed.) *Advances in Human Factors and Ergonomics in Health Care and Medical Devices*. Springer Cham, p 763-769.

#### INVITED PRESENTATION

**Kalra, J.** *Quality Management: Trends in Medical Error Disclosure and its Implications*. Leader-Roundtable Presentation. Canadian Society of Clinical Chemist Annual Conference. Niagara Falls, Canada. June 2021.

**Kalra, J.** *Quality Management and Assessment: Integration of Culture of Quality to Improve Patient Safety and Healthcare Delivery*. 47th Association of Clinical Biochemist of India (ACBICON) – “Towards a Better Tomorrow”. Session – Quality Control. The West Bengal University of Health Sciences, Kolkata, India. December 14, 2021

**Kalra, J.** *Foundation Day Orator. Medical Error Disclosure: A Quality Perspective and Ethical Dilemma*. 109th Foundation Day Celebration 2021 & Pathology Annual Oration. Department of Pathology, King George’s Medical University, Lucknow, India. December 2, 2021

#### CONTRIBUTED PRESENTATIONS (VIRTUAL)

Seitzinger, P., **Kalra, J.** *Incorporating Artificial Intelligence into Medical Practice: Navigating Ethics, Opportunities, and the Path Forward*. University of Saskatchewan Resident Research Day – Virtual REACH. July 7, 2021

Seitzinger, P., Rafid-Hamed, Z., **Kalra, J.** (July 2021). *Global Trends in Clinical Practice and Healthcare Delivery: Opportunities for Growth and Innovation*. International Conference on Advances in Intelligent Systems and Computing. *Advances in Human Factors and Ergonomics in Health Care and Medical Devices* (AHFE). USA. July 28, 2021.

Seitzinger, P., Rafid-Hamed, Z., **Kalra, J.** (July 2021). *Healthcare Delivery: Leveraging Artificial Intelligence to Strengthen Healthcare Quality*. International Conference on Advances in Intelligent Systems and Computing. *Advances in Human Factors and Ergonomics in Health Care and Medical Devices* (AHFE). USA. July 28, 2021.

**Kalra, J.**, Rafid-Hamed, Z., Seitzinger, P. (July 2021). *Artificial Intelligence and Humanistic Medicine: A Symbiosis*. *International Conference on Advances in Intelligent Systems and Computing*. *Advances in Human Factors and Ergonomics in Health Care and Medical Devices* (AHFE). USA. July 28, 2021.

Seitzinger, P., Rafid-Hamed, Z., **Kalra, J.** (July 2021). *Diagnostic Decision Making in the Face of Uncertainty: COVID-19 and its Sequelae*. International Conference on Advances in Intelligent Systems and Computing. *Advances in Human Factors and Ergonomics in Health Care and Medical Devices* (AHFE). USA. July 29, 2021.



## RECOGNITION AND AWARDS



**Jay Kalra.** *The Coffee Table Book – Jewels of India: Leading 75 Indo-Canadian Personalities*, Presented by the Indian High Commissioner, Mr. Ajay Bisaria, to Canada on the 75th Independence Day of India. (The book that puts forth true Indian struggle and success stories in Canada, the book that celebrates righteousness, the book that celebrates bilateral relations, the book that INSPIRES!) Maneesh Media. April 2022.

Life Fellow, Royal Society of Medicine, UK. September 2021.

American Society for Quality (ASQ) Scholarship, Lily Wiebe, Supervisor – **Kalra J.** *Quality Care and Patient Safety: A Legal and Ethical Perspective of Medical Error Disclosure*. Excellence Through Quality. 2021.

American Society for Quality (ASQ) Scholarship, Patrick Seitzinger, Supervisor – **Kalra J.** *Quality Management and Assessment Discordance Rates between Clinical and Post-mortem Findings and The Impact of Diagnostic Modalities*. Excellence Through Quality. 2021.

Research Day Top Poster Award – WHAT WORKS, 1st Place Award, Patrick Seitzinger, Supervisor – **Kalra J.** *Incorporating Artificial Intelligence into Medical Practice: Navigating Ethics, Opportunities, and the Path Forward*. University of Saskatchewan Resident Research Day. October 21, 2021.

AHFE 2021 Best Student Paper Award – Seitzinger Patrick, Rafid-Hamed Zoher, **Kalra Jay.** *Global Trends in Clinical Practice and Healthcare Delivery: Opportunities for Growth and Innovation*. Applied Human Factors and Ergonomics 2021 and Its Affiliated Conferences. July 2021.

AHFE 2021 Best Student Paper Award – Seitzinger Patrick, Rafid-Hamed Zoher, **Kalra Jay.** *Diagnostic Decision-making in the face of Uncertainty: COVID-19 and its Sequelae*. Applied Human Factors and Ergonomics 2021 and Its Affiliated Conferences. July 2021.

Zoher Rafid-Hamed, under the supervision of Dr. Jay Kalra, receiving the Graduate Students Association Professional Excellence Award.



## PRACTICE OF PROFESSIONAL SKILLS

### PROFESSIONAL SERVICES:

Examiner, Medical Biochemistry- Royal College of Physicians and Surgeons of Canada. Ottawa, Ontario

Physician Examiner, Medical Council of Canada Qualifying Exam, Part II

Medical Examiner, National Assessment Collaboration (NAC), Medical Council of Canada, Saskatoon, SK

### PROFESSIONAL PRACTICE:

Member, Editorial Board, American Journal of Pathology & Research

Member, Editorial Board, Journal of Biotechnology and Biomedicine

Editor-In-Chief, Journal of Integrative Medicine

Member, Editorial Board, American Journal of Biomedical Science & Research

Member, Editorial Board, Journal of Pathology Clinical and Medical Research

Member, Editorial Board, Madridge Journal of Cardiology (MJC)

Co-editor-in-chief, Pathology and laboratory medicine Open Journal

Editor-in-chief (North America), Journal of Primary Health Care, Open access

Member, Editorial Board, Journal of Healthcare Communications

Member, Editorial Board, SM Journal of Clinical Pathology

Member, Editorial Board, Journal of clinical and Laboratory Medicine

Member, Editorial Board, Human-Intelligent Systems Integration

Member, Editorial Board, Applied Human Factors and Ergonomics International

Member, Editorial Board, Annals of Clinical Pathology

Member, Editorial Board, Austin Journal of Pathology & Laboratory Medicine

Member, Editorial Board, Clinical Biochemistry

## ADMINISTRATIVE SERVICE

### UNIVERSITY COMMITTEES:

Member, Board representative, Search committee for Dean, Dentistry.

Member- Executive Committee; College of Graduate and Postdoctoral Studies

Member (Elected) Board of Governors, University of Saskatchewan

Committee Member, Board of Governors Audit and Finance committee, University of Saskatchewan

Committee Member, Board of Governors Land and Facilities committee, University of Saskatchewan

Committee Member-at-Large, College of Graduate and Postdoctoral Studies Council

Member Representative, Clinical Faculty Committee, Canadian Association of University Teachers (CAUT),  
University of Saskatchewan Faculty Association (USFA)

Committee Member, Faculty Association Representative (FAR'S) Committee (Departmental Representative)

Committee Member Elected-at-Large, University Council, University of Saskatchewan

#### COLLEGE AND DEPARTMENTAL COMMITTEES

Chair, Nominations Committee, Faculty Council, College of Medicine

Committee Member, Bylaws Committee, College of Medicine

Committee Member, Faculty Council, College of Medicine

Committee Member, Endowment / Trust Funds Committee, Department of Pathology

Coordinator, Education Division, Department of Pathology and Lab Medicine: Overall responsibility for all departmental undergraduate (Med 115, Pathology 205, Biomedical Sciences Course-new-curriculum setting) educational programs

#### OTHER ADMINISTRATIVE SERVICE

Member research committee, Global outreach Medical and health Association (GOMHA) –Non-Profit Organization Registered, Government of India

Reviewer, Tenure/Promotion for Faculty Member, Computer Sciences. USFA Tenure and Promotion Outsider Perspective.

#### PROFESSIONAL OR ASSOCIATION OFFICES AND COMMITTEE ACTIVITIES OUTSIDE U OF S

Regional Delegate, Saskatchewan Medical Association Representative Assembly (RA)

Member, Practitioner Staff Appeals Tribunal. Ministry of Health, Government of Saskatchewan

Member, Canadian Association of Health Sciences (CAHS) Regional Network

Vice-President, Saskatchewan Association of Laboratory Medicine (SALM)

Chair, Audit Finance and Risk and Human Resource Committee, Council of Canadian Academies

Member, Executive Committee, Council of Canadian Academies (CCA)

Member, Board Strategic Science Fund Working Group, Council of Canadian Academies (CCA)

Member, Board of Governors/Directors, Council of Canadian Academies (CCA)

Member, Awards Committee for the American Association of Clinical Chemistry (AACC)

Vice-Chair, American Society for Quality (ASQ), Saskatchewan Section

Chair, Scientific Advisory Board, International Conference on Human Factors in Aging and Special Needs (HFASN) – conference track, Applied Human Factors and Ergonomics (AHFE), USA

Committee Member, Human Factors and Ergonomics in Healthcare Scientific Advisory Board, Applied Human Factors and Ergonomics (AHFE), USA

Co-Chair, Scientific Session, Health Care Organization and COVID-19 Responses. Applied Human Factors and Ergonomics (AHFE), USA

Co-Chair, Scientific Session, Health Care Advancement and Patient Safety. Applied Human Factors and Ergonomics (AHFE), USA

Co-Chair, Scientific Advisory Board, Global Issues Challenge and Awards: Human Factors in Disease Control and Pandemic Prevention. Conference track, Applied Human Factors and Ergonomics (AHFE)

Co-Chair, Scientific Advisory Board, Artificial Intelligence and Social Computing. Conference track, Applied Human Factors and Ergonomics (AHFE)

Co-Chair, Scientific Advisory Board, Healthcare and Medical Devices. Conference track, Applied Human Factors and Ergonomics (AHFE)

## PUBLIC AND COMMUNITY CONTRIBUTIONS – NON-UNIVERSITY RELATED

President, EMCY (Enriching my Canada and Yours) Awards Foundation

Vice-President, Community Services, Canadian Eyesight Global

Member, Rotary Club of Saskatoon Nutana. Volunteer for Enchanted Forest. Fundraising for Saskatoon City Hospital Foundation and Saskatoon Zoo Foundation.

## **RANI KANTHAN, MBBS, MS, FRCS, FRCPSC, FCAP, M.ED**

### PUBLICATIONS IN REFEREED JOURNALS

Yanko, E.; Le, D.; Mahmood, S.; Ginther, D.N.; Chalchal, H.I.; **Kanthan, R.**; Haider, K.; Zaidi, A.; Dueck, D.-A.; Ahmed, O.; Gowrishankar, B.; Ahmed, S. (2022) *Outcomes of Patients with Small Intestine Adenocarcinoma in a Canadian Province: A Retrospective Multi-Center Population-Based Cohort Study*. Cancers 2022, 14, 2581. <https://doi.org/10.3390/cancers14112581>

I am a co-author as the contributing pathologist in this study.

Ahmed, Shahid & Anderson, Deborah & Chalchal, Haji & Dwernychuk, Lynn & Gill, Dilip & Gitlin, Josh & Hammond, Austin & **Kanthan, Rani** & Le, Duc & Lim, June & Rakheja, Rajan & Sari, Nazmi & Vizeacoumar, Franco & Zaidi, Adnan & Moser, Michael. (2021). *Conversion from unresectable to resectable liver metastases in real-world patients with liver-only metastatic colorectal cancer (mCRC) treated with FOLFOXIRI plus bevacizumab: The Conversion trial*. Journal of Clinical Oncology. 39. TPS147-TPS147. 10.1200/JCO.2021.39.3\_suppl.TPS147.

I am a co-author as the contributing pathologist in this study.

L. D. Blondeau, M. Deutscher, J. E. Rubin, H. Deneer, **R. Kanthan**, S. Sanche & J. M. Blondeau (2021) *Urinary tract infection in a human male patient with Staphylococcus pseudintermedius transmission from the family dog*. Journal of Chemotherapy <https://doi.org/10.1080/1120009X.2021.1995251>

I am a co-author for this study based on the PhD project work by Leah Blondeau

### REFERRED CONFERENCE PUBLICATIONS

Yanko, Emma & Le, Duc & Mahmood, Shazia & Ginther, Nathan & Chalchal, Haji & **Kanthan, Rani** & Haider, Kamal & Zaidi, Adnan & Dorie-Anna, Dueck & Ahmed, Shahid. (2022). *Outcomes of patients with small intestine adenocarcinoma (SIA) in a Canadian province: A population-based cohort study*. Journal of Clinical Oncology. 40. 641.10.1200/JCO.2022.40.4\_suppl.641

This was delivered as a conference presentation by the medical student who is the first author.

### INVITED PRESENTATIONS

FEB 2022                      Invited Faculty In person Microscopic seminars/Workshops Sri Ramachandra University Chennai, India

JAN 2022                      Invited Faculty Seminars x2 for the Rapid Post Graduate Review Course –Jan 04th and 06th Sri Ramachandra University Chennai, India-Online digital presentations

### RESEARCH FUNDING HISTORY

SEPT 2021                      Vizeacoumar F, Ahmed S, Ravi D, **Kanthan R** Developing novel targeted therapies for telomerase overexpressing pancreatic cancers. Cancer Research Society  
I am coinvestigator in this multidisciplinary team grant



## SUPERVISION AND ADVISORY ACTIVITIES

### UNDERGRADUATE AND POST GRADUATE STUDENTS SUPERVISED

2022, 2021      Suresh Tharmaradhinam, General Pathology Resident - research projects  
2022, 2021      Henry Pan, Daniel Markowich, Pramath Kakodkar, General Pathology residents

### GRADUATE STUDENT AND THESIS SUPERVISION

Ms. Leah Blondeau, Department of Pathology and Laboratory Medicine, College of Medicine. Supervisors  
Dr Harry Deneer, Joe Rubin, Sanche and myself : One Health - Role of organisms as pathogens from animals to  
humans. Msc/PhD My role- Member of the Advisory Committee 2018- present

## COMMITTEE MEMEBERSHIP

### COLLEGE COMMITTEES

2020- 2023      PGME Standing Committee for Appeals [1st July 2020 for 3 year term]  
2020- 2023      College Review Committee for Tenure and Promotions [1st July 2020/3 year term]

### DEPARTMENT COMMITTEES

2021-PRESENT      Program Director for General Pathology Program -appointed in Sep 2021  
2000 – PRESENT      Residency Training Committee-[Assistant Program Director 2012-2016]  
2020, 2021      Tenure and Promotions Committee

### ASSOCIATE MEMBERSHIPS AT THE U OF S

2007 - PRESENT      Faculty, School of Physical Therapy  
2003 - PRESENT      Faculty, College of Graduate and Postdoctoral Studies -renewed five year term (2023)

### AFFILIATIONS

2018 - PRESENT      Visiting Professor-Department of Pathology, Saveetha Medical College and Hospital,  
Chennai, India -Term 3 years and then renewed annually  
2016 - PRESENT      Visiting Professor – Department of Pathology, Sri Ramachandra Medical College & Research  
Institute, Chennai, India -Term 3 years and then renewed annually

## **ANDREW LYON, PHD FCACB DDABCC**

### PUBLICATIONS:

Cembrowski GS, **Lyon AW**, McCudden C, Qiu Y, Xu Q, Mei J, Tran DV, Sadrzadeh SMH, Cervinski MA.  
*Transformation of Sequential Hospital and Outpatient Laboratory Data into Between-Day Reference Change  
Values.* Clin Chem 2022

Stritzke AI, Ismail R, Rose S, **Lyon A**, Fenton T. *Cord-blood derived chemistry reference values in preterm infants  
for sodium, chloride, potassium, glucose, and creatinine.* Am J Perinatol 2022

#### POSTER PRESENTATIONS:

**Lyon AW**, Lyon ME. *Evaluation of Electrode Maintenance and Quality Control for Ionized Calcium to Support Post-Filter Testing During Continuous Renal Replacement Therapy (CRRT) With Regional Citrate Anticoagulation*. AACC / CSCC Annual Meeting, Atlanta, GA, USA. Sept 28, 2021.

Cembrowski G, Qiu Y, **Lyon A**, McCudden C, Holmes D, Sadrzadeh H, Cervinski M. *Reference change values of hospitalized patients differ from those of healthy subjects: It's time to get real*. AACC /CSCC Annual Meeting, Atlanta, GA, USA. Sept 28, 2021.

#### SUPERVISION:

Leis, Benjamin. Focused cardiac ultrasound in stroke: a feasibility study. MSc Program, Health Sciences. University of Saskatchewan. Supervised by **Drs. Andrew Lyon** and Jawed Akhar. 2019-present.

### **ERICK MCNAIR, BSC, MSC, PHD, CCP**

#### PUBLICATIONS:

Gamble JJ, McKay WP, Ambros B, Miller GG, **McNair ED**, et al. *A performance comparison of the most commonly used minimally invasive monitors of cardiac output*. Can J Anaesth. 2021 Nov;68(11):1668-1682.

**McNair ED**, Bezaire J, Moser M, Mondal P, Conacher J, Franczak A, Sawicki G, Reid D, Khani-Hanjani A. *The Association of Matrix Metalloproteinases With Acute Kidney Injury Following CPB-Supported Cardiac Surgery*. Can J Kidney Health Dis. 2021 Jul 16;8:20543581211019640

Bally JMG, Spurr S, Hyslop S, Hodgson-Viden H, **McNair ED**. *Using an interprofessional competency framework to enhance collaborative pediatric nursing education and practice*. BMC Nurs. 2022 Jun 10;21(1):147.

#### GRANTS:

2021 College of Medicine Research Award (CoMRAD) for your project entitled, *Assessment of Proteome Changes in the Development of Acute Kidney Injury following Cardiopulmonary Bypass-supported Cardiac Surgery*. Approved for funding with a budget of \$ 29,508.75.

### **JESSICA MINION, MD MSC FRCPC D(ABMM)**

#### PUBLICATIONS:

Bharat A, Petkau A, Avery BP, Chen JC, Folster JP, Carson CA, Kearney A, Nadon C, Mabon P, Thiessen J, Alexander DC, Allen V, Bailey SE, Bekel S, German GJ, Haldane D, Hoang L, Chui L, **Minion J**, Zahariadis G, Van Domselaar G, Reid-Smith RJ, Mulvey MR. (2022). *Correlation between phenotypic and in silico detection of antimicrobial resistance in Salmonella enterica in Canada using Staramr*. Microorganisms. 10(2):292.

Sawatzky P, Demczuk W, Lefebvre B, Allen V, Diggle M, Hoang L, Van Caesele P, Haldane D, **Minion J**, Mulvey MR, Martin I. (2022). *Increasing azithromycin resistance in Neisseria gonorrhoeae due to NG-MAST 12302 clonal spread in Canada, 2015-2018*. Antimicrob Agents Chemother. 66(3): e01688-21

Anderson M, Chhetri A, Halyk E, Lang A, McDonald R, Kryzanowski J, **Minion J**, Trecker M. (2021). **An outbreak of COVID-19 associated with a fitness centre in Saskatchewan: lessons for prevention.** CCDR. 47(11):485-90

Demczuk W, Martin I, Griffith A, Lefebvre B, McGeer A, Tyrrell GJ, Zhanel GG, Kus JV, Hoang L, **Minion J**, Van Caesseele P, Gad RR, Haldane D, Zahariadis G, Mead K, Steven L, Strudwick L, Mulvey M. (2021). **Linear regression equations to predict beta-lactam, macrolide, lincosamide and fluoroquinolone minimum inhibitory concentrations from molecular antimicrobial resistance determinants in Streptococcus pneumoniae.** Antimicrob Agents Chemother. 66(1): e01370-21

Cox GW, Parmley EJ, Avery BP, Irwin RJ, Reid-Smith RJ, Deckert AE, Finley RL, Daignault D, Alexander DC, Allen V, Bailey SE, Bekel S, Chui L, German GJ, Haldane D, Hoang L, **Minion J**, Zahariadis G, Mulvey M, Bharat A. (2021). **A one-health genomic investigation of gentamicin resistance in Salmonella from human and chicken sources in Canada, 2014-2017.** Antimicrob Agents Chemother. 65(12):e0096621

Parmar NR, Mushanski L, Manlin T, Lepe A, Lang A, **Minion J**, Dillon JR. (2021). **High prevalence of macrolide and fluoroquinolone resistance-mediating mutations in Mycoplasma genitalium-positive urine specimens from Saskatchewan.** Sex Transm Dis. 48(9):680

#### POSTER PRESENTATIONS:

Martin I, Demczuk W, Griffith A, Golden A, Lefebvre B, McGeer A, Tyrrell GJ, Zhanel GG, Kus JV, Hoang L, **Minion J**, Van Caesseele P, Smadi H, Haldane D, Zahariadis G, Mead K, Steven L, Strudwick L, Mulvey MR. (2022). **Shifting epidemiology of pneumococcal vaccine serotypes among various age groups in Canada from 2011 to 2020.** International Symposium on Pneumococci and Pneumococcal Diseases.

Demczuk W, Martin I, Griffith A, Lefebvre B, McGeer A, Tyrrell GJ, Zhanel GG, Kus JV, Hoang L, **Minion J**, Van Caesseele P, Smadi H, Haldane D, Zahariadis G, Mead K, Steven L, Strudwick L, Mulvey MR. (2022). **Phylogenetic analysis of Streptococcus pneumoniae serotype 4 causing invasive pneumococcal disease in Canada.** International Symposium on Pneumococci and Pneumococcal Diseases.

Gohil N, Mushanski L, Wanlin T, Lepe A, Lang A, **Minion J**, Dillon J. (2021). **Mycoplasma genitalium: the most prevalent STI in Saskatchewan, Canada, has a high prevalence of resistance to macrolides and fluoroquinolones.** Sexually Transmitted Infections. 97:A116

## **AHMED MOSTAFA, PHD, MD, D(ABHI)**

#### AWARDS:

- |      |  |
|------|--|
| 2022 | 2022 CST Nursing and Allied Health Professional Travel Grants to attend the annual Banff-CST Joint Meeting in Banff. September 19 - 23, 2022 |
| 2021 | ASHI Travel award to attend the 2021 annual ASHI meeting, September 26-October 1, 2021, Hyatt Regency Grand Cypress, Orlando, FL, USA.       |

#### GRANTS:

CAP Foundation Rippey Grant for Expedited Research - The Impact of Laboratory Testing for SARS-CoV-2 on Quality and Patient Safety funded by CAP. A grant amount of USD\$ 17,500.00. Yayuan Zhao MD, PhD  
A pathology resident will be conducting the research.

### INTERNATIONAL TEACHING:

- 2021 **ASNRT Fellowship program in clinical transplantation**  
Courses Nephrologist and Transplant physicians:
- Basics of Transplant Immunology
  - Histocompatibility and Immunogenetics

### SUPERVISORY AND TEACHING EXPERIENCE:

- 2022 **Pathology Resident:** Modeling for risk stratification of patients infected with COVID-19 based on cytokine profile and other immune-related biomarkers, Dr. Pramath Kakodkar PG2
- 2022 **Nephrologist Fellow:** Assessment of risk stratification of COVID-19 Vaccines in waitlist kidney transplant recipients. Dr. Khlalid Mussa, PG5
- 2022 **Deans Project Summer student:** Cytokine profile and disease severity in patients with COVID-19. Mujtaba Ibrahim is a second-year medical student at the University of Saskatchewan.

### PUBLICATIONS:

Abdelfatah N, **Mostafa AA**, French CR, Doucette LP, Penney C, Lucas MB, Griffin A, Booth V, Rowley C, Besaw JE, Tranebjærg L, Rendtorff ND, Hodgkinson KA, Little LA, Agrawal S, Parnes L, Batten T, Moore S, Hu P, Pater JA, Houston J, Galutira D, Benteau T, MacDonald C, French D, O'Rielly DD, Stanton SG, Young TL A Pathogenic Deletion in Forkhead Box L1 (FOXL1) Identifies the First Otosclerosis (OTSC) Gene Hum Genet. 2022 Apr;141(3-4):965-979. doi: 10.1007/s00439-021-02381-1. Epub 2021 Oct 11

### PUBLISHED ABSTRACTS:

Pearce T, Webster D , Gorkoff K, Shanofer C, **Mostafa A**. Mixed chimerism identified by SureTyper analysis software during validation of LinkSeq HLA Typing 48th American Society of Histocompatibility and Immunogenetics annual meeting Oct 23 - 28, 2022 at Bally's Las Vegas, Las Vegas, Nevada, United States of America.

Kakodkar P , Webster D , Sawyer T, Wu F, Dokouhaki P, **Mostafa A** .The role of the HLA allelic repository on the clinical severity of COVID-19 48th American Society of Histocompatibility and Immunogenetics annual meeting Oct 23 - 28, 2022 at Bally's Las Vegas, Las Vegas, Nevada, United States of America.

### POSTER PRESENTATIONS

Davidovic F, Dokouhaki P, Pearce T, **Mostafa A**. Overutilization of HLA Testing for Celiac Disease Screening. September 27-October 1st, 47th American Society of Histocompatibility and Immunogenetics annual meeting, Orlando, FL, USA

**Mostafa A**, Webster D, Twyla Pearce T , Gorkoff K , Shanofer C, Seasonal Influenza vaccine impacted HLA antibody formation in a kidney transplant recipient with history of blood transfusion: A case study. September 27-October 1st, 47th American Society of Histocompatibility and Immunogenetics annual meeting, Orlando, FL, USA



## INVITED SEMINARS/PRESENTATIONS:

**Mostafa AA** History of Transplantation Immunology: Ancient Legends to Modern Practice, ARSHI first annual meeting, 4-5 March 2022.

**Mostafa AA** History of Transplantation Immunology: Ancient Legends to Modern Practice, Pathology and Laboratory Medicine Grand Rounds, College of Medicine, University of Saskatchewan, November 29th 2021

**Mostafa AA** AllType™ FASTplex™ v2: Our HLA Laboratory Experience. ASHI 2021 annual meeting. Orlando, Florida USA, September 26- October 1st 2021.

**Mostafa AA** AllType™ FASTplex™ NGS and MiniSeq: Our Lab Combo for HLA Typing. ASHI 2021 Regional Educational Virtual Workshops June 4th 2021.

## COMMUNICATIONS AND MEDIA

Directors' Affairs Committee — NGS Survey report. ASHI Quarterly Volume 46, Number 1 (2022) page 46  
[Link to article](#)

Transforming Diagnostics for Tissue Transplantation 2021. One Lambda, Community spotlight.  
[Link to the article](#)

Laboratory Medicine SHA/PaLM annual report 2020-2021. Dr. Marc Baltzan Histocompatibility & Immunogenetics Laboratory (HIL) Page 39-41. [Link to the article](#)

## PROFESSIONAL SERVICE

### PUBLISHED ABSTRACTS

2022 - 2025      College of Medicine, University of Saskatchewan.

### WELLNESS COMMITTEE

2020 - 2021      College of Medicine, University of Saskatchewan.

### ACCREDITATION REVIEW MEDICAL SCHOOL SURVEY (MSS) WORKING GROUP MEMBER

2020 - 2021      College of Medicine, University of Saskatchewan.

### CHIEF EDITOR

2020 - PRESENT      ARSHI newsletter

### GRANT REVIEWER

2020- CURRENT      Deans Project, Office of Vice Dean Research (OVDR), USASK

### JOURNAL REVIEWER

2021- CURRENT      Transplantation (official Journal for the transplantation society)

## LEADERSHIP AND VOLUNTEER EXPERIENCE

- 2022 - CURRENT International ASHI laboratory inspector
- 2022 - CURRENT Member of the ASHI abstract committee
- 2022 - CURRENT Assessor at College of Medicine virtual Multiple Mini Interviews for future medical student at the University of Saskatchewan
- 2022 - CURRENT Member of the research committee of the Canadian society of transplantation (CST)

## **ALLISON OSMOND, MD MSC FRCPC**

### INVITED PRESENTATIONS:

Fortuitous germination of a Dermatopathology practice on the prairies: challenges, rewards and encounters. Departments of Pathology & Laboratory Medicine, Departmental Grand Rounds, Calgary, AB (April 2021) and Eastern Health, NL (November 2021)

The spectrum of cutaneous spitzoid lesions: avoiding benign and malignant misdiagnoses- Canadian Association of Pathologists Virtual Education Series, Course Chair (April 2022) and abbreviated version with Saskatchewan Dermatology Association (May 2022)

Isolated Shoulder lesion in an elderly female: CDX2 and SATB2 positivity in pilomatrical carcinomas Gut Club, Mount Sinai Hospital, Toronto, ON (July 2021)

### CONFERENCE PRESENTATIONS:

A case of a pseudoneoplastic primary syphilis chancre on the Neck. Virtual poster presentation, October 2021 American Society of Dermatopathology (ASDP) annual general meeting

### LEADERSHIP AND ADMINISTRATIVE ACTIVITIES:

Race, Equity, Accountability and Leadership (REAL) Committee member, Canadian Association of Pathologists (CAP) 2021- present

Academic Advisor, Department of Pathology and Laboratory Medicine, Saskatoon Health Region 2020 – present

Dean's Designate, Medical School Admissions Committee and Multiple Mini Interview (MMI) Scenario Subcommittee, University of Saskatchewan Saskatoon SK, 2019—present

Region 2 representative (Saskatchewan, Manitoba and North West Territories) for Anatomic Pathology Specialty Committee, Royal College Physicians and Surgeons of Canada 2019- present

Dermatopathology Working Group member, Royal College Physicians and Surgeons of Canada, 2021- present  
Canadian Society of Dermatopathology (CSDP), Executive Committee member May 2022- present

Dermatopathology Team Chair, Department of Pathology and Laboratory Medicine, Saskatoon Health Region Saskatoon SK, 2019—May 2022

Medical Council of Canada Qualifying Examination, Evaluator - ongoing

#### PUBLICATIONS:

Odesch, Kenny, Kogilwaimath, Oroz and **Osmond** (2022). ***Lichenoid granulomatous dermatitis: A case with dramatic desquamation and multiple potential causes.*** Journal of Cutaneous Medicine and Surgery Published online 2022 Apr 14. doi: [10.1177/2050313X221086322](https://doi.org/10.1177/2050313X221086322)

Kenny, Oroz and **Osmond** (2022). ***A Novel EVER1 Polymorphism of Epidermodysplasia Verruciformis: Homozygous TMC6 c.718del.*** Journal of the American Academy of Dermatology (JAAD) Letter to the Editor. Dec 20(12): 3751-3752.

Kenny and **Osmond** (2022). ***CDX2 and SATB2 positivity in pilomatrix carcinoma: avoiding an erroneous diagnosis of cutaneous metastasis of gastrointestinal origin.*** Journal of Cutaneous Pathology. 2022 Apr;49(4):399-402

Kenny and **Osmond** (2021). ***Reaction to dermal filler following COVID-19 vaccination.*** Journal of Cosmetic Dermatology, 20 (12), 3751-3752.

Kenny Zhao, Banerjee and **Osmond** (2021). ***Pigmented apocrine hamartoma: A distinct and uncommon pigmented lesion with dendritic melanocytes and appraisal of terminology.*** Journal of Cutaneous Pathology. 2022 Feb;49(2):172-175.

Kenny, Hamza, Peermohamed, Shumilak, Groot and **Osmond** (2021). ***A case of a pseudoneoplastic primary syphilis chancre on the neck.*** JAAD Case Reports, 16, 130-133.

Kenny, Oroz and **Osmond** (2021). ***Diffuse skin colored papules in a child.*** Journal of the American Academy of Dermatology (JAAD) 2022 Jan; 19: 7–9

Baranova, Goebel, Wasserman and **Osmond** (2021). ***A survey on changes to the Canadian anatomical Pathology Certification Examination due to coronavirus disease 2019 and implications for competency based medical education*** Academic Pathology: Special Collection Article- COVID 19. 2021 Dec 13;8:23742895211060711.

Vats, Banerjee, Wang and **Osmond** (2021). ***Recurrent malignant triton tumor (MTT) as isolated exclusive angiosarcomatous component: utility of H3K27me3 in establishing divergent differentiation in malignant peripheral nerve sheath tumors (MPNST) with review of the literature.*** Canadian Journal of Pathology Nov2021, Vol. 13 Issue 4, p62-70

Price, Baranova, Goebel, Sur and Osmond (2022). *Competency Based Medical Education (CBME) and the Royal College examination: benefits and challenges for early exam takers in the CBME era*. (accepted for publication: Canadian Journal of Pathology- in press)

Vats, Spafford, Groot, Groot, Graham, Banerjee, Deobald and Osmond (2022). *Moving towards the optimization of diagnosis for patients with sarcoma: A 10 year review of externally consulted cases in a general anatomical pathology practice*. (accepted for publication: Annals of Diagnostic Pathology - in press).

#### RESEARCH ACTIVITIES (ONGOING)

Utility of Breslow diameter ratio in vulvar melanomas. A pan Canadian multi-institutional Canadian study

Sarcoma diagnoses in a largely rural Canadian province: a 10 year review Department of Pathology and Laboratory Medicine and Surgery, Saskatoon City Hospital, Saskatchewan Health Authority, SK

The spectrum of cutaneous spitzoid melanocytic lesions, Departments of Pathology and Laboratory Medicine (with Western University, University of Calgary and Dalhousie University).

Survey study of perceptions on changes to Canadian pathology residency programs in the CBME/CBD era, multi-institutional study, Departments of Pathology and Laboratory Medicine, Western University, University of Ottawa and McMaster University

### **ALYSA POULIN, PHD MD FRCPC**

#### PUBLICATIONS:

Kemps PG, Picarsic J, Durham BH, Hélias-Rodzewicz Z, Hiemcke-Jiwa L, van den Bos C, van de Wetering MD, van Noesel CJM, van Laar JAM, Verdijk RM, Flucke UE, Hogendoorn PCW, Woei-A-Jin FJSH, Sciort R, Beilken A, Feuerhake F, Ebinger M, Möhle R, Fend F, Bornemann A, Wiegering V, Ernestus K, Méry T, Gryniewicz-Kwiatkowska O, Dembowska-Baginska B, Evseev DA, Potapenko V, Baykov VV, Gaspari S, Rossi S, Gessi M, Tamburrini G, Héritier S, Donadieu J, Bonneau-Lagacherie J, Lamaison C, Farnault L, Fraïtag S, Jullié ML, Haroche J, Collin M, Allotey J, Madni M, Turner K, Picton S, Barbaro PM, Poulin A, Tam IS, El Demellawy D, Empringham B, Whitlock JA, Raghunathan A, Swanson AA, Suchi M, Brandt JM, Yaseen NR, Weinstein JL, Eldem I, Sisk BA, Sridhar V, Atkinson M, Massoth LR, Hornick JL, Alexandrescu S, Yeo KK, Petrova-Drus K, Peeke SZ, Muñoz-Arcos LS, Leino DG, Grier DD, Lorsche R, Roy S, Kumar AR, Garg S, Tiwari N, Schafernak KT, Henry MM, van Halteren AGS, Abula O, Diamond EL, Emile JF. ***ALK-positive histiocytosis: a new clinicopathologic spectrum highlighting neurologic involvement and responses to ALK inhibition***. Blood. 2022 Jan 13;139(2):256-280. doi: 10.1182/blood.2021013338. PMID: 34727172; PMCID: PMC8759533.



## OKSANA PROKOPCHUK-GAUK, MD FRCPC DRCPC

### ACADEMIC ACHIEVEMENT:

#### **Diplomate of the Royal College of Physicians and Surgeons of Canada**

Practice Eligibility Route - Area of Focused Competence

- **Transfusion Medicine** – May 4, 2022

### CHAPTERS IN BOOKS:

**Prokopchuk-Gauk O**, Pastor C, Stirling A, Lett R. Chapter 12: Hemorrhage Control and Balanced Transfusion in Trauma. In: University of Saskatchewan – Trauma Manual, 2nd Edition. 2021.

### PAPERS IN PEER REVIEWED JOURNALS:

Kirpalani HM, **Prokopchuk-Gauk O**, Heddle M. *Use of irradiated red blood cell transfusions in newborns to improve intracerebral saturation*. JAMA Pediatr. 2022;176(5):e220149.  
DOI:10.1001/jamapediatrics.2022.0149

Begin P, Callum J, Jamula E, et al. on behalf of the CONCOR-1 Study Group\*. *Convalescent plasma for hospitalized patients with COVID-19: an open-label, randomized controlled trial*. Nature Medicine 27(11).  
**DOI:10.1038/s41591-021-01488-2**

- **Prokopchuk-Gauk O** was the site lead for Saskatoon hospitals participating in the CONCOR-1 Study and is included as one of 614 CONCOR-1 Study Group authors.

**Prokopchuk-Gauk O**, Petraszko T, Nahirniak S, Doncaster C, Levy I. Blood shortages planning in Canada: the National Emergency Blood Management Committee experience during the first 6 months of the COVID-19 pandemic. Transfusion. 2021;3258-66. **DOI: <https://doi.org/10.1111/trf.16661>**

### CONFERENCE ABSTRACTS AND PRESENTATIONS:

**Prokopchuk-Gauk O**, Tehseen S, Anthony S, Thomson K, Lehto P, Rutledge Harding S. The Landscape of Maternal Alloimmunization in Saskatchewan: Results of a 2 year audit. Poster Presentation – Canadian Society of Transfusion Medicine Conference 2022; Toronto, ON. May 27, 2022.

Tehseen S, **Prokopchuk-Gauk O**, Anthony S, Thomson K, Lehto P, Rutledge Harding S. Laboratory Characteristics and Transfusion Requirements in Neonates Affected by Alloimmunized Gestation: Results of the PRAMS Program. Poster Presentation – Canadian Society of Transfusion Medicine Conference 2022; Toronto, ON. May 27, 2022.

Rahmani M, Charge S, Bodnar M, Callum J, Chipperfield K, Conrad D, Hsia C, Lavoie M, Lemay A, Mack J, Morin P, Pelletier P, Ponnampalam A, **Prokopchuk-Gauk O**, Salib M, Sidhu D, Trudeau J, Whitman L, Zeller M, Lin Y. Evaluating the Current State of Canadian Undergraduate Medical School Training in Transfusion Medicine. Oral Presentation – Canadian Society of Transfusion Medicine Conference 2022; Toronto, ON. May 28, 2022.

Blais-Normandin I, Rymer T, Feenstra S, Burry A, Colavecchia C, Farrell M, Gupta A, Huynh Q, Lawrence R, Lehto P, Lett R, Lin Y, Lyon B, McCarthy J, Peddle M, **Prokopchuk-Gauk O**, Sham L, Greene A, Trojanowski J, Shih A. Current State of Technical Transfusion Medicine Practice for Pre-hospital Transfusion in Canada. Poster Presentation – Canadian Society of Transfusion Medicine Conference 2022; Toronto, ON. May 27, 2022.

**Prokopchuk-Gauk O**, Tehseen S, Anthony S, Thomson K, Lehto P, Rutledge Harding S. The Landscape of Maternal Alloimmunization in Saskatchewan: Results of an 18 month audit. Poster Presentation – Saskatchewan Centre for Patient Oriented Research (SCPOR) Virtual Showcase; Saskatoon, SK. November 16 & 18, 2021.

#### REPORTS AND OTHER OUTPUTS:

Bech M, Jones Down C, Nilson J, **Prokopchuk-Gauk O**, Thompson M. All About Mild Hemophilia, 2nd Edition. Canadian Hemophilia Society. Published February 2022.

<https://www.hemophilia.ca/wp-content/uploads/2022/01/All-About-Mild-Hemophilia.pdf>

Tinmouth A, Shih A, Nahirniak S, Pavenski K, **Prokopchuk-Gauk O**, Shabani-Rad M, Webert K. Recommendations for the Use of Prothrombin Complex Concentrates in Canada. The National Advisory Committee on Blood and Blood Products. Published April 7, 2022.

<https://nacblood.ca/en/resource/recommendations-use-prothrombin-complex-concentrates-canada>

Tinmouth A, Nahirniak S, **Prokopchuk-Gauk O**, Shih A, Musuka C, Uhlik C, Rowsell C, Lane D, Pavenski K, McIntyre L, St. Croix L, Coupland R, Petraszko T, LaRoche V. The National Plan for Management of Shortages of Labile Blood Components. The National Advisory Committee on Blood and Blood Products. Published March 10, 2022. <https://nacblood.ca/en/blood-shortage>

#### ADVISORY COMMITTEES:

National Advisory Committee on Blood and Blood Products – Saskatchewan Representative. 2016-present.

Canadian Blood Services Plasma Protein Product Request for Proposal (RFP) Selection Committee, National Advisory Committee on Blood and Blood Products Representative. January-June 2022.

Saskatchewan Transfusion Medicine Discipline Committee, Member. 2019-present.

2021 SK Virtual Transfusion Medicine Symposium Planning Committee Co-Chair, July-November 2021.

## **ANIA RADOMSKA, PHD MD**

#### ACADEMIC ACHIEVEMENT:

**Anna Radomska**, Daniel Lee, Heather Neufeld, Nancy Korte, Emina Torlakovic, Anita Agrawal and Rajni Chibbar. *Diagnostic Pathology A retrospective study on incidence, diagnosis, and clinical outcome of gastric-type endocervical adenocarcinoma in a single institution.* (2021) 16:68

<https://doi.org/10.1186/s13000-021-01129-9>

## DR. ANURAG SAXENA

### CONFERENCE PRESENTATIONS

**Saxena A**, Smith P, Dickson G, Van Aerde J, Desanghere L. Leader effectiveness and factors contributing to success: Perspectives from physician leaders across Canada. International Leadership Association, Healthcare Virtual Leadership conference May 2022.

**Saxena A**, Desanghere L, Dore K & Reiter H. (2021). Incorporating situational judgement test into PGME admissions: Examining educational and organizational outcomes. Learn, Serve Lead 2021: The AAMC Annual Meeting. November 2021. Also published in Academic Medicine 2021; 96(11s): S 203.

**Saxena A**, Desanghere L, Robertsen-Frey T. (2021). Equity, Diversity and Inclusion: Generating a desired state of harmony in postgraduate medical education. International Conference on Residency Education, September, 2021.

**Saxena A**, Desanghere L & Robertsen-Frey T. (2021). Discovering a way forward: Equity, Diversity and inclusion in postgraduate medical education. International Leadership Association annual conference July 2021.

### GRANTS / CONTRACTS

**Saxena A** (Principal Investigator). Exploring IMG routes to unsupervised clinical practice in Saskatchewan. Ministry of Immigration and Career Training, Government of Saskatchewan. \$ 100,000.00, November 2021.

**Saxena A** (Principal investigator), Desanghere L, Robertsen-Frey T. Exploring leadership developmental readiness on leader development, practice and effectiveness in postgraduate medical education. The Royal College of Physicians and Surgeons of Canada. \$ 25,000, October 2021.

### COMMITTEES AND PROFESSIONAL ORGANIZATIONS

Member, Council of the Royal College of Physicians and Surgeons of Canada

Chair, Committee on Specialty Education, the Royal College of Physicians and Surgeons of Canada

Surveyor, national and international residency programs, the Royal College of Physicians and Surgeons of Canada

Planning committee member, The International Summit for Leadership Education for Physicians (TISLEP)

Planning advisory board member, The International Conference on Residency Education (ICRE)

## RAJENDRA SHARMA, SOM, PHD, DSC, FRSA

### RECOGNITIONS:

Saskatchewan Association of Laboratory Medicine  
College of Medicine 2022

Lifetime Achievement Award. 2022

<https://medicine.usask.ca/news/2022/pathology-professor-recognized-with-lifetime-achievement-award.php>



Dr. Rajendra Sharma, SOM PhD DSc FRSA, Distinguished Professor, receiving a SALM Lifetime Achievement Award (L-R Dr. Fergall Magee, Provincial Head, Dr. R. Sharma, Dr. Rani Kanthan, Resident Program Director) – 21 OCT 2021

Saskatchewan Association of Laboratory Medicine  
Lifetime Achievement Award Presentation, October 2021

<https://www.dropbox.com/s/kuuu8gfii173v95/Life%20time%20achievement%20unedited.MOV?dl=07>

Supervision of post-doctoral fellows, graduate students, visiting researchers, undergraduate and visiting students and summer students.

### POST-DOCTORAL FELLOW:

Dr. Swagatika Das, The Evaluation of potent cytotoxic curcumin analogs as methionine aminopeptidase, Post-doctoral Fellow. Supervised by Drs. J R Dimmock and R K Sharma.

### GRADUATE STUDENTS:

Mr. Praveen Kumar Roayapalley, PhD Student (2014-2021)

Supervisor – [Dr. R.K. Sharma](#) and Dr. J. Dimmock

Committee Members: Dr. E. Krol and Dr. A. El-Anned

Thesis Title: "The evaluation of novel conjugated unsaturated ketones as candidate antineoplastic agents".

College of Pharmacy and Nutrition.

Degree Awarded October 2021



Ms. Sukanya Pati, MSc Student (2018-2021)  
Supervisor – **Dr. R.K. Sharma** and Dr. J. Dimmock  
Committee Membership: Dr. B Bandy and Dr. S Tikoo  
Thesis Title: “Docking studies of curcumin analogs against methionine aminopeptidase 2 and biological evaluation of lead molecules in colon cells”.  
College of Pharmacy and Nutrition.  
Degree Awarded **October 2021**

#### PUBLICATIONS:

Roayapalley PK, Dimmock JR, Sakagami H, Okudaira N, **Sharma RK**, Das U (2022)  
1-4-(2-dimethylaminoethoxy) phenylcarbonyl]-3, 5-bis (3,4,5-trimethoxybenzylidene)-4-piperidone hydrochloride and related compounds. Potent cytotoxins demonstrating greater toxicity to neoplasms than non-malignant cells. Med Chem <https://www.eurekaselect.com/article/121799>

Roayapalley PK, Sakagami H, Satoh K, Amano S, Bandow K, Aguilera RJ, Hernandez KGC, Austre Y, Bustamante AYS, Dimmock SG, **Sharma RK**, Das, U Dimmock JR (2021) Cytotoxic tumour-selective 1,5-diaryl-3-oxo-1,4-pentadienes mounted piperidine ring. Medicines 8, 78;  
<https://doi.org/10.3390/medicines8120078>

Roayapalley PK, Dimmock JR, Contreras L, Balderrama K, Aguilera RJ, Sakagami H, A Shigeru, **Sharma RK**, Das U (2021) Design, synthesis and tumour-selective toxicity of novel 1-[3-[3, 5-bis(benzylidene)-4 -oxo-1-piperidino]-3-oxopropyl]-4-piperidone oximes and related quaternary ammonium salts. Molecules. 26, 7132 <https://doi.org/10.3390/medicines8120078>

#### PRESENTATIONS:

Pati S, Das U, Das S, Dimmock JR, **Sharma RK** (2021) Docking studies of curcumin analogs against methionine aminopeptidase 2 and biological evaluation of lead molecules in colon cells. Drug Discovery and Development Colloquium. 20. <https://egrove.olemiss.edu/dddc/2021/07-15-2021/>

#### SCHOLARSHIP:

Dr. Sukanya Pati received an Interdisciplinary Graduate Scholarship (January 2020- December 2021), University of Saskatchewan.

#### ADMINISTRATIVE SERVICE INCLUDING COMMITTEE MEMBERSHIP:

College of Medicine – Faculty Council Member.

#### EDITORIAL BOARD:

Editor-in-Chief: Journal of Molecular Biology and Therapeutics.

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## EMINA TORLAKOVIC, PHD MD, FCAP

### CHAPTERS IN BOOKS:

**Torlakovic E**, Cheung C. Quality Assurance in Immunohistochemistry in the Age of Precision Medicine, in: Dabbs DJ. Diagnostic Immunohistochemistry, Theranostic and Genomic Applications, 6th Edition, Elsevier, Philadelphia, PA, USA, 2022

### PEER-REVIEWED PUBLICATIONS:

**Torlakovic EE**, Sompuram SR, Vani K, Wang L, Schaedle AK, DeRose PC, Bogen SA. Development and Validation of Measurement Traceability for In Situ Immunoassays. Clin Chem. 2021 Apr 29;67(5):763-771. doi: 10.1093/clinchem/hvab008. PMID: 33585916; PMCID: PMC8085580. First author

Fenizia F, Wolstenholme N, Fairley JA, Rouleau E, Cheetham MH, Horan MP, **Torlakovic E**, Besse B, Al Dieri R, Tiniakos DG, Deans ZC, Patton SJ, Normanno N. Tumor mutation burden testing: a survey of the International Quality Network for Pathology (IQN Path). Virchows Arch. 2021 Dec;479(6):1067-1072. doi: 10.1007/s00428-021-03093-7. Epub 2021 Apr 15. PMID: 33856555; PMCID: PMC8724102. Co-author

Hwang DM, Albaqer T, Santiago RC, Weiss J, Tanguay J, Cabanero M, Leung Y, Pal P, Khan Z, Lau SCM, Sacher A, **Torlakovic E**, Cheung C, Tsao MS. Prevalence and Heterogeneity of PD-L1 Expression by 22C3 Assay in Routine Population-Based and Reflexive Clinical Testing in Lung Cancer. J Thorac Oncol. 2021 Sep;16(9):1490-1500. doi: 10.1016/j.jtho.2021.03.028. Epub 2021 Apr 26. PMID: 33915250. Co-author

Meza-León B, Gratzinger D, Aguilar-Navarro AG, Juárez-Aguilar FG, Rebel VI, **Torlakovic E**, Purton LE, Dorantes-Acosta EM, Escobar-Sánchez A, Dick JE, Flores-Figueroa E. Human, mouse, and dog bone marrow show similar mesenchymal stromal cells within a distinctive microenvironment. Exp Hematol. 2021 Aug;100:41-51. doi: 10.1016/j.exphem.2021.06.006. Epub 2021 Jul 3. PMID: 34228982. Co-author

Radomska A, Lee D, Neufeld H, Korte N, **Torlakovic E**, Agrawal A, Chibbar R. A retrospective study on incidence, diagnosis, and clinical outcome of gastric-type endocervical adenocarcinoma in a single institution. Diagn Pathol. 2021 Jul 31;16(1):68. doi: 10.1186/s13000-021-01129-9. PMID: 34332600; PMCID: PMC8325857. Co-author

Sompuram SR, **Torlakovic EE**, 't Hart NA, Vani K, Bogen SA. Quantitative comparison of PD-L1 IHC assays against NIST standard reference material 1934. Mod Pathol. 2022 Mar;35(3):326-332. doi: 10.1038/s41379-021-00884-w. Epub 2021 Aug 13. Erratum in: Mod Pathol. 2021 Sep 7; PMID: 34389791; PMCID: PMC8840973. Co-author

Cheung CC, Smith AC, Albadine R, Bigras G, Bojarski A, Couture C, Cutz JC, Huang WY, Ionescu D, Itani D, Izevbaye I, Karsan A, Kelly MM, Knoll J, Kwan K, Nasr MR, Qing G, Rashid-Kolvear F, Sekhon HS, Spatz A, Stockley T, Tran-Thanh D, Tucker T, Waghray R, Wang H, Xu Z, Yatabe Y, **Torlakovic EE**, Tsao MS. Canadian ROS proto-oncogene 1 study (CROS) for multi-institutional implementation of ROS1 testing in non-small cell lung cancer. Lung Cancer. 2021 Oct;160:127-135. doi: 10.1016/j.lungcan.2021.08.003. Epub 2021 Aug 10. PMID: 34509095. Co-senior author

Bogen SA, Dabbs D, Miller K, Nielsen S, Parry S, Szabolcs M, 't Hart N, Taylor C, **Torlakovic EE**. A consortium for Analytic Standardization in Immunohistochemistry. Arch Path Lab Med 2022 (in press). Senior author

## INVITED LECTURES/PRESENTATIONS:

### INTERNATIONAL

- MAY 30, 2022 **Invited lecturer**/faculty - Integrative approach to distinguish T-LGL from non-neoplastic T-LGL proliferations. XV European Bone Marrow Working Group International Bone Marrow Course and Workshop. Lund, Sweden, May 28 – May 31, 2022.
- MAY 12, 2022 **Invited speaker** – Report on CBQA/IQN Path digital slide PD-L1 initiative, International Quality Network for Pathology (IQN Path) Annual Meeting, Naples, Italy
- NOV 3, 2021 **Invited speaker** – Current External Quality Assurance/Proficiency Testing Challenges in PD-L1 Testing. European Society for Pathology (ESP) & International Quality Network for Pathology (IQN Path) Webinar on PD-L1 Testing. <https://youtu.be/3h9OR0ExqBk>
- SEPT 17, 2021 **Presenter**, “Shall we move into digital Immunohistochemistry?”, European Society for Digital Pathology (ESDIP) Town Square Meeting
- JULY 14, 2021 **Presenter**, Significance of pathologist’s readout for IHC biomarker assays: Art of science? International Society for Immunohistochemistry and Molecular Morphology (ISIMM) Webinars

### NATIONAL

- JULY 5, 2022 **Invited Speaker**, The principles of validation for clinical IHC assays. Dako/Agilent Canadian Virtual User Group

## PUBLISHED ABSTRACTS:

Booth A, **Torlakovic E**, Chetty R, Farris AB, Furth E, Goldblum J, Longacre T, et al. Despite simplified diagnostic criteria, observer variability remains in interpretation of colorectal serrated polyps. Lab Invest 2022, Mar 19-24, USCAP 111th Annual Meeting, Los Angeles, Ca, USA.

Kinloch M, Baniak N, Campbell K, **Torlakovic E**, Gilks CB. Her-2 expression and p53 in Endometrial Cancers compared to Serous Carcinomas. Lab Invest 2022, Mar 19-24, USCAP 111th Annual Meeting, Los Angeles, Ca, USA.

**Torlakovic EE**, Sompuram S, VAni K, Bogen S. Analysis of PD-L1 IHC tests using NIST SRM 1934- Otraceable reference materials: A new paradigm for development of predictive IHC biomarkers. Cancer Res 2021 (July);81 (13): Supplement, AACR Annual Meeting Abstract LB034.

## PROFESSIONAL ACTIVITIES

- MAY 31, 2022 **Session Co-Chair** (Session 2, Day 3), XV European Bone Marrow Working Group International Bone Marrow Course and Workshop. Lund, Sweden, May 28 – May 31, 2022.
- MAY 12, 2022 **Session Co-Chair** PD-L1 Testing: Current state and future developments. International Quality Network for Pathology (IQN Path) Annual Meeting, Naples, Italy
- NOV 3, 2021 **Session Chair** – Current External Quality Assurance/Proficiency Testing Challenges in PD-L1 Testing. European Society for Pathology (ESP) & International Quality Network for Pathology (IQN Path) Webinar on PD-L1 Testing.

JAN 2022 – PRESENT	<b>Chair</b> , International Consortium for Analytic Standardization in Immunohistochemistry (CASI), funded by NCI, USA.
JUL 2020 – PRESENT	<b>President</b> , International Society for Immunohistochemistry and Molecular Morphology (ISIMM)
2007 - PRESENT	<b>Chair</b> , National Standards Committee for High Complexity Testing, Canadian Association of Pathologist (CAP-ACP)
APR 2021 – PRESENT	<b>Associate Editor</b> , Applied Immunohistochemistry and Molecular Morphology Journal (AIMM)
NOV 2019 – PRESENT	<b>Founder and Editor-in-Chief</b> , Canadian Biomarker Quality Assurance Readout Proficiency Testing Program (CBQARReadout.ca)
JAN 2020 – PRESENT	<b>Founder and Director</b> , Canadian Biomarker Quality Assurance (CBQA) proficiency testing program for predictive and prognostic biomarkers in oncology.
2018 – PRESENT	<b>Member</b> , Board of Directors, International Quality Network for Pathology (IQN Path)
2018 – PRESENT	<b>Treasurer</b> , International Quality Network for Pathology (IQN Path)

#### LOCAL COMMITTEES

2018 – PRESENT	<b>Co-Chair</b> , Committee for Biomarker Development and Quality Assurance, Department of Pathology and Laboratory Medicine, SHA
JAN 2022 – PRESENT	<b>Member</b> , CellaVision Steering Committee
FEB 2022 – PRESENT	<b>Member</b> , Molecular Biomarker Prioritization Committee, SCA

#### GRANTS

APR 2022 – PRESENT	<b>Co-Investigator</b> , Is immune modulation the basis for microbeam radiation effect? Characterizing the findings of randomized canine brain tumor study. Saskatchewan Cancer Agency Foundation Operating Grant (\$140,300)
JUL 2021 – JUN 2022	<b>Principal Investigator</b> , CBQARReadout.ca industry funded educational and operating grants for PD-L1 module development

#### ADVISORY BOARDS AND CONSULTING

MAY 17, 2022	<b>Expert Session (Presenter)</b> on Testing for t(11;14) in Multiple Myeloma for AbbVie Canada
OCT 26, 2021	<b>Member</b> , Merck Western Regional TNBC Consultation Meeting
OCT 6, 2021	<b>Presenter</b> , National Virtual Conference on PD-L1 assays in upper GI: Test implementation and the Role of Proficiency Testing, BMS Canada
SEP 27, 2021	<b>Presenter and Member</b> , Canadian NTRK Ring Study Advisory Board Meeting
AUG18, 2021	<b>Presenter</b> , Issues with Ventana/Roche Platform for Pan-TRK Immunohistochemistry, Bayer Canada
AUG 18, 2021	<b>Presenter</b> , Issues with Dako/Agilent Platform for Pan-TRK Immunohistochemistry, Bayer Canada



## CHUNJIE WANG, PHD MD FRCPC FCAP

### CHAPTERS IN BOOKS:

Vats K, Al-Nourhji O, Wang H, **Wang C**. Primary epithelioid angiosarcoma of the mediastinum, cytomorphic features of a rare entity—A case report and literature review. *Diagnostic Cytopathology*. 2022;1-7. doi:10.1002/dc.24946

Wang H., Baniak N., **Wang C.**, Mullerian glandular inclusion in axillary lymph node of patients with invasive breast carcinoma: A rare case report and literature review. *Canadian Journal of Pathology* 2022 February 14 (1): 52-58

Tam I. S., Vats K., **Wang C.**, The challenges and pitfalls of diagnosing adenomyoepithelioma in needle core biopsies of the breast, *Human Pathology Reports*, Vol 26, November 2021, 300572 <https://doi.org/10.1016/j.hpr.2021.300572>

Vats K., Banerjee T., Lee C-H, **Wang C.**, Osmond A., Recurrent malignant Triton tumour with isolated exclusive angiosarcomatous component and H3K27me3 loss: A case report and review of the literature. *Canadian Journal of Pathology* 2021 Nov 13 (4);63-70

### NEW ADMINISTRATIVE POSITIONS

Member of College of Medicine Nomination Committee, University of Saskatchewan (2019- current, renewed in 2022)

Member of College of Medicine Budget, Planning and Priorities Committee, University of Saskatchewan (2022 – current)

### GRANTS

Department of Surgery Seed Grant (together with Dr. L. Hnenny, neurosurgery) “Immunology of high-grade glioma: can we predict clinical outcomes based on PD-1/PD-L1 expression?” (\$10,000).

### NEW ADMINISTRATIVE POSITIONS

Dr. Kristen Marciniuk, Dr. Viktor Zhrebetskiy, Dr. Alysa Poulin, Dr. Georgina Martin, Dr. Julia Radic “Spinal cord injury associated with Wilms tumor metastasis: case report” ( CNSF-2022, Montreal, QC, Canada, June 26-29, 2022).

## FANG WU, PHD

### SUMMER STUDENTS

2022 MAY- JULY Allan Yan, (2024 MD candidate), Choose Wisely with Prostate-Specific Antigen (PSA) Testing in Saskatchewan? Dean's Research Project, co-supervised by Drs, **Fang Wu**, Pounesh Dokouhaki, and Ninad Mehta.

MAY -JULY Mujtaba Ibrahim (2025 MD Candidate), Cytokine profile and disease severity I patients with COVID-19, Dean's Research Project, co-supervised by Drs, **Fang Wu**, Pounesh Dokouhaki, and Ahmed Mostafa

2021 JUN- AUG Shravan Murthy (2024 MD candidate), Choosing Wisely: Thyroid Function Testing, received the first-place ranking at the Undergraduate Research Symposium,

co-supervised by Drs. **F Wu**, & Pouneh Dokouhaki; Mr. Shravan Murthy received a Letter of Excellence from the Vice-Dean Research and Education for the College of Medicine at the University of Saskatchewan

### PATHOLOGY RESIDENTS

- 2022 Dr. Pramath Kakodkar PG2, Modeling for risk stratification of patients infected with COVID-19 based on cytokine profile and other immune-related biomarkers. co-supervisors: **Dr. Fang Wu**, Pouneh Dokouhaki, and Ahmed Mostafa
- 2022 Dr. Yayuan, Zhao (PGY-3), Title of project: Investigation of COVID-19 Vaccines on Kidney Transplant; CAP Foundation, John Rippey Grant for Expedited Research-the Impact of laboratory testing for SARS-CoV-2 on Quality and Patient Safety. \$ 17,500 (USD); co-PI: Dr. **Wu, F**, Mostafa, A, Dokouhaki, P

### ORAL PRESENTATION

**Wu, F** (2022). Scientific Session Speaker, Optimal Test: AACC's Guide to Lab Test Utilization, Annual Meeting, American Society of Clinical Chemistry, Chicago, USA, 2022.

### POSTER PRESENTATION

Yayuan Zhao, Pouneh Dokouhaki, **Wu, F**. Saskatoon Thyroid function test ordering guideline, 2022 Resident Research Day, University of Saskatchewan, College of Medicine

Murthy S., Karki, E., Hasan, M. N., Daniels B, Dokouhaki, P., **Wu, F**. Thyroid Function Testing: Choosing Unwisely in Saskatchewan the 2022 Choosing Wisely Canada National Meeting

Murthy S., Karki, E., Hasan, M. N., Daniels B, Dokouhaki, P., **Wu, F**. Thyroid Function Testing: Choosing Unwisely in Saskatchewan 2021 Undergraduate Research ShowCase, University of Saskatchewan, College of Medicine October 2021.

Murthy S., Karki, E., Hasan, M. N., Daniels B, Dokouhaki, P., **Wu, F**. Thyroid Function Testing: Choosing Unwisely in Saskatchewan 2021 Saskatchewan Health Research Showcase

### GRANTS

Applicant: Jariwala, Mehul, Co-applicants: **Wu, F**, Dokouhaki, P., (Jan 2022- Jan 2023), Title of project: Metabolomic Profiling to Predict Methotrexate Treatment Response in Juvenile Arthritis" has received 2021 College of Medicine Research Award (CoMRAD). \$30,000 (CAD)

Applicant: Shavadia, J., Co-applicants: Katselis, G., Dokouhaki, P., **Wu, F**, and Haddad, H. (2021-2023), Title of project: Serum Proteomics, Left Ventricular Systolic Function and Clinical Outcomes following ST-Elevation Myocardial Infarction. \$25,000 (CAD), RUH Foundation Research Grant.

Applicant: Yayuan, Zhao (PGY-3), co-PI: Dr. **Wu, F**, Mostafa, A, Dokouhaki, P. Title of project: Investigation of COVID-19 Vaccines on Kidney Transplant; CAP Foundation, John Rippey Grant for Expedited Research-the Impact of laboratory testing for SARS-CoV-2 on Quality and Patient Safety. \$ 17,500 (USD)

## **YUE WU, PHD MD FRCPC**

M. Patterson, Y. Wu and M. Niazi. Myeloid sarcoma presenting as obstructive jaundice. Case reports in Gastroenterology. 2021, 15: 695-702.

## ENDOWMENT FUNDING:

### MRS. J. OLSZEWSKA NEUROPATHOLOGY FUND

1. \$6,000 to hire a data scientist for an 8-week period to develop a proof-of-concept data analytics package with a dashboard interface.
2. \$12,050 to hire a biobank coordinator to support tumour biobanking from an Ovarian Cancer Care grant and the increased need for clinical trials research support in Pathology.
3. \$3,000 to test safety and efficacy of microfractionated focussed beam therapy for the treatment of brain tumors.
4. \$3,345 to invite two guest lecturers in Neuropathology.
5. \$3,950 for publication and Open Access charges for an article in the journal "Radiation Research".
6. \$380 for publication of an article in the journal "Oxford University Press".

### DR. MARC OMAR SHOKEIR MEMORIAL FUND

1. \$1,000 to bring in a coaching expert with a goal to provide tools to achieve the professional goals of a few teams of Anatomical Pathologists that work together.

### DR. THOMAS A. CUNNINGHAM MEMORIAL FUND

1. \$3,800 for an undergraduate student to attend and present at the 2021 International Conference on Applied Human Factors and Ergonomics conference in Manhattan. This student's paper on artificial intelligence was accepted for presentation and for the Springer Book as well as being chosen for an award.
2. \$1,300 to purchase books and on-line licenses for the Resident Library.
3. \$7,000 for two SHA LIS staff to the SCC Network of Users Group conference in Florida as there is no government ministry funding for continuing education provided to the Health Authority.
4. \$7,048 to allow two Residents to attend and present at the UACAP 2022 Conference in Los Angeles.
5. \$4,600 to allow an undergraduate student to attend and present at the AHFE conference in Manhattan.
6. \$800 for books/subscriptions for the Resident Library.

### DR. RAJENDRA SHARMA RESIDENT RESEARCH AWARD

1. \$4,200 to cover Langerin staining at Sick Kids Hospital and professional consultation.

#### D.F. MOORE LECTURE FUND

1. \$12,400 for Residents to attend virtually and in-person the 27-29 OCT ASCP 2021 Conference in Boston.
2. \$3,400 for a Resident to attend the Society for Pediatric Pathology course on Perinatal Pathology in Chicago.

#### SASKATCHEWAN ASSOCIATION OF LABORATORY MEDICINE AWARD

1. \$200 for the SHA Manager, Biosafety & Biosecurity, to virtually attend the 26-28 OCT 2021 Canadian Biosafety Symposium.
2. \$240 for two SHA employees to attend the SMLT Fall Conference in Saskatoon.

#### MAUREEN FULLER MEMORIAL LECTURE FUND

1. \$1,595 to invite a guest lecturer in Forensic Pathology.

#### BARBARA MOORE MEMORIAL TRUST FUND

1. \$3,000 for a SHA MLT to attend a conference for a HLA Laboratory education opportunity in San Diego.
2. \$738 to enable a SHA HLA Supervisor to write the American Board of Histocompatibility & Immunogenetics Certified Histocompatibility Associate Exam in Regina.
3. \$3,000 for a SHA employee to attend the NSH Annual Convention in Reno Nevada.

#### SHR PATHOLOGISTS FUND IN MEDICINE

1. \$4,000 for Department Wellness initiatives.

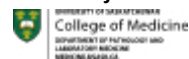


# HUMANITIES

## WELLNESS



Pathology & Laboratory Medicine (CoM)  
Laboratory Medicine (SHA)



### DEPARTMENT OF PATHOLOGY & LABORATORY MEDICINE WELLNESS COMMITTEE



Dr. Henrike Rees  
Chair



Dr. Amanda Lang



Dr. Pouneh  
Dokouhaki



Dr. Katelynn  
Campbell



Dr. Kayode  
Balogun



Dr. Ahmed  
Mostafa



Harold Shiffman



Dr. Ingrid Tam



Dr. Karan Vats



Dr. Fang Wu

The Wellness Committee was initiated by Drs. P. Dokouhaki and H. Rees in July 2020 following a Departmental meeting. The initial goal was to explore the current state of wellbeing of the Department and use a Quality improvement (QI) approach, since both pathologists had significant training and experience in running QI projects. A baseline assessment using a complex and comprehensive survey was designed and administered with the help of an outside agency (Mc Lean and Company). In January 2021 the position of a Departmental Wellness director (0.1 FTE) was created with funding from the College of Medicine and Dr Rees was appointed to this position. The Wellness committee grew and now consists of: Drs. Kayode Balogun, Katelynn Campbell, Pouneh Dokouhaki, Amanda Lang, Ahmed Mostafa, Henrike Rees (chair), Harold Shiffman, Ingrid Tam, Karan Vats and Fang Wu. The team meets approximately 8 times a year and has received some administrative support since early 2022. It has developed terms of reference and a team charter.

The committee developed and helped administer a thorough and complex Departmental wellness survey in early 2021. The results of this survey were shared with the Department in June 2021 and recently a small additional survey was circulated to help identify and prioritize potential solutions to issues identified in the 2021 survey.

Multiple regular and well-attended monthly Wellness Lunch and Learn sessions on a variety of topics were organized with guidance from Dr. A. Chakravarti, the College of Medicine Wellness Lead. These sessions included presentations on Introduction to Mindful Professional Practice, Sleep, Burnout, Wellness as a Jus-

tice Issue, Parks Rx and Nature Prescriptions, CISM peer support, a Fun winter activity, Nutrition, Time management and Habits, Ergonomics, Mindful Based Stress Reduction and Workload. As of early 2022 lunches are being provided during these sessions to anyone who wishes.



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Regina, April 24, 2022 Fun walk (left to right)  
Drs. L Blower with son, D Ledingham, J Minion with  
dog and kids, M. Alawa and daughter as well as  
A Lang (taking photo)

Additional wellness initiatives included the development of a Department Wellness Logo, having a meeting with Dr. Rees as part of the onboarding protocol of new members of the Department, having wellness added as a standing item on the agendas of AP divisional, Departmental and SALM (Saskatchewan Association of Laboratory Medicine) meetings, and a birthday plant initiative, where members of the Department who share their birth month with Dr. Rees, receive a small potted plant and a birthday card in their birth month. These initiatives have been very well received.



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Saskatoon, April 24, 2022 fun walk (left to right)  
Dr Kinloch with her children and their friends,  
Dr. K. Campbell, Dr. H Rees, Dr. Z. Taheri and  
Dr. Fevry Desire, a Haitian orthopedic resident who  
was visiting Saskatoon as an observer.

Smaller initiatives include the creation of a wellness what's app chat group, a wellness display board at Saskatoon City Hospital, a number of various monthly wellness challenges, wellness walks, virtual movie nights and a "coffee with a colleague" challenge. As the pandemic evolves and the Covid related public health restrictions change the hope is that the department will be able to have more social interactions and community building events.



March 19, 2022 10 km walk for Ukraine in Saskatoon  
Drs. V. Zhrebitskiy with his wife, Rees and Osmond.



Plants for faculty offices



City hospital wellness bulletin board



# SASKATCHEWAN ASSOCIATION OF LABORATORY MEDICINE (S.A.L.M.)

As the previous year, this year was marked by the COVID pandemic, which had significant impact on SALM membership with the need to keep physically distanced, comply with hospital and university restrictions, keep up with vaccination and revaccination schedules, perform multiple swabbing, masking and other COVID-related chores. All of this put enormous stress on our members who partially switched to working from home on-line and experienced significant isolation. However, with advent of anti-COVID vaccines the whole situation with this infection has started gradually improving. Following SMA advice, we still had our fall 2021 and spring 2022 semi-annual meetings on-line, but participation in those meetings was quite high and engaging.

Several changes occurred in the SALM leadership during the 2021-2022 period. Dr. Mary Kinloch, who since 2016 served as SALM representative at SMA RA meetings, was promoted to a member of SMA resolution committee in September 2021 and later on in May 2022 to SMA vice-speaker. Dr. Deep-ti Ravi expressed interest and was appointed as a new SALM representative at SMA RA. Dr. Jay Kalra replaced Dr. Michael Presta as SALM vice-president. At the same time, following SMA announcement about a few additional openings in SMA RA, Dr. Jay Kalra expressed his interest in becoming Saskatoon representative at SMA RA. Dr. Viktor Zhrebetskiy (SALM president) and Dr. Roland Auer (secretary-treasurer) supported his candidature and Dr. Kalra was successfully elected to this position. Dr. Donna Ledingham was able to retain her position as Regina SMA RA representative. Now we feel that our representation at SMA RA is quite strong and allows us to promote SALM interests even more effectively and on par with other more numerous clinical specialties.

During two semi-annual meetings that took place on October 2021 and April 2022, we continued

discussing regional and specialty/subspecialty developments including strategic provincial planning (Dr. Fergall Magee), 5 year expansion plan in Prince Albert and North Battleford (Drs. B. Murray, C. Ruano and R. Sabaratnam), Saskatoon and Regina workforce changes (Dr. M. Kinloch and Dr. D. Ledingham respectively), functional improvements in Moose Jaw (Dr. H. Miraliakbari), automation of COVID testing (J. Minion), expansion of IVIG stewardship program across the province (Dr. Prokopychuk-Gauk), challenges in biochemical workload (Dr. J. Kalra) and staffing in hematopathology (Drs. E. Torlakovic/ R. Seno).

SALM welcomed recent developments in the provincial molecular biomarker program, presented Drs. M. Kinloch and J. DeCoteau. Operational and financial reports (Dr. V. Zhrebetskiy) provided reassurance that SALM financial situation is quite stable and allows to continue supporting multiple programs and initiative including PALM grand rounds (honorarium for invited speakers), PALM endowment funds (Dr. Marc Omar Shokeir Memorial Fund and Saskatchewan Association of Laboratory Medicine Award for MLT's/MLA's/BSc's), general pathology residency educational fund (supporting attendance of CAP-ACP, USCAP and ASCP conferences and residents review courses), SALM Workload Committee, SALM life-long achievement award, PALM Wellness Committee, PALM AP and Patient Safety meetings, etc.

SALM negotiation Committee/SMA Intersectional Committee (Drs. S. Angel and V. Zhrebetskiy) worked closely with SMA negotiation team (Mr. Ed Hobday and Marcel Nobert) in securing financial interests of pathologists and laboratory physicians during on-going and future negotiations with the Ministry of Health and SHA. Dr. V. Zhrebetskiy together with Dr. E. Alport also received a positive response from the Coroner's Office (C. Weighill) regarding indexation of medicolegal autopsies per-



formed by SHA pathologists. Also, SALM together with SHA Professional Affairs Office (Mr. Rob Gentes and Steve Chard) and SMA negotiation team (Mr. Ed Hobday and Marcel Nobert) continued working on the benefit packages for certain categories of pathologists and laboratory physicians.

SALM Workload Committee led by Dr. M. Presta had about 30 meetings and invited several prominent speakers including Dr. Dan Holmes, Vancouver, BC who provided us with very needed calculations for biochemistry workload. As a practical result of the committee work was implementation of L4E like point system in Regina. It is still a lot of work needed to be done in order to create a viable provincial workload program. Dr. F. Magee suggested getting some boost from the PaLM Wellness program (Dr. H. Rees) in terms of stress relief and conflict resolution related to workforce shortages and professional communication of our members.

SALM membership remains fairly stable and even slightly growing (about 40-44 full members and 12-13 residents) with several planned and unplanned retirements (e.g. Drs. D. Korol, M. Copete, J. Eich-

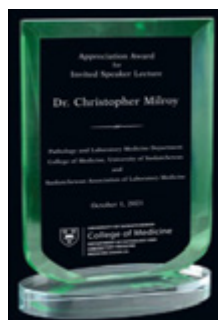
horst, H. Deneer), relocations to other provinces (e.g. Drs. R. Saeedi, S. Naidoo, etc.) and many new arrivals (Drs. H. Wang, Dr. K. Wood, Dr. L. Blower, N. Mehta, J. Forbes, A. Ajayi, etc.).

SALM strongly supports our local general pathology residency program by providing not only funding for residents to go for conferences and review courses, but also by inviting world renown speakers to the resident's half academic day. This time we sponsored invitation of Drs. Christopher Milroy and Jacqueline Parai from University of Ottawa who presented on topics of modern approach to autopsy including COVID infection, biochemistry in autopsy and pathology of drugs of abuse, and held an expert witness workshop.

The priority of SALM is promotion and popularization of pathology and laboratory medicine across Saskatchewan, and support of professional advancement and good care about personal wellbeing of SALM members. We do not forget our most experienced people like Dr. Rajendra Sharma who has served in the Pathology and Laboratory Medicine Department more than 30 years and still continues contributing to Departmental research.



**DR. CHRISTOPHER MILROY**  
MBChB, MD, LLB, BA, LLM,  
FRCPath, FFFLM, FRCPC  
Founder in Forensic  
Pathology, DMJ



**DR. JACQUELINE PARAI**  
MD, MSc, FRCPC  
Founder in Forensic  
Pathology



# HOSPITAL FOUNDATIONS

FACILITY	AREA	SOURCE OF FUNDING	DESCRIPTION
Regina General Hospital	Regina	Hospitals of Regina Foundation	Refrigerated Centrifuge
Yorkton Regional Hospital	Yorkton	The Health Foundation of East Central Saskatchewan	GeneXpert 16 of 16 Modules
Pasqua Hospital	Regina	Hospitals of Regina Foundation	Biological Safety Cabinet
Saskatoon City Hospital	Saskatoon	Saskatoon City Hospital Foundation	Microscope – Pathologist
Southeast Integrated Care Centre	Moosomin	Moosomin District Health Care Foundation	Philips TC30
Yorkton Regional Health Centre	Yorkton	The Health Foundation of East Central Saskatchewan	Ortho Gel Workstation
Southeast Integrated Care Centre	Moosomin	Moosomin District Health Care Foundation	Vitros XT 3400
Southeast Integrated Care Centre	Moosomin	Moosomin District Health Care Foundation	Motic BA410E Hematology Package – Microscope
Paradise Hill Health Centre	Paradise Hill	Twin Rivers Health Care Foundation	Sorval ST8 Centrifuge
Lloydminster Hospital	Lloydminster	Lloydminster Regional Health Foundation	CellaVision
Leader & District Integrated Facility	Leader	Foundation of Leader & District Integrated Facility	Beckman Coulter XH520 Hematology Analyzer & Interfacing
Southwest Integrated HC Facility	Maple Creek	Foundation of Maple Creek IHC Facility	Beckman Coulter XH520 Hematology Analyzer & Interfacing
Battleford Union Hospital	North Battleford	Battleford Foundation	BD Max
St. Paul's Hospital	Saskatoon	St. Paul's Hospital Foundation	Bench Top Refrigerated Centrifuge
Arcola	Arcola	Arcola Palliative Care Committee	DXH520 Plus Interfacing
Kamsack	Kamsack	Kamsack Auxillary	Centrifuge
Saskatoon City Hospital	Saskatoon	City Hospital Foundation	HTS Tissue Microarray Instrument Package
Humboldt	Humboldt	Humboldt Foundation	Blood Bank Refrigerator
Cypress Regional Hospital	Cypress Hills	Dr. Noble Irwin Regional Healthcare Foundation Inc.	DC-1 Instrument

SASKATCHEWAN HEALTH AUTHORITY | COLLEGE OF MEDICINE

[MEDICINE.USASK.CA/DEPARTMENT/CLINICAL/PATHOLOGY.PHP](https://medicine.usask.ca/department/clinical/pathology.php)



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**Saskatchewan  
Health Authority**