

Department of

# PATHOLOGY & LABORATORY MEDICINE

U of S College of Medicine

# ANNUAL REPORT 2022/23

LABORATORY MEDICINE

Saskatchewan Health Authority



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# ABOUT US

## 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.

We acknowledge that we are gathering on Treaty 6 lands today and we are members overseeing lab operations across Treaties 2, 4, 5, 8, 10 territories also. Recognizing this history is important to our future and our efforts to close the gap in health outcomes between Indigenous and non-Indigenous peoples by knowing what the land and the traditional people of the land offer us.



## 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
- collaboration
- commitment to community
- different ways of knowing, 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

## Vision

Healthy People, Healthy Saskatchewan

## Mission

We work together to improve health and well-being. Every day. For Everyone.

## Values

**Safety** Be aware. Commit to physical, psychological, social, cultural and environmental safety. Every day. For everyone.

**Accountability:** Be responsible. Own each action and decision. Be transparent and have courage to speak up.

**Respect:** Be kind. Honour diversity with dignity and empathy. Value each person as an individual.

**Collaboration:** Be better together. Include and acknowledge the contributions of employees, physicians, patients, families and partners.

**Compassion:** Be caring. Practice empathy. Listen actively to understand each other's experiences.

## Philosophy of Care

Our commitment to a philosophy of Patient and Family Centred Care is at the heart of everything we do and provides the foundation of our values.



## MESSAGE FROM THE PROVINCIAL DYAD LEADERSHIP

It is with pleasure that Lenore and I welcome you to Annual Report number seven in the continually evolving Provincial Department of Laboratory Medicine (Saskatchewan Health Authority) and Department of Pathology and Laboratory Medicine (University of Saskatchewan). This report provides us with a chance to remember and celebrate the wonderful achievements of Department members over the past twelve months.

The varied accomplishments featured in this report speak to an actively growing Department delivering success in all three of its mandates - Clinical Care, Academics and Public Health. The activities listed include on-going success in our Residency Program as evidenced by personal growth, academic success and effective wellness activities; an increasingly eclectic and sophisticated portfolio of Departmental Grand Rounds presentations; exciting new arrivals and sad departures of some faculty; outreach initiatives to Africa and South Asia by specific Department members; significant recognitions of many Department members; wonderful images for the highly successful Department Family Social of June 2023; celebration of great successes by specific laboratories including Histocompatibility and Immunogenetics; the imminent launch of the NeuroEPO Clinical Trial for Novel Alzheimer's Disease therapy; implementation of an effective University of Saskatchewan Biobank; continued growth of Clinical Chemistry as they plan to host a Fellowship Program; and Transfusion Medicine who have implemented a Massive Hemorrhage Protocol, among other initiatives; expansion of Newborn Screening; on-going continual improvement by means of Lean Leadership and Management Systems training; a really impressive collection of publications, grants and academic awards for our Departmental members; many active Departmental Wellness initiatives - a successful Glove Recycling Program; continued active support by SALM and, as always, continued support of many Lab Med initiatives by the generosity of many Hospital Foundations through-out the province (please see final section of this report-Foundations).

While the items listed above are addressed in detail within this report, they do not represent all Department activities. Therefore, once again, I would appeal to all Department members to contribute to next year's annual report-to insure that it truly captures all that Department members achieve.

Lenore and I would like to take this opportunity to thank all members of Provincial Laboratory Medicine for their dedication, innovation and hard work during these tough times of severe health system stress.

I would also like to express sincere thanks to Harold Shiffman, U of S College of Medicine Department Manager, who, behind the scenes, so adeptly manages our Department administration, budget and Endowment Funds. And to SALM - whose generous contributions cover a significant component of the production costs of this Annual Report.

Finally - as always - we would like to express our deep gratitude for the on-going generous support that we continue to receive from donors to our U of S College of Medicine Department Endowment Funds and to all of our Hospital Foundations-(please see also section on Foundations at the end of this report).

Lenore and I hope that you enjoy reading this report and wish all Department members success in the future.



**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

Provincial Executive Team with Guests  
SEP 2022  
1<sup>st</sup> In-person meeting after 2.5 years



**Back Row L-R:** Christine Schachtel, Kristin Agopsowicz, Jae Bean, Betty Drewes, Belinda Daniels, Gisele Sakowski, Dawn Callaghan, Nicole Cox, Virginia Marsh, Michelle Harris, Rhonda Hartz, Larry Tittle, Brandi Keller, Navjot Singh, Alexis Hicock, Shawn Gilbert, Glenda Young, Lesley David, Sharon Michell, Pam Nyholt, Angela McTaggart, Michelle Olfert, Geri Chipuer, Kerry Martell, Kendra Nelson (in tree) Sandra Lesko, Shay Jackson, Keri Crawford

**Bottom Row L-R:** Lenore Howey, Jocelyn Stewart, Simone Corriveau, Christina Bacalso, Sheri McCorriston, Heather Brandt, Amy Ratcliffe, LeeAnn Mette, Carla Watson, David King



Lab Leadership – Kick-off Meeting to Strategic Planning for 2023/24

**Back Row L-R:** Dr. J. Martin, Dr. F. Wu, Dawn Callaghan, Dr. B. Burray, Rhonda Hartz, Lenore Howey, Nicole Cox, Dr. N. Antonishyn, Dr. J. Blondeau, Dr. J. BuseF

**Front Row L-R:** Tammy Neuwirth, Keri Crawford, Brandi Kelly, Dr. M. Kinloch, Dr. J. Minion, Dr. D. Ledingham, Dr. F. Magee

# EDUCATION

## Residency



### RESIDENCY PROGRAM ANNUAL REPORT

*By Dr. Rani Kanthan, Resident Program Director  
& Deb Quirion, Resident Program Administrator*

We know this has been a challenging year and recognize that we have additional challenges ahead of us with the upcoming Royal College accreditation in November 2023. We hope that the flexibility, determination, resilience, and spirit of our residents, teaching faculty and laboratory staff will continue to bring us together and cross this bridge with success.

The summer of 2022 welcomed the arrival of our two new residents: Dr. Joel Scott and Dr. Javera Tariq, who began their residency journey on July 1<sup>st</sup>, 2022. July also signaled the adoption of Elentra as the new electronic repository that has now replaced the E-portfolio, which is no longer supported by the Royal College. We also welcomed the arrival of baby boy Lucca Zhao and our congratulations and best wishes to Dr Yayuan Zhao and family. The residents hosted an informal welcome BBQ gathering for the new residents. The program continued with educational activities such as a) Resurrection of the weekly quiz by popular demand b) Purchase of two digital online WHO subscriptions and c) six monthly end of academic year meetings etc. The chief resident as chosen by the residents, Dr. Ingrid Tam, for a six-month term [01 July, 2022 to 31 December, 2022] was welcomed as a member of the Resident Program Committee [RPC].

The fall of 2022 was busy with scheduled academic activities including the first of the four Transfusion Day Camp (September 16) and our Competency meeting on October 12<sup>th</sup>. As it was a year since change of leadership, a Survey Monkey was sent to all residents and members of the RPC seeking feedback regarding the status and leadership of the current program. The Departmental Research Day was held on November 7<sup>th</sup> wherein all residents except the first year presented their research projects. Judges adjudicated their work and awards were distributed based on their excellence. On

November 18<sup>th</sup> our first Fall Welcome was held at Louis' on campus. November was the chosen month to accommodate the new exam schedule in place for our CBD residents. It was a delight to meet up with Dr. Osama Al-agma [Regina Educational site coordinator] who kindly drove up from Regina to join the celebrations.

The year wrapped up with the six-month exam on December 2<sup>nd</sup>. The Christmas Lunch for the RPC committee members and the residents was hosted at Lucky Bastard Distillery with lunch ordered in from The Hunger Cure. The lunch also included a tour of the distillery (with samples!!) which was informative and interesting. We managed to secure our yearly money quota for resident education from the Saskatchewan Association of Laboratory Medicine [SALM], which was used to purchase three online Path Dojo subscriptions-an exam aide -as decided by the residents. As the New Year arrived, residents returned to their academic schedules which included all day activities such as the Transfusion Camp [January 20<sup>th</sup>] etc. Exam going residents (Archana, Phillipe, and Karan) were now also corralled to move into Exam prep mode with JAN/FEB/MAR designated as dedicated Exam review blocks. In this context, the resident CAP Review Course held between January 30<sup>th</sup>-February 3<sup>rd</sup> was attended by Drs. Archana Kakadekar, Phillipe Price, Karan Vats, Ingrid Tam and Yayuan Zhao. There was a change of guard for the Chief resident with Dr. Yayuan Zhao replacing Dr. Ingrid Tam for the next six months until June 30<sup>th</sup>, 2023. February was surprisingly not that cold this year with no 'deep freeze' weeks-probably yet to come...Routine academic program activities continued with the meetings of the RPC,

Competency Committee, six-month review of the residents with the PD/PA team etc. Accreditation has now emerged as the next big-ticket item and many endeavors have been launched in this regard at the program, department and PGME level. Dedicated monthly luncheon resident sessions with the PD/PA team have also begun to explore matters of resident concerns. We now have two off-site Ombudsmen [Dr. Tom Wilson and Dr. Kathleen Felton] for our residency program. As the year rolls on, the CaRMS selection process with the first iteration interviews for the next batch of residents, for the allocated two Canadian Medical Graduate [CMG] positions took place on February 21<sup>st</sup>.

With the arrival of March, we received the results of the CaRMS: Match Day March 22<sup>nd</sup> - we matched with Richard Zhu (U of S graduate). Academic activities continued with the RISE exams written by all PGY1-3 residents between March 11<sup>th</sup> - 24<sup>th</sup> and dedicated focused Exam review prep sessions underway for the Exam going residents. This is our first batch of CBD residents [Karan and Phillipe] writing the PART I Royal College Exams in their 4<sup>th</sup> year of training [one year earlier]. Accreditation meetings at the program level including resident luncheon meetings, Department level with accreditation meetings, and at the PGME level with a 4-hour workshop were attended.

As spring arrived, so was the 'Exam fever' as April 3<sup>rd</sup> and 4<sup>th</sup> were the Royal College Written exams for Archana, Phillipe, and Karan. As we did not match for the second CMG position, we had a second iteration of the CaRMS process with tight deadlines spanning across the

Easter break (April 11<sup>th</sup> was the CaRMS Second Iteration interviews). We were successful in this round and on April 27<sup>th</sup>, CaRMS Match Day, received the news that we had matched with Dr. Dan Zhang.

As the winter snow slowly melted away, we continued in May with routine academic activities including RPC meetings, six-month exam [May 26<sup>th</sup>] etc. The Exam fever persisted as May 16<sup>th</sup> was the PART II of the Royal College OSCEs for Archana only. It was a joyful day on May 30<sup>th</sup> when the Royal College exam marks results were announced – all three of our residents passed.

As we approach the end of the academic year, June has been busy with completion of routine activities including Competency Committee meeting June 5<sup>th</sup>, RPC meeting June 22<sup>nd</sup>, six monthly resident reviews etc. We shall celebrate the end of the academic year with our yearly lunch with the residents and all members of the RPC at Louis' on Campus on June 9<sup>th</sup>. Thus, as another academic year ends, we get ready to welcome our next batch of residents – Dr. Richard Zhu and Dr. Dan Zhang who have their PGY1 Orientation scheduled on June 26<sup>th</sup>-28<sup>th</sup> at PGME, and our program-dedicated orientation scheduled for June 29<sup>th</sup>.

As a program, we thank each and every one of you who have helped our residents along their educational journey. We, as the PD/PA team, are here to serve the program and we look forward to doing so in the most impactful way in the upcoming year.

Once again, a big thank-you to one and all - for everything-past, present and future.



*"We are hopeful that our common passion for education and investing in our residents, with the desire to ensure the best possible outcomes, will help fulfill our goals and vision for the residency program."*

## Pathology & Lab Medicine Residents 2022 -2023 Academic Year



Archan Kakadekar  
PGY5



Phillipe Price  
PGY4



Karan Vats  
PGY4



Ingrid Tam  
PGY3



Yayuan Zhao  
PGY3



Henry Pan  
PGY2



Daniel Markewich  
PGY2



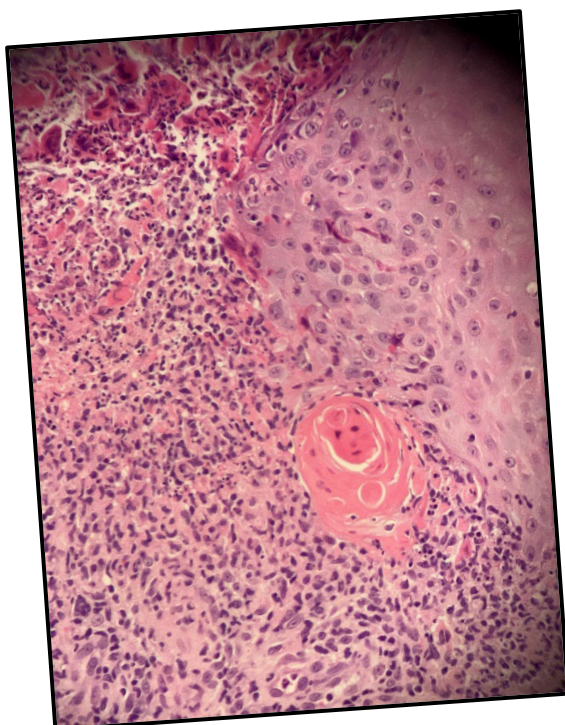
Pramath Kakodkar  
PGY2



Joel Scott  
PGY1



Javera Tariq  
PGY1



"Face the Day"  
Skin slide submitted by Dr. Javera Tariq  
PGY1



## RESIDENT REFLECTIONS

By *Dr. Archana Kakadekar, PGY5*

I am grateful to have gone through my residency with supportive co-residents and staff who have been fundamental to my training. General pathology residency was challenging but rewarding and I am looking forward to taking the knowledge I have accrued and applying it in my fellowship.

**Residency** was a unique experience with the Covid-19 pandemic starting midway through my second year. Despite the challenges it posed, our medical communities and programs quickly established alternative methods to continue resident education. Digital pathology, virtual academic half-day lectures, and Zoom meetings were just a few of the innovations implemented to ensure a minimal lapse in our education.

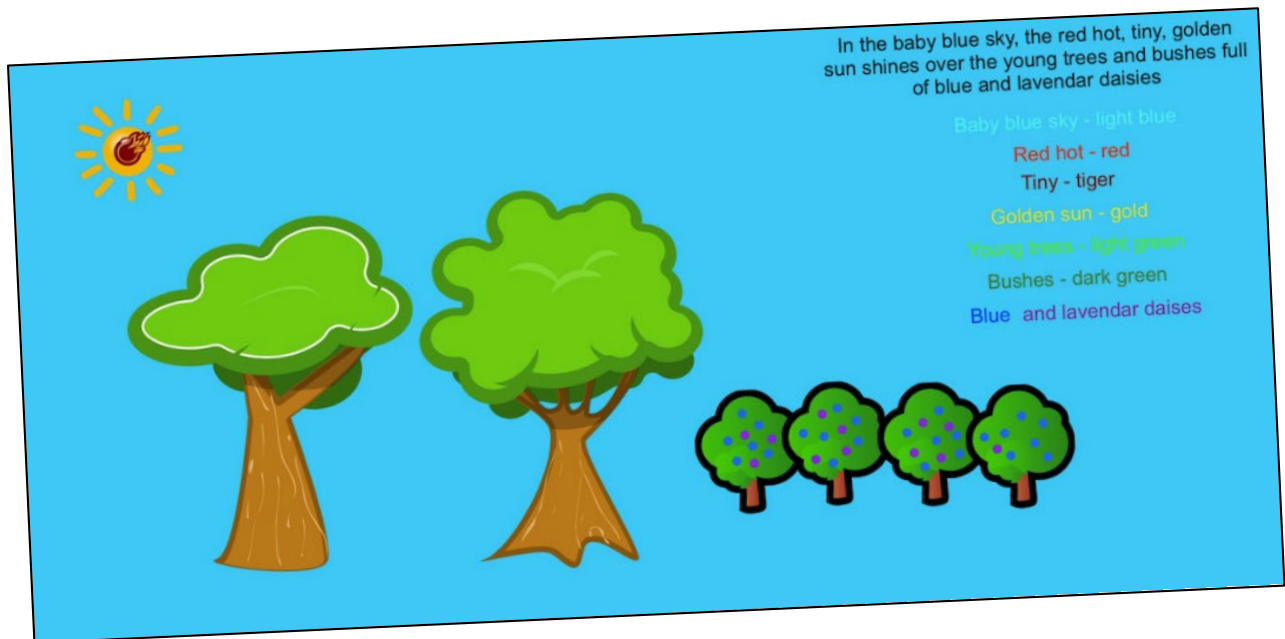
Something that I enjoyed throughout my time in the program were the resident wellness activities and lunches. I was able to try rock-climbing for the first time, which was challenging, but still very fun! I was able to try my hand at disc golf, which proved to be difficult on a windy day. The resident Bob Ross inspired paint "night" was a stroke of brilliance, and our resident lunches that followed at OEB and Louis were enjoyed by all.

Aside from the training in Saskatoon, I am glad to have had the opportunity to do a portion of it in Regina and Prince Albert. The pathologists were always sharing cases with the residents on service and provided a broad scope of pathologies. I went to Prince Albert last November and Dr. Sabaratnam allowed me the flexibility to focus my time in the areas of clinical pathology that I wanted to improve upon. It was an enriching experience to apply all the aspects of laboratory medicine and practice as a general pathologist.

The implementation of the review blocks was integral to me and my colleagues' (Drs. Karan Vats and Phillippe Price) success in passing the General Pathology Royal College examination(s). This would not have been possible without the help and

organization of Dr. Glenda Wright, support of our program director Dr. Rani Kanthan and program administrator Deb Quirion for our scheduling, and all the generous staff who volunteered their time to teaching us.

One memory that sticks out to me while studying was the time we were trying to memorize the order of draw in phlebotomy. We took opportunities to make studying somewhat entertaining, so Karan applied his artistic skills in paint to make a “picmonic.”

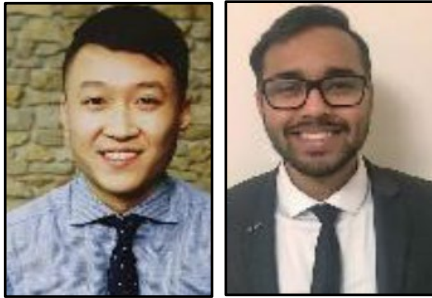


*Painting Credit: Dr. Karan Vats (PGY-4)*

Studying together with residents within the program and across the country is something I want to emphasize while preparing for the board exams. We were able to use our strengths and contribute to each other's knowledge, which reiterated the importance of working together towards a common goal.



Staining Pathology Slides | Science Photo Library



## ENHANCING RESIDENT WELL-BEING FROM THE RESIDENTS' PERSPECTIVE

*By Drs. Henry Pan & Pramath Kakodkar,  
PGY2*

**Embracing** and celebrating resident wellness in a general pathology residency program is crucial for the overall well-being and success of both the residents and the program itself. In this reflection, we will explore the importance of resident wellness, discuss wellness strategies and implementation we have promoted within the program, and highlight the benefits it can bring to both residents and the institution.

With the full-swing incorporation of CBD in our general pathology program, the residency is no longer constrained to historic stressors such as long working hours, high-volume caseloads, and pressure to perform at a high level. Some of these new additional stressors include staying after hours to complete or refill expired EPAs, completion of mandatory semi-useful certifications without allocation of additional time etc. This can take a toll on their physical, mental, and emotional health. Therefore, prioritizing resident wellness is essential to ensure their overall well-being, job satisfaction, and professional growth.

According to our senior resident, resident wellness has improved over the years. However, previous wellness activities were close to null, and improvement is needed. To promote resident wellness, it is important to provide a supportive and nurturing environment within the pathology residency program. This can be achieved through various means, including:

### **Establishing work-life balance:**

Encouraging residents to maintain a healthy work-life balance is crucial. This can be done by setting realistic work hours, providing opportunities for relaxation and leisure activities, and promoting time off for rest and rejuvenation and abolishing archaic unspoken rules of working over the weekend for certain rotations.

### **Creating a culture of support:**

Fostering a culture of support and camaraderie among residents is vital. Encouraging teamwork, collaboration, and open communication can create a sense of belonging and help residents navigate challenges together. Our PD has worked with the RPC to appoint two ombudsmen and individual resident mentors to facilitate check-ins, career planning, additional support, and guidance throughout the year. Our resident wellness coordinators have scheduled monthly events such as bowling, art gallery visits, corn maze, and yearly retreats at Waskesiu Lake. We would encourage the Department Wellness Committee to fund catering

breakfast/coffee at our academic half-days.

#### **Offering wellness resources:**

Providing access to wellness resources such as counselling services, stress management programs, and mindfulness training can be highly beneficial. The Department Wellness Committee has access to these resources and has been instrumental in disseminating these to the residents as well. These resources can help residents cope with stress, develop resilience, and enhance their overall well-being. We would like to see the Postgraduate Medical Education program allocate additional wellness funds to purchase stationary bicycles, sports equipment, or an air hockey table for the resident room.

#### **Encouraging self-care:**

Promoting self-care practices among residents is essential. This can include encouraging regular exercise, healthy eating, and adequate sleep. Additionally, promoting hobbies, interests, and activities outside of work can contribute to a well-rounded and fulfilled life. We suggest bringing in a door-mounted pull-up bar to promote low-volume calisthenics during the day. We also aim to implement a weekly scheduled pickup soccer game with the resident, attending, administrative and lab staff to promote general fitness and camaraderie.

#### **Recognizing achievements and milestones:**

Celebrating the accomplishments and milestones of residents can boost morale and motivation. Recognizing their hard work and dedication through awards, appreciation events, or other forms of acknowledgment can create a positive

and uplifting atmosphere within the residency program. We suggest creating resident, attending, and lab staff awards for the end of the year departmental celebrations.

By embracing and celebrating resident wellness, a general pathology residency program can reap numerous benefits. These include:

**1. Improved resident satisfaction:** When residents feel supported, valued, and cared for, their overall satisfaction with the program increases. This can contribute to a positive learning environment and foster a sense of loyalty and commitment among residents. This will translate to high resident retention after graduation and positive selection for new residency candidates.

**2. Enhanced learning and performance:** Resident wellness has a direct impact on learning and performance. When residents are physically and mentally healthy, they are better able to concentrate, retain information, and perform at their best. This ultimately leads to improved rotation performance.

**3. Decreased burnout and attrition rates:** Prioritizing resident wellness can help reduce burnout and prevent residents from leaving the program prematurely. This not only benefits the residents themselves but also ensures continuity and stability within the program.

**4. Positive program reputation:** A residency program that prioritizes resident wellness gains a positive reputation in the medical community. This can attract top-quality candidates and faculty, enhancing the program's competitiveness and prestige.

In conclusion, embracing and celebrating resident wellness in a general pathology residency program is vital for the overall success and well-being of residents and the program itself. By implementing strategies to promote resident wellness, such as establishing work-life balance.





## RESIDENT INTERVIEW – Dr. Joel Scott, PGY1

By Deb Quirion, Resident Program Administrator

### What is the last show you binge watched?

- *Severance* (*Severance* follows a team of office workers at a sinister biotech company called Lumon Industries, who have all undergone a procedure known as 'severance'.)

### Who inspires you?

- My parents

### What is the best concert you have been to?

- Elton John

### What vacation/destination is on your bucket list?

- Getting to climb Verdon Gorge, France



### What is your favorite ice cream flavor?

- Chocolate

### Do you have any hidden talents?

- Song lyrics – maybe?



### When you were little, what did you want to be when you grew up?

- Dentist

### Which historical figure would you most like to meet?

- Karl Marx

### What three items would you want on a deserted island?

- Water filter, sleeping bag and knife

What is the most amazing fact you know?

- The estimated biomass of all the insects on earth

Who is the most interesting person you have met?

- Hard to choose...

What is your dream vehicle?

- Anything electric...and fast!

RESIDENT INTERVIEW – Dr. Javera Tariq, PGY1

*By Deb Quirion, Resident Program Administrator*

What is your favorite way to spend a day off?

- Cook, eat, sleep, shop...repeat



Who would play you in a movie?

- Katherine Heigl (if she was brown)



What phone app do you use the most?

- Outlook – since I started residency

Do you have a favorite board game?

- Ludo

What is one thing you would buy if you won the lottery?

- A penthouse

If you could go to any concert, what would you choose?

- John Mayer ("Waiting on the World to Change", "Free Fallin")

What favorite dish does a family member cook?

- My aunt cooks Zarda (Pakistani sweet rice) that few people can perfectly make – very technical

What is the best advice you have ever been given?

- Choose your battles wisely

If you had a superpower, what would it be?

- Teleportation

What is your favorite ice cream flavour?

- Cookies & Cream



Which travel destination is on your bucket list?

- London

A genie gives you three wishes...what are they?

- Hmmm...secret (shhh)

What would the title of your memoir be?

- Miracles of Manifestation

What would your last supper be?

- Fettucine Alfredo pasta with good garlic bread. Mmm!



## RESIDENT RESEARCH

*By Dr. Pouneh Dokouhaki, Resident Research Coordinator*

**Scholarly** activities including research are an important part of the residency training. The General Pathology program at USASK is endowed with brilliant residents who are eager to expand their clinical knowledge and advance their field by performing research projects in different areas of pathology. As Research Coordinator, I am happy to support residents in their "research journey" from connecting them with interested faculty, directing them to available resources and follow up with their progress. I am pleased to see that our residents have been successful to publish more than

15 peer-reviewed papers in high quality medical journals over the past 4 years and to present numerous abstracts and posters in local, national and international conferences. These achievements speak to the high standards of the residency program and strong commitment of our residents as future pathologists to advance the field of pathology and laboratory medicine.



*By Dr. Phillippe Price, PGY4*

**Dr.** Torlakovic and I were successful in publishing our paper this year, titled “Reinventing Nuclear Histo-score Utilizing Inherent Morphologic Cutoffs: Blue-brown Color H-score (BBC-HS)” in the journal *Applied Immunohistochemistry and Molecular Morphology*.

Immunohistochemistry (IHC) is a tool that has fundamentally changed the way we practice pathology. IHC is a qualitative method of revealing which antigens are present on a given cell on microscopy. It is often used in threshold-based stratification (positive vs. negative) to prove the presence or absence of that antigen. However, the **increasing level of expression** of some of these biomarkers often lead to **more intense staining**, which published evidence links to specific **diagnosis, prognosis, and responses to therapy**. More and more, diagnostic and prognostic guidelines are encouraging pathologists to adopt semi-quantitative scoring algorithms to assess levels of antigen expression.

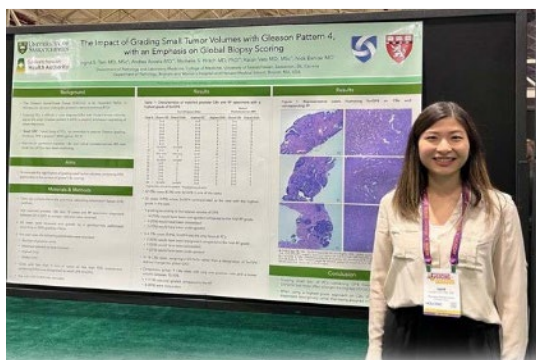
It is essential that these two use cases, descriptive thresholds between positive and negative, as well as graded categories of staining intensity (e.g. 1+, 2+, and 3+) are **standardized and reproducible**. Histo-score (H-score) is a frequently used scoring system that utilizes these graded categories. Our study introduces a novel system that categorizes the cutoff points between positive and negative results and graded categories of staining intensity for a nuclear IHC biomarker. This categorization is based on the color interaction between hematoxylin and diaminobenzidine (DAB); we call it the Blue-brown Color H-score (BBC-HS). The reason we chose to use this color interaction is that it can help overcome the variability in staining intensity between laboratories, given the current lack of standardization of IHC assay protocols. We hope that the BBC-HS can someday help reach better reproducibility of IHC interpretation.

*By Dr. Karan Vats, PGY4*

I have had the opportunity to participate in a variety of research activities during my time in residency. Having the ability to work with my co-residents and colleagues locally, nationally and internationally in pathology and other disciplines has provided me with rewarding experiences.

My research has taken me to conferences within Canada and internationally, giving me the chance to learn from experts in various fields and understand the nature of research that is being conducted at other institutions.



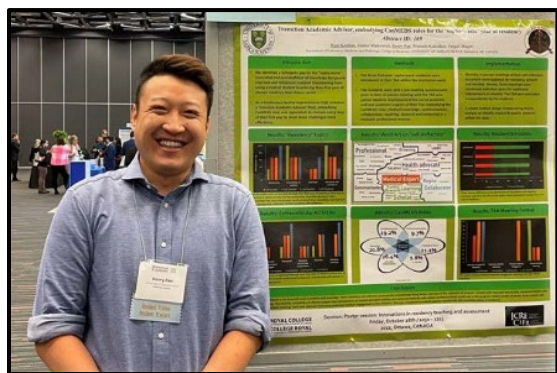


*By Dr. Ingrid Tam, PGY3*

One of the projects that I worked on this past year was on concordance between grading of prostate core biopsies and radical prostatectomies, supervised by Dr. Baniak. I had a great opportunity to go to USCAP in New Orleans to present it, which was a lot of fun! Specifically, we looked at core biopsies with small tumor foci of Gleason pattern 4, which can lead to erroneous upgrading of cases when considering correlation with radical prostatectomies. We found that while grading small foci has a minimal impact on global Gleason Score/Grade Group, it more often changes the highest Gleason Score/Grade Group. This supports a descriptive approach to these small tumour foci of Gleason pattern 4 rather than being assigned a Gleason Score/Grade Group when using a highest-grade approach on core biopsy specimens.

*By Dr. Yayuan Zhao, PGY3*

In 2022, I received the CAP Foundation John H. Rippey Grant to investigate the impact of COVID-19 vaccines on kidney transplant patients. Additionally, I have received the 2022 NACCCA Grant with the most votes to study metabolomics profiles in methotrexate treated juvenile arthritis. I also served as a committee member on the Canadian Certification Council of Pathologists' Assistants Exam Committee since 2020 and have served as Chief Resident in 2023. I presented one of my research papers at the 2022 Banff-CST Joint Meeting and their departmental research day, and authored two abstracts on the impact of SARS-COV2 vaccination on renal transplant patients and the wise use of thyroid function testing in Saskatchewan.



*By Dr. Henry Pan, PGY2*

I am currently finishing my second year of general pathology. I have four research projects at various stages of completion. The first project I picked up is GI-focused research on BAP1 protein expression loss in gastric carcinomas. This project is currently in the data collection stage. Dr.'s Nick Baniak and Rani Kanthan are my supervisors.

The second project that I was included in was pediatric neurosurgery/neuropathology related. The research is a case review of all reported pediatric intracranial tuberculomas

and identifying any causations or correlations. This paper is pending publication in "The Journal of Neurosurgery: Case Lessons." The paper was done in conjunction with fellow general pathology resident Dr. P. Kakodkar.

The third project I am involved in is HLA antibody profiles in COVID19 vaccinated renal transplant patients. The project is completed with the abstract accepted and expected to be presented at the 2023 American Society for Histocompatibility and Immunogenetics (ASHI) 49th Annual Meeting in San Antonio, Texas. The paper was done in conjunction with fellow general pathology residents Drs. P. Kakodkar and Y. Zhao. Our supervisor is Dr. Ahmed Mostafa.

The last and final project is still in its infancy. It is pediatric minded with a focus on congenital Wilms and nephrogenic rests. We are at the literature review stage and the project is being done with fellow general pathology residents Drs. P. Kakodkar and D. Markewich. Our supervisor is Dr. Alysa Poulin.

*By Dr. Daniel Markewich, PGY2*

I am currently working on four projects. Firstly, I am working on a dermatopathology QA project involving sentinel lymph node biopsies for melanoma. Next, I am working on a pediatric autopsy project. I am also working on a literature review on the history of autopsy. Finally, I am working on a literature review on Wilms tumors.



*By Dr. Pramath Kakodkar, PGY2*

Dr. Ahmed Mostafa has been instrumental in supervising me on three projects. Our first manuscript, published in the journal Human Immunology, explores the role of the HLA allelic repertoire in the clinical severity of COVID-19 among Canadians living in the Saskatchewan province. Our second manuscript, currently being submitted to the journal Frontiers in

Immunogenetics, focuses on NGS-based chimerism monitoring in allogeneic hematopoietic stem cell transplant patients. This research aims to enhance our understanding of engraftment dynamics and its impact on transplant outcomes. Additionally, we are preparing a manuscript on the interplay between HLA antibody profile and COVID-19 vaccination in renal transplant patients for the journal Transplant Medicine. I will also be working on completing my active projects with Dr. Roland Auer on gangliogliomas with GBM molecular profile, Dr. Camille Hamula on the emerging uropathogen *Aerococcus urinae*, and Dr. Alysa Poulin on borderline congenital Wilms tumor.



*By Dr. Joel Scott, PGY1*

**M**y current research project is regarding the *Aerococcus* UTI epidemic in our province. Fellow resident, Dr. Pramath Kakodkar and I have been compiling a case series from 130 patients, and we are currently in the phase of data analysis and hope to publish our manuscript shortly. This project is being supervised by Dr. Camille Hamula.

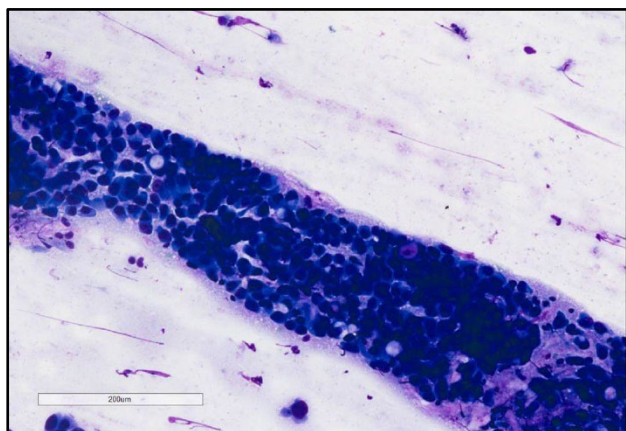
*By Dr. Javera Tariq, PGY1*

Dr. Roland Auer \*\*\*\*\* Dr. Javera Tariq

**T**he literature suggests that Parkinson's disease starts in the olfactory bulb and gastrointestinal tract before progressing to the brainstem and cerebral cortex via the spinal cord. This observational study aims to examine the distribution of Parkinson's disease in the nervous system through microscopic analysis of the spinal cord and olfactory bulb. The study will analyze different segments of the cervical, thoracic, lumbar, and sacral regions of the spinal cords using convenience sampling from autopsies conducted from 2015 to 2023 for Parkinson's disease.



Control samples from spinal cord segments of patients with supranuclear palsy and essential tremors will also be used. The study will focus on locating Lewy bodies, Lewy neurites, and granular alpha-synuclein in the different spinal cord segments and olfactory bulbs. The specimens will also be scored according to the ABC (amyloid, BRAAK and CERAD staging systems) to rule out Alzheimer's disease which is the most common neurodegenerative disorder.



Diagnostic Molecular Pathology | Mayo Clinic



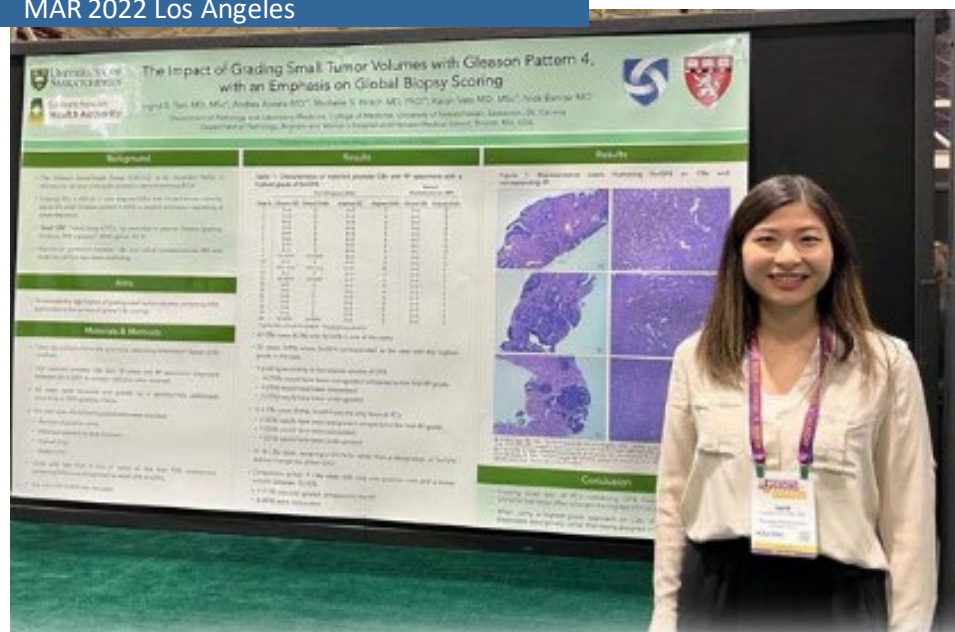
Corn Maze  
30 SEP 2022



Dr. Fergall Magee, Provincial Head, Dr. Karan Vats PGY4 & Dr. Henry Pan PGY2 at the International Conference on Residency Education OCT 2022 Montreal



Dr. Ingrid Tam presenting at USCAP MAR 2022 Los Angeles



Resident Fall Welcome – Casual Come & Go  
Louis' Pub on Campus  
18 NOV 2022



Resident Holiday Lunch – 09 DEC 2022  
Lucky Bastard Distillers



Resident End of Year Lunch—09 JUN 2023  
Louis' Pub on Campus



## Grand Rounds

By Dr. Viktor Zherebitskiy

**Despite** aftershocks of COVID19 pandemic, the PaLMGR Committee, led by Dr. Fergall Magee, Provincial Department Head, with the participation of Dr. Viktor Zherebitskiy (anatomical and clinical pathology representative), Dr. Maruti Uppalapati (basic medical research representative) and Dr. Phillipe Price (general pathology residency representative) worked actively with medical directors (e.g. Dr. Jessica Minion, Roy Romanow Provincial Laboratory, Regina, etc.), area leads (e.g. Dr. Donna Ledingham, SHA/Regina, etc.), division heads (e.g. Dr. Mary Kinloch, SHA/APD Saskatoon, Fang Wu, SHA/BCD Saskatoon, etc.), GP Residency Program Director, Dr. Rani Kanthan and individual faculty members within and outside the department to ensure that we all have a vibrant, exciting and scientifically sounded presentation program for 2022-2023.



Traditionally, we included in the program the Dr. Marc Omar Shokeir Memorial Lecture and presentations from our senior general pathology residents. Also, we tried to keep a healthy balance between energy of the younger generations and experience of the older generations, as well as representation of Regina faculty members, our clinical colleagues and international participants.



**Dr. Pouneh Dokouhaki & Dr. Fang Wu**

27 JUN 2022

Representing pathology and biochemistry, Drs. Dokouhaki and Wu gave a joint presentation "Laboratory stewardship – are we doing enough?" Based on the local practice review related to ordering by clinicians ANA, PSA, thyroid hormones and CRP with ESR, the presenters demonstrated significant potential savings if local clinicians could adhere with Choosing Wisely national and international guidelines and stop ordering unnecessary tests for their patients. Pathologists and laboratory medicine doctors should provide a stewardship to the clinicians, explaining to them appropriateness of certain testing rather than limiting them from ordering of those tests.

**Dr. Sarah Tehseen**  
26 SEP 2022

Representing pediatric hematology and oncology, Dr. Tehseen presented "Pathogen reduced platelets: the implications for transfusion services and hospitals". In her presentation, she discussed a novel pathogen reduction technology and its use in platelets transfusion to the risk categories of patients including thrombocytopenic patients, platelet refractory patients, patients with significant trauma related active hemorrhage and patients with various types of immunodeficiency as well as pediatric and neonatal populations.



**Dr. Erin Prosser-Loose & Dr. Erick McNair**  
31 OCT 2022

Dr. Prosser-Loose, Engagement & Recognition Specialist, CoM and Dr. Erick McNair, basic medical research, gave a joint presentation "Equity, diversity & inclusion in the College of Medicine: 2021 survey findings". In their presentation, they focused on the introduction of the EDI concept in university operations and obstacles for collecting that EDI data, particularly within minority groups. Also, they familiarized the audience with the CoM EDI Survey findings, including demographic distribution of faculty members and the need for more transparency and fairness during the hiring process, distribution of leadership positions and retention within the College.

**Dr. Archana Kakadekar & Dr. Karan Vats**  
29 NOV 2022

Dr. Kakadekar, PGY5,, in her presentation "Clinical-histologic correlations and considerations in skin of color", provided insight on histologic variations of normal skin in different ethical and racial groups, and clinical and histopathologic challenges in the diagnosing inflammatory dermatoses in the patients belonging to those groups.



Dr. Karan Vats, PGY4, shared in his talk “Moving towards the optimization of diagnosis for patients with sarcoma: A 10-year review of externally consulted sarcoma cases in a general anatomical pathology services” the results of his retrospective studies on provincial habits of requesting the external consultations for sarcoma cases and discussed potential solutions in terms of optimization of referral practice for general anatomical pathology services.



**Dr. Sarah Donkers & Dr. Jillian Horton**

16 JAN 2023

functional neurorecovery through early intervention”, targeting early biomarkers of MS relapses and D. Jillian Horton, Internal Medicine, U of M, presented her book “Art, medicine, life” that laid a foundation of WellMD professional fulfillment model. Although these were two very different talks, they both emphasized a pivotal role of women in the research and practice of modern medicine and healthcare system at large.

### **Dr. Ahmed Mostafa**

*(photo courtesy of St. Paul's Hospital Foundation)*

30 JAN 2023

Dr. Mostafa, Director, Technical Supervisor and Clinical Consultant HIL, St. Paul's Hospital, presented “Engraftment/chimerism monitoring: fantasy to reality”. Dr. Mostafa walked us through the history of engraftment and chimerism, types of chimerism, main principles of chimerism monitoring in the HIL, use of new approaches to the monitoring (i.e. STR, NGS, etc.) and their advantages and limitations as well as various aspects of NGS validation for the chimerism monitoring and local experience from the introduction of the chimerism monitoring in Saskatchewan.





**Dr. Keith MacKenzie**

27 FEB 2023

Presenting from the Roy Romanow Provincial Laboratory, Regina, in his talk, "Microbial genomics in lab medicine: SARS-CoV-2 and beyond", Dr. MacKenzie described general applications of whole genome sequencing (WGS) in infectious diseases and WGS use to identify SARS-CoV-2 variants in the clinical specimens. He also provided several examples of implementation of WGS with regard to SARS-CoV-2 variants detection, walked us through a Pango classification system and lineage assignment with use of machine learning. He finished his presentation with discussing first local results of WGS identification of SARS-CoV-2 variants and perspectives of WGS based technology for diagnostics of the other viral and non-viral infectious disease in Saskatchewan.



**Dr. Gudrun Caspar-Bell, Dr. Rick Jaggi, Dr. Rani Kanthan, Dr. Andrew Lyon**

27 MAR 2023

Dr. Caspar-Bell (endocrinology), Dr. Jaggi (ENT), Dr. Kanthan (pathology) and Dr. Lyon (biochemistry) gave a joint presentation "Hyperparathyroidism from the surgical, endocrine, pathology and laboratory medicine perspectives." In their presentation, they discussed modern diagnostic criteria for hyperparathyroidism, classic and new medical and surgical approaches and interventions for this pathologic condition, new WHO-2022 classification for parathyroid pathology and pre-operative, intraoperative and postoperative biochemical investigations for hyperparathyroidism and parathyroidectomy. Based on the local, national and international experience, they concluded that the need in the combined use of frozen section and intraoperative biochemistry is still there and can't be replaced by either of the diagnostic approached individually, at least for the foreseeable future.

## Dr. Angie Rasmussen

24 APR 2023

Dr. Rasmussen, a world-renown microbiologist and VIDO's principle research scientist, presented "Getting to the virus through the host". In her presentation, she emphasized the role of host in determining of virus susceptibility and pathogenicity. She also described various biological mechanisms involved in the emergence and propagation of viruses as well as their impact on various tissues and organs. Based on a case study related to SARS-CoV-2, her research demonstrated usefulness of combination of molecular genetic approaches with machine learning technology in the discovery of virus origin and mechanisms of crossing the cross species barriers.

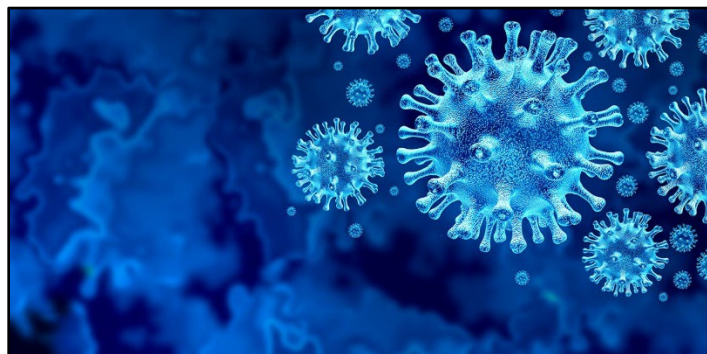


## Dr. Amanda Lang

29 MAY 2023

Dr. Lang discussed in her presentation "Saskatchewan SARSCoV-2 seroprevalence 2020-2023", the concept of using serology for the diagnostics and follow-up of COVID-19 related infection in the community. She explained how Saskatchewan (and Canada at large) used a serosurveillance through the SARS-CoV-2 pandemic and what did we learn from the results of the Saskatchewan Seroprevalence Study.

We are pleased to announce that our presentation portfolio is almost completely filled until the beginning of the summer 2024, including many local speakers and outside the province speakers as well as presenters from the United States. We still have a few spots left and would be more than happy to invite more potential presenters who can broaden our knowledge in various areas of pathology and laboratory medicine and even beyond that!



COVID-19 | Pan American Health Organization

## Endowment Funds

Members/Residents of the Department have access to nine different Funds:

Dr. Thomas A. Cunningham Memorial Fund  
Maureen Fuller Memorial Lecture Fund  
Barbara Moore Memorial Trust Fund  
D.F. Moore Memorial Lecture Fund  
Mrs. J. Olszewska Neuropathology Fund  
SHR Pathologists Fund in Medicine  
Dr. Rajendra K. Sharma Resident Research Award in Pathology  
Saskatchewan Association of Laboratory Medicine Award  
Dr. Marc Omar Shokeir Memorial Fund

Information concerning application dates, and Terms of Reference for each fund is available on the Department webpage under the heading 'Endowment Funds/Apply for an Endowment'

[Pathology and Lab Medicine - College of Medicine - University of Saskatchewan \(usask.ca\)](https://www.usask.ca/pathology/)

The current Endowment Committee is composed of:

Dr. Fergall Magee (Chair), Lenore Howey (SHA Executive Director, Laboratory Medicine), Dr. Jay Kalra, Dr. Rani Kanthan, Dr. Ninad Mehta, Harold Shiffman (General Manager), Dr. Ingrid Tam (Resident), Dr. Sarah Tehseen, Dr. Darryl Yu.

A list of projects/events which have been allocated funding in the academic year of 2022-23 is below:

- Registration to allow a SHA Biosafety & Biosecurity Specialist to register for the virtual 2022 Canadian Biosafety Symposium
- Registration and travel expenses to allow a SHA MLT to attend the SEP 2022 Autoantibody Summit held in Hamilton ON
- Registration and travel expenses (in part) to allow a Resident to attend and facilitate a workshop at the OCT 2022 Internal Summit on Leadership Education for Physicians in Montreal QC
- Travel expenses for a Clinical Microbiologist to attend and present at the APR 2023 European Congress of Clinical Microbiology & Infectious Diseases in Copenhagen DK
- Research, publication and conference presentation expenses for a GI Pathologist (Fellowship Trained)
- A visiting lecturer for the Dr. Marc Omar Shokeir Memorial Lecture Series
- Registration and travel expenses (in part) to allow a SHA Director to attend the MAY 2023 Lab Con Annual Conference in Whistler BC
- A one-year subscription to the Osler videos for Resident training

-

## PEOPLE



### VISIT TO UNIVERSITY OF CAPE COAST, GHANA

*By Dr. Jennifer Billinsky, Clinical Doctoral Scientist Forensic Toxicology, Roy Romanow Provincial Laboratory, Regina*

**This** spring I travelled to Ghana to visit a friend I made during my studies at the U of S. The main objective of the trip was of course leisure but I also wanted to visit the University of Cape Coast where my friend Isaac works as a professor in the Department of Chemistry. Since I was going to campus anyways, Isaac and I decided that it would be a wonderful opportunity for me to visit the Department of Forensic Sciences and give a presentation to the students. The students really enjoyed learning about what we do in the Forensic Toxicology program at RRPL and were eager to ask many questions. I now have a greater appreciation for all of the resources that we have in Canada for forensic testing!

Ghana is a relatively small country (1/3 the size of Saskatchewan) so I was able to cover a lot of terrain. I visited the western village of Nzulenzu built entirely on stilts on a lake, the castles of Cape Coast, the largest market in Western Africa located in Kumasi, the savanna of the north with its thatch-roofed houses and a mosque built in 1421, and the mountains and waterfalls in the east. The highlight of Africa was definitely monkeying around with the wildlife!





UNIVERSITY OF CAPE COAST  
COLLEGE OF AGRICULTURE AND NATURAL SCIENCES  
SCHOOL OF BIOLOGICAL SCIENCES  
DEPARTMENT OF FORENSIC SCIENCE

Presents

## Monthly Departmental Seminar

### Theme

FORENSIC TOXICOLOGY AT THE ROY  
ROMANOW PROVINCIAL LABORATORY  
(REGINA, SK, CANADA)



**DATE**  
FRIDAY, 24TH  
MARCH, 2023



**TIME**  
10AM



**VENUE**  
INSTITUTE OF EDUCATION  
CONFERENCE ROOM

### CHAIRMAN:

PROF. MOSES JOJO EGHAN  
PROVOST  
COLLEGE OF AGRICULTURE AND NATURAL SCIENCES



### SPEAKER

DR. JENNIFER BILLINSKY  
FORENSIC TOXICOLOGIST  
ROY ROMANOW PROVINCIAL LABORATORY (REGINA,  
SK, CANADA)

Compulsory for all Forensic Science  
Students



## COLLEGE OF MEDICINE REGINA CAMPUS TEACHING AWARD



**Dr. Osama Al-Agha** receiving the College of Medicine Regina Campus Teaching Award (recognizing excellence in teaching, demonstrating mentorship, commitment to learning and innovation) from Dr. Rashmi Bhargava, Director of Faculty Development, Regina – 17 MAY 2023

*“Besides my primary clinical duties in anatomical pathology, I have been the Regina-site education coordinator since 2014. This experience has been challenging but, at the same time, exciting and rewarding. Over the past years, we worked hard to improve our pathology residents' training in Regina.*

*We managed to make Regina an excellent and enjoyable training place for our pathology residents and learners from all other disciplines. Needless to say, this success was impossible without the support of all my colleagues in Regina and Saskatoon.*

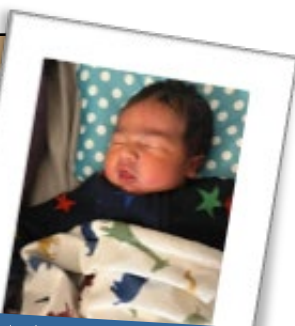
*Under the tenure of the current pathology Residency Program Director, Dr. Rani Kanthan and the Resident Program Administrator, Deb Quirion, a robust headway has been established in developing a solid relationship between Regina and Saskatoon. In the present competence-by-design training program, pathology residents now spend an essential part of their training in Regina where they acquire a good grounding in all aspects of general pathology.*

*In recognition of hard work and commitment to teaching, I am thrilled and honoured to win the 2023 College of Medicine Faculty Award for excellence in post-graduate teaching in Regina Campus. This will undoubtedly inspire me to continue my substantive contribution to the teaching process here. My passion is to continue working diligently on “perfecting tools of the trade.” My main goals are to elevate teaching level and overcome all hurdles and challenges.*

*Many thanks to all those who offer help to make and shape great pathologists who can contribute to our profession and patient care.”*

Dr. Osama Al-Agha, MD, DABP, FRCPC

## NEW AND DEPARTING FACULTY



Welcome to Hasan (Dr. Homan Miraliakbari) – NOV 2022

## Welcome

- Dr. Kara Roncin
- Dr. Jim Xiang – Associate Member (Appointment Renewal)
- Dr. Sukhbir Kaur
- Dr. Janet Martin
- Dr. Jalaluddin Bhuiyan
- Dr. Reshma Khoosal
- Dr. Hui Wang
- Dr. Cody Lewis
- Dr. Felipe Sperandio

## Farewell

- Dr. Barry Kyle
- Dr. Jessica Forbes
- Dr. Kayode Balogun
- Dr. Sarisha Naidoo
- Dr. Maria Copete
- Dr. Harry Deneer
- Dr. Rajendra Sharma
- Dr. Rajni Chibbar
- Dr. Ian Etches
- Dr. Rommel Seno



Welcome to Anders (Dr. Joshua Buse) – JAN 2023



## Dr. Seno's Farewell – MAY 2023

Back row – Drs. A. Kirby; O. Al-Agha; E. Jones; D. Alfano; R. Seno; A. Khalifa; D. Grammatico; M. Presta; A. Nistor; E. Alport

Front row – Drs. L. Blower; K. Wood; J. Wooff; A. Box



RUH G-Wing Pathology "Neighbours" Year-end Lunch Hosted by Drs. Rani Kanthan & Rajendra Sharma  
Tamarind – 06 DEC 2022  
- Dr. R. Auer, Dr. R. Kanthan, Loreen Trautmann, Deb Quirion, Dr. D. Diudea, Dr. R. Sharma, Dr. V. Zhrebetskiy

#### A Few Photos...



Dr. Marilyn Kinloch  
SMA Meeting Saskatoon  
05 MAY 2023



Dr. Fergall Magee at the 62<sup>nd</sup> Annual CANP meeting in Saskatoon 14 OCT 2022

## DR. SHEILA RUTLEDGE HARDING

Receiving the 2022 Saskatoon Medical Staff Association Exceptional Service Award for her outstanding lifetime long service in transfusion medicine.

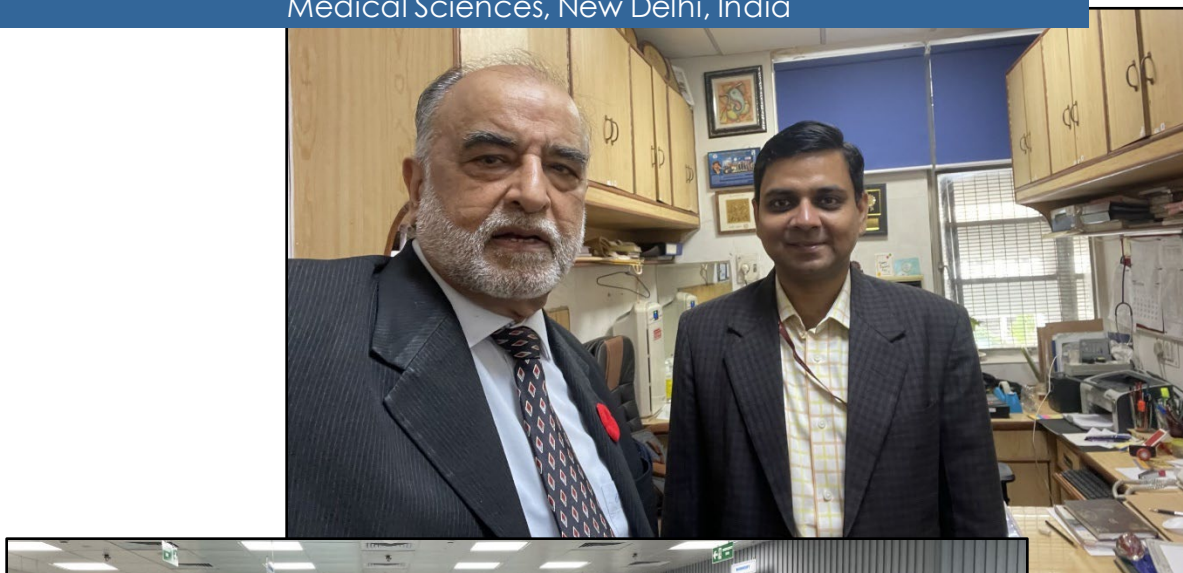


## DR. JAWAHAR (JAY) KALRA



The Department of Biochemistry organized guest lecture by Professor Jay Kalra from College of Medicine, University of Saskatchewan, Canada on "Ethics in Artificial Intelligence." Director Lady Hardinge Medical College, New Delhi, India, Dr. Virender Kumar & AMS Dr V.K. Sharma also interacted with him.

Dr. Kalra with Dr. Sudip Datta, Additional Professor of Laboratory Medicine and Head of the Department of Laboratory Medicine at All India Institute of Medical Sciences, New Delhi, India



## RECIPIENTS OF THE QEII PLATINUM JUBILEE MEDAL

**Dr. Joseph Blondeau** being awarded the QEII Platinum Jubilee Medal 18 DEC 2022 in having demonstrated exceptional qualities and outstanding service to our province in the field of healthcare and public service – nominated by the Member of the Legislative Assembly, Marv Friesen.



**Dr. Jay Kalra** in being a recipient of the QEII Platinum Jubilee Medal on 24 MAR 2023; after a thorough Civic process, Mayor Clark noted this medal was awarded to Dr. Kalra for his contributions in the field of healthcare through his demonstration of exceptional qualities and outstanding service to our province and dedication to the City of Saskatoon



### **Dr. Rajendra Sharma**

Being awarded the QEII Platinum Jubilee Medal from the Government of Saskatchewan Ministry of Executive Council – presented by The Honourable Tim McLeod, Provincial Secretary



**Dr. Marilyn Kinloch** for receiving the Queen Elizabeth II Platinum Jubilee Medal at a ceremony TUE, 24 JAN 2023 for her significant contributions in Philanthropy – nominated by Nathaniel Teed, a member of the provincial NDP caucus.

**Angela Aug**, a CLXT in Shellbrook, received the Platinum Jubilee Medal from Lt. Gov. Russ Mirasty and Premier Scott Moe – 17 MAR 2023, Shellbrook, for her commitment to health care.

## DEPARTMENT FAMILY SOCIAL – 03 JUN 2023























Dr. Ania Radomska's Retirement Gift from Department  
Presented by the Provincial Head, Dr. Fergall Magee



CoM Staff Recognition – 01 JUN 2023  
Dr. Marilyn Kinloch and Dean, Dr. Preston Smith, acknowledging  
Dr. Radomska's Retirement





Dr. Rajendra Sharma – Retirement Presentation



CoM Staff Recognition – 01 JUN 2023  
Dr. Marilyn Kinloch and Dean, Dr. Preston Smith, acknowledging  
Dr. Sharma's Retirement



# LABORATORY PRACTICE



## DR. MARC BALTZAN PROVINCIAL HISTOCOMPATIBILITY & IMMUNOGENETICS LABORATORY (HIL)

*By Dr. Ahmed Mostafa, Clinical Director and Consultant  
(photo courtesy of St. Paul's Hospital Foundation)*

*With Acknowledgement to Simone Corriveau, Manager  
of Genomics Group, Saskatoon*

On April 6, a significant milestone was celebrated within our laboratory as we unveiled a new plaque and officially changed the name from the Human Leukocyte Antigen (HLA) Lab to the Dr. Marc Baltzan Histocompatibility and Immunogenetics Laboratory (HIL). This name change signifies the expanded scope of services offered by the lab, which now supports all aspects of organ and bone marrow transplantation.

The Dr. Marc Baltzan Histocompatibility and Immunogenetics Laboratory (HIL) at St Paul's Hospital (SPH) stands at the forefront of groundbreaking advancements in the field of transplant medicine and immune system analysis. With unwavering dedication and relentless pursuit of scientific excellence, this pioneering laboratory has made remarkable strides in unraveling the complexities of histocompatibility and Immunogenetics, revolutionizing the landscape of transplantation and personalized medicine. By combining cutting-edge technologies, innovative research methodologies, and a team of brilliant scientists, the laboratory has successfully contributed to the understanding of human immune responses, enhancing the success rates of organ transplants, and improving patient outcomes. The Histocompatibility and Immunogenetics Laboratory's remarkable achievements have not only transformed medical practice but also instilled hope in countless lives, underscoring its pivotal role in shaping the future of healthcare.

Over the past year, the HIL has undergone substantial advancements, marked by the successful integration of Engraftment Monitoring by Next-Generation Sequencing (NGS) for the assessment of stem cell transplantation outcomes. This cutting-edge method exhibits a remarkable tenfold increase in sensitivity compared to conventional techniques previously employed, enabling the early detection of relapse and significantly

enhancing patient well-being and safety. Notably, HIL proudly stands as the inaugural Canadian laboratory to adopt this groundbreaking approach to engraftment monitoring. Furthermore, the laboratory's commendable efforts have resulted in the official accreditation of this method by the esteemed American Society of Histocompatibility and Immunogenetics (ASHI), underscoring the laboratory's commitment to excellence and adherence to rigorous quality standards.

The Histocompatibility and Immunogenetics Laboratory (HIL) has been awarded a significant grant by the St. Paul's Foundation Inc. to support kidney health and enhance organ transplant services through the implementation of state-of-the-art technology. This funding will facilitate the acquisition of cutting-edge equipment, including the RoboSep, Cytotflex, Luminex 3D scanner, Tape station, and EZ2 DNA extractor. Currently, the HIL employs a labor-intensive and time-consuming method for isolating cells from donor blood to perform the crossmatch, a gold standard test for assessing transplantation risk, which can take up to 7 hours or longer in the case of consecutive donors. This prolonged process increases cold ischemia time and poses a risk to organ viability. To address these challenges, the RoboSep™ Cell Separation Instruments will be introduced, enabling automated cell processing and isolation with minimal hands-on time. The RoboSep instruments offer a column-free system, reducing sample handling and eliminating cross-contamination risk, while facilitating the simultaneous isolation of cells from up to 16 samples for various downstream applications, including flow cytometry using the Cytotflex system. Additionally,

the laboratory implemented Real-Time PCR, a genomic diagnostics technology, to enhance organ-patient matching. This advanced diagnostic method significantly reduced testing time from over 7 hours to 90 minutes, complementing the efficiency achieved through RoboSep cell isolation. Consequently, the combination of real-time PCR and RoboSep technology will reduce the hands-on time from 14 hours to 2 hours, leading to decreased cold ischemia time for solid organ donation and improved patient outcomes. The HIL's crucial role in the Saskatchewan Transplant Program (STP) and the Saskatchewan Cancer Agency Stem Cell Transplantation Program (SCASCT) will be further strengthened with these technological advancements, enabling more accurate risk assessments, shorter turnaround times, and ultimately, earlier transplantation, minimizing organ damage and enhancing survival rates. By addressing the recommendation to reduce cold ischemia time, this project aligns with recent studies on transplant organ rejection and aims to improve graft outcomes and long-term survival, mitigating complications such as delayed graft function (DGF) and acute immune rejection. The implementation of advanced technology in the Transplantation Laboratory will revolutionize pre-transplant risk assessment, offering ease of use, automation, high throughput capacity, analysis of diverse clinical samples, and reliable information from minute samples. Patients will benefit from improved graft outcomes, extended organ survival, fewer surveillance biopsies, and reduced unnecessary courses of immunosuppressive therapy, and fewer adverse reactions to therapeutic medications, ensuring enhanced overall transplant success.

Additionally last year our lab significantly participated in the implementation of the first successful pediatric Saskatchewan Diseased Donor offer. Previously these patients were getting only offers from the Alberta Transplant Program. Now all the pediatric transplant patients are now added to our provincial and national waitlist enabling them to access multiple offers either locally or nationally. Including them on the waitlist ensures that these vulnerable patients have equitable access to life-saving kidney transplants, providing them with a chance at improved health and a better quality of life. Ultimately, the addition of pediatric renal patients to the waitlist is a testament to the commitment towards comprehensive and inclusive healthcare, aiming to address the unique needs of all patients, regardless of age, and to provide them with the best possible chance of survival and well-being.

To align with ASHI accreditation standards regarding continuing education requirements, we worked with the American College of Histocompatibility and Immunogenetics (ACHI) to get the lab accredited for CME. Staff is now able to obtain ACHI-approved CE credits by participating in weekly staff meetings and journal club talks. As a clinical lab, it is critical to maintain high standards of patient care. Continuous education programs help keep our staff up-to-date with the latest developments in the field, including new technologies, methodologies, and best practices. This knowledge enabled us to provide accurate and reliable test results, which is critical for ensuring quality patient care. ASHI requires our lab to maintain a minimum level of training and education for their staff. Continuous education programs helped us meet these requirements and demonstrate our commitment to compliance with regulatory standards. Investing in the continuous education and development of our staff demonstrates our commitment to their growth and development. This increased staff engagement, job satisfaction, and retention, reduced training costs, and ensured a stable workforce. Continuous education programs encouraged our staff to stay up-to-date with the latest developments in the field, allowing them to identify and adopt innovative approaches that improve patient care, increase efficiency, and reduce costs.

On April 6, a significant milestone was celebrated within our laboratory as we unveiled a new plaque and officially changed the name from the Human Leukocyte Antigen (HLA) Lab to the Dr. Marc Baltzan Histocompatibility and Immunogenetics Laboratory (HIL). This name change signifies the expanded scope of services offered by the lab, which now supports all aspects of organ and bone marrow transplantation. Furthermore, HIL conducts tests that delve into how an individual's genetic makeup influences their response to pharmaceuticals. Recognizing the impact a lab's name has on its perception by clients, collaborators, and stakeholders, it was essential to update the name to accurately reflect the lab's focus, scope, and mission. The shift from HLA to HIL aligns with the lab's evolution beyond histocompatibility testing, now encompassing a broader range of Immunogenetics tests. Additionally, the name change forms part of a broader branding and marketing strategy aimed at raising awareness about the lab's services and attracting new clients and collaborations. To mark this occasion, the SPH Foundation Inc. and the pathology and lab medicine department organized a small event, featuring a presentation by Dr. Mostafa on the significance of the name change. The event culminated in the unveiling of the new plaque, joined by Corey Miller, CEO & President of Emmanuel Health, followed by an opportunity for attendees to engage in socialization while enjoying some treats.

Corey Miller and Dr. Ahmed Mostafa

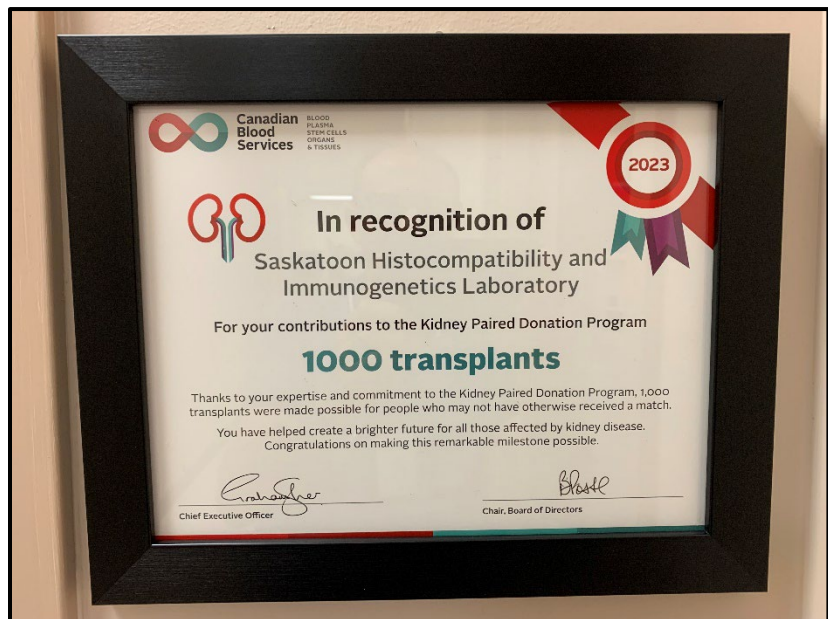


The noteworthy accomplishment of the Dr. Marc Baltzan Histocompatibility and Immunogenetics Laboratory (HIL) at St. Paul's Hospital (SPH) can be attributed to the exceptional teamwork demonstrated by its dedicated personnel. The lab's multidisciplinary nature necessitates seamless collaboration among scientists, technologists, clinicians, and support staff to effectively pursue common objectives. Through this collective effort, team members are able to leverage their diverse expertise, skills, and perspectives, thereby effectively addressing intricate challenges inherent in histocompatibility and immunogenetics research. The outcomes of this collaborative endeavor are more accurate and comprehensive results, which contribute to advancements in the field. In light of this achievement, I would like to extend my appreciation to Destinie Webster, the lab supervisor, Twyla Pearce (Technologist II), as well as all the staff members including Karey Gorkoff (Technologist I), Terry Sawyer (Technologist I), Didem Hammond (Clinical Genetics Technologist I), and Svetlana Parsyak (Clinical Genetics Technologist I), for their invaluable contributions to the success of the HIL at SPH. Their dedication, expertise, and teamwork have been instrumental in achieving excellence in histocompatibility and Immunogenetics research, ultimately enhancing patient care and outcomes.

Destinie Websater, Didem Hammond, Twyla Pearce, Karey Gorkoff, Simone Corriveau, Terry Sawyer, Ahmed Mostafa



This prestigious accolade, presented by the Canadian Blood Service (CBS), commemorates HIL's exceptional contribution to facilitating an impressive milestone of 1000 successful Kidney Paired Donor (KPD) transplants. The KPD program stands as a national initiative wherein incompatible donor-recipient pairs are thoughtfully matched with other similarly incompatible pairs. In this unique exchange, the donor from the first pair selflessly donates a kidney to the recipient of the second pair, reciprocally providing an opportunity for both recipients to receive compatible kidneys from willing donors. At times, the KPD programs involve multiple pairs and are expertly facilitated by the collaborative efforts of CBS and the Canadian Transplant Registry (CTR). By expanding the pool of potential donors and recipients, these programs strive to significantly increase the number of successful kidney transplants across our nation.





## CLINICAL TRIAL PLANNED FOR NOVEL ALZHEIMER'S DISEASE THERAPY AT USASK

Dr. Ron Geyer on NeuroEPO

Biochemist & Professor in the Department of Pathology & Laboratory Medicine

*Reprinted from [medicine.usask.ca/news/2023](https://medicine.usask.ca/news/2023)*

A novel therapy developed for Alzheimer's disease – previously shown to significantly slow the progression of the disease and, in some instances, reverse cognitive decline – will be tested in a Phase II clinical trial at the University of Saskatchewan (USask).

"The positive results that have been demonstrated this far for NeuroEPO are an important milestone in the development of a breakthrough technology for the treatment of Alzheimer's disease," Geyer said. "This Phase II clinical trial at the USask will be pivotal towards further demonstrating NeuroEPO's efficacy, not only for Saskatchewan's Alzheimer's patients, but society as a whole."

Members of the clinical research team include assistant professors and geriatricians in the college, Dr. Megan Surkan (MD) and Dr. Krista Lagimodiere (MD), and clinical psychologist Dr. Megan O'Connell (PhD). They will also collaborate with the Centre for Molecular Immunology, who will play an integral role in this trial, as well as with Rocket Science Health Inc.

During the trial, a new method will be used to deliver the drug through the nasal cavity using an engineered drug delivery device developed by Rocket Science Health to deposit small quantities of the drug in the upper nasal region where it is taken directly to the brain without first being metabolized in the liver. This novel direct nose to brain delivery is critical for drug delivery to the brain, which allows NeuroEPO to reach its target in the brain within minutes and avoids the potential for side effects in other organs.

As part of the process to measure the effectiveness of NeuroEPO to stop the decline in cognition in Alzheimer's patients, the group will use both cognitive assessments and measure biological markers in clinical trial participants that include beta amyloid plaques, Tau

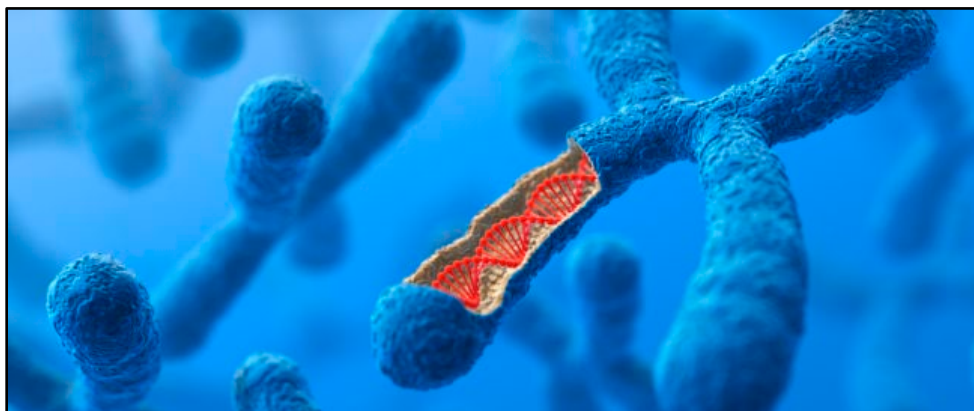
neurofibrils and ApoE, as well as MRI that measures decline in brain volume.

These biological markers, which have not previously been measured with NeuroEPO administration, are hallmarks of Alzheimer's disease and play a significant role in neuron cell death.

Detection of beta amyloid plaques in the brain will be enabled by a positron emission tomography imaging probe (drug) that must be manufactured on-site. Fortunately, the Sylvia Fedoruk Canadian Centre for Nuclear Innovation operates the Saskatchewan Cyclotron Facility on the USask campus to support cutting-edge radiopharmaceutical research and development, such as the work led by Geyer and Kirk. The radiation-emitting component, Fluorine-18, is produced at the Facility and combined with the molecule Flutemetamol, in a laboratory compliant with Health Canada regulations, to yield the imaging probe.

"Establishing a biologic diagnostics process in Saskatchewan will be of great benefit to clinicians, allowing them to more accurately diagnose Alzheimer's disease and provide the appropriate therapeutic intervention," Geyer said.

Currently the Alzheimer's diagnosis is performed using cognitive assessments, making it difficult to differentiate the disease from other types of dementia. The USask team will work with the Geriatric Evaluation and Management Clinic at City Hospital, the Rural and Remote Memory clinic, and the Alzheimer Society of Saskatchewan to recruit participants and make the public aware of this clinical trial.



Cytogenetics & Molecular Pathology | [pathology.wustl.edu](http://pathology.wustl.edu)

## SASK RESEARCHERS UNCOVER ENHANCED CANCER-FIGHTING APPROACH

Drs. Andrew Freywald & Franco Vizeacoumar (SCA)  
Professors in the Department of Pathology & Laboratory Medicine

*Reprinted from Saskatoon.ctvnews.ca 30 MAR 2023*

Ground-breaking research at the University of Saskatchewan (U of S) could lead to more effective cancer treatments for patients. Work done by researchers **Andrew Freywald** and **Franco Vizeacoumar** identifies a powerful way to take down cancer cells, according to the university.

Freywald said there are currently two ways to fight cancer, one is a toxic attack on the cancer cells and the other is a more targeted approach to attacking cancer.

He compared the approaches to trying to make a chair fall. "One way is we can just smash it and then everything falls down. This is our analogy to general traditional cytotoxic therapy." Freywald said it was effective but can do damage to the patient. "They kill cancer cells, but they also kill normal cells in the body. These therapies are very toxic for normal tissues." Because of that, Freywald said the treatment can only be used in limited amounts so it does not damage the patient too much. "Because of this limitation, they cannot eliminate, or they cannot kill cancer cells, because if there were too many too much of this traditional cytotoxic therapy, they start killing the patient. We don't want to kill the patient, you want to kill only selectively cancer cells. So this is a limitation of the general cytotoxic therapy."

He said the targeted therapies were better in that they were not as toxic, but also had their limitations in that they cannot kill all cancer cells. Using the chair analogy, Freywald said targeted therapy cuts off one leg of a chair but the chair continues to stand. "Even with three remaining legs, the chair can still be balanced, and it still stays damaged. But it still stays there," he said. "Some of the cancer cells die, but some of them will still survive. Then the tumour will come back in a more aggressive format. And this eventually will kill a cancer patient."

The goal of the research was to find a targeted approach to take down two parts of the cancer cell and improve the chances of eliminating cancer. The challenge, he said, was to identify which parts of the cancer cell could be targeted that would ultimately kill cancer.

"It's not a trivial task, because there are multiple mechanisms that operate in cancer cells. So there's thousands of them," Freywald said. This is where Vizeacoumar's expertise came in, and he helped identify the best parts of the cancer cell to target. "We knocked down every single gene to find the targets that can potentially eliminate the cancer cells," Vizeacoumar said. "By this, we actually came with a set of targets. Then we worked with Andrew to identify what is the most optimal within that set."

At this point, they brought in Dr. Nicolas Bisson from Université Laval who helped the team by identifying all proteins that interact with the first targeted part of the cancer cell. They narrowed down the set of targets to two. From there they got in touch with a company that Freywald had a connection with to develop an antibody.

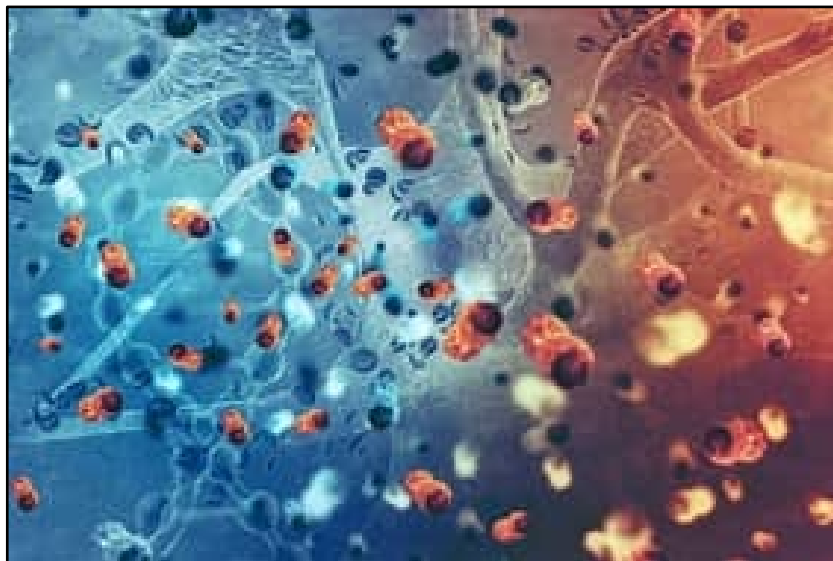
"We tested this antibody in animal models of human breast cancer and human pancreatic tumours, and found that this antibody that targets two molecules of our choice of our prediction works very effectively in suppressing tumour growths," Freywald said.

With their research validated, Freywald said scientists can use the results to develop a more effective targeted treatment for cancer patients.

Vizeacoumar and Freywald said they were grateful to everyone who helped along the way, including Bisson, Behzad Toosi, Humphrey Fonge, Leonard Foster from the University of British Columbia and Aaron White.

The team's work has been published in Clinical Cancer Research.

*Funding was provided by the Canadian Institutes of Health Research, Genome Canada, the Saskatchewan Health Research Foundation, the USask College of Medicine, and #BeLikeBruce Memorial Pancreatic Cancer Research*



Cancer cells | [beverlyoncology.com](http://beverlyoncology.com)

## DIVISION OF ANATOMIC PATHOLOGY - SASKATOON

*By Dr. Marilyn Kinloch, Area Division Lead, Anatomic Pathology, Saskatoon*



We welcome Dr. Hui Wang to practice after she finished her fellowship from Western University in gastrointestinal pathology. She also sees breast specimens and has joined the cytopathology service. We are also excited to welcome back Dr. Alicia Andrews, another previous resident, in August, from her fellowship in pediatric pathology. She is set to join her colleagues in RUH.

Dr. Felipe Sperandio, oral pathologist, has started with us this year. He comes to us from University of British Columbia where he did a four-year oral pathology fellowship. He joins Dr. Amanda Gruza as the pathologist's oral pathologists. Dr. Gruza had her second baby, Olena, this year and we are welcoming her back from maternity in August 2023. We had our first surgical pathology fellow, Dr. Kara Roncin, return from a maternity leave after her baby, Saorise, was born. We wished Dr. Rajni Chibbar a happy retirement from her many years of service for both the division of Anatomic Pathology and the University of Saskatchewan in October 2022.

It has been four years since the Western Canadian Diagnostic Accreditation Alliance (WCDA) has accredited our lab so we are gearing up for a fall inspection. We have been running Accreditation Spotlights during our Quality Assurance rounds to highlight the

previous citations and increase awareness of the pathologist's role in the Accreditation cycle.

Successful partnerships within the Provincial biomarkers committee has led to expanded testing for patients with non-small cell lung adenocarcinoma. Starting in June, every patient diagnosed with non-small cell lung adenocarcinoma will be triaged with a DNA panel (KRAS/EGFR/BRAF) and a PD-L1 immunostain and if they are driver negative they are reflexed to an RNA fusion panel that includes NTRK, MET skipping, and RET. This will capture more actionable mutations for our patients to access therapy. We continue to serve the cancer patients in the province with personalized biomarkers for an expanding number of disease sites.

### Biobank

The USask Gynecologic Biobank has continued to thrive for another year since opening in 2021. With the recent success of the Genomic Application Partnership Program (GAPP) implementation grant between Drs. John DeCoteau and Marilyn Kinloch, totalling \$3.6 million, they plan to implement oncogenomic ovarian cancer testing and partner with Gynecologic Oncologist, Dr. Laura Hopkins, to run an

investigator-led clinical trial. The 4PDQ trial combines Patient-Oriented Research and the potential to limit harmful patient chemotherapy side-effects by refining ovarian diagnostics through Homologous Recombination testing.

<https://genomeprairie.ca/project/ovarian-cancer-genomics-project/>

We look forward to expanding to breast cancer banking this year. Working with Dr. Dean Chamberlain, Jean E. Murray Chair in Cancer Research at the University of Saskatchewan. The goal is to

partner on research with breast organoids and the tumour microenvironment with the division of General Surgery.

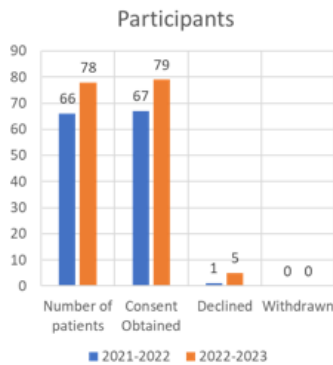
Of course, we couldn't provide a biobanking service without our **Biobank manager, Sylvie Clairefond**. Sylvie continues to improve the quality and expand the biobank to including new ways specimens can be stored and accessed for research.

## University of Saskatchewan Tumor Biobank

- ❖ **Bank Manager:** Dr. Mary Kinloch
- ❖ **Bank Co-manager:** Dr. Laura Hopkins
- ❖ **Bank Coordinator:** Dr. Sylvie Clairefond
- ❖ **Research Facilitator:** Dr Mark Milne
- ❖ **Sponsor or partner:** Ovarian Cancer Canada, College of Medicine from University of Saskatchewan and Genome Canada
- ❖ **First sample was collected on October 22, 2021**
- ❖ **Only institutional biobank presents in Saskatchewan**

## What is new

### ❖ Number of patients recruited: 144 patients



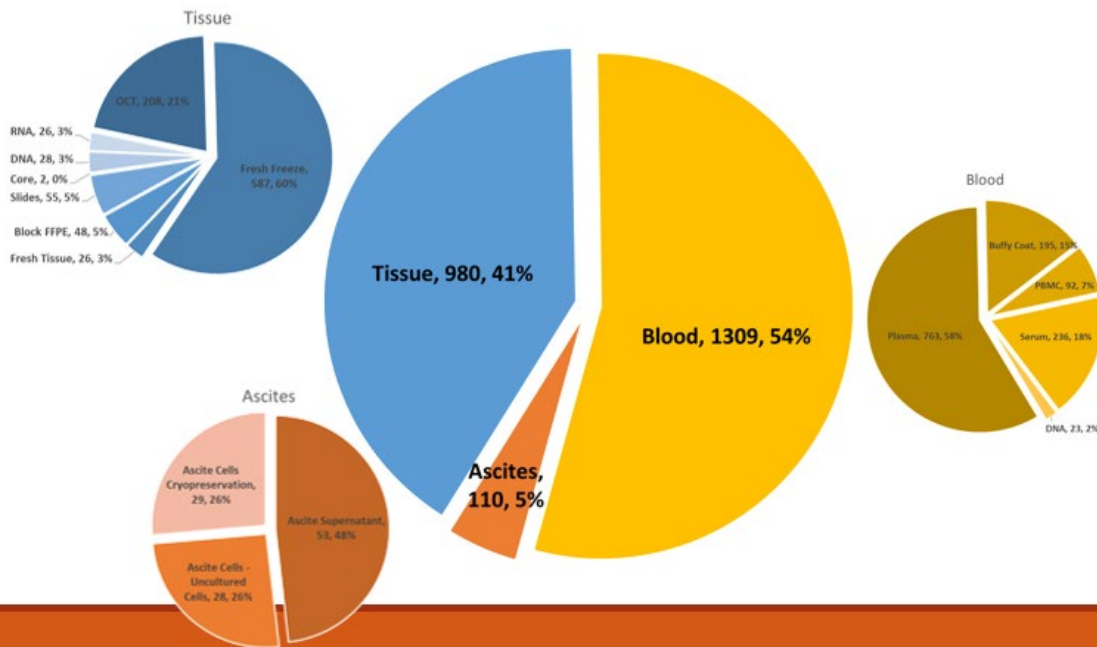
### ❖ The biobank supports 4 academic research projects from the University of Saskatchewan:

- "Cryobiological evaluation of ovarian tissue for development of optimal preservation protocols"
- "Pilot study to characterize methods to process ovarian tumors to generate 3D tumor models"
- "Clinical implementation oncogenomic testing and synoptic reporting for improved ovarian cancer patient care in Saskatchewan"
- "Development of patient avatars using tissue engineering techniques"

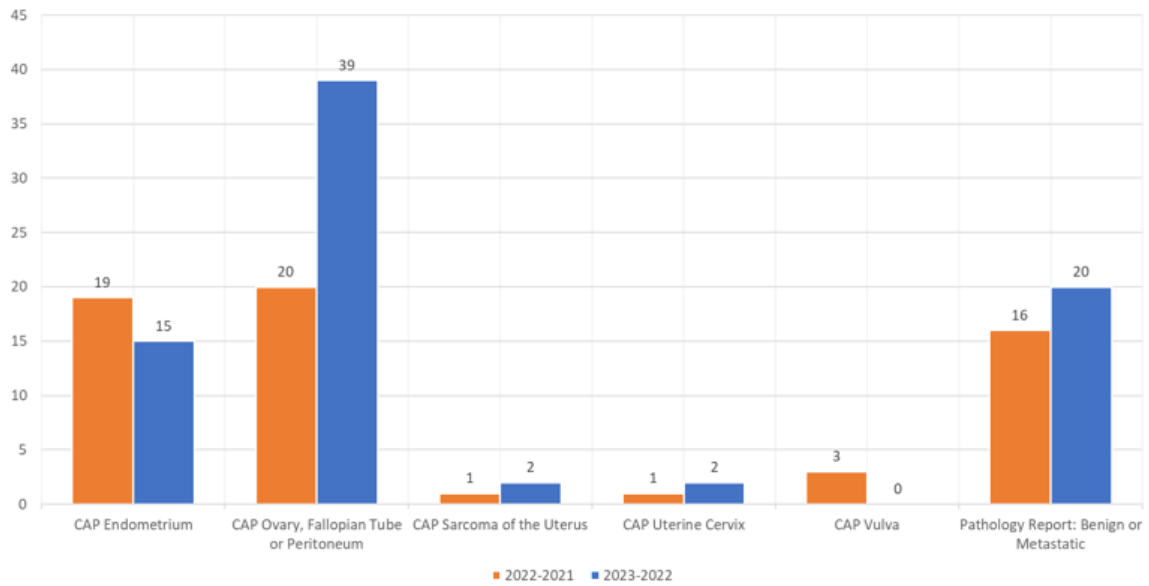
### ❖ The biobank is involved in two Canadian cohorts of the Terry Fox Research Institute:

- "Prairie Cancer Research Consortium, Contribution of clinical cohorts for molecular profiling to the Marathon Of Hope Cancer Centres Network"
- "Pan-Canadian, Enabling precision oncology in rare types of gynecologic cancer"

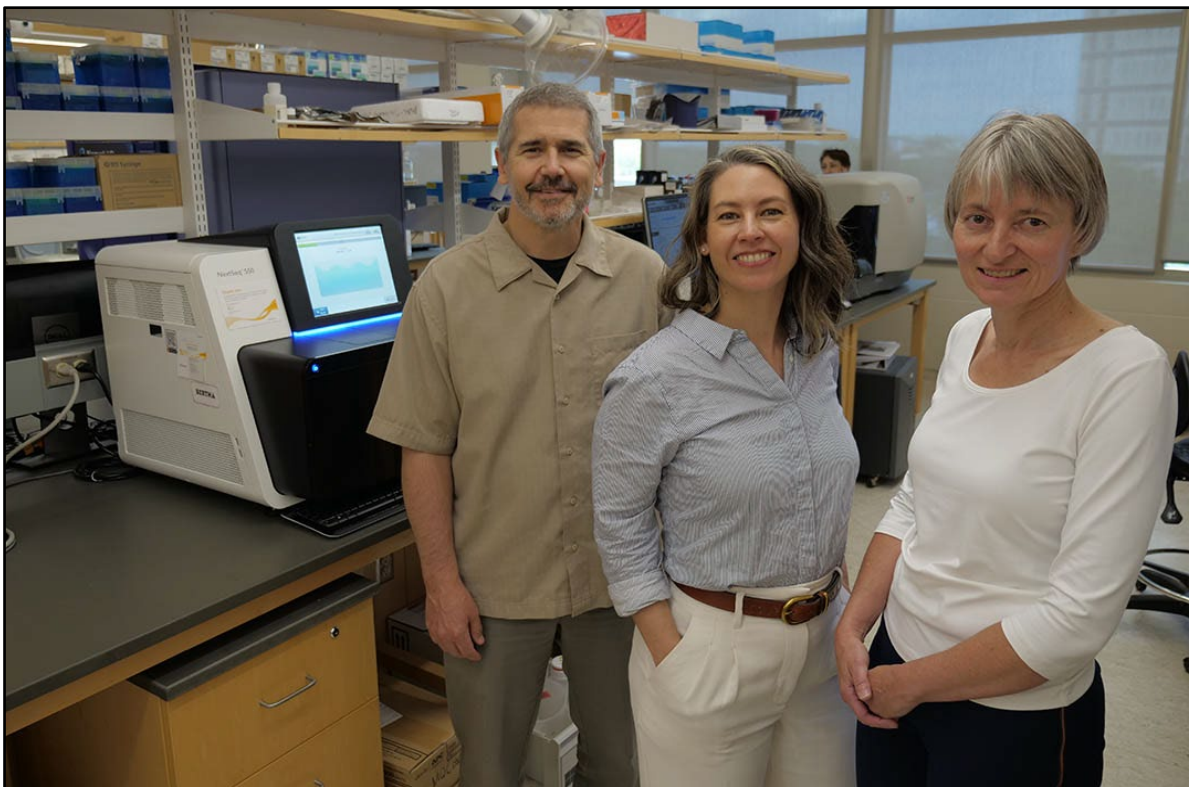
### ❖ Specimen Types Collection:



### Clinical Representation of the patient in the biobank



Molecular Pathology | [theecpt.org](http://theecpt.org)



Department of Pathology & Laboratory Medicine researchers Dr. John DeCoteau & Dr. Marilyn Kinloch along with Dr. Laura Hopkins, Medicine Division of Oncology researcher with new, next-generation genetic sequencer. (Photo: Daniel Hallen)

## Usask launches world-first clinical trial to improve ovarian cancer treatment.

A new University of Saskatchewan (USask)-led clinical trial aims to substantially improve quality of life for ovarian cancer patients and making it part of routine clinical testing, while also reducing costs.

*Reprinted from the 05 JUN 2023  
news.usask.ca*

USask gynecologic cancer physicians, working closely with USask pathology doctors, will test ovarian cancers patients' tumours for a range of mutations that predict response to a new class of drugs. By combining multiple tumour test methods together for the first time, patients will get more accurate, personalized, genomic information about their tumours than was previously possible. This information will help patients make more informed choices about their own care, including more precise estimates about the benefits of these drugs.

"For the first time, we will be able to give ovarian cancer patients very specific information about their chances of responding to treatment," said Dr. Laura Hopkins (MD), provincial lead for

gynecologic oncology at USask's College of Medicine and the Saskatchewan Cancer Agency, and co-leader of the research team. "This trial will also bring research opportunities for new treatments to the point of care and open the gateway for scientists to become partners in care."

This research was made possible thanks to close collaboration at USask between doctors and researchers, and \$3.8 million in funding. In 2021, financial support from Ovarian Cancer Canada and the provincial government of Saskatchewan paved the way for the team to establish Saskatchewan's first biobank for ovarian tumour tissue.

Most recently, a generous gift in honour of Donald E. Kramer was made by his family, working through the Cancer Foundation of Saskatchewan, for the Saskatchewan Cancer Agency to purchase a new, leading-edge, next-generation genetic sequencing tool.

"With this new technology, we can predict response to a given treatment and quantify the amount of benefit," said Hopkins. "This type of research has not been done previously by any other cancer program and will be first in Canada."

Ovarian cancer is the most fatal gynecologic cancer—only 40 per cent of patients survive more than five years after diagnosis. Advanced disease—where the cancer has spread out of the pelvis and into the upper abdomen—is not curable and treatment options are limited to a combination of surgery and chemotherapy.

The current, standard ovarian cancer tumour testing practice in Canada tests only for the absence or presence of a mutation to one set of tumour-suppressing genes—this identifies only a

fraction of patients with genetic changes in their tumour.

"Previously, we could only guess which patients would respond to treatment," said Hopkins. "This led to over-treatment of many patients—up to 25 per cent—receiving therapy from which they would not benefit and from which they experienced side effects and decreased quality of life."

Co-led by USask gynecologic pathologist Drs. **Mary Kinloch** (MD), division head of anatomic pathology with the Saskatchewan Health Authority, and USask molecular pathologist Dr. **John DeCoteau** (MD), the project involves testing patients' tumours with four different diagnostic tools at the **USask Advanced Diagnostics Research Laboratory**, and providing that data directly to oncologists for clinical care optimization.

Specific information about the genomic makeup of the tumour will allow oncologists to work with patients and jointly create a drug treatment plan personalized for each patient's unique needs—ensuring patients do not take drugs that do not help control their cancer and that worsen their quality of life.

"The paradigm for ovarian cancer care will change in Saskatchewan and across Canada with this trial," said Hopkins. "This 'precision medicine' approach will also save the health-care systems hundreds of thousands of dollars annually, since we will no longer be using a 'one size fits all' approach with these drugs."

Currently, ovarian cancer patients who have responded well to chemotherapy and surgery get one test dictating whether they are eligible for a new drug that works to keep their cancer

suppressed. That test only checks for the absence or presence of a mutation to one set of tumour-suppressing genes and misses the other combinations of genetic factors that predict how well a tumour will respond to another new drug.

"This mutation affects the DNA repair pathway—cancer cells that cannot repair damaged DNA cannot recover from the effects of chemotherapy," said Kinloch. "When the cells are pushed to die instead of repair that is one way to achieve 'cancer control' and/or remission."

About 20 percent of all patients—those who have the tumour-suppressing gene mutation—have excellent outcomes from currently prescribed medication, potentially leading to their cancers going into remission for up to five years and in some cases, include living longer. For the remaining patients who are eligible for treatment, half benefit from an additional year of cancer remission, whereas the other half get no real benefits but experience all the negative side effects of the drug.

"For this 60 per cent of patients, it is important for us to be able to test their tumours for genetic changes that define and predict response, since the gains are different, and the side effects of the drug they have access to are very different,"

said Kinloch. "Currently, there is no way to know who will respond and who won't."

"When benefits are small, patient preferences and priorities become extremely important for decision-making," she said.

The research team will use four different diagnostic platforms, combining results, and comparing it to the current 'gold standard' for tumour testing—a substantially more expensive test, not currently available to patients in Canada as part of the funded health-care system.

"This testing format will be the first in Canada and the world," said DeCoteau. "Our results will lead to guideline changes on tumour testing for ovarian cancer patients and how we make clinical decisions needed to deliver the best therapy—hopefully, this provides increased access to tumour testing and increased choices for patients."

The research team also includes colleagues at University of British Columbia, University of Victoria, the Saskatchewan Health Authority, and the Saskatchewan Cancer Agency.

## SPANISH NATIONAL CANCER RESEARCH CENTER (CNIO)

*By Dr. Marilyn Kinloch, Area Division Lead, Anatomic Pathology, Saskatoon*



In February 2023, I visited the Spanish National Cancer Research Center (CNIO). In Spanish, the 'C' stands for Charles, King Charles III; hence the 3 dots over the i. The CNIO hosts a national biobank for the entire country of Spain with the main goal to facilitate access to quality research samples. Hosted in Madrid, and led by Dr. Eva Ortega (to my right in the photo), the CNIO Biobank offers comprehensive services for researchers that involve human samples. The purpose of the visit was to explore CNIO's central platform communicated with hospitals across Spain promoting collaboration and integrated data collection as well as examining their quality practices for maintaining high-standards for human samples. There was also an ethicist visiting from Columbia doing a project on the difference between Spanish and American biobanks and many fascinating debates and discussions ensued. The knowledge sharing will help improve our own biobank and facilitate future partnerships.



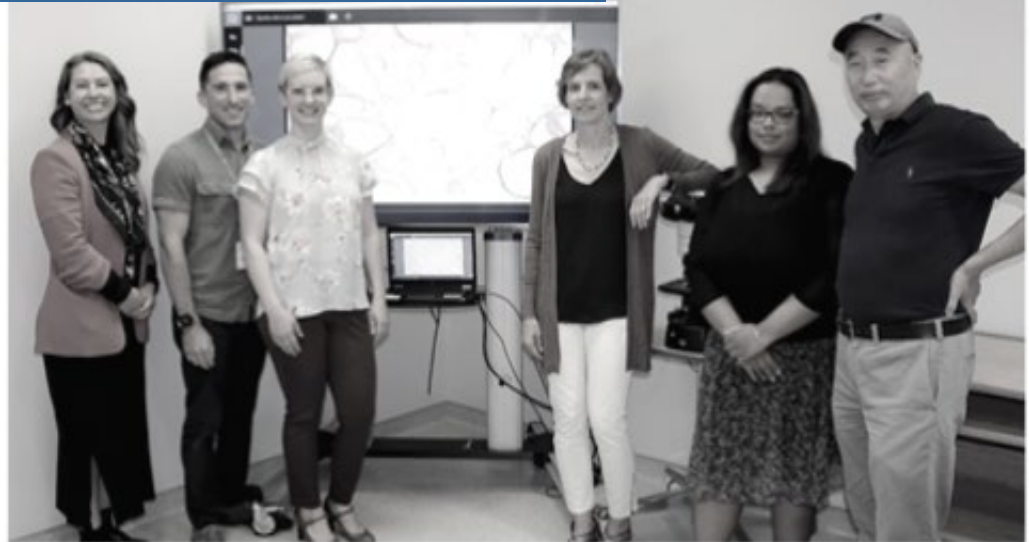
SMSA Holiday Dinner 2022

I-r Drs. V. Zherebitskiy; R. Campbell, K. Campbell, F. Magee, J. Kalra, A. Poulin; M. Kinloch



AP Faculty

I-r Drs. M. Kinloch; R. Campbell; K. Campbell; H. Rees; D. Ravi; C. Wang





## CLINICAL BIOCHEMISTRY - SASKATOON

*By Dr. Fang Wu, Area Division Lead, Saskatoon*

As we continually strive for excellence by building a skillful and collegial workforce, the Clinical Biochemistry team in Saskatoon has shown incredible resilience this past year.

Given all the challenges and work pressures in the 2022-2023 fiscal year, we are very proud of our success as the Saskatoon biochemistry team set up a standardized method validation process across all sites in Saskatoon, implemented blood gases instrument for SPH OR services, updated thyroglobulin testing with the improvement of sensitivity for clinical use, set up biotin resistant methods/reagents for a number of biochemistry tests (e.g. TSH, FT3, FT4, FSH, LH, testosterone etc.), resolved vancomycin reporting issues in Saskatoon, and near the completion of gas-chromatography (GC-FID) RFP process. Two new urinalysis instruments (chemistry and microscopy) installation and validation processes for RUH and SPH were started this past November. In addition, our team set up the point-of-care programs for the provincial kidney health pilot project/initiative and continue to support our rural services.

This past year has witnessed tremendous growth in our team. We welcomed two new biochemists. Dr. Cody Lewis joined our team right after he completed his clinical biochemistry fellowship training at the University of Calgary in July 2022. Dr. Sukhbir Kaur joined our team by providing remote services to Saskatoon and Rural/North biochemistry services this past December. We look forward to having Dr. Song Lu join us next January, and he is completing his clinical chemistry fellowship training at Pen State University in the US by Nov this year.

Besides the clinical services, the Saskatoon biochemistry division has been 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 senior residents' biochemistry review sessions to prepare our residents for their Royal College Exams. Division members have also participated in undergraduate medical student teaching, biomedical sciences teaching and graduate student teaching advisory committees. With respect to our residency training program accreditation, we successfully addressed the biochemistry division's weaknesses in various areas.

Another exciting activity this past year is our team setting up a clinical biochemistry fellowship training program. By establishing the clinical biochemistry fellowship, we will add trained fellows and highly qualified clinical biochemists to the Canadian recruitment pool to serve society within or outside Saskatchewan. We hope to contribute positively to laboratory medicine at the national and international levels.

Despite the busy clinical services and teaching duties, our division members have engaged in numerous research collaborations within and outside the University of Saskatchewan and received

a list of awards due to their clinical and academic achievements (refer to our division member's scholarly activities in the annual report). In this report, we would like to highlight that Dr. Jay Kalra received the Queen Elizabeth II Platinum Jubilee Medal this past year due to his outstanding services and exceptional contributions to Health Care in our province and city. We are very proud of him to be one of the recipients of this medal.

We thank all our staff members for their dedication to patient care over the last year and look ahead to the future.

### Division Member Award Highlight

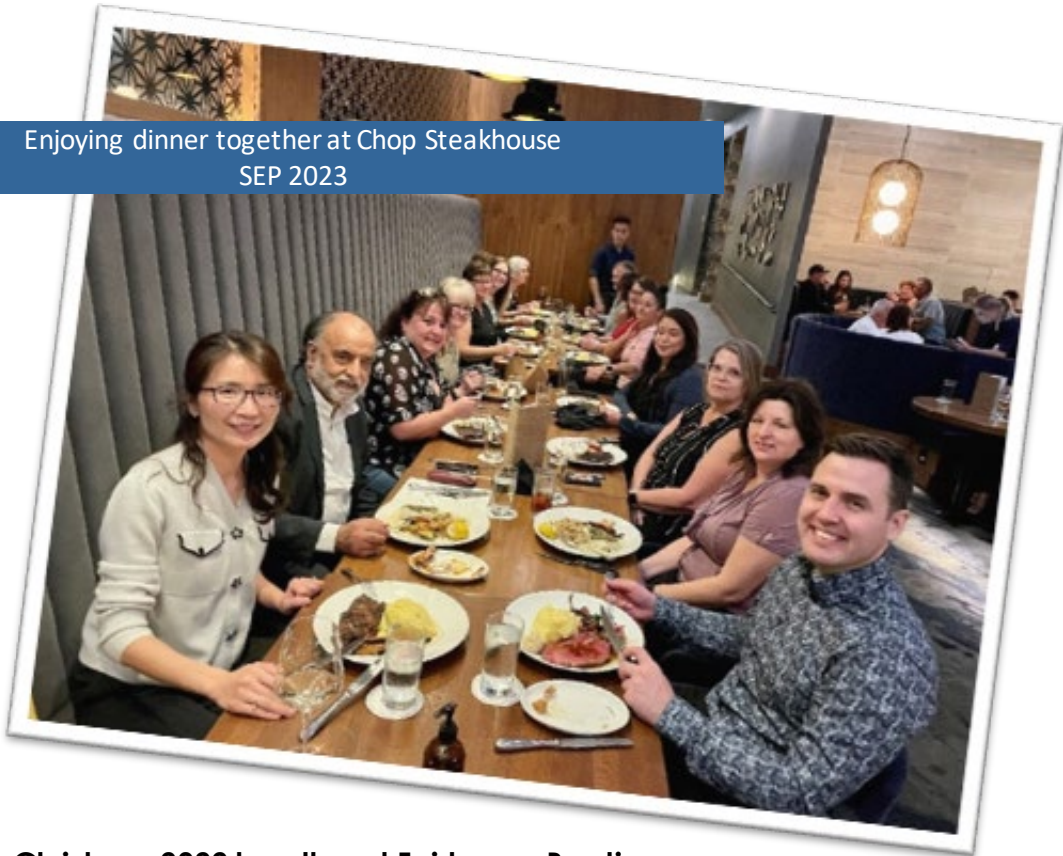
Dr. Kalra receiving the QEII Platinum Jubilee Medal 24 MAR 2023



Medal being presented by His Honour, The Honourable Russ Mirasty, S.O.M., M.S.M., Lieutenant Governor of Saskatchewan

## Saskatoon Biochemistry Team Works Hard and Plays Hard!

Enjoying dinner together at Chop Steakhouse  
SEP 2023

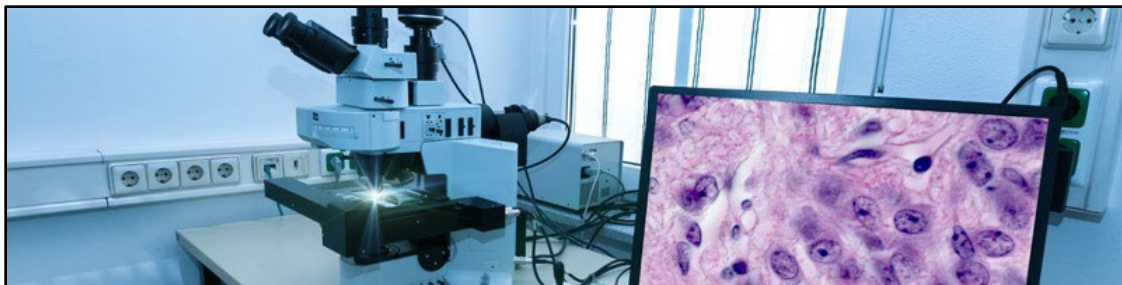


Celebrating Christmas 2022 together at Fairhaven Bowling





## Christmas 2022 Pizza Lunch Group Picture



Pathology & Clinical Chemistry | [jrfglobal.com](http://jrfglobal.com)



## DIVISION OF TRANSFUSION MEDICINE

*By Dr. Sheila Rutledge Harding, Area Division Lead /  
Provincial Clinical Lead*

The  
Transfusion  
Medicine (TM)  
Division was  
delighted to

welcome Dr. Reshmal Khoosal to the Hematopathology/TM group in Regina in 2022. She is a capable, engaged colleague, and it is a pleasure working with her.

Other highlights of the 2022-2023 include the following:

### **Prevention of Alloimmunization in Mothers of Saskatchewan Program**

The PRAMS program, initiated in February 2020, has matured into a fully functional program. There are now three nurse navigators (based in Prince Albert, Regina and Saskatoon) who collaborate to ensure that all pregnant Rh Negative patients receive prophylaxis with Rh Immune Globulin in a timely manner, with appropriate doses. They also ensure that alloimmunized patients and their babies receive optimal peri-partum care.

Other provincial programs have been reaching out to us for input as they plan similar programs in their jurisdictions.

### **Saskatchewan Immune Globulin (IG) Stewardship Program**

Initiated in November 2020, the IG program continues to improve and grow. Plans to extend the program to include pediatric patients are ready for implementation. The program has been associated with annual savings of over

40,000 grams of IG, worth over \$2.8 million. As the use of IG rebounds following the impact of the COVID-19 pandemic, only Saskatchewan continues to have a downward/stable trend in IG usage.

Related to this work, Dr. S. Harding is on the national Ethics Working Group as part of the National Immunoglobulin Shortages Management Plan Project.

### **Massive Hemorrhage Protocol for Air Transport**

In the summer of 2022, "STARS in Saskatchewan and Saskatchewan Air Ambulance (SAA) have partnered with the provincial health authority to launch Massive Hemorrhage Protocol (MHP), making both the first air ambulances in Canada to do so." (<https://stars.ca/new-blood-plan-a-canadian-first/>). This work (supported by Dr. Prokopchuk-Gauk) involved the TM labs in Regina and Saskatoon in the validation of transport containers to ensure that, in addition to red cells, fibrinogen concentrate and prothrombin complex concentrate can be carried by STARS and SAA to support patients with massive hemorrhage, safely and without wastage.

### **Chimeric Antigen Receptor T-cell (CART) Program**

In early 2023, the Saskatchewan Stem Cell Transplant and Cellular Therapy Program (SCTCTP) team at the Cancer Agency and the SHA announced the implementation of CAR-T therapy in Saskatchewan. Dr. Tehseen has provided very capable oversight of the TM

laboratory aspects of this initiative. The Cellular Therapy Lab at Royal University Hospital is currently accredited by once pharmaceutical CAR-T provider and is in the process of obtaining approvals from others. As of May 31, 2023, CAR-T therapy has been administered to one Saskatchewan resident receiving treatment by the Saskatchewan Cancer Agency, with numerous other patients anticipated to receive this therapy locally in the future.

See

<http://saskcancer.ca/images/pdfs/about/media/1NR-CAR T Therapy Announcement-17-Feb-2023.pdf> for additional information.

### **Provincial Standardization**

Efforts towards standardization of transfusion medicine governance and practice for the province. This has included formal implementation in Saskatoon of all blood component screening to enhance patient safety, something we hope to disseminate province-wide, as capacity permits.

### **Education**

All members continue to contribute to General Pathology and Anesthesia resident teaching in TM during assigned rotations, and coordinate and administer Transfusion Camp for General Pathology, Anesthesiology and Emergency Medicine Residents.

### **National Activities**

#### **National Advisory Committee on Blood and Blood Products (NAC):**

Drs. O. Prokopchuk-Gauk and R. Lett (Anesthesiology, Regina) represent Saskatchewan on this important national body.

- Dr. Lett is Chair the Patient Blood Management Subcommittee

- Dr. Prokopchuk-Gauk is Chair of the Adverse Reactions Subcommittee, Co-chair of the Irradiation Recommendations Subcommittee, a Member of the Blood Shortages Subcommittee and was a Member of the Prothrombin Complex Concentrate Subcommittee (see <https://nacblood.ca/en/resource/recommendations-use-prothrombin-complex-concentrates-canada>).

#### **Canadian Obstetrical Pediatric Transfusion Network (COPTN):**

Dr. S. Tehseen is a Co-chair of this important subcommittee of the Canadian Society for Transfusion Medicine (CSTM).

#### **Canadian Society for Transfusion Medicine (CSTM):**

Divisional members are actively engaged in CSTM. At the May 2023 meeting, Dr. Tehseen presented at a workshop session and a COPTN project update; and Dr. Prokopchuk-Gauk presented a scientific session and an oral administrative abstract presentation. Details are available at their individual entries.

Preparations have begun for the CSTM Annual Conference May 24-27, 2024, which will be held in Saskatoon. Drs. Prokopchuk-Gauk and Tehseen are serving as medical co-leads of this conference, with support from Ms. Edith Hein (Lab Manager, Athabasca Health Authority) and Ms. Elaine Blais (Transfusion Safety Manager, Northern Saskatchewan).

#### **Association of the Hemophilia Clinic Directors of Canada (AHCDC):**

Both Drs. Tehseen and Prokopchuk-Gauk continue to participate in clinical patient

care as Hematologists with the Saskatchewan Bleeding Disorders Program. Dr. S. Tehseen was officially inducted as a member of the AHCDC as a pediatric hematologist who treats patients with bleeding disorders. At this year's AHCDC Scientific Symposium in May 2023, Dr. Prokopchuk-Gauk gave an oral presentation on "Successful Recurrent Factor IX Inhibitor Management in an Adult with Severe Hemophilia B," which received the Best Clinical Abstract Award.

### Leadership Transitions

Finally, as of April 2023, Dr. S. Harding has moved to a 0.5 FTE position, with full retirement on the horizon for March 31, 2024. (Anchors aweigh!) Dr. Prokopchuk-Gauk has assumed leadership for the TM Division in Saskatoon and is the clinical co-lead for the provincial Transfusion Medicine Discipline Committee. Dr. Tehseen is now providing formal clinical leadership for the PRAMS program. The TM division continues to actively seek physician colleagues to participate in TM consultation in Regina and will begin recruitment efforts in Saskatoon within the coming months.

## ADVANCEMENTS IN NEWBORN SCREENING

*Reprinted from Department of Surgery  
Quarterly Newsletter MAR 2022*

Photo: [wakemedvoices.com](https://www.wakemedvoices.com)



On February 23, 2022, the Saskatchewan Ministry of Health announced that it is expanding the newborn screening program to include four additional conditions: spinal muscular atrophy, hemoglobinopathies, severe combined immunodeficiency and congenital cytomegalovirus (cCMV). Advocacy for developing a new cCMV screening program was led by Dr. Paul Mick (Division of Otolaryngology), **Dr. Nick Antonishyn (Department of Pathology & Laboratory Medicine)**, pediatric infectious disease physicians and Saskatchewan Health Authority audiologists.

cCMV is a significant public health concern because of its high prevalence and potential for serious sequelae when contracted in utero (affecting 100-110 babies/year in Saskatchewan). The new cCMV screening program will identify babies born with cCMV infection by testing a blood sample for viral DNA. Babies with a confirmed CMV infection will be eligible for early antiviral therapy, which, if started before a month of age, reduces the likelihood of developing hearing loss or the severity of the impairment.

# SHA LABORATORY MEDICINE

## Continual Improvement



### LEAN IMPROVEMENT LEADERSHIP TRAINING

*By Sheri McCorriston, Manager of  
Hematology/Transfusions  
Regina General & Pasqua Hospitals*

I have learned to share the load as engaging others promotes teamwork, communication, empowerment, respect and trust. These tools are needed to ensure the ultimate success of every project!

Being part of the Lean Improvement Leadership Training (LILT) program taught me to look at everyday problems in a different light, and gave me a variety of tools to aid in solving them. There were eight modules to work through, and each one introduced a new tool. We then put these tools into use by implementing each one to solve a problem in our everyday work life. The reason that this class is different from others, is that it allowed us to gain hands on experience, rather than just reading from a textbook. I have listed a few of the concepts that had a huge impact on me.

1. POSITIVE METRICS-This concept caught my attention, because as we all know we receive a lot of negative feedback in our day to day work, but rarely the positive. For example, rather than posting the sick time for the day, start communicating the number of staff present instead. Just because some staff called in sick, does not necessarily mean that the department is short staffed, but it is perceived that way, starting the work day on a negative note.
2. VISUAL CONTROLS/MANAGEMENT-I had never thought of the Lab as being a visual workplace, but as I worked through this module, I realized how visual the Lab really is. Some examples of visual controls that can be found within the Lab include, flashing lights to let us know that samples have arrived after hours, signage hanging over each work bench indicating the proper PPE to use, and the reagents boxes on the analyzers are color-coded to show which line should be attached to which box. This module got me thinking of other ways to use this simple tool to increase Lab Safety.

3. OPTIMIZING FLOW was a very interesting topic as it forced me to think outside the box. In the Lab, we tend to think of our work flow starting once a sample is collected, to when the results are released to the Doctor. As we have limited patient contact, we sometimes forget that there is a person involved at the other end, let alone family members and other healthcare professionals. We can be very siloed within our work flows and need to step out of the comfort of the Lab and move through the system to observe how our internal work flows affect outside work flows. Once we understand these various unknowns, we can begin to map this and hopefully optimize our flow to better serve the people of Saskatchewan.
4. ZERO DEFECTS- If we are working towards a goal of zero defects, it is worthwhile to grab the low hanging fruit, to gain knowledge and insight that can apply to much larger projects in the future. Some error proofing projects may not affect a huge number of patients, but the patients that are affected are greatly impacted. This causes them to feel frustration with the Health Care System due to having surgeries or treatments delayed while waiting for test results. So the low hanging fruit may not have a huge impact on your workflow but it does have an enormous impact on the patient at the other end. This awareness is challenging me to find other areas where correcting small errors on my end, could yield big impacts down the line.

Working through this class, I learned that not all tools are useful for every project and that it is important to identify which tools are required, so as to not feel frustrated and not waste precious time. Being armed with this knowledge, will ensure that every tool I am using is adding value to the project.

## SHA MANAGEMENT SYSTEMS INDIVIDUAL CONTRIBUTOR PROGRAM

*By Amanda Montgomery, BSc MLT, Laboratory – Yorkton Regional Health Centre (YRHC)*

Every little improvement we make leads to what in the end is our main goal as a laboratory in the SHA, to provide timely and accurate results to our providers in order to aid in patient treatment and care.

I started working in the YRHC Laboratory as a Medical Laboratory Technologist (MLT) after graduation in 2013. I always look for ways to improve the work flow in the laboratory and the SHA Management Systems Individual Contributor program seemed beneficial in aiding in such efforts. It was suggested I look into improving the specimen drop off process at the YRHC Laboratory.

I started off the program with what I thought were all the answers, but little did I know there would be so much more involved in this improvement project than just having a solution to what I thought was the problem.

The most important and large portion of the program was spent identifying our team, stakeholders and analyzing the current state of the process. My team consisted of MLTs, Porters, Home Care Nurses, ER Staff, Continuing Care Aids (CCA), and Medical Office Assistances (MOA). A few of the major tools used to analyze the process involved gemba walks, gap analysis, process maps, value stream maps, fish bone diagrams, spaghetti diagrams and SWOT (Strength, Weakness, Opportunity, and Threat) analysis. This enabled our team to define the problem and narrow down the part of the process we would be able to improve on over the course of the program. We observed that the process of dropping off a specimen could be improved and built our AIM statement from those findings.

**AIM Statement: By March 31, 2023, we will reduce the wait time for specimens to be dropped off and ordered by 50%.**

By using the information gathered we developed driver diagrams that organized our change ideas and helped prioritize the changes required to reach our AIM. Future state spaghetti diagrams, process and value stream maps demonstrated what we anticipated the process would look like once changes were implemented. Through a series of Plan Do Study Act (PDSA) cycles we were able to implement and study the changes. The two main change ideas were moving the drop off area to one main central area that was closer and within direct eyesight of lab and ward

staff and the other was removing the multiple bucket system and going down to one tray for all specimens (not including STATS which were still to be handed to a staff member). In order to carry out these changes we performed a 5S, optimized flow and utilized visual controls. See Photos 1 and 2 for pre project state (1) and post project state (2).

Displaying data was vital to the project as it provided engagement and communication with staff and team members that the changes were effectively reaching our AIM. We were able to measure the outcome of the PDSAs by measuring the time it took a specimen to be dropped off and the time a specimen waited to be processed by lab staff. The data showed a 91% decrease in drop off time and a 62% decrease in wait time by the end of March 2023. We had reached our AIM! Another important piece of data was a process measure which demonstrated that the implemented changes were, in fact, working. This was accomplished through measuring the number of times lab staff were interrupted regarding specimen drop off and the number of specimens found in wrong locations within the lab. There were on average 15 interruptions per month and 20 specimens per month found in wrong locations before PDSAs. After the first PDSA (moving the drop off location to a central spot but keeping the multi bucket system) it was evident the process could still use improvement, specimens in wrong locations went down to 16 a month but interruptions went up to 18 per month. One month after our last PDSA, removing multiple buckets and having all specimens dropped off in the same central location, the number of interruptions and specimens in wrong locations went

down to zero! The last metric needed was a balancing measure. This was to ensure the changes implemented weren't causing problems in other areas of the process. The turn around time (TAT) of operating room (OR) pregnancy tests and emergency room (ER) urines were identified as balancing measures because these specimens were no longer brought to the urine department directly by ward staff but dropped off at the one central location with all other specimens. There was very little change in ER urine TATs but we actually saw an improvement in the OR pregnancy TATs by the end of the PDSAs.

The final part of the course focused on how to ensure the changes that were implemented continued to serve their purpose through auditing the process. This is vital to continuous improvement as great improvements can be made but if the new process being implemented is

not followed we fall right back to where we started or possibly worse. If the new process is not being followed it is so important to get to the root cause as to why the change is not sustainable in order to keep improving. Recognizing the problems that arise are intrinsic to the process and not the users is paramount in fostering an engaged and open change environment. This could lead to starting the whole improvement process over again to find a more sustainable solution but luckily in our case this was not necessary and we have had great success.

Continuous improvement doesn't need to involve huge changes. Small improvements can accumulate and lead to bigger overall improvements. Even with this small project it had a ripple effect and led to other improvements within the YRHC lab.



Photo 1  
Pre-project Specimen Drop Off



Photo 2  
Post-project Specimen Drop Off

## National Medical Laboratory Week

rRemai mModern Art Gallery lit up the skies for National Medical Laboratory Week



# RESEARCH

## Publications, Grants & Awards

**BLONDEAU, Joseph M**, BSc MSc PhD

### PAPER PUBLICATIONS

Danger B, Ripplinger C, Blondeau JM, Blondeau L, Peermohamed S. Bacteremia and polyarticular septic arthritis to *Moraxella bovis* in a pregnant patient with HIV and who injects drugs. Journal of the Association of Medical Microbiology and Infectious Disease 2022; June 3;7(2):146-149.

Seifert H, Blondeau JM, Lucaben K, Utt, EA. Global update on the *in vitro* activity of tigecycline and comparators against isolates of *Acinetobacter baumannii* and rates of resistant phenotypes (2016-2018). Journal of Global Antimicrobial Resistance 2022 December; 31:82-89.

Blondeau LD, Deneer H, Rubin JE, Kanthan R, Sanche SE, Hamula CL, Blondeau JM. Zoonotic *Staphylococcus pseudintermedius*: an underestimated human pathogen? Future Microbiology 2023. On line May 9, 2023.

Blondeau JM. Immunomodulatory effects of macrolides considering evidence from human and veterinary medicine. Microorganisms 2022; December 9; 10(12):2438.

Blondeau JM, Blondeau L, Fitch S. *In vitro* killing of drug susceptible and multidrug resistant bacteria by amikacin considering pulmonary drug concentrations based on an inhaled formulation. Microorganisms, Submitted.

Blondeau JM, Charles MK, Loo V, Adam H, Del Vecchio MG, Ghakis C, O'Callaghan E, El Ali R. A nested cohort 5-year Canadian Surveillance of Gram-negative antimicrobial resistance for optimized Antimicrobial therapy. Nature Scientific Reports. Submitted.

### ABSTRACTS

Zhanel GG, Baxter M, Golden A, Lagace-Wiens P, Fuller J, Davidson R, Blondeau JM, Poutanen S, Lavallee C, Karlowsky J, Schellenberg J, Alford M, Walkty A, Bay D, Schweizer F, Mulvey M, Golding G, Canadian Antimicrobial Resistance Alliance (CARA), Adam H. Antimicrobial susceptibility of 25, 203 Gram-positive pathogens isolated from patients in Canadian hospitals: 16 years of the CANWARD Study 2007-2022. American Society of Microbiology Microbe, Houston, Texas, June 15-19, 2023.

Zhanel GG, Baxter M, Golden A, Lagace-Wiens P, Fuller J, Davidson R, Blondeau JM, Poutanen S, Lavallee C, Karlowsky J, Schellenberg J, Alford M, Walkty A, Bay D, Schweizer F, Mulvey M, Golding G, Canadian Antimicrobial Resistance Alliance (CARA), Adam H. Antimicrobial susceptibility of 32,958 Gram-negative pathogens isolated from patients in Canadian hospitals: 16 years of the CANWARD Study 2007-2022. American Society of Microbiology Microbe, Houston, Texas, June 15-19, 2023.

### BOOK CHAPTER

Rankin SC, Blondeau JM. Laboratory Diagnosis of Infectious Disease. Chapter 184. In: Ettinger's Textbook of Veterinary Internal Medicine.

## INVITED PRESENTATIONS

Immunomodulatory properties of antimicrobial agents with a focus on macrolides. 2022 Summer Conference Academy of Veterinary Consultants, Denver, CO, August 4, 2022.

Antibacterial and non-antibacterial properties of antimicrobial agents: is there more than susceptibility or resistance? Eleventh International Conference on Antimicrobial Agents in Veterinary Medicine (AAVM), Madrid, Spain, September 12, 2022.

Is the renaissance in advanced (rapid?) diagnostic technology the key to optimizing antimicrobial therapy? Eleventh International Conference on Antimicrobial Agents in Veterinary Medicine (AAVM), Madrid, Spain, September 13, 2022.

Zoonosis and Zoonanthroponosis: Is "One Health" the correct approach? Eleventh International Conference on Antimicrobial Agents in Veterinary Medicine (AAVM), Madrid, Spain, September 14, 2022.

COVID-19: The Canadian experience – The Real World impact of COVID-19 on diagnostic clinical microbiology laboratories and the ongoing need for "real time" results, including susceptibility/resistance testing. Clinical ID Form 2022, Circular Quay, Sydney, Australia, November 19, 2022.

The immunomodulatory effect of antimicrobial agents. Clinical ID Form 2022, Circular Quay, Sydney, Australia, November 19, 2022.

High mutant prevention concentration values for vancomycin against MRSA: When is it time to look at alternative agents. Clinical ID Form 2022, Circular Quay, Sydney, Australia, November 20, 2022.

Zoonosis and Zoonanthroponosis: Is One Health the correct approach? Clinical ID Form 2022, Circular Quay, Sydney, Australia, November 20, 2022.

The immunomodulatory effect of antimicrobial agents. Rounds – Westmead Hospital, Sydney, Australia, November 22, 2022.

The immunomodulatory effects of antimicrobial agents. ID Speaker Tour, Adelaide, Australia, November 24, 2022.

Rising to the challenge. The impact of COVID-19 on diagnostic clinical microbiology laboratories. 32<sup>nd</sup> International Congress of Antimicrobial Chemotherapy, Australian Society for Antimicrobials - Pfizer Hosted Evening Symposium, Perth, Western Australia, November 28, 2022.

## **FREYWALD, Andrew, PhD**

### LIST OF SUPERVISED TRAINEES (A. Freywald – supervisor)

#### a. Research Officer

- Dr. Tetiana Katrii, Project Title: "The role of mitochondrial fission in triple-negative breast cancer tumor-initiating cells", May 16, 2022 – May 15, 2023. Supervisors – Andrew Freywald and Scot Leary

### b. Ph.D. Students

- Frederick Vizeacoumar, Project Title: "Mapping the interactome of the Eph family of receptors in cancer", January 2020 – in progress. Supervisor – Andrew Freywald.
- Vincent Maranda, Project Title: "Developing combination therapies for telomerase-overexpressing clear cell carcinoma of the ovaries", September 2021 – in progress. Supervisors – Andrew Freywald and Franco Vizeacoumar.
- Jared Price (MD/PhD), Project Title: "Exploring Therapeutic Potential of Synthetic Dosage Lethal Interactions of Telomerase for Prostate Cancers", June 2021 – in progress. Supervisors: Andrew Freywald and Franco Vizeacoumar.
- Alain Morejon Morales, Project Title: "Analysis of EphB6-mediated modulation of EGFR and ERBB2 action in cancer cells", started as MSc student in January 2021, transferred to PhD program in January 2023 – in progress. Supervisors – Andrew Freywald and Franco Vizeacoumar.

### c. M.Sc. Students

- Malkon Sanchez Estrada, Project Title: "Combination treatments for suppressing EphA2 and EGFR expressing tumors", January 2021 – in progress. Supervisors – Andrew Freywald and Behzad Toosi.
- Hardikkumar Patel, Project Title: "Exploring the crosstalk between PLK1 and Eph-family receptors in cell division in pancreatic cancer model", May 2021 – in progress. Supervisors – Andrew Freywald and Franco Vizeacoumar.
- Liliia Kyrylenko, Project Title: "Mapping synthetic lethal interactions amongst DNA damage repair genes", May 2021 – in progress. Supervisors - Andrew Freywald and Franco Vizeacoumar.

### ADVISORY COMMITTEE MEMBER/EXTERNAL EXAMINER

- Jessica Sharpe, M.Sc. program. "EphB receptors expression and function in canine and human osteosarcoma", College of Veterinary Medicine, U of S, 2020-present.
- Gabrielle Mercier, M.Sc. program. "Understanding the Role of the Anaphase Promoting Complex in Breast Cancer Progression" College of Medicine, U of S, 2020-November 2022 (defended).
- Hussain Elhasasna, M.Sc. program. "Drug re-purposing to eradicate prostate cancer". College of Medicine, U of S, 2018-October 2022 (defended).
- Hanan Babeker, Ph.D. program. "Development of small protein domain affinity reagents targeting cancer biomarkers MUC16 and MUC4". College of Medicine, U of S, 2017-present.
- Aditya Mandipati, Ph. D. program. "The Role and Mechanism of Action of BRK in Tamoxifen Resistant Breast Cancer". College of Medicine, U of S, 2017-September 2022 (defended).
- Franklyn De Silva, Ph.D. program. "Tyrosine kinase inhibitor, Ibrutinib, discovery and targeting of multiple pathways within primary and metastatic breast cancer". College of Pharmacy and Nutrition, U of S, 2016-February 2023 (defended).
- Kiranmayee Budharaju, M.Sc. program. "Validation and targeting of cancer vulnerabilities in PPAR $\gamma$ - Telomerase signalling pathway". College of Pharmacy and Nutrition, U of S, 2020-present.

- Chandra Bose Prabakaran, Ph.D. program. "Development of targeted radioimmunotherapy for osteosarcoma using comparative oncology approach". College of Medicine, U of S, January 2020 – present.
- Fabrice Njotu, Ph.D. program. "Priming cancer cells for immunotherapy using radiolabelled antibody and peptide against cell surface receptors." College of Medicine, U of S. July 2021-present.
- Mobina Sharifi, M.Sc. program. "Finding the Best Gene Candidate(s) as a Potential Therapeutic Target for N-MYC Overexpressing Neuroendocrine Prostate Cancer (NEPC)". College of Medicine, U of S. January 2022-present.
- Mathew Lubachowski, Ph.D program. "Characterizing the role of TFPI in driving the development of drug resistant breast cancer" College of Medicine, U of S. September 2019 – May 2023 (student transferred with their supervisor to the University of Alberta).
- Shabnam Abdi, Ph.D. program. "Targeting the Eph receptor tyrosine kinases in human and dog malignancies" College of Veterinary Medicine, U of S. September 2021-present.
- Eleonora Ela Hezkiy, Ph.D. Thesis: "Use of genetic screen to develop novel drug combinations to treat chronic lymphocytic leukemia". Ariel University, Israel. External Examiner, September 2022.
- Valid Gahramanov, Ph.D. Thesis/Proposal: "Integration of CMAP and Pathway analysis in the study of drug responses". Ariel University, Israel. External Examiner, September 2022 - October 2022.

#### UNIVERSITY, COLLEGE AND DEPARTMENTAL COMMITTEES (SERVED IN 2022 (JULY 01) – 2023 (JUNE 30))

1. Internal CIHR grant reviewing (2 grants) – Committee member
2. Saskatchewan Cancer Res Institute Foundation Committee – Committee member
4. College of Medicine Bylaws Committee – Committee member
5. College of Medicine Faculty Council – Council member
6. PICS Genomics Facility - Scientific co-Director
7. Young faculty advisory committee – Committee member
8. PCRC-TFRI Breast Cancer group – Committee member
9. Departmental Review Committee – Committee member
10. CIHR Project Grant Workshop - panelist

#### OUTREACH, PUBLIC SERVICE AND SERVICE TO PROFESSIONAL ORGANIZATION ACTIVITIES (SERVED IN 2022 (JULY 01) – 2023 (JUNE 30))

- "Cells" journal, Editorial board member
- NSERC grant reviewing – one grant reviewed

#### PUBLICATIONS

Amr El Zawily, Frederick S. Vizeacoumar, Renuka Dahiya, Sara L. Banerjee, Kalpana K. Bhanumathy, Hussain Elhasasna, Ginton Hanover, Jessica C. Sharpe, Malkon G. Sanchez, Paul Greidanus, R Greg Stacey, Kyung-Mee Moon, Ilya Alexandrov, Juha P. Himanen, Dimitar B. Nikolov, Humphrey Fonge, Aaron P. White, Leonard J. Foster, Bingcheng Wang, Behzad M. Toosi\*, Nicolas Bisson\*, Tajib A. Mirzabekov\*, Franco J. Vizeacoumar\*, and **Andrew Freywald\***. (2023). A Multipronged Unbiased Strategy Guides the Development of an anti-EGFR/EPHA2 Bispecific

Antibody for Combination Cancer Therapy. Clinical Cancer Research, online ahead of print  
(\*Corresponding authors)

Arna AB, Patel H, Singh RS, Vizeacoumar FS, Kuslik A, **Freywald A**, Vizeacoumar FJ, Wu Y. (2023). Synthetic lethal interactions of DEAD/H-box helicases as targets for cancer therapy. Frontiers in oncology, 12: 1087989.

Elhasasna H, Khan R, Bhanumathy KK, Vizeacoumar FS, Walke P, Bautista M, Dahiya DK, Maranda V, Patel H, Balagopal A, Alli N, Krishnan A, **Freywald A\***, Vizeacoumar FJ\*. (2022). A Drug Repurposing Screen Identifies Fludarabine Phosphate as a Potential Therapeutic Agent for N-MYC Overexpressing Neuroendocrine Prostate Cancers. Cells. 11: 2246-63. (\*Corresponding authors)

Maranda V, Zhang Y, Vizeacoumar FS, **Freywald A\***, Vizeacoumar FJ\*. (2023). A CRISPR Platform for Targeted In Vivo Screens. Book chapter in: "The Tumor Microenvironment", Springer Nature.  
(\*Corresponding authors)

## MEDIA INTERVIEWS

Global News: <https://globalnews.ca/video/9697658/focus-saskatchewan-university-of-saskatchewan>

## GRANTS RECEIVED

1. 2022/09 - 2024/08

Co-Applicant

Targeting mitochondrial fission machinery in tumor initiating cells.

Funding Sources:

Cancer Research Society (The)

Operating grant

Total Funding - \$119,218

Co-Applicant: Franco Vizeacoumar

Principle Applicant: Scot Leary

Funding Competitive?: Yes

2. 2023/03 - 2024/02

Co-Principle Investigator

MEMO1: A novel biomarker for selective chemotherapy of lung cancer

Funding Sources:

Saskatchewan Health Research Foundation

Innovation Grant

Investigator: Sunil Yadav

Co-Principle Investigator: Franco Vizeacoumar

Principle Investigator: Oleg Dmitriev

Total Funding - \$50,000

Funding Competitive?: Yes

## **KALRA, Jawahar (Jay)**, PhD MD FRCPC FCAHS CCPE

### GRADUATE STUDENT/ ADVISORY COMMITTEE

#### Advisory Committee Chair

Hanan Babekar, Ph.D. Student, Committee Chair, Health Sciences Graduate program, "Development of small protein domain affinity reagents targeting biomarker, MUC16/CA125, 2022-23 – (In Progress)

Chandrabose Prabakaran, Ph.D. Student, Committee Chair, Health Sciences Graduate Program, "Comparative oncology approach for radioimmunotherapy of osteosarcoma", 2022-23 – (In Progress)

### SUMMER STUDENT

Patrick Seitzinger, 2nd Year Pediatric Resident University of Saskatchewan, "*Artificial Intelligence and its Impact on Healthcare Delivery*", 2022-23

Zoher Rafid-Hamed, 2nd Year Medical Student University of Saskatchewan, "*Medical Error Disclosure – A Global Perspective on Healthcare Delivery and a Best Practice Model*", 2022-23

Lily Wiebe, College of Law 3rd Year student University of Saskatchewan, "*Medical Error Disclosure – A Legal Perspective*", 2022-23

### EDITED BOOKS – ACCEPTED/PUBLISHED

**Kalra, J.**, Ahram, T., (Ed.) (2022). *Global Issues: Disease Control and Pandemic Prevention*. Open Access Science in Human Factors Engineering and Human Centered Computing. New York, USA.

Ahram, T., **Kalra, J.**, Waldemar, K., (Ed.) (2022). *Artificial Intelligence and Social Computing*. Open Access Science in Human Factors Engineering and Human Centered Computing. New York, USA.

**Kalra, J.**, (Ed.) (2022). *Human Factors in Aging and Special Needs*. Open Access Science in Human Factors Engineering and Human Centered Computing. New York, USA.

**Kalra, J.**, Lightner N., (Ed.) (2022). *Healthcare and Medical Devices*. Open Access Science in Human Factors Engineering and Human Centered Computing. New York, USA.

### CHAPTERS IN BOOKS

**Kalra, J.**, Markewich, D., Rafid-Hamed, Z., Seitzinger, P. (2022). Enhancing the Quality and Delivery of Healthcare: A Decade Review of Autopsy Data. In: Jay Kalra and Nancy Lightner (eds) *Healthcare and Medical Devices*. AHFE (2022) International Conference. AHFE Open Access, vol 51, pg. 91-99. AHFE International, USA.

**Kalra, J.**, Rafid-Hamed, Z., Wiebe, L., Seitzinger, P. (2022). Medical Error Disclosure: A Quality Perspective and Ethical Dilemma in Healthcare Delivery. In: Jay Kalra and Nancy Lightner (eds) *Healthcare and Medical Devices*. AHFE (2022) International Conference. AHFE Open Access, vol 51, pg. 125-132. AHFE International, USA.

**Kalra, J.,** Seitzinger, P. (2022). Implications and Consequences of Artificial Intelligence in Healthcare Quality and Medical Training. In: Jay Kalra and Nancy Lightner (eds) Healthcare and Medical Devices. AHFE (2022) International Conference. AHFE Open Access, vol 51, pg. 138-143. AHFE International, USA.

Seitzinger, P., **Kalra, J.** (2022). Drawing Connections: Artificial Intelligence to Address Complex Health Challenges. In: Jay Kalra and Nancy Lightner (eds) Healthcare and Medical Devices. AHFE (2022) International Conference. AHFE Open Access, vol 51, pg. 151-156. AHFE International, USA.

#### PUBLISHED ARTICLES IN PEER REVIEWED JOURNALS

Daniel R. Beriault, Karina Rodriguez-Capote, Kristin Hauff, David Kinniburgh, Loralie Langman, Andre Mattman, Danijela Konforte, Curtis Olechuk, Lori Beach, Yu Chen, Manal Elnenaei, Michelle Parker, Felix Leung, Saranya Arnoldo, Michael Knauer, **Jay Kalra**, Ihssan Bouhtiauy, Mohamed Abou El Hassan, Dana Bailey, Peter Catomeris, Janet Simons. Reduce, Reuse, Recycle: Top 10 Choosing Wisely Canada's Recommendations for Conserving Laboratory Resources. Canadian Journal of General Internal Medicine. Volume 17, Issue 4, 2022

#### REFEREED CONFERENCE PUBLICATION

**Kalra, J.** Artificial Intelligence: Ethical Challenges. Indian J Clin Biochem. Volume 37. Abstract #IL-50. Page S23. November 2022.

#### INVITED PRESENTATION

**Kalra, J.** Roundtable Leader. Artificial Intelligence: Ethical Issues and Challenges. 2023 CSCC/CCMG Joint Annual Conference. Winnipeg, Canada. June 19, 2023.

**Kalra, J.** Ethics in Artificial Intelligence. Department of Biochemistry. Lady Harding Medical College, New Delhi, India. December 5, 2022.

**Kalra, J.** Artificial Intelligence: Ethical Challenges. 48th Association of Clinical Biochemist of India (ACBICON) – “Harnessing Basic And Molecular Research To Enhance Patient Care. New Delhi, India. November 25, 2022.

**Kalra, J.** Medical Error Disclosure – Everything You Need to Know. Saskatchewan Society of Medical Laboratory Technologists. Western Development Museum, Saskatchewan Hall Room. September 23, 2022.

#### CONTRIBUTED PRESENTATIONS

**Kalra, J.** Rafid-Hamed, Z, Seitzinger, P. (2023). Quality Care and Patient Safety – A Suggested Model for Medical Error Disclosure across Canada. 2023 CSCC/CCMG Joint Annual Conference. Winnipeg, Canada. June 18, 2023.

Seitzinger, P., **Kalra, J.** (July 2022). Drawing Connections: Artificial Intelligence to Address Complex Health Challenges. International Conference on Advances in Intelligent Systems and Computing. Advances in Human Factors and Ergonomics in Health Care and Medical Devices (AHFE). New York, USA. July 27, 2022.

**Kalra, J.,** Seitzinger, P. (July 2022). Implications and Consequences of Artificial Intelligence in Healthcare Quality and Medical Training. International Conference on Advances in Intelligent

Systems and Computing. Advances in Human Factors and Ergonomics in Health Care and Medical Devices (AHFE). New York, USA. July 27, 2022.

**Kalra, J.,** Rafid-Hamed, Z., Wiebe, L., Seitzinger, P. (July 2022). Medical Error Disclosure: A Quality Perspective and Ethical Dilemma in Healthcare Delivery. International Conference on Advances in Intelligent Systems and Computing. Advances in Human Factors and Ergonomics in Health Care and Medical Devices (AHFE). New York, USA. July 27, 2022.

**Kalra, J.,** Markewich, D., Rafid-Hamed, Z., Seitzinger, P. (July 2022). Enhancing the Quality and Delivery of Healthcare: A Decade Review of Autopsy Data. International Conference on Advances in Intelligent Systems and Computing. Advances in Human Factors and Ergonomics in Health Care and Medical Devices (AHFE). New York, USA. July 27, 2022.

## RECOGNITION AND AWARDS

Queen Elizabeth II Platinum Jubilee Medal. Through City of Saskatoon Civic Process, Awarded this honour for contributions in the field of Health Care. TCU Place, Saskatoon, Saskatchewan. March 24, 2023

Recipient, Rafid-Hamed Z, Kalra J: "Medical Error Disclosure – An Ethical and Legal Dilemma?" 2nd Place – Quality Improvement at Undergraduate Research Showcase 2022. College of Medicine. University of Saskatchewan. October 19, 2022.

AHFE 2022 Best Paper Award – Kalra Jay, Seitzinger Patrick. Implications and Consequences of Artificial Intelligence in Healthcare Quality and Medical Imaging. Applied Human Factors and Ergonomics 2022 and Its Affiliated Conferences. July 2022.

AHFE 2022 Best Student Paper Award – Seitzinger Patrick, Rafid-Hamed Zoher, Wiebe Lily, Kalra Jay. Medical Error Disclosure: A Quality Perspective and Ethical Dilemma in Healthcare Delivery. Applied Human Factors and Ergonomics 2022 and Its Affiliated Conferences. July 2022.

AHFE 2022 Best Student Paper Award – Seitzinger Patrick, Kalra Jay. Drawing Connections: Artificial Intelligence to Address Complex Health Challenges. Applied Human Factors and Ergonomics 2022 and Its Affiliated Conferences. July 2022.

## PRACTICE OF PROFESSIONAL SKILLS

### **Professional Services**

Attended. Positive Academic Leadership Workshop. Jeffrey L. Buller – ATLAS: Academic Training, Leadership, and Assessment Services. University of Saskatchewan. Staybridge Suites. Saskatoon, Saskatchewan. May 4, 2023.

Attended. Faculty and Staff Engagement Workshop. Jeffrey L. Buller – ATLAS: Academic Training, Leadership, and Assessment Services. University of Saskatchewan. Staybridge Suites. Saskatoon, Saskatchewan. May 3, 2023.

Attended. Trust, Access and Joint Decision-Making: Foundations of effectively leading together. College of Medicine. University of Saskatchewan. April 28, 2023

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

Certificate of Completion. Importance of the Pre-analytical Phase in Different Areas of the Laboratory. International Federation of Clinical Chemistry and Laboratory Medicine (IFCC). September 7, 2022

Certificate of Completion – Trauma Informed Practice: Creating Safety. October 13, 2022

Attended, 2022 Saskatoon MSA Quarterly Meeting and President and Vice-President Tour. September 20, 2022. William Pascoe Room, Delta Bessborough.

### **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

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**

Co-Director, Clinical Biochemistry Fellowship Training Program Development and Accreditation. Department of Pathology and Lab Medicine. College of Medicine

Member, Nominations Committee, Faculty Council, College of Medicine

Chair, Bylaws Committee, College of Medicine

Member, Faculty Council, College of Medicine

Coordinator, Clerkship Electives, Department of Pathology and Lab Medicine

Committee Member, General Pathology Resident Program Committee, Department of Pathology and Laboratory 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

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

Member, Legislation and Policy Committee. Saskatchewan Medical Association

Attended, Track Chairs Board Meeting, International Conference on Applied Human Factors and Ergonomics (AHFE), New York, USA

Regional Delegate, Saskatchewan Medical Association Representative Assembly (RA)

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

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, Academy of American Association of Clinical Chemistry (AACC)

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

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

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

Chair, Scientific Advisory Board, Human Factors in Aging and Special Needs. Conference track, International Conference on Applied Human Factors and Ergonomics (AHFE), New York, USA

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

Co-Chair, Scientific Session, Healthcare Advancement and Patient Safety. International Conference on Applied Human Factors and Ergonomics (AHFE), New York, USA

#### 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, Saskatoon

### **KANTHAN, Rani, MBBS MS FRCS FRCPSC FCAP MD**

#### PUBLICATIONS IN REFEREED JOURNALS

Blondeau LD, Deneer H, Rubin JE, Kanthan R, Sanche SE, Hamula C, Blondeau JM (**2023**) Zoonotic *Staphylococcus pseudintermedius*: An underestimated human pathogen? Future Microbiology in press

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

Chibbar R, Foerstner S, SureshJ Chibbar R Piche A, Kundapur D, **Kanthan R**, Kundapur V, Lee C-H, Agrawal A, and Lai R. (**2023**) Estrogen/Progesterone Receptor Loss, CTNNB1 and KRAS Mutations Are Associated With Local Recurrence or Distant Metastasis in Low-Grade Endometrial Endometrioid Carcinoma. Appl Immunohistochem Mol Morphol 2023;31:[3]181–188)

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

Tharmaradinam S, Kanthan S, Diudea D, **Kanthan R (2022)** Uncommon Mucosal Metastases in Endoscopic Colorectal Biopsies: A 20 year single institution review of 55, 154 consecutive Endoscopic Colorectal biopsies. Gastroenterology Hepatology and Digestive System -Review Article 2022; 1 (2) :1-20

***I am the senior author with, Diduea D co-pathologist, S. Kanthan, surgeon/endoscopist and S.Tharmaradinam, senior pathology resident as co-authors.***

Channabasappa S, Caldwell S, **Kanthan R**, Singh, B (2022). Retinoid receptors are expressed in mouse and human lungs. The Anatomical Record 305, (9), p2281-2289

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

#### REFERRED CONFERENCE PUBLICATIONS

**Kanthan R (2023)** Arabian Gulf University International Conference "Towards Future Doctors: Innovations and Prospects"--'Serious Games in Medical Education' in Arabian Gulf University, Kingdom of Bahrain 2023 March 09<sup>th</sup> and 10<sup>th</sup>-Conference proceedings booklet

**Kanthan R**, Markewich D, Pan H, Kakodkar P, Magee FM (2022) Transition Academic Advisor, embodying CanMEDS roles for the 'sopho-moric' year International Conference on residency Education , Oct 2022 26<sup>th</sup>-30<sup>th</sup> -conference proceedings

**Kanthan R**, Kakodkhar P, Quirion D (2022) - "Universal Master Rotation Blueprint" for general pathology [gp]residency program at the Competency Based Medical Education Program Evaluation Summit Oct 24<sup>th</sup> 2022 –Royal College Summit Proceedings

Kanthan SC, Tharmaradhinam S. **Kanthan R (2022)** Surgical updates of anal adenocarcinomas with pathological correlation The Royal College of Surgeons of Edinburgh International Conference Chennai 2022-Oct 06<sup>th</sup>-08<sup>th</sup> Chennai, India -conference proceedings

**Kanthan R**, Tharmaradhinam S. Kanthan SC (2022) Anal Adenocarcinomas: A pathological review with two cases of signet ring cell carcinoma. XXXIV - International Academy of Pathology (IAP) Sydney Australia 11-15<sup>th</sup> October 2022 34<sup>th</sup> International Congress of the International Academy of Pathology 11-15 October 2022 Sydney, Australia Histopathology Volume 81 Supplement 1 October 2022 Page 5

**Kanthan R**, Tharmaradhinam S. Kanthan SC (2022) Tubulopapillary Neoplasms [TPN] of the Pancreatobiliary Tract . XXXIV - International Academy of Pathology (IAP) Sydney Australia 11-15<sup>th</sup> October 2022 34<sup>th</sup> International Congress of the International Academy of Pathology 11-15 October 2022 Sydney, Australia Histopathology Volume 81 Supplement 1 October 2022 Page 8

#### INVITED PRESENTATIONS

**March 2023** Invited Keynote in-person speaker Arabian Gulf University International Conference "Towards Future Doctors: Innovations and Prospects "-- Serious Games in Medical Education in Arabian Gulf University, Kingdom of Bahrain 2023 March 09<sup>th</sup> and 10<sup>th</sup>

**Jan 2023** Invited Faculty Seminars x 2 for the Rapid Post Graduate Review Course –Jan 09<sup>th</sup> Sri and Jan 10<sup>th</sup> Sri Ramachandra University Chennai, India-In person Slide presentations.

#### RESEARCH FUNDING HISTORY

**Sept 2021 to present** – Vizeacoumar F, Ahmed S, Ravi D, Kanthan R Developing novel targeted therapies for telomerase overexpressing pancreatic cancers.-Cancer Research Society

## SUPERVISION AND ADVISORY ACTIVITIES

### **Post Graduate Supervision**

2022, 2023 Henry Pan, Daniel Markewich, Pramath Kakodkar, GP Residents –resident *research*

### **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**

## COMMITTEE MEMBERSHIP

### **College Committees**

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

### **Department Committees**

2021-present	Program Director for General Pathology Program -appointed in Sep 2021
2000 – present	Residency Program Committee-{Assistant Program Director 2012-2016}

### **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
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2016 - Present	Visiting Professor – Department of Pathology, Sri Ramachandra Medical College & Research Institute, Chennai, India -Term 3 years and then renewed annually
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## **KINLOCH, Marilyn, MD FRCPC**

## PUBLIC AND COMMUNITY CONTRIBUTIONS – NON-UNIVERSITY RELATED

Volunteer Chair – Women Leading Philanthropy, Royal University Hospital Foundation

President – Saskatoon Medical Staff Association

Resource Chair, Board of Directors, Canadian Association of Pathologists

Deputy Speaker, Saskatchewan Medical Association

Member, International Association of Pathology, Education Committee

## PUBLICATIONS

Amy Jamieson, Jutta Huvila, Derek Chiu, Emily F. Thompson, Stephanie Scott, Shannon Salvador, Danielle Vicus, Limor Helpman, Walter Gottlieb, Sarah Kean, Vanessa Samouelian, Martin Köbel, Mary Kinloch, Carlos Parra-Harran, Saul Offman, Katherine Grondin, Julie Irving, Amy Lum, Janine Senz, Samuel Leung, Melissa K. McConechy, Marie Plante, Stefan Kommoss, David G. Huntsman, Aline Talhouk, C. Blake Gilks, Jessica N. McAlpine. *Grade and Estrogen Receptor Expression*

*Identify a Subset of No Specific Molecular Profile Endometrial Carcinomas at a Very Low Risk of Disease-Specific Death*, Modern Pathology, Volume 36, Issue 4, 2023

Amy Jamieson, Jutta Huvila, Samuel Leung, Derek Chiu, Emily F. Thompson, Amy Lum, Mary Kinloch, Limor Helpman, Shannon Salvador, Danielle Vicus, Sarah Kean, Vanessa Samouelian, Katherine Grondin, Julie Irving, Saul Offman, Carlos Parra-Herran, Susie Lau, Stephanie Scott, Marie Plante, Melissa K. McConechy, David G. Huntsman, Aline Talhouk, Stefan Kommoss, C. Blake Gilks, Jessica N. McAlpine. *Molecular subtype stratified outcomes according to adjuvant therapy in endometrial cancer*. *Gynecologic Oncology*, Volume 170, 2023, Pages 282-289.

Emily F Thompson, Jutta Huvila, Amy Jamieson, Samuel Leung, Amy Lum, Saul Offman, Alice Lytwyn, Mona Lisa Sur, Lynn Hoang, Julie Irving, Nicholas van der Westhuizen, Chantale Morin, Cyrille Bicamumpaka, Nazilla Azordegan, François Gougeon, Kaoutar Ennour-Idrissi, Janine Senz, Melissa K McConechy, Rosalia Aguirre-Hernandez, Victoria Lui, Carolyn Kuo, Cassidy Bell, Taylor Salisbury, James Lawson, Ellen He, Shanzhao Wang, Derek Chiu, Sarah Kean, Vanessa Samouëlian, Shannon Salvador, Walter Gotlieb, Limor Helpman, Stephanie Scott, Christoph Wohlmuth, Danielle Vicus, Marie Plante, Aline Talhouk, David Huntsman, Carlos Parra-Herran, Mary Kinloch, Katherine Grondin, C Blake Gilks, Jessica N McAlpine. *Variability in endometrial carcinoma pathology practice: opportunities for improvement with molecular classification*. *Mod Pathol* **35**, 1974–1982 (2022).

## POSTERS

Kinloch, Marilyn, et al. "Her-2 Expression in p53 and Endometrial Cancers compared to Serous Carcinomas." United States and Canadian Academy of Pathology 2022, Los Angeles, CA

Kinloch, Marilyn, et al. "Reflexive Molecular Testing for BRAF in Colorectal Carcinoma and Melanoma Patients Leads to Improved Access to Results" United States and Canadian Academy of Pathology 2023, New Orleans, LA

## INVITED TALKS

May 6, 2022 – Canadian Association of Molecular Pathology (CAMP): Maximizing MMR in Gynecologic and Gastrointestinal Cancers, Whistler, BC

October 3-4, 2022 – St. John's, Newfoundland. Site visit to Implement MMR testing

April 29, 2023 Canadian Clinical Trials Group – Molecular Pathology Inclusion in EN.10, Toronto, Ontario, Chelsea Hotel

March 16, 2023 United States and Canadian Academy of Pathology (USCAP) – Short Course – DNA Repair Mechanisms in Gynecologic and Gastrointestinal Cancer, New Orleans, LA

## GRANTS

Genomic Applications Partnership Program (GAPP). Dr. Decoteau and Dr. Kinloch. Clinical implementation of oncogenomic testing and synoptic reporting for improved ovarian cancer patient care in Saskatchewan. \$3.6 million

## STUDENTS

Howard Li – Reflexive Molecular Testing for BRAF in Colorectal Carcinoma and Melanoma Patients Leads to Improved Access to Results

## AWARDS

Queen Elizabeth II Platinum Jubilee Medal, Philanthropy, 2023

**LANG, Amanda**, PhD FCCM D(ABMM)

## PUBLICATIONS

Antonia Dibernardo, Nikki PL Toledo, Alyssia Robinson, Carla Osiowy, Elizabeth Giles, Jacqueline Day, L Robbin Lindsay, Michael A Drebot, Timothy F Booth, Tamara Pidduck, Ashley Baily, Carmen L Charlton, Graham Tipples, Jamil N Kanji, Gino Brochu, **Amanda Lang**, Christian Therrien, Mélina Bélanger-Collard, Sylvie-Nancy Beaulac, Brian M Gilfix, Guy Boivin, Marie-Ève Hamelin, Julie Carbonneau, Simon Lévesque, Philippe Martin, Andrés Finzi, Gabrielle Gendron-Lepage, Guillaume Goyette, Mehdi Benlarbi, Romain Gasser, Claude Fortin, Valérie Martel-Lafferrière, Myriam Lavoie, Renée Guérin, Louis-Patrick Haraoui, Christian Renaud, Craig Jenkins, Sheila F O'Brien, Steven J Drews, Valerie Conrod, Vanessa Tran, Bill Awrey, Robert Scheuermann, Alan DuPuis, Anne Payne, Casey Warszycki, Roxie Girardin, William Lee, George Zahariadis, Lei Jiao, Robert Needle, James Cordenbach, Jerry Zaharatos, Kellee Taylor, Marty Teltscher, Matthew Miller, May Elsherif, Peter Robertson, Jason L Robinson. Evaluation of the performance of multiple immunoassay diagnostic platforms on the National Microbiology Laboratory SARS-CoV-2 National Serology Panel. *Official J Assoc Medical Microbiol Infect Dis Can* **7**, 186–195 (2022).

Arinjay Banerjee, Jocelyne Lew, Andrea Kroeker, Kaushal Baid, Patryk Aftanas, Kuganya Nirmalarajah, Finlay Maguire, Robert Kozak, Ryan McDonald, **Amanda Lang**, Volker Gerdt, Sharon E. Straus, Lois Gilbert, Angel Xinliu Li, Mohammad Mozafarihashjin, Sharon Walmsley, Anne-Claude Gingras, Jeffrey L. Wrana, Tony Mazzulli, Karen Colwill, Allison J. McGeer, Samira Mubareka, Darryl Falzarano. Immunogenicity of convalescent and vaccinated sera against clinical isolates of ancestral SARS-CoV-2, beta, delta, and omicron variants. *Med* **3**, 422-432.e3 (2022).

Jason J. LeBlanc, May ElSherif, Lingyun Ye, Donna MacKinnon-Cameron, Ardith Ambrose, Todd F. Hatchette, **Amanda L.S. Lang**, Hayley D. Gillis, Irene Martin, Walter H.B. Demczuk, Melissa K. Andrew, Guy Boivin, William Bowie, Karen Green, Jennie Johnstone, Mark Loeb, Anne E. McCarthy, Allison McGeer, Makeda Semret, Sylvie Trottier, Louis Valiquette, Duncan Webster, Shelly A. McNeil. Recalibrated estimates of non-bacteremic and bacteremic pneumococcal community acquired pneumonia in hospitalized Canadian adults from 2010 to 2017 with addition of an extended spectrum serotype-specific urine antigen detection assay. *Vaccine* **40**, 2635–2646 (2022).

Layla Pires, Brian C. Wilson, Rod Bremner, **Amanda Lang**, Jeremie Larouche, Ryan McDonald, Joel D. Pearson, Daniel Trcka, Jeff Wrana, James Wu, Cari M. Whyne. Translational feasibility and efficacy of nasal photodynamic disinfection of SARS-CoV-2. *Sci Rep-uk* **12**, 14438 (2022).

## LEWIS, Cody, PhD

### PUBLICATIONS

Lewis CW, Butorin Y, de Koning L, Paul H, Gifford JL, Venner AA, Sieden-Long I. Low partial pressure of oxygen causes significant and unrecognized under-recovery of glucose on blood gas analyzers. *Clinical Biochemistry*. Vol 111 (60-65). 2022

Ayoud AT, Nishiura N, Techima A, Elrefairy MA, Muslimin R, Do KM, Kodama T, Lewis CW, Chan G, Morita H, AraKawa. Bioinspired computational design of lankacidin derivatives for improvement in antitumor activity. *Future Science*. Vol 14. 2022

## LYON, Andrew, PhD FCACB DABCC

### ASSOCIATE MEMBERSHIPS AT THE U OF S

2012 – Present Faculty, College of Graduate and Postdoctoral Studies.

### DEPARTMENT COMMITTEES

2023 CACB Postdoctoral Fellowship Training Program Committee  
2022-present SHA Pre-analytics provincial committee  
2022-present SHA Biochemistry provincial committee

### PUBLICATIONS

MacDonald AM, Gabos S, Braakman S, Cheperdak L, Lee B, Lyon ME, **Lyon AW** et al. Maternal and child biomonitoring strategies and levels of exposure in western Canada during the past seventeen years: The Alberta Biomonitoring Program: 2005-2021. *Int J Hyg and Envir Health*. 2022; 244.

### ABSTRACTS

Lyon OAS, Szafron M, Lyon ME, **Lyon AW**. Effect of Analytic and Biologic Variation of Plasma Creatinine on Classification of Chronic Kidney Disease Stages using the CKD-EPI 2021 eGFR Equation. *CSCC Annual Meeting* Winnipeg, MN. June 18, 2023.

Szafron M, Lyon OAS, **Lyon AW**, Lyon ME. Comparison of the CKD-EPI 2009 and 2021 equations to screen for chronic kidney disease stages using a NHANES dataset. *CSCC Annual Meeting* Winnipeg, MN. June 18, 2023.

## MacKENZIE, Keith, PhD

### PUBLICATIONS IN REFEREED JOURNALS

Suchan DM, Loos KD, MacKenzie KD, Workman SD, Johnson L, Cameron ADS, Alexander DC. A complete whole-genome sequence of *Ignavigranum ruoffiae* strain CPL 242382-20, an opportunistic human pathogen recovered from a breast cyst. *Microbiol Resour Announc*. 2023 Jan 24 12(1):e0052122 doi: 10.1128/mra.00521-22. PMID: 36472427.

Gill IS, Griffiths EJ, Dooley D, Cameron R, Kallesøe SS, John NS, Sehar A, Gosal G, Alexander D, Chapel M, Croxen MA, Delisle B, Di Tullio R, Gaston D, Duggan A, Guthrie JL, Horsman M, Joshi E, Kearny L, Knox N, Lau L, LeBlanc JJ, Li V, Lyons P, [MacKenzie K](#), McArthur AH, Panousis EM, Palmer J, Prystajek N, Smith KN, Tanner J, Townend C, Tyler A, Van Domselaar G, Hsiao WWL. The DataHamonizer: a tool for faster data harmonization, validation, aggregation and analysis of pathogen genomics contextual information. *Microb Genom.* 2023 Jan 9 9(1):mgen000908. Doi: 10.1099/mgen.0.000908. PMID: 36748616.

### INVITED PRESENTATIONS

Microbial Genomics in Lab Medicine: SARS-CoV-2 and Beyond. Department of Pathology and Laboratory Medicine Grand Rounds, College of Medicine, University of Saskatchewan. 2023 Feb 27.

### GRANTS

2020 – 2022      Member, Canadian COVID-19 Genomics Network (CanCOGeN). Genome Canada. \$40 million (CAD).

### UNDERGRADUATE AND POST GRADUATE STUDENT SUPERVISION/CO-SUPERVISION

2023      Mr. Thomas Haidl, NSERC Undergraduate Student Research Award Recipient, Department of Biology, University of Regina. Primary Supervisor: Dr. Andrew Cameron

### COMMITTEE MEMBERSHIP

#### Department Committees

2023 – PRESENT      Member, Equity, Diversity, and Inclusivity Committee, Department of Pathology and Laboratory Medicine

#### National Committees

2023 – PRESENT      Co-Chair, Canadian Public Health Laboratory Network Sequencing Subcommittee  
 2023 – PRESENT      Member, Canadian Public Health Laboratory Network Point of Care Testing Group  
 2022 – PRESENT      Member, Canadian Public Health Laboratory Network Syphilis Laboratory Diagnostics Group  
 2021 – PRESENT      Member, Canadian Public Health Laboratory Network Canadian SARS-CoV-2 Variant Surveillance Group (CSVSG)  
 2021 – PRESENT      Member, Canadian Public Health Laboratory Network Genomics Data Analytics Working Group

## **McDONALD, Ryan, PhD RMCCM**

### PUBLICATIONS IN REFEREED JOURNALS

Pires, L., B.C. Wilson, R. Bremner, A. Lang, J. Larouche, [R. McDonald](#), J.D. Pearson, D. Trcka, J. Wrana, J. Wu, and C.M. Whyne (2022) Translational feasibility and efficacy of nasal photodynamic disinfection of SARS-CoV-2. *Scientific Reports* 12:14438.

Banergee, A., J. Lew, A. Kroeker, K. Baid, P. Aftanas, K. Nirmalarajah, F. Maguire, R. Kozak, [R. McDonald](#), A. Lang, V. Gerdtz, S.E. Straus, L. Gilbert, A.X. Li, M. Mozafarihashjin, S. Walmsley, A.-C. Gingras, J.L. Wrana, T. Mazzulli, K. Colwill, A.J. McGeer, S. Mubareka, and D. Falzarano (2022)

Immunogenicity of convalescent and vaccinated sera against clinical isolates of ancestral SARS-CoV-2, Beta, Delta, and Omicron variants. *Med* 3(6):422-432.e3.

## GRANTS

2020 – 2022            Member, Canadian COVID-19 Genomics Network (CanCOGeN) - VirusSeq. Genome Canada. \$40 million.

## **McNAIR, Erick,** BSc MSc PhD CCP

2023-05, **McNair E. (supervisor)**, Abbas Khani-Hanjani (co-supervisor).

The Association of Matrix Metalloproteinases-2 and-9 with Acute Kidney Injury Following Cardiopulmonary Bypass-supported Cardiac surgery. Department of Surgery Faculty Research Day. College of Medicine, University of Saskatchewan, Annual Research Day, Saskatoon SK, 2023. Awarded 2nd Place Podium Presentation – Josie Conacher

2022-12, AmSECToday: Erick McNair, Featured in the Member Spotlight article as Associate Editor for the Journal of the American Society for Extracorporeal Technology

2022-10, **McNair E.**, Katselis, G. Assessment of Proteome Changes in the Development of Acute Kidney Injury following Cardiopulmonary Bypass-supported Cardiac Surgery. Department of Pathology and Laboratory Medicine Faculty Research Day. Podium Presentation 2022

2022-10, Highlights in Surgery: Rebecca Iyoha (Supervisor: Dr. Erick McNair, Cardiac Surgery) for winning 2<sup>nd</sup> place in the Biochemistry, Microbiology & Immunology category at the 2022 CoM UGME Research Showcase for her poster entitled "Assessment of Proteome Changes in the Development of Acute Kidney Injury following Cardiopulmonary Bypass-supported Cardiac Surgery"

2022-09, **McNair E. (supervisor)**, Katselis, G. (co-supervisor) Assessment of Proteome Changes in the Development of Acute Kidney Injury following Cardiopulmonary Bypass-supported Cardiac Surgery. College of Medicine Undergraduate Showcase, Awarded 2nd Place Virtual Presentation -Rebecca Iyoha

## **MEHTA, Ninad,** PhD D(ABMM)

### PUBLICATIONS IN REFEREED JOURNALS

Pender, M., **Mehta, N.**, Hamilton, B. D., & Swaminathan, S. (2022). *Nocardia beijingensis* Isolated from an Adrenal Abscess in a Diabetic Host. *Open Forum Infect Dis*, 9(7), ofac328. <https://doi.org/10.1093/ofid/ofac328>

### TEXT BOOK CHAPTERS

**Ninad Mehta**, and Christine C Ginocchio, 2022. 10.12 Shell Vial/Multiwell Plate Culture for Rapid Virus Isolation, p.10.12.1-10.12.4. Leber AL Clinical Microbiology Procedures Handbook, 4th Edition. ASM Press, Washington, DC.

David R Hillyard, Larry G Reimer, **Ninad Mehta**, and Melanie A Mallory 2022. 12.3 Molecular Methods for Identification of Cultured Microorganisms, p.12.3.2.1-12.3.2.6. Leber AL Clinical Microbiology Procedures Handbook, 4th Edition. ASM Press, Washington, DC.

### INVITED TALKS

**Syphilis & the Saskatchewan landscape** – SSMLT Fall Conference, Saskatoon. 08/2022.

**Respiratory Virus Testing in Saskatchewan** – Hologic User Group Meeting, Toronto. 9/2022

**Antibiotic Resistance: An update of what is happening in our hospitals** – Mingling Minds, University of Saskatchewan, Saskatoon. 02/16/2023

### COMMITTEES

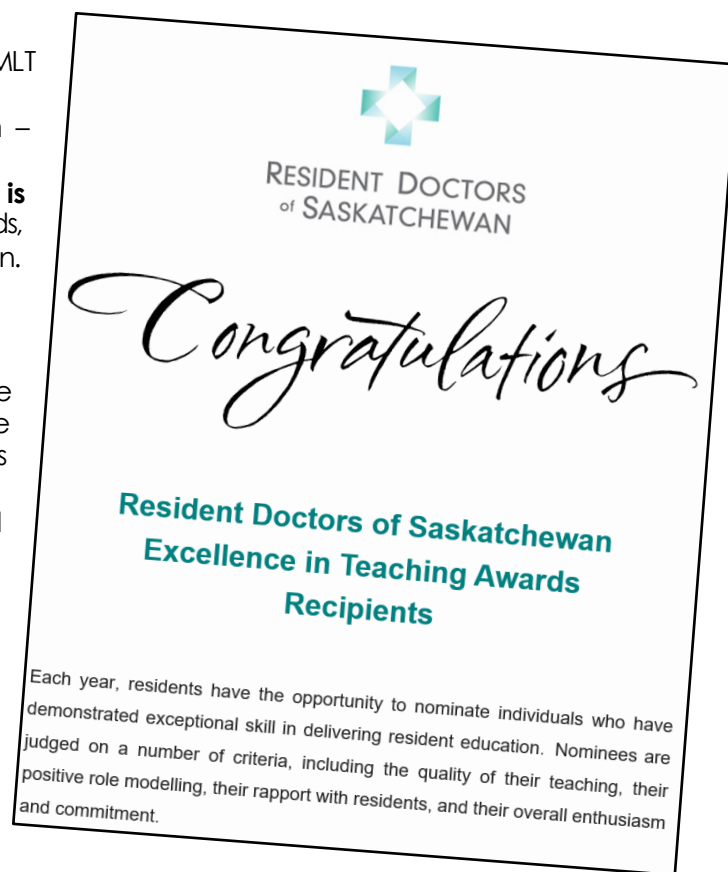
Member of the Microbiology Quality Assurance Committee, Laboratory Quality Assurance Program, College of Physicians and Surgeons of Saskatchewan (August 2022-Present)

Member of Biosafety Protocol Approval Committee, University of Saskatchewan (April 2023-Present)

Member of CMPT Clinical Bacteriology committee, Western Canada (April 2023-Present)

### AWARDS

**2023 RDoS Excellence in Teaching Award**, Resident Doctors of Saskatchewan



**MINION, Jessica**, MD MSc FRCPC D(ABMM)

### JOURNAL ARTICLES

Mitchell R, Cayen J, Thampi N, Frenette C, Bartoskzo J, Choi KB, Comeau JL, Conly J, Ellis C, Ellison J, Embil J, Evans G, Johnston L, Johnstone J, Katz KC, Kibsey P, Lee B, Lefebvre MA, Longtin Y, McGeer A, Mertz D, **Minion J**, Rudnick W, Silva A, Smith SW, Srigley JA, Suh KN, Tomlinson J, Wong A, Pelude L. (2023). Trends in Severe Outcomes Among Adult and Pediatric Patients Hospitalized With COVID-19 in the Canadian Nosocomial Infection Surveillance Program, March 2020 to May 2022. *JAMA Netw Open*. 6(4):e239050.

Golden AR, Adam HJ, Karlowsky JA, Baxter M, Schellenberg J, Martin I, Demczuk W, **Minion J**, Van Caeseele P, Kus JV, McGeer A, Lefebvre B, Smadi H, Haldane D, Yu Y, Mead K, Mulvey MR, Zhanel GG. Genomic investigation of the most common *Streptococcus pneumoniae* serotypes causing invasive infections in Canada: the SAVE study, 2011-2020. (2023). *J Antimicrob Chemother*. 78(S1):i26-i36.

Atkinson A, Albert A, McClymont E, Andrade J, Beach L, Bolotin S, Boucoiran I, Bullard J, Charlton C, Crane J, Dougan S, Forest JC, German GJ, Giguère Y, Girouard G, Hankins C, Krajden M, Lang A, Levett P, **Minion J**, Neudorf C, Poliquin V, Robinson JL, Scott H, Stein DR, Tran V, Zahariadis G, Zhou HY, Money D; Antenatal Serostudies Team. (2023). Canadian SARS-CoV-2 serological survey using antenatal serum samples: a retrospective seroprevalence study. *CMAJ Open*. 11(2):E305-E313.

Bharat A, Mataseje L, Pamley EJ, Avery BP, Cox G, Carson CA, Irwin RJ, Deckert AE, Daignault D, Alexander DC, Allen V, El Bailey S, Bekal S, German GJ, Haldane D, Hoang L, Chui L, **Minion J**,

Zahariadis G, Reid-Smith RJ, Mulvey MR. (2022). One Health Genomic Analysis of Extended-Spectrum  $\beta$ -Lactamase–Producing *Salmonella enterica*, Canada, 2012–2016. *Emerg Infect Dis.* 28(7):1410-1420.

Sharma MK, Janella D, McGurran A, Corbett C, Adam H, Akochy PM, Haldane D, MacKenzie H, **Minion J**, Needle R, Newberry C, Patterson M, Sekirov I, Tyrrell G, Soualhine H. (2022). Compilation of 10 Years of MIRU-VNTR Data: Canadian National Tuberculosis Laboratory's Experience. *Can J Infect Dis Med Microbiol.* 2022: Linear Regression Equations.

Choi KB, Du T, Silva A, Golding GR, Pelude L, Mitchell R, Rudnick W, Hizon R, Al-Rawahi GN, Chow B, Davis I, Evans GA, Frenette C, Johnstone J, Kibsey P, Katz KC, Langley JM, Lee BE, Longtin Y, Mertz D, **Minion J**, Science M, Srigley JA, Stagg P, Suh KN, Thampi N, Wong A, Comeau JL, Hota SS; Canadian Nosocomial Infection Surveillance Program (CNISP). (2022). Trends in *Clostridioides difficile* infection rates in Canadian hospitals during the coronavirus disease 2019 (COVID-19) pandemic. *Infect Control Hosp Epidemiol.* 18:1-4.

Thorington R, Sawatzky P, Lefebvre B, Diggle M, Hoang L, Patel S, Van Caesseele P, **Minion J**, Garceau R, Matheson M, Haldane D, Gravel G, Mulvey MR, Martin I. (2022). Antimicrobial susceptibilities of *Neisseria gonorrhoeae* in Canada, 2020. *Can Commun Dis Rep.* 48(11/12):571–9.

Du T, Choi KB, Silva A, Golding GR, Pelude L, Hizon R, Al-Rawahi GN, Brooks J, Chow B, Collet JC, Comeau JL, Davis I, Evans GA, Frenette C, Han G, Johnstone J, Kibsey P, Katz KC, Langley JM, Lee BE, Longtin Y, Mertz D, **Minion J**, Science M, Srigley JA, Stagg P, Suh KN, Thampi N, Wong A, Hota SS. (2022). Characterization of Healthcare-Associated and Community-Associated *Clostridioides difficile* Infections among Adults, Canada, 2015-2019. *Emerg Infect Dis.* 28(6):1128-1136.

Golden AR, Griffith A, Demczuk WHB, 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, Li AY, Mulvey MR, Martin I. (2022). Invasive pneumococcal disease surveillance in Canada, 2020. *Can Commun Dis Rep* 48(9):396–406.

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. (2022). 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  
Sin P, Siddiqui M, Wozniak R, Bare I, **Minion J**, Sanche S, Udell J, Lavoie A, Dehghani P. (2022). Heart failure after laboratory confirmed influenza infection (FLU-HF). *Global Heart.* 17(1): 43.

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 Caesseele 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

## POSTERS/ABSTRACTS

Golden AR, Demczuk W, Griffith A, Tyrrell GJ, Kus JV, McGeer A, Domingo MC, Hoang L, **Minion J**, Van Caeseele P, Smadi J, Haldane D, Yu Y, Mead K, Steven L, McFadzen J, Mulvey MR, Martin I. (2023). Increase of *Streptococcus pyogenes* emm49 causing invasive infections in Canada. *Applied Bioinformatics and Public Health Microbiology*. Cambridge, UK. May 3-5, 2023.

Mulvey MR, Bharat A, Mistry K, Hoang L, Chui L, **Minion J**, Alexander D, Patel S, Bekal S, El Bailey S, German G, Haldane D, Zahariadis G, Ziebell K, Agunos A, Avery BP, Reid-Smith RJ, Carson CA. (2023). Rapid change in the genetic mechanism of reduced susceptibility to ciprofloxacin in *Salmonella* Enteritidis from human infections and potential linkage to agrifood sources. *Association of Medical Microbiology and Infectious Diseases Canada – Canadian Association of Clinical Microbiology and Infectious Diseases Annual Conference*. Toronto, ON, Canada. March 28-31, 2023

Martin I, Barairo N, Sawatzky P, Peterson S, Lefebvre B, Diggle M, Hoang L, Patel S, Van Caeseele P, **Minion J**, Garceau R, Haywood N, Haldane D, Mulvey MR. (2023). Antimicrobial susceptibilities to *Neisseria gonorrhoeae* in Canada, 2017-21. *Association of Medical Microbiology and Infectious Diseases Canada – Canadian Association of Clinical Microbiology and Infectious Diseases Annual Conference*. Toronto, ON, Canada. March 28-31, 2023

Mataseje L, Mitchell R, Davis I, Ellis C, Hota SS, Kibsey P, Leis JA, Longtin Y, McGeer A, **Minion J**, Mulvey M, Musto S, Rajda E, Smith SW, Srigley JA, Suh KN, Thampi N, Tomlinson J, Wong T, Katz K. (2023). Molecular investigation of Carbapenemase-producing Enterobacterales Infections in Canadian Acute-Care Hospitals, 2010-2021. *Association of Medical Microbiology and Infectious Diseases Canada – Canadian Association of Clinical Microbiology and Infectious Diseases Annual Conference*. Toronto, ON, Canada. March 28-31, 2023

Mitchell R, Mataseje L, Cayen J, Davis I, Ellis C, Hota SS, Kibsey P, Leis JA, Longtin Y, McGeer A, **Minion J**, Mulvey MR, Musto S, Rajda E, Smith SW, Srigley JA, Suh KN, Thampi N, Tomlinson J, Katz K. (2023). Epidemiology of carbapenemase-producing Enterobacterales infections in a network of Canadian acute care hospitals. *Association of Medical Microbiology and Infectious Diseases Canada – Canadian Association of Clinical Microbiology and Infectious Diseases Annual Conference*. Toronto, ON, Canada. March 28-31, 2023

Mulvey MR, Hoang L, Dingle T, **Minion J**, Alexander D, Patel SN, Melano R, Doualla-Bell F, Haldane D, Girouard G, Cameron M, German G, Zahariadis G, Mataseje L. (2022). Canadian Public Health Laboratory Network reporting of carbapenemase-producing Enterobacterales in Canada: 2008-2021. *Association of Medical Microbiology and Infectious Diseases Canada – Canadian Association of Clinical Microbiology and Infectious Diseases Annual Conference*. Vancouver, BC, Canada. April 5-8, 2022

Mitchell R, Mataseje L, Al-Rawahi G, Davis I, Ellis C, Embree J, Hota SS, Kibsey P, Leis JA, McGeer A, **Minion J**, Mulvey M, Musto S, Rajda E, Smith SW, Srigley JA, Suh KN, Thampi N, Tomlinson J, Wong T, Katz K. (2022). The evolving modes of transmission of carbapenemase-producing Enterobacterales (CPE) in Canadian acute care facilities, 2017-2020. *Association of Medical Microbiology and Infectious Diseases Canada – Canadian Association of Clinical Microbiology and Infectious Diseases Annual Conference*. Vancouver, BC, Canada. April 5-8, 2022

Mataseje L, Fakharuddin K, Mitchell R, Al-Rawahi GN, Davis I, Ellis C, Embree J, Hota SS, Kibsey P, Leis JA, McGeer A, **Minion J**, Musto S, Ewa R, Smith SW, Srigley JA, Suh KN, Thampi N, Tomlinson J, Wong T, Katz K, Mulvey MR. (2022). Dissemination of plasmids co-harboring OXA-48-type and

NMD carbapenemases in Canada from 2010-2020. *International Symposium on Plasmid Biology*. Toulouse, France. Sept 18-23, 2022.

Petkau A, Bharat A, Avery BP, Carson CA, Kearney A, Nadon C, Mabon P, Thiessen J, Alexander DC, Allen V, El Bailey S, Bekal S, German GJ, Haldane D, Hoang L, Chui L, **Minion J**, Zahariadis G, Domselaar GV, Reid-Smith RJ, Mulvey MR. (2022). Antimicrobial resistance detection with the StarAMR tool and Galaxy workflow. *Galaxy Community Conference*. Minneapolis, Minnesota, USA. July 17-23, 2022.

Ting JY, Lee KS, Dunn MS, Elsharkawy A, Gupta-Bhatnagar S, Landry MA, Toye J, Bodani J, Chao MJ, Srigley JA, Lisboa LF, Khan S, Donohue M, Kuan M, Richter L, Choudhury J, **Minion J**, Hamilton CL, Shah PS. (2022). Antibigram of bacterial pathogens in NICUs in Canada. *Pediatric Academic Societies*. Denver, CO, USA. April 21-25, 2022.

Martin I, Demczuk W, Griffith A, Golden A, Lefebvre B, McGeer A, Tyrrell GJ, Zhanel GG, Kus JV, Hoang L, **Minion J**, Van Caeseele 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 Caeseele 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*.

## COMMITTEES – EXTERNAL

Member, National Wastewater Planning & Steering Committees, Canadian Public Health Laboratory Network (CPHLN), Public Health Agency of Canada (PHAC), 2023 – present

Member, Community-Based Testing Working Group, Canadian Public Health Laboratory Network (CPHLN), Public Health Agency of Canada (PHAC), – present

Member, Point of Care Testing Working Group, Canadian Public Health Laboratory Network (CPHLN), Public Health Agency of Canada (PHAC), 2023 – present

Member, Syphilis Laboratory Diagnostics Working Group, Canadian Public Health Laboratory Network (CPHLN), Public Health Agency of Canada (PHAC), 2022 – present

Incoming Provincial Co-Chair, Executive Committee, Canadian Public Health Laboratory Network (CPHLN), Public Health Agency of Canada (PHAC), 2022 – present

Member, Laboratory Directors Council, Canadian Public Health Laboratory Network (CPHLN), Public Health Agency of Canada (PHAC), 2017 – present

Member, Canadian Hospital Epidemiology Committee (CHEC), Association of Medical Microbiology and Infectious Diseases Canada (AMMI), 2015 – present

Member, Surveillance for *Clostridium difficile* Infection Working Group, Canadian Nosocomial Infection Surveillance Program (CNISP), 2015 – present

Member, Surveillance for Carbapenem-Resistant Gram-Negatives (CRGN) in Healthcare Facilities Working Group, Canadian Nosocomial Infection Surveillance Program (CNISP), 2015 – present

Member, Antimicrobial Resistance Surveillance and Stewardship Working Group, Canadian Nosocomial Infection Surveillance Program (CNISP), 2016 – present

Provincial Liaison, COVID-19 Immunity Task Force, Government of Canada, 2020 – 2022

### COMMITTEES – INTERNAL

Member, SHA Quality and Safety – Clinical Advisory Panel, 2023 – present

Member, SHA Population and Public health – Communicable Disease and Harm Reduction Sub-Committee, 2022-current

Member, SHA Laboratory Medicine – Provincial Executive Committee, 2021 – current

Member, SHA Quality and Safety – Infection Prevention and Control Steering Committee, 2019 – current

Alternate Member, SHA Research Ethics Board, 2018 – current

**MOSTAFA, Ahmed**, MB BCh(MD) MSc PhD D(ABHI) F(ACHI)

### RECOGNITIONS

Canadian Society of Transplantation Allied Health Professional Travel Grants to attend the annual CST Meeting in Winnipeg. MB.CAD\$1000. May 2023.

Dr. Lorne Massey Top Presentation Award. *The role of the HLA Allelic Repository on the clinical severity of COVID-19*. Pathology and Laboratory Medicine Research Day, College of Medicine, University of Saskatchewan. CAD\$300, November 2022.

Presenter: Pramath Kakodkar (PGY2). **(My role is Principle Investigator)**

Canadian Society of Transplantation Allied Health Professional Travel Grants to attend the annual Banff-CST Joint Meeting in Banff.CAD\$1000. September 2022.

### PUBLISHED MANUSCRIPTS

Kakodkar P, Dokouhaki P, Wu F, Shavadia J, Nair R, Webster D, Sawyer T, Huan T and Mostafa A\*. The role of the HLA allelic repertoire on the clinical severity of COVID-19 in Canadians, living in Saskatchewan. Hum Immunol. 2023 Jan 20;84(3):163-171. doi: 10.1016/j.humimm.2023.01.003. Epub ahead of print. PMID: 36707385; PMCID: PMC9852320. Impact Factor 2.211 and H index 97

\*Senior author and the primary supervisor of the first author.

## REFEREED CONFERENCE PUBLICATIONS

Zhao Y, Wu F, Dokouhaki P, **Mostafa A\***. SARS-COV2 Vaccination could induce HLA antibodies and impact the renal transplant. Clin Invest Med. 2022 Dec 31;45(4):E46-89. doi:10.25011/cim.v45i4.39557. ID: 31 P 56

Pearce T, Webster D, Gorkoff K, Shanofer C, **Mostafa A\***. Mixed chimerism identified by SureTyper analysis software during validation of LinkSeq HLA Typing. Hum Immunol. 83 (2022) page 75. <https://doi.org/10.1016/j.humimm.2022.08.008>. ISSN 0198-8859.

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. Hum Immunol. 83 (2022) page 133. <https://doi.org/10.1016/j.humimm.2022.08.008>. ISSN 0198-8859.

\*Senior author and the primary supervisor of the first author.

## CONTRIBUTED PRESENTATIONS

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. Department of Pathology and Lab medicine Research Day, RUH Mall Theatre, College of Medicine, University of Saskatchewan. November 7<sup>th</sup>, 2022

\*Senior Author

Murthy S I, Dokouhaki P, **Mostafa A\*** Wu F. Thyroid Function Testing: Choosing Unwisely in Saskatchewan. Department of Pathology and Lab medicine Research Day, RUH Mall Theatre, College of Medicine, University of Saskatchewan. November 7<sup>th</sup>, 2022

\*Co-Supervisor

Davidovic F, **Mostafa A\***, Dokouhaki P, Wu F. Thyroid Function Testing: Choosing Unwisely in Saskatchewan. 2021 Department of Pathology and Lab medicine Research Day, RUH Mall Theatre, College of Medicine, University of Saskatchewan. November 7<sup>th</sup>, 2022.

\*Co-Supervisor

## POSTER PRESENTATIONS

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 at Bally's Las Vegas, Las Vegas, Nevada, United States of America. Oct 23 - 28, 2022

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 at Bally's Las Vegas, Las Vegas, Nevada, United States of America. Oct 23 - 28, 2022

Mujtaba I, Wu F, Dokouhaki P, **Mostafa A\***. Cytokine Assay at Presentation Could Help Triage Patients with COVID-19. Virtual Undergraduate Summer Research Showcase, College of Medicine USASK. October 19<sup>th</sup> 2022.

Zhao Y, Wu F, Dokouhaki P, **Mostafa A\***. SARS-COV2 Vaccination could induce HLA antibodies and impact the renal transplant. Joint Meeting on Transplantation: Canadian Society of Transplantation and Banff Foundation Of Allograft Pathology, Banff, Alberta, Canada. September 19-23, 2022.

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. Department of Pathology and Lab medicine Resident Research Day, College of Medicine, University of Saskatchewan. June 19th, 2022

\*Senior Author

## REPORTS AND OTHER OUTPUTS

**Mostafa (2022)**, Directors' Affairs Committee — NGS Survey report. ASHI Quarterly Volume 46, Number 1 (2022) page 46

<https://cdn.ymaws.com/www.ashi->

[hla.org/resource/resmgr/docs/ashi\\_quarterly/2022/ashi\\_q1\\_quarterly\\_updated.pdf](https://cdn.ymaws.com/www.ashi-hla.org/resource/resmgr/docs/ashi_quarterly/2022/ashi_q1_quarterly_updated.pdf)

## RESEARCH FUNDING HISTORY

Principal Investigator (PI) **Mostafa A.** Wu, F Dokouhaki P. Dean's Research Project Awardee. Epitope analysis as tool for prediction of graft failure. College of Medicine, University of Saskatchewan. CAD\$5000 to support a medical student stipend. January 2023.

Principal Investigator (PI) **Mostafa A.** Wu, F Dokouhaki P. Dean's Research Project Awardee. Vitamin Testing: Do We "Choose Wisely" in Saskatchewan. College of Medicine, University of Saskatchewan. CAD\$5000 to support a medical student stipend. January 2023.

**ORDE, Matthew M,** MBCHB FRCPATH FRCPA DMJ(PATH) DIPFORMED(SA) MFFLM LLDIP PGDLS, BARRISTER-AT-LAW

## PUBLIC AND COMMUNITY CONTRIBUTIONS – NON-UNIVERSITY RELATED

Contributor to Innocence Canada / UBC Innocence Project – prior exoneration in R v Yebe, and three ongoing case files

Regular (4-5 x/year) lecturer at the Major Crimes Investigation Training Course at the Western Canada RCMP Training College

External reviewer, Israel Public Defender's Office

Contributor: 2022 Inquiry into the Convictions of Kathleen Megan Folbigg, NSW, Australia

## PUBLICATIONS

Payne-James & Byard: Principles of Forensic and Legal Medicine. Author Chapter: Aviation Deaths. *In print.*

[Hamilton, Kimberly; Orde, Matthew; Finlayson, Gordon. Fatal cerebral air embolism post esophageal endoscopy with dilatation: a case report. Submitted to *Medicine, Science and the Law*. Accepted for publication with revisions.]

Peer reviewer for: *Academic Forensic Pathology; Forensic Science, Medicine and Pathology; Journal of Forensic Sciences; Journal of Forensic and Legal Medicine; Canadian Journal of Pathology; PLOS-ONE; Addiction; the Arab Journal of Forensic Sciences & Forensic Medicine; and Medicine, Science, and the Law.*

## PRESENTATIONS

*Classification of Injuries*. Saskatchewan Coroners Service Annual Conference. Regina. May 30, 2023.

*A Forensic Master Class. A Year in Provenge (or... 28 Years in Death Investigation)*. Invited lecture to the trainees of the Ontario Forensic Pathology Service. Online webinar, hosted by the University of Toronto. May 09, 2023.

*Forensic Fallout: Scientific Evidence and the Prevention of Wrongful Convictions*. Online webinar hosted by Federal/Provincial/Territorial Heads of Prosecutions Committee and BC Courthouse Libraries. Canada-wide. November 9, 2022.

*Environmental Deaths*. Saskatchewan Coroners Service Annual Conference. Regina. June 8, 2022.

Forensic Science Student Association (FSSA), UBC. Forensic Science Speaker Night. UBC. March 20, 2022.

## TEACHING, SUPERVISION AND ADVISORY ACTIVITIES

Regular tuition of pathology residents and medical students in autopsy pathology, at the Pasqua Hospital, Regina.

## **PROKOPCHUK-GAUK, Oksana**, MD FRCPC DRCPSC

## PAPERS IN PEER REVIEWED JOURNALS

Greene A, Trojanowski J, Shih AW, Evans R, Chang E, Nahirniak S, Pearson D, **Prokopchuk-Gauk O**, Martin D, Musuka C, Seidl C, Peddle M, Lin Y, Smith JA, MacDonald S, Richards L, Farrell M, Nolan B. A descriptive analysis of the Canadian prehospital and transport transfusion (CAN-PATT) network. *Resuscitation Plus*. 2023; 13:100357.

Yeung KCY, Kapitany C, Chargé S, Callum J, Cserti-Gazdewich C, D'Empaire PP, Khandelwal A, Lieberman L, Lee C, Pavenski K, Pendergrast J, Shehata N, Hsia CC, Lavoie M, Murphy MF, Prokopchuk-Gauk O, Rahmani M, Trudeau J, Zeller MP, Lin Y. Transfusion camp: A retrospective study of self-reported impact on postgraduate trainee transfusion practice. *Transfusion*. 2023; 63:839-48.

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

## CONFERENCE ABSTRACTS AND PRESENTATIONS

Malkani N, Brown Broderick J, Bi H, Fedrau B, Healey C, Martin V, **Prokopchuk-Gauk O**, Hopkins L. Enhanced Recovery after Surgery in Gynecologic Oncology: Meaningful Improvements in Patient Outcomes with Implementation of the ERAS protocol. Poster Presentation – The Society of Gynecologic Oncology of Canada 40<sup>th</sup> Annual General Meeting; Ottawa, ON. June 9 2023.

**Prokopchuk-Gauk O**, Hodgson N, McLeod R, Brose K. Successful Recurrent Factor IX Inhibitor Management in an Adult with Severe Hemophilia B. Oral Presentation – Association of Hemophilia Clinic Directors of Canada Scientific Symposium 2023; Niagara Falls, ON. May 6, 2023. **\*2023 AHCDC Scientific Symposium Top Clinical Abstract**

**Prokopchuk-Gauk O**, Hodgson N, McLeod R, Schlosser T, Sinha R, Tehseen S, Brose K. Prophylactic Therapy in Persons with Severe Hemophilia A: A Real-World Data Audit of SHL rFVIII versus Emicizumab Compliance and Utilization. Oral Presentation – Association of Hemophilia Clinic Directors of Canada Scientific Symposium 2023; Niagara Falls, ON. May 6, 2023.

**Prokopchuk-Gauk O**, Robitaille N, Devine D, Laroche V, Morrison D, Musuka C, Shih A, Timmouth A. Revised NAC-CCNMT Irradiation Recommendations: Proposed Updates and a Summary of Canadian TA-GVHD Hemovigilance Data. Oral Presentation – Canadian Society of Transfusion Medicine Conference 2023; Montreal, QC. May 27, 2023.

**Prokopchuk-Gauk O**, Thomson K, Lehto P, Tehseen S, Rutledge Harding S. Validation of an Out-of-Lab Storage Container for Blood Product Access During Air Transport. Poster Presentation – Canadian Society of Transfusion Medicine Conference 2023; Montreal, QC. May 26, 2023.

Rahmani M, Charge S, Bodnar M, Callum J, Lavoie M, Lemay AS, Mack J, **Prokopchuk-Gauk O**, Trudeau JD, Lin Y. Assessing the impact of medical school undergraduate training on postgraduate transfusion medicine knowledge. Poster Presentation – AABB Annual Conference 2022; Orlando, FL. October 2, 2022.

## MAJOR ACADEMIC PRESENTATIONS

**Canadian Society of Transfusion Medicine Annual Meeting**, Montreal, QC  
Scientific Session (90 minutes), May 26, 2023

- Hyperhemolysis: The Forgotten Transfusion Reaction  
(Co-Presenter Dr. N. Robitaille, Hema-Quebec)

**Learn Transfusion Seminar Series**, Canadian Blood Services  
Virtual Presentation (60 minutes), April 11, 2023

- Blood Shortages and Hospital Transfusion Medicine Laboratory Planning

**University of Saskatchewan, Department of Anesthesiology - Provincial Grand Rounds**  
Virtual Presentation (60 minutes), March 10, 2023

- Transfusion Medicine and Coagulation Pearls for Anesthesiology  
(Co-Presenter Dr. S. Rutledge Harding)

**University of Saskatchewan, Division of Neurosurgery - Quality Improvement Rounds**  
Virtual Presentation (60 minutes), January 27, 2023

- Managing Spontaneous Intracranial Hemorrhage in the Context of Antiplatelet Therapy

## **RONCIN, Kara, MD**

1. Pathomorphological changes in mammary glands of 16 patients who underwent surgical Aquafilling® removal: a single-center study
  - a. **AP Dermatopathology and Soft Tissue Journal Club** at home institution: University of Saskatchewan College of Medicine Department of Pathology (June 14, 2023)

2. Bilateral mastectomies in post-neoadjuvant patients: a returning trend in breast pathology? A single institutional survey
  - a. **Invited Talk: Grand Rounds** at away institution: University of Vermont, Burlington, Vermont (April 13, 2023)
  - b. **Invited Talk: Grand Rounds** at away institution: Emory University (virtual) (April 17, 2023)
3. High-risk and selected benign breast lesions diagnosed on core needle biopsy: evidence for and against immediate surgical excision
  - a. **AP Breast Journal Club** at home institution: University of Saskatchewan College of Medicine Department of Pathology (April 6, 2023)
4. Cystic neutrophilic granulomatous mastitis
  - a. **AP Breast Interesting Case Conference** at home institution: University of Saskatchewan College of Medicine Department of Pathology (April 6, 2023)
5. Clinical pearls in breast pathology
  - a. **Invited Talk: Resident Slide Session** at away institution: Creighton University, Omaha, Nebraska (March 2, 2023)
  - b. **Invited Talk: UofS PGME Pathology Resident Slide Session** at home institution: University of Saskatchewan College of Medicine Department of Pathology (March 23, 2023)
  - c. **Invited Talk: Resident Slide Session** at away institution: University of Vermont, Burlington, Vermont (April 14, 2023)
6. An introduction to papillary lesions of the breast
  - a. **Invited Talk: Grand Rounds** at away institution: Creighton University, Omaha, Nebraska (March 2, 2023)
7. Tips for a successful accreditation
  - a. **Invited Talk: UofS PGME Pathology Resident Academic Half Day** at home institution: University of Saskatchewan College of Medicine Department of Pathology (February 10, 2023)
  - b. **Invited Talk: Pathology and Laboratory Medicine Department Accreditation Readiness Meeting** at home institution: University of Saskatchewan College of Medicine Department of Pathology (March 16, 2023)

**SAXENA, Anurag**, MD Med MBA FRCPC FCAP CCPE CHE

#### PUBLICATION IN PEER-REVIEWED JOURNAL

Saxena A, Desanghere L. A framework for residents' pursuit of excellence based upon non-cognitive attributes. Postgraduate Medical Journal. 2023; 99(1167):17-24. doi: 10.1093/postmj/qgac001.

#### REFEREED 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 annual meeting. Washington DC. October 2022.

Saxena A, Robertson-Frey T, Desanghere L and Johnston B. Exploring leadership developmental

readiness on leader development, practice, and effectiveness in postgraduate medical education. The International Summit on Leadership Education for Physicians (TISLEP). Montreal, QC. October 2022.

#### WORKSHOPS FACILITATED / CO-FACILITATED (LOCAL, NATIONAL, INTERNATIONAL)

1. Saxena A, Skotnitsky L, Hazelton L. Leading with wisdom for "belonging" in the evolving workplace. International Leadership Association annual meeting, Washington, DC, October 2022.
2. Saxena A, Vats K, Davidson M. Reconciling physician leadership dualities. The International Summit for Leadership education for Physicians annual conference. October 2022.
3. Saxena A. The power of presence and feedback. King Saud University Medical School, Riyadh Feb 2023).
4. Saxena A, Thakur A, Prabhakar S. LEADS leadership framework and its relevance to healthcare in India. Annual meeting of the Global Association of Physicians of Indian Origin, Ahmedabad, India (Feb 2023).
5. Saxena A, Garg A, Dickson, G. LEADS capabilities for leaders in India. Annual meeting of the Consortium of Accredited Healthcare Organizations in India (CAHO), Hyderabad. April 2023.
6. Saxena A. Sharing leadership across academic and administrative functions: Trust, access and joint decision-making. College of Medicine, University of Saskatchewan, April 2023.
7. Saxena A, Dickson G. Critical success factors for physician leaders. Preconference course at the Annual meeting for the Canadian Society of Physician Leaders, Vancouver BC. May 2023.
8. Saxena A, Vats K. Reconciling physician leadership dualities. Annual meeting for the Canadian Society of Physician Leaders, Vancouver BC. May 2023.

#### SUPERVISION OF DEAN'S SUMMER STUDENT PROJECT

Johnston Bryan. Exploring leadership developmental readiness. Summer 2022.

#### AD HOC REVIEWER FOR

Abstracts submitted to the International Leadership Association annual meeting and the International Summit on Leadership education for Physicians.

Royal College Education Grants

Manuscripts submitted to the journals: Academic Medicine, BMJ Leader, Journal of Healthcare Leadership, Heliyon, Education for Health.

#### EXTERNAL ORGANIZATIONAL WORK

1. Member, Council, The Royal College of Physicians and Surgeons of Canada
2. Chair, committee on Specialty education, The Royal College of Physicians and Surgeons of Canada
3. Surveyor (Residency programs and Institutions), The Royal College of Physicians and Surgeons of Canada.
4. Member, Specialist Recruitment and Retention committee, Saskatchewan Medical Association.
5. Member, Registration committee, College of Physicians and Surgeons of Saskatchewan

## SHARMA, Rajendra, SOM PhD DSC FRSA

### RECOGNITIONS

#### **Queen Elizabeth II Platinum Jubilee Medal 2022**

In Honour of the 70<sup>th</sup> anniversary of Her Majesty's accession to the Throne as Queen of Canada. This medal serves to honour a significant contribution to their communities or fellow citizen. Awarded, - September 2022

### PUBLICATIONS

Pati S, Das U, Dimmock JR **Sharma RK** (2023) Docking Studies of curcumin analogs against methionine aminopeptidase and biological evaluation of lead molecules in colon cells (in preparation).

**Sharma RK** (2023) Evaluation of N-myristoyl-CoA protein N- myristoyltransferase:from discovery to translational medicine for detection of colorectal cancer (in preparation).

**Sharma RK** (2023) Role of methionine aminopeptidase 2 in cancer (in preparation).

### ADMINISTRATIVE SERVICE INCLUDING COMMITTEE MEMBERSHIP

College of Medicine – Faculty Council Member.

### EDITORIAL BOARD

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

Visit our website: [www.innovapublications.com](http://www.innovapublications.com)

### OTHER ACTIVITIES

Bertech Pharma, Edmonton, Alberta, Canada

Provided myscientific expertise to BertechPharma for our patent on "Use of N-myristoyltransferase on non-tumor tissue for cancer diagnosis"

## TEHSEEN, Sarah, MBBS MSc FRCPC

### PAPERS IN PEER REVIEWED JOURNALS

Murguia-Favela, L., Suresh, S., Wright, N. A., Alvi, S., **Tehseen, S.**, Hernandez-Trujillo, V., & Grunebaum, E. Long-term immune reconstitution in ADA-deficient patients treated with elapegadomase: a real-world experience. *The Journal of Allergy and Clinical Immunology: In Practice*. S2213-2198(23)00114-9. doi: 10.1016/j.jaip.2023.01.028. Epub ahead of print. PMID: 36736953.

**Tehseen, Sarah**, Williams S, Robinson J et al. Thrombosis and hemorrhage experienced by hospitalized children with SARS-CoV-2 infection or MIS-C: Results of the PICNIC registry. *Pediatric Blood & Cancer*. 2022 69(9):e29793. doi: 10.1002/pbc.29793. Epub 2022 Jun 11. PMID: 35689507; PMCID: PMC9350140.

## CONFERENCE ABSTRACTS AND PRESENTATIONS

Prokopchuk-Gauk O, Thomson K, Lehto P, **Tehseen S**, Rutledge Harding S. Validation of an Out-of-Lab Storage Container for Blood Product Access During Air Transport. Poster Presentation – Canadian Society of Transfusion Medicine Conference 2023; Montreal, QC. May 26, 2023.

Prokopchuk-Gauk O, Hodgson N, McLeod R, Schlosser T, Sinha R, **Tehseen S**, Brose K. Prophylactic Therapy in Persons with Severe Hemophilia A: A Real-World Data Audit of SHL rFVIII versus Emicizumab Compliance and Utilization. Oral Presentation – Association of Hemophilia Clinic Directors of Canada Scientific Symposium 2023; Niagara Falls, ON. May 6, 2023.

## MAJOR ACADEMIC PRESENTATIONS

**Canadian Society of Transfusion Medicine Conference 2023**, Montreal, QC. May 26, 2023  
Assessing the value of antenatal fetomaternal hemorrhage testing in prevention of RhD alloimmunization. Updated from Canadian Obstetrics and Pediatric Transfusion Network (COPTN)

**Canadian Society of Transfusion Medicine Conference 2023**, Montreal, QC. May 25, 2023.  
Pediatric Massive Hemorrhage Workshop.

**Association for Advancement of Blood and Biotherapies (AABB): Pediatric Subsection Meeting.** February 2, 2023. Recommendations for management of Hyperbilirubinemia by American Academy of Pediatrics: A critical analysis.

**University of Saskatchewan Pathology Grand Rounds**  
Virtual Presentation (45 minutes), September 26, 2022

- Pathogen Reduced Platelets: The Hospital Perspective

**Learn Transfusion Seminar Series**, Canadian Blood Services  
Virtual Presentation (60 minutes), November 1, 2022

- Evidence-based Utilization of Blood in Neonates and Infants

**WANG, Chunjie**, MD PhD FRCPC FCAP

## PUBLICATION

Lewis, G.; Fong, N.; Gjeorgjievski, S.J.; Li, X.; Li, Z.; Wei, S.; Sturgis, C. D.; **Wang, C.**; Komforti, M.; Zhang, H.; Erinn Downs, E.; Cui, X.; McIntire, P.; Hoda, R. S.; Rowe, J.; Sciallis A.; Zhang G. (2023) Low-grade adenosquamous carcinoma of the breast: a clinical, morphological and immunohistochemical analysis of 25 patients. *Histopathology* 2023 DOI: 10.1111/his.14917  
I am a co-author as the contributing pathologist in this study.

## AWARD

Teaching Excellence 2022-2023, Chinese American Pathologist Association (CAPA), 21<sup>st</sup> CAPA Annual Meeting, March 11, 2023, New Orleans, Louisiana

## WANG, Hui, MD PhD FRCPC

### PUBLICATIONS

SMARCA4-Deficient Undifferentiated Tumor of the Esophagus: A Tale of Two Cases and Literature Review

Chakrabarti R, Lin S, **Wang H**, Cecchini M (in preparation)

### ABSTRACT

Determination of Ki-67 Proliferative Index: the Past, Present, and Future

Haupt J, **Wang H**, Liu E, Han, Y, Ling C, Cecchini M, Zhang Q.

USCAP 2023 annual meeting

### RESEARCH PROJECTS

1. The utility of Mid Infrared (MID-IR) Spectromicroscopy in precision diagnosis in poorly differentiated carcinoma of gastrointestinal tract.

I am the primary investigator. This project has received endowment grant and REB approval. Pending operational approval.

2. Phyllodes tumor project.

This is a project collaborating with other centers (Sunnybrook hospital, UHN, BCcancer etc). I am co-investigator. This project has received REB approval from U. of Toronto. Pending REB approval from U. of S (as of early May 2023).

### STUDENT SUPERVISION

Oct. 2022 - present: Academic advisor for resident Dr. Yayuan Zhao

## WU, Fang, PhD DABCC FCACB FAACC

### SUMMER STUDENTS

- 1) Hassan Jamil, MD Candidate 2026, Co-supervisor, Dean's summer research project: Vitamin Testing: Do We "Choose Wisely" in Saskatchewan? May to August 2023 (10 weeks)
- 2) Eric Wang, MD Candidate 2026, Co-supervisor, Dean's summer research project: "Epitope analysis as a tool for prediction of graft failure." June 2023- August 2023 (10 weeks)
- 3) Ashton Heidt, MD Candidate 2026, Co-supervisor, Dean's summer research project: Project: "Procalcitonin, a promising screening test for sepsis and septic shock in emergency patients." June 2023- August 2023 (10 weeks)

### ORAL PRESENTATIONS

- 1) Wu, F (2023), Speaker, AACC's Guide to Lab Test Utilization: Taskforce Updates, AACC SPCC Committee Weekend, April 21, 2023, Washington DC, USA
- 2) Wu, F (2023), Keynote Speaker, Clinical Mass Spectrometry and Personalized Drug Therapy, International Clinical Mass Spectrometry Symposium, Shanghai, China, March 10, 2023

- 3) Wu, F (2022). Scientific Session Speaker, Optimal Test: AACC's Guide to Lab Test Utilization, Annual Meeting, American Society of Clinical Chemistry, Chicago, USA, July 24-29, 2022.
- 4) WU, F (2022). Biochemistry Testing: Are We Choosing Wisely, Pathology Grand Rounds, University of Saskatchewan, Saskatoon June 27, 2022

### CONTRIBUTED PRESENTATIONS

- 1) Kakodkar P (2022). The role of the HLA allelic repository on the clinical severity of COVID-19. Department of Pathology and Lab Medicine Research Day, RUH Mall Theatre, College of Medicine, University of Saskatchewan. Nov 7th, 2022, (co-supervisors Drs. **Wu, F.**, Dokouhaki P., & Mostafa, A.)
- 2) Murthy S (2022). Thyroid Function Testing: Choosing Unwisely in Saskatchewan, Department of Pathology and Lab Medicine Research Day, RUH Mall Theatre, College of Medicine, University of Saskatchewan. Nov 7th, 2022 (co-supervisors Drs. **Wu, F.**, Dokouhaki P., & Mostafa, A.)
- 3) Yang, A (2022). Do We "Choose Wisely" with Prostate Specific Antigen (PSA) Testing in Saskatchewan? Department of Pathology and Lab Medicine Research Day, RUH Mall Theatre, College of Medicine, University of Saskatchewan. Nov 7th, 2022 (co-supervisors Drs. **Wu, F.**, Dokouhaki P., & Mostafa, A.)
- 4) Zhao, Y (2022) SARS-COV2 Vaccination could induce HLA antibodies and impact the renal transplant Department of Pathology and Lab Medicine Research Day, RUH Mall Theatre, College of Medicine, University of Saskatchewan. Nov 7th, 2022 (co-supervisors Drs. **Wu, F.**, Dokouhaki P., & Mostafa, A.)
- 5) Kakodkar P (2022). The Role of the HLA Allelic Repository on the Clinical Severity of COVID-19 Pathology Department Research Day, Nov 7, 2022, (co-supervisors Drs. **Wu, F.**, Dokouhaki P., & Mostafa, A.)

### REFEREED CONFERENCE PUBLICATIONS

- 1) Zhao Y, **Wu F**, Dokouhaki P, Mostafa A. SARS-COV2 Vaccination could induce HLA antibodies and impact the renal transplant. Clin Invest Med. 2022 Dec 31;45(4):E46-89. doi:10.25011/cim.v45i4.39557. ID: 31 P 56
- 2) Kakodkar P, Webster D, Sawyer T, **Wu F**, Dokouhaki P, Mostafa. The role of the HLA allelic repository on the clinical severity of COVID-19. Hum Immunol. 83 (2022) page 133. <https://doi.org/10.1016/j.humimm.2022.08.008>. ISSN 0198-8859.

### PEER-REVIEWED JOURNAL PUBLICATIONS

- 1) Kakodkar P, Dokouhaki P, **Wu F**, Shavadia J, Nair R, Webster D, Sawyer T, Huan T and Mostafa A\*. The role of the HLA allelic repertoire on the clinical severity of COVID-19 in Canadians, living in Saskatchewan. Hum Immunol. 2023 Jan 20;84(3):163-171. doi: 10.1016/j.humimm.2023.01.003. Epub ahead of print. PMID: 36707385; PMCID: PMC9852320. Impact Factor 2.211 and H index 97

### POSTER PRESENTATIONS

- 1) 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 at Bally's Las Vegas, Las Vegas, Nevada, United States of America. Oct 23 - 28, 2022
- 2) Mujtaba I, **Wu F**, Dokouhaki P, Mostafa A. Cytokine Assay at Presentation Could Help Triage Patients with COVID-19. Virtual Undergraduate Summer Research Showcase, College of Medicine USASK. October 19th 2022.
- 3) Zhao Y, **Wu F**, Dokouhaki P, Mostafa A. SARS-COV2 Vaccination could induce HLA antibodies and impact the renal transplant. Joint Meeting on Transplantation: Canadian Society of Transplantation and Banff Foundation of Allograft Pathology, Banff, Alberta, Canada. September 19-23, 2022.
- 4) 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. Department of Pathology and Lab medicine Resident Research Day, College of Medicine, University of Saskatchewan. June 19th, 2022

- 5) Zhao Y, Murthy S., Karki, E., Hasan M. N., Daniels B, Dokouhaki P, **Wu F\***. B1.8: Thyroid Function Testing: Choosing Unwisely in Saskatchewan, Saskatoon Thyroid function test ordering guideline, 2022 June REACH, the University of Saskatchewan, College of Medicine;
- 6) Murthy S., Karki, E., Hasan M. N., Daniels B, Dokouhaki P., **Wu, F\***. Thyroid Function Testing: Choosing Unwisely in Saskatchewan 2022 Choosing Wisely Canada National Meeting JUNE 2022

## GRANTS

- 1) Dr. Yayuan, Zhao (PGY-3), Clinical Mass Spectrometry Grant, NACCCA (USD\$ 2500). PI: Dr. **Wu, F** (primary PI), Co-PIs: Pouneh Dokouhaki, Mehul Jariwala; project proposal title: Metabolomics Profiles in Methotrexate Treated Juvenile Arthritis, 2022 July
- 2) PI: Mostafa A. co-PI: **Wu, F** Dokouhaki P. Dean's Research Project Awardee. Epitope analysis as tool for prediction of graft failure. College of Medicine, University of Saskatchewan. CAD\$5000 to support a medical student stipend. January 2023.
- 3) PI: **Wu, F.**, co-PI: Mostafa A. Dokouhaki P. Dean's Research Project Awardee. Vitamin Testing: Do We "Choose Wisely" in Saskatchewan? College of Medicine, University of Saskatchewan. CAD\$5000 to support a medical student stipend. January 2023.
- 4) PI: Metha, N., **Wu, F.**, co-PI: Dokouhaki P. Project: "Procalcitonin, a promising screening test for sepsis and septic shock in emergency patients." Dean's Research Project Awardee, College of Medicine. CAD\$5000 to support a medical student stipend. January 2023.

## AWARDS

- 1) Dr. Pramath Kakodkar received the first-place ranking among the resident group) (Co-Supervisor: **Wu, F**) The Role of the HLA Allelic Repository on the Clinical Severity of COVID-19 Pathology Department Research Day, Nov 7, 2022
- 2) Mr. Allan Yang (Summer Student, 2024 MD Candidate) received a Letter of Excellence from the Vice-Dean of Research and Education, the College of Medicine at the University of Saskatchewan (Co-Supervisor: **Dr. Wu, F**), Oct 2022
- 3) Mr. Allan Yang (Summer Student, 2024 MD Candidate) received the first place ranking at the 2022 Virtual Undergraduate Research Symposium (Co-Supervisor: **Dr. Wu, F**), Oct 2022
- 4) Mr. Allan Yang (Summer Student, 2024 MD Candidate) received the second-place ranking at the 2022 Pathology Department Research Day among the UGME group (Co-Supervisor: **Dr. Wu, F**), Nov 7 2022
- 5) Mr. Shravan Murthy (Summer Student, 2024 MD Candidate) received the first-place ranking at the 2022 Pathology Department Research Day among the UGME group) (Co-Supervisor: **Dr. Wu, F**)

## PROFESSIONAL COMMITTEE SERVICES

- 1) Co-Chair, Clinical Biochemistry Fellowship Training Program Planning Committee, Department of Pathology & Lab Medicine, University of Saskatchewan, 2022 to 2023 June
- 2) Present- Elect, North American Chinese Clinical Chemistry Association (NACCCA), 2022 July to July 2023
- 3) Chair, Travel Award Abstract Selection Committee, North American Chinese Clinical Chemistry Association (NACCCA), April 2023
- 4) Chair, Clinical Mass Spectrometry Grant Proposal Review Committee, North American Chinese Clinical Chemistry Association (NACCCA), April 2023
- 5) Chair, the American Association for Clinical Chemistry (AACC) Clinical Translational Science Division (CTSD), July 2021-Present
- 6) Council Member, the American Association for Clinical Chemistry (AACC) Lab Test Utilization Task Force, July 2020 to Present
- 7) Member, Scientific Practice Core Committee (SPCC), the American Association for Clinical Chemistry (AACC), 2021 January to Present

- 8) Member, Scientific Development Committee, North American Chinese Clinical Chemist Association (NACCCA), 2021 to present.
- 9) Member, Travelling Lectureship Committee, Canadian Society of Clinical Chemistry (CSCC), 2022
- 10) Clinical Translational Science Division (CTSD), Lunch & Learn Event Organizer, American Society of Clinical Chemistry (AACC) Annual Conference, 2022 July 26, Chicago

## ZHEREBITSKIY, Viktor, MD FRCPC DABP FCAP FASCP

### ADMINISTRATIVE POSITIONS

1. President, Saskatchewan Association of Laboratory Medicine (2018 – current)
2. Member of College of Medicine Nomination Committee, University of Saskatchewan (2019- current, renewed in 2022)
3. Member of College of Medicine Budget, Planning and Priorities Committee, University of Saskatchewan (2022 – current)
4. Member of RPC Committee (General Pathology Program), PALM, University of Saskatchewan (2022 – current)
5. Member of CaRMS Committee (General Pathology Program), PALM, 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).

### PUBLICATIONS

1. Liu E., Radic J., Hnenny, L., Toyota P., Persad A., Pendleton, N., Kakodkar, P., Zherebitskiy V., Auer, R., Hamula, C., Vats, K. (2023) "Cerebral toxoplasmosis in HIV-negative patient: case report and literature review", SNI (submitted).
2. Millward C.P., Armstrong T.S., Barrington H., Bell S., Brodbelt, A.R., Bulbeck H., Crofto A., Dirven L., Georgious T., Grundy P.L., Islim A., Javadpour M., Keshwara, S.M., Koszdin S.D., Marson A.G., McDermott M.W., Meling T.R., Oliver K., Plaha P., Preusser M., Santarius T., Srikandarajah N., Taphoom, M.J.B., Turner C., Watts C., Weller M., Williamson P.R., Zadeh G., Najafabadi A.H.Z., Jenkinson M.D. (2022) "Development of 'Core Outcome Sets' for Meningioma in Clinical Studies (The COSMIC Project): protocol for two systematic literature reviews, eDelphi surveys and online consensus meetings" (contributor as a part of ICOM consortium), *BMJ Open*, ;12(5):e057384. [PMID: 35534067]
3. Islim A., Millward C.P., Piper R.J., Fountain D.M., Mehta S., Kolamunnage-Dona R., Ali U., Koszdin S.D., Georgious T., Mills S.J., Brodbelt A.R., Mathew R.K., Santarius T., Jenkinson, M.D. (2022) "External validation and recalibration of an incidental meningioma prognostic model – IMPACT: protocol for an international multicentre retrospective cohort study" (contributor as a part of ICOM consortium), *BMJ Open*, ;12(1):e052705 [PMID: 35042706]
4. Kundapur V., Mayer M., Alexander A., Sidhu N., Zherebitskiy V., Auer R. "Is Immune Modulation Possible with Radiation Treatment? (2020) - Report of a Randomized Phase III Study Irradiating Canine De-Novo Brain Tumors", *Cureus*, 12(4):a530.

# DEPARTMENT RESEARCH DAY

## PRESENTATIONS:

### ➤ **Provincial Head – Opening Comments**

Dr. J. Fergall Magee

### ➤ **Plenary Speaker**

Dr. Marek Radomski, Vice-Dean Research

**UGME Moderator: Dr. Alysa Poulin**

### ➤ **UGME Students**

Filip Davidovic (Drs. P. Dokouhaki & A. Mostafa)

Zoher Rafid-Hamed (Dr. J. Kalra)

Shravan Murthy (Drs. F. Wu, P. Dokouhaki & A. Mostafa)

Allan Yang (Drs. F. Wu, P. Dokouhaki & A. Mostafa)

Li Howard (Dr. M. Kinloch)

**Resident Moderator: Dr. Donna Ledingham**

### ➤ **Residents**

Dr. Pramath Kakodkar (PGY2)

Dr. Daniel Markewich (PGY2)

Dr. Henry Pan (PGY2)

Dr. Patrick Seitzinger (PGY2 PEDS – Dr. J. Kalra)

Dr. Ingrid Tam (PGY3)

Dr. Yayuan Zhao (PGY3)

Dr. Phillip Price (PGY4)

Dr. Karan Vats (PGY4)

Dr. Archana Kakadekar (PGY5)

**Grad Student Moderator: Dr. Rani Kanthan**

### ➤ **Graduate Students**

Chandra Bose (Dr. M. Uppalapati)

Hanan Babeker (Dr. M. Uppalapati)

**Faculty Moderator: Dr. Pouneh Dokouhaki**

### ➤ **Faculty**

Dr. Anurag Saxena

Dr. Rajendra Sharma

Dr. Erick McNair



UNIVERSITY OF SASKATCHEWAN

College of Medicine

DEPARTMENT OF PATHOLOGY AND  
LABORATORY MEDICINE  
MEDICINE.USASK.CA

**MON, 07 NOV 2022**  
**RUH MALL THEATRE**

## Program:

**0730**

Breakfast

**0800**

Provincial Head

UGME Presentations

**0930**

Plenary Speaker

**1000**

Break/Refreshments

**1015**

Resident Presentations

**1230**

Lunch

**1315**

Grad Student / Faculty  
Presentations

**1430**

Break/Refreshments

**1500**

Award Presentations

**1515**

Closing Remarks

*Judges:*

*Dr. Roland Auer*

*Dr. Erick McNair*

*Dr. Jessica Minion*

Filip Davidovic	Utilization of Celiac Testing: Have we crossed the (guide)line?
Zoher Rafid-Hamed	Quality Care and Medical Error Disclosure - An Ethical Dilemma
Shravan Murthy	Thyroid Function Testing: Choosing Unwisely in Saskatchewan
Allan Yang	Do We "Choose Wisely" with Prostate Specific Antigen (PSA) Testing in Saskatchewan?
Li Howard	Pathologist Empowerment in Reflexive Molecular Testing for BRAF in Colorectal Carcinoma and Melanoma Patients Leads to Improved Access to Molecular Results
Dr. Pramath Kakodkar	The Role of the HLA Allelic Repository on the Clinical Severity of COVID-19
Dr. Daniel Markewich	Enhancing the Quality and Delivery of Healthcare: A Decade Review of Autopsy Data
Dr. Henry Pan	Loss of BAP1 Expression in Gastric Cancers
Dr. Patrick Seitzinger	Expanding Our Grasp: Artificial Intelligence as the Next Leap Forward in Healthcare Quality
Dr. Ingrid Tam	Langerhans Cell Histiocytosis: A Case Series & Retrospective Review
Dr. Yayuan Zhao	SARS-COV2 Vaccination could induce HLA antibodies and impact the renal transplant
Dr. Phillipe Price	Standardized Nuclear H-Score; Validation of a New Concept & Inter-Observer Reproducibility Study
Dr. Karan Vats	Moving Towards the Optimization of Diagnosis for Patients with Sarcoma: A 10-Year Review of Externally Consulted Sarcoma Cases in a General Anatomical Pathology Service
Dr. Archana Kakadekar	Skin of Colour: Variations in Inflammatory Dermatopathology
Chandra Bose Prabakaran	Development of targeted radioimmunotherapy for osteosarcoma using comparative oncology approach
Hanan Babeker	Novel 225Ac/89Zr-labeled fully human anti-nectin-4 antibody as theranostic agent for nectin-4 positive triple negative breast cancers
Dr. Anurag Saxena	A framework for residents' pursuit of excellence based upon non-cognitive and cognitive attributes
Dr. Rajendra Sharma	Collaboration in Research
Dr. Erick McNair	Assessment of Proteome Changes in the Development of Acute Kidney Injury following Cardiopulmonary Bypass-supported Cardiac Surgery

## Awards:

UGME 1 <sup>st</sup> Place	MURTHY, Shravan (Yr. 3)	\$250
UGME 2 <sup>nd</sup> Place	YANG, Allan (Yr. 3)	\$200
Dr. Lorne Massey Award PGY 2/3	KAKODKAR, Pramath	\$300
Jack Adolph Award PGY 4/5	PRICE, Phillipe	\$400
Dr. Harry E. Emson Award Best Resident Interdisciplinary Presentation	VATS, Karan	\$400
Graduate Student 1 <sup>st</sup> Place	BABEKER, Hanan	\$300
Graduate Student 2 <sup>nd</sup> Place	PRABAHARAN, Chandra Bose	\$300

# WELLNESS



## WELLNESS COMMITTEE ANNUAL REPORT

*By Dr. Henrike Rees, Wellness Director*



The Pathology & Laboratory Medicine Wellness Committee was initiated by Drs Dokouhaki and 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.

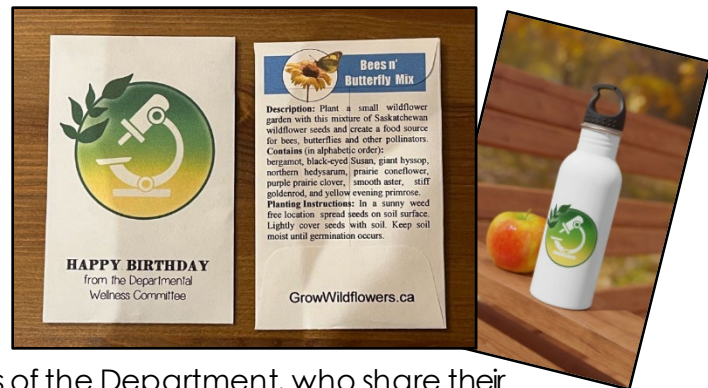
A baseline assessment using a complex and comprehensive survey was designed and administered with the help of an outside agency (Mc Lean and Company). The survey had a stellar 66.3% participation rate. The key issues identified were:

1. a perceived lack of social support and community
2. issues with harassment and bullying
3. issues pertaining to the lack of transparency and lack of resources
4. a divide of the department along race, gender, status and specialty lines and
5. issue pertaining to excessive workload

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 has grown and now consists of: Drs. Luke Blower, Katelynn Campbell, Pouneh Dokouhaki, Amanda Lang, Ahmed Moustafa, Deepti Ravi, Henrike Rees (chair), Harold Shiffman, Ingrid Tam, Karan Vats and Fang Wu. The team meets approximately 6-8 times a year and has received administrative support since early 2022. It has developed terms of reference and updated its team charter annually.

Multiple regular and well-attended monthly Wellness Lunch and Learn sessions on a variety of topics were organized with initial guidance from Dr. A. Chakravarti, the College of Medicine Wellness Lead. In 2022/23 these sessions included presentations on Music and Wellbeing, Narrative Medicine and Wellbeing, Visual Arts and Wellbeing, Relationships, Communication, Leadership, Anxiety and How to Manage, One Health and Coping with Stress. As of early 2022, lunches are being provided during these sessions to anyone who wishes.

Additional wellness initiatives include a meeting with Dr. Rees as part of the onboarding protocol for new members of the Department, reports on wellness issues as a standing item on the agendas of AP Divisional, Departmental and SALM (Saskatchewan Association of Laboratory Medicine) meetings, and a birthday water bottle and wild flower seed initiative, where members of the Department, who share their birth month with Dr. Rees, receive a custom water bottle and a custom package with wildflower seeds as well as a birthday card in their birth month. These initiatives have been very well received.



Smaller initiatives include the availability of a wellness what's app chat group, a wellness display board at Saskatoon City Hospital, a "coffee with a colleague" and "lunch with a colleague" challenge as well as a relatively new "colleagues of the month" initiative where a couple of colleagues are featured every month. There was an "Art in the halls ways" initiative where photos and paintings submitted by staff were framed and hung in the hallways at Saskatoon City Hospital and St Paul's as well. We had a summer bash in Dr. Rees' backyard with fire, drinks and snacks, a Peers-to-Peers information session, a cross country ski event in February, a bowling night in March and a lab appreciation event in April.



The committee is continuing to focus on the organization of social events and other wellness



initiatives to help build a community as well as finding ways to increase engagement and the sense of inclusivity as well as beginning to address some of the more difficult issue identified in the wellness survey in 2021 such as issues with bullying and harassment.

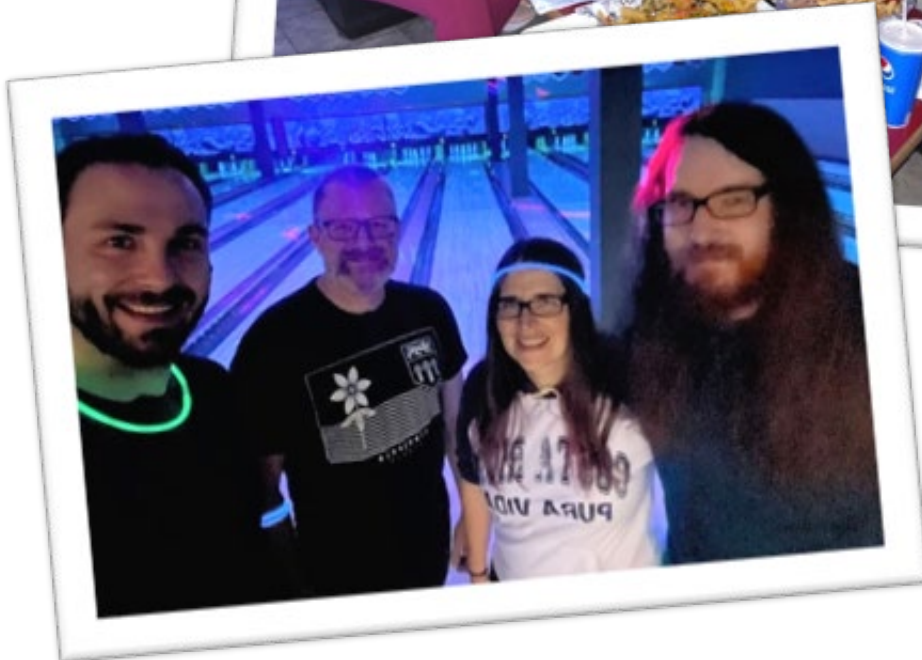




Cross-country Skiing FEB 2023



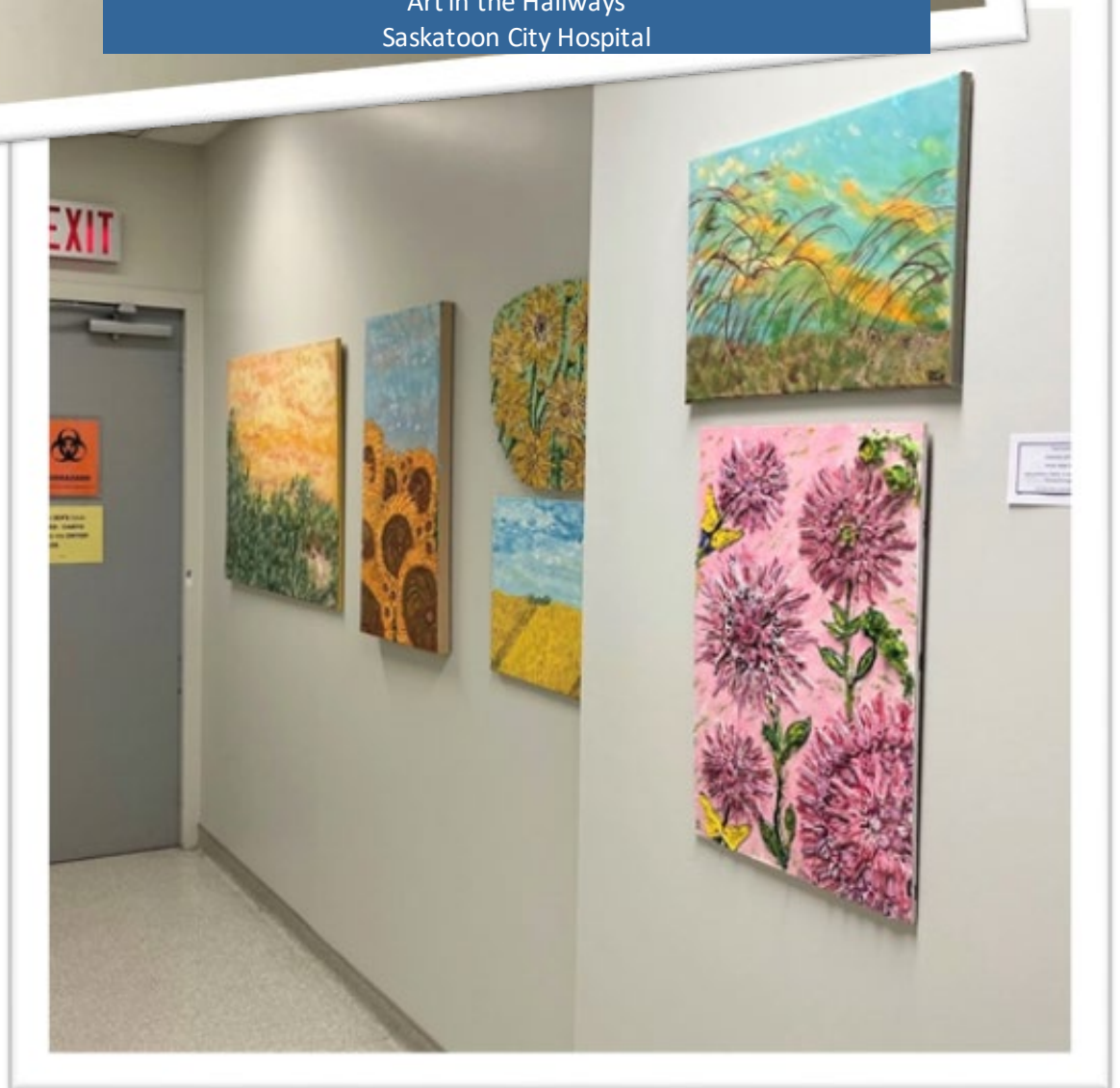
Bowling (Saskatoon MAR 2023)



Bowling (Regina)  
MAR 2023



Art in the Hallways  
Saskatoon City Hospital





# LAB WEEK 2023

## APRIL 11-14

**IT'S ALRIGHT, CUZ YOU'RE - SAVED BY THE LAB ASCP**

**Tuesday**

**APRIL 11<sup>th</sup>**

- Aggressively marketed 90's breakfast items and treats

**Wednesday**

**APRIL 12<sup>th</sup>**

- Scavenger hunt
- Root beer floats

**Thursday**

**THROWBACK THURSDAY April 13<sup>th</sup>**

- Dress so FRESH- Photo booth
- 90's photo contest

**Friday**

**FRIDAY PIE-DAY April 14<sup>th</sup>**

- Pizza pie lunch
- Pie to the face!

Prize draw for completing scavenger hunt!

Prize draw for 90's photo submission!





Dr. Henrike Rees  
Chair



Dr. Amanda Lang



Dr. Pouneh Dokouhaki



Dr. Katelynn Campbell



Dr. Ahmed Mostafa



Harold Shiffman



Dr. Fang Wu



Dr. Karan Vats



Dr. Ingrid Tam



Dr. Luke Blower



Dr. Deepti Ravi



Dr. Cody Lewis

## GLOVE RECYCLING PROGRAM IN THE PATHOLOGY & LABORATORY MEDICINE DEPARTMENT AT SASKATOON CITY HOSPITAL By Dr. Henrike Rees, Wellness Director

Health care and pathology laboratories produce a large amount of waste. I was interested in reducing the carbon footprint generated by the lab I work at in Saskatoon.

The recycle initiative by the Department of Pathology at McGill in 2020 which had won the first Green Lab award by the CAP-ACP in 2022 encouraged me. I used their report from 2021 as a major reference for the Saskatoon project.

I found out that in 2021, that the Histology/Cytology area in the Pathology Department at Saskatoon City Hospital had purchased and consumed approximately 170000 gloves, which produced approximately 550 kg of waste. In early 2022 I therefore applied for and secured an initial \$1000 grant from a Departmental Endowment fund to recycle non-soiled nitrile and latex gloves in various

locations, primarily within the histology and cytology areas of the laboratory at Saskatoon City Hospital. At that time Vitacore had just started a pilot mask recycling program at City Hospital. Vitacore is a Canadian company which recycles gloves and masks in Canada. I decided to purchase the recycle boxes from this company, which also has a Saskatchewan connection, since the cost of the recycle boxes was also considerably more affordable than those from the competitor Terracycle waste management. With the endowment money I was able to purchase 8 recycle boxes. Each recycle box can hold approximately 10-14 kg of gloves. The box purchase includes prepaid postage to Vitacore in BC. Vitacore converts the gloves into pellets and provides them to a company which uses them in building and construction supplies where they produce products such as concrete reinforcement, weather membranes, and exterior sidings.

My goal was initially to run this project for 6 month and recycle 50% of all unsoiled gloves used in the histology and cytology areas of the lab including accessioning and immunohistochemistry.

I surveyed various locations in our department and asked the personnel working in these areas to agree to participate in this pilot project. I had various meetings with the staff prior to the start of the project. In these meetings I informed them of the waste problem and goal of the pilot project and tried to

address any questions they had. I also asked for support in selecting the most appropriate location for the recycle boxes. Some staff questioned whether it was mandatory to recycle the gloves; I clarified that it is a voluntary activity and encouraged them to recycle.

Lab sectors that had direct specimen contact, such as macroscopy (grossing) and intraoperative consultation (frozen sections) were excluded from the recycling program due to the possibility of cross contamination with soiled gloves.

Glove collection bins were placed in areas that generated a high volume of non-soiled gloves. The project started in histology on May 3, 2022 and was expanded to cytology the following day, accessioning on May 6 and immunohistochemistry on May 10, 2022.

After one month into the project, I received positive feedback from the lab personnel when I shipped the first box back

to Vitacore. At this time (June) I added a second collection box in the histology area next to a handwashing station since the majority of the recycling happened in this area of the lab.

Over time some of the technicians started to recommend other possible green initiatives and offered to support my efforts to get the administration of the Health Authority to take this initiative over, since I had secured very limited short term funding only. I also received encouragement from members of CAPE SK and eventually secured additional funding (\$500) from this organization and



was thus able to purchase 4 more recycle boxes in August 2022 with this additional funding. Later more funding for 4 boxes was also secured from a combined \$1500 fund which was received from CFMS HEART and SMSS (500\$ of funding from the CFMS HEARTs application and 1000\$ from the SMSS) following an application spearheaded by two medical students who are also CAPE SK members (Aristizabal Londono, Candelaria and Cropper, Kayla). The fund money was shared with a separate glove recycling initiative which is now operating out of a surgicentre and a medical office space.

I weighed the recycling bins every week, if possible, around the same time. During the collection period, personnel were updated on the number of gloves collected and encouraged to keep going with the recycle efforts

The highest glove turnover was in Histology (50%) closely followed by Cytology (30%). The number of gloves recycled in the accessioning (12%) and immunohistochemistry (IHC) area (8%) were much smaller. After 12 months, we had diverted 144 kg of unsoiled gloves into recycling programs, and this is equivalent to approximately 44000 gloves and approximately 25% of gloves purchased in this time by our department.

So far, I have been able to collect and monitor the number of recyclable gloves in the pathology department over a 12 month period (May 2022 – April 2023). We were able to recycle approximately 2.75 kg of gloves (approximately 850 gloves) every week or 12 kg (approximately 3700 gloves) every month.

I used quality improvement methodology to define, measure, analyze, improve and control the disposal of gloves in our pathology department. I have been able to divert 144 kg of non-soiled gloves for recycling so far which equates to 25% of purchased. My goal is to keep this initiative going as long as I can and hopefully expand it to other areas in the hospital and province.



Keeping it Simple | [kisbyto.blogspot.com](https://kisbyto.blogspot.com)

# SASKATCHEWAN ASSOCIATION OF LABORATORY MEDICINE (SALM)

*By Dr. Viktor Zherebitskiy, SALM President*



The priority of SALM remains the same - promotion and popularization of pathology and laboratory medicine across Saskatchewan; strong support of professional advancement and caring about the personal wellbeing of SALM members. We welcome new initiatives and, at the same time, cherish our past and current accomplishments!

This was the last year of COVID pandemics that put significant pressure on everybody, including SALM membership. Nevertheless, our membership demonstrates marked resilience and a significant degree of optimism. We still held our meetings on-line but have started thinking about switching to in-person or hybrid formats. During 2022 (summer-fall)-2023 (winter-spring) period of time we held 2 semi-annual and 1 ad-hoc SALM meetings. During those meetings, we discussed recent changes in the SHA leadership (new SHA CEO – Mr. Andrew Will and COO – Mr. Derek Miller) and SHA administrative structure. Among other things, the phase 1 administrative changes have eliminated VP for “Provincial Services” and merged those services (including pathology and laboratory medicine – PaLM) with “Support Services” creating a larger structure “Provincial Clinical & Support Services”. Dr. Fergall Magee, Provincial PaLM Department Head, raised concerns regarding these changes and possible dissociation of dyad leadership, which might have a negative impact on PaLM functioning. Dr. Viktor Zherebitskiy (SALM president) after discussion with SALM leadership (Drs. Jay Kalra, SALM vice-president and Dr. Roland Auer, SALM secretary-treasurer) approached Dr. Clifford Bell (President of Saskatchewan Diagnostic Radiology Association) and talked to him. Also, this topic was twice discussed at the SALM general meetings. After Mr. D. Miller met with Dr. F. Magee and provided his reassurance in unconditional PaLM support, it was decided to monitor the situation and try to adopt to the new structure rather than oppose the above-noted changes.

SALM leadership together with PaLM/SALM SMA RA members (Drs. Jay Kalra, Donna Ledingham and Deepti Ravi) kept in close contact with SMA leadership (Mr. Ed Hobday and Mr. Marcel Nohert) in terms of SMA & MoH

contract negotiations. Moreover, one of SALM members (Dr. Steven Angel, PaLM/SALM representative in the SMA Intersectional Committee) participated in the election of new members of SMA Negotiation Committee. Also, SALM continued to follow-up with Mr. Steven Chard (SHA Practitioner Staff Affairs) on the benefits package for incorporated SALM members that is still lacking in spite of multiple promises to resolve this issue.

SALM continued its on-going support of PaLM endowment funds (Dr. Marc Omar Shokeir Memorial Fund and Saskatchewan Association of Laboratory Medicine Award Fund for MLT's/MLA's/BSc's); U of S General Pathology Residency program (in close collaboration with Dr. Rani Kanthan), PaLM Wellness program (in close collaboration with Dr. Henry Rees), PaLM AP and Patient Safety meetings (in close collaboration with Ms. Rhonda Hartz), provincial biomarker initiative (in close collaboration with Drs. John . DeCoteau and Marilyn Kinloch) and some other activities related to SALM membership.

SALM, together with PaLM leadership, values and praises lifelong service of SALM members representing the older generation of pathologists and laboratory MDs. A good example of this would be presentation of the PaLM/SALM Lifetime Achievement Award for 2022 to Dr. Rajni Chibbar who served in various capacities (e.g. general anatomical pathologist, renal pathologist, RUH pathology site lead, U of S tenure professor, etc.) for more than 20 years. Another of our members, Dr. Sheila Rutledge Harding, also got the Saskatoon Medical Staff Association Exceptional Service Award for 2022 for her outstanding lifetime long service in transfusion medicine (initiated by Dr. Oksana Prokopchuk-Gauk and supported by Dr. Marilyn Kinloch, SMSA President).

SALM, together with PALM leadership, will continue supporting a younger generation of pathologists and laboratory medicine doctors including GP residents and young faculty members. This year for example, SALM sponsored a purchase of an on-line questions bank subscription for our GP residents which, in their opinion, significantly improved their performance on the Royal College and other board examinations.



Dr. Fergall Magee with RUH team is presenting PaLM/SALM Lifetime Achievement award to Dr. Rajni Chibbar (Saskatoon, September 28, 2022)



Dr. Jay Kalra together with Dr. Susan Hayton and Ms. Reche McKeague is presenting proposed SMA 2023 bylaw amendments at the spring SMARA session (Saskatoon, May 5, 2023)



Dr. Marilyn Kinloch moderates Dr. Alan Berggs (CPSS President) CPSS at the spring SMARA session (Saskatoon, May 6, 2023)



Dr. Donna Ledingham at the microphone is following up on a SMA/SALM motion regarding IT/E-Health issues (spring SMARA session, Saskatoon, May 6, 2023)

# HOSPITAL FOUNDATIONS

We continue to thank our Foundation partners.

*By Dr. Fergall Magee, Provincial Head, Pathology & Laboratory Medicine*

In my tenure as Provincial Department Head, numerous Foundations have contributed significant funding support for so many Departmental initiatives. Foundations in Saskatoon have regularly contributed to Fellowship training for our residents, genomic technology for RUH, a complete re-tooling of the Anatomic Pathology Laboratory in City Hospital, and vital instrumentation of the HIL and Immunodiagnostic laboratories in St Paul's Hospital.

Currently, the Hematopathology section of Provincial Laboratory Medicine is beginning to build a Cellavision Network throughout province – with the support of many Foundations (Humbolt, Weyburn, SPHF, Regina among others). This will allow for central expert review of challenging hematology morphology in real time and represents a major advance of diagnostic access for the patients of Saskatchewan. The next great digital initiative for Laboratory Medicine will be to introduce similar connectivity between the sites that practice Anatomic Pathology (North Battleford, Prince Albert, Saskatoon, Regina and Moose Jaw) and will require support of Foundations at all of these sites.

On behalf of the Department, Lenore Howey, Executive Director, SHA Laboratory Medicine, and I wish to extend sincere thanks to all of these Foundations and their extremely generous donors. Simply put - we would fail in our mandates were it not for the deep commitment for on-going support displayed by all of the province's Hospital Foundations as we strive to deliver high quality services that are integrated, accessible and necessary for optimal outcomes for the patients of Saskatchewan.

A list of some of the most recent initiatives with selected images:

Yorkton Regional Health Centre	Laboratory	Yorkton	The Health Foundation of East Central Saskatchewan	D	Beckman Coulter Cellavision & Interface
<b>MCE Approval outside of Annual Process - Foundation</b>					
St. Paul's Hospital	Laboratory	Saskatoon	St. Paul's Hospital Foundation	D	GLASS/LAB-WARE WASHER FOR SPH LAB
Saskatoon St. Paul's Hospital	Laboratory	Saskatoon	St. Paul's Hospital Foundation	D	Pluggo RH-Iris Decapper
Battleford Union Hospital	Laboratory	North Battleford	Battleford Union Hospital Foundation Inc.	D	ECG Machine
Royal University Hospital	Laboratory	Saskatoon	RUH Foundation	D	Digital Imaging Technology for Hematology
Onion Lake Health Centre	Laboratory	Onion Lake	Onion Lake Health Board	D	Centrifuge
Onion Lake Health Centre	Laboratory	Onion Lake	Onion Lake Health Board	D	DxH 520
Dr. FH Wigmore Regional Hospital	Laboratory	Moose Jaw	Foundation Supported	D	Gem 5000
Humboldt District Health Complex	Laboratory	Humboldt	Humboldt District Health Foundation	D	DC-1 Cellavision
St. Paul's Hospital	Laboratory	Saskatoon	St. Paul's Hospital Foundation	D	EZ2 Connect - Automated DNA Extractor Instrumentation
St. Paul's Hospital	Laboratory	Saskatoon	St. Paul's Hospital Foundation	D	Bio-Analyzer - 4150 Tape Station
Cypress Regional Hospital	Laboratory	Swift Current	Noble Irwin	D	ACLTOP
St. Paul's Hospital	Laboratory	Saskatoon	St. Paul's Hospital Foundation	D	LabScan 3D Luminex
St. Paul's Hospital	Laboratory	Saskatoon	St. Paul's Hospital Foundation	D	RoboSep-S
Rosetown Health Centre	Laboratory	Rosetown	Rosetown Foundation	D	Centrifuge
Yorkton Regional Health Centre	Laboratory	Yorkton	The Health Foundation of East Central Saskatchewan	D	Cytospin
Yorkton Regional Health Centre	Laboratory	Yorkton	The Health Foundation of East Central Saskatchewan	D	Transfusion Medicine Fridge
Yorkton Regional Health Centre	Laboratory	Yorkton	The Health Foundation of East Central Saskatchewan	D	3 power phlebotomy chairs
Yorkton Regional Health Centre	Laboratory	Yorkton	The Health Foundation of East Central Saskatchewan	D	Ortho Workstation - TML
Yorkton Regional Health Centre	Laboratory	Yorkton	The Health Foundation of East Central Saskatchewan	D	Centrifuge
Saskatoon City Hospital	Laboratory	Saskatoon	Saskatoon City Hospital Foundation	D	Leica HistoCore Autocut Microtome
Saskatoon City Hospital	Laboratory	Saskatoon	Saskatoon City Hospital Foundation	D	Embedding Centre

**Cellavision:** An automated differential counter. The examination of blood films by microscopy remains one of the major labor-intensive routine procedures. Using this technology allows the laboratory to be more efficient, increases the quality of differential reporting, allows connectivity in real-time with the specialized pathologist in Regina, and improves technologist proficiency by providing a bank of reference cells for review.



**Cellavision**  
**Weyburn Hospital Foundation**  
*Staff: I-r Jenelle Breault & Liz Hammermeister*

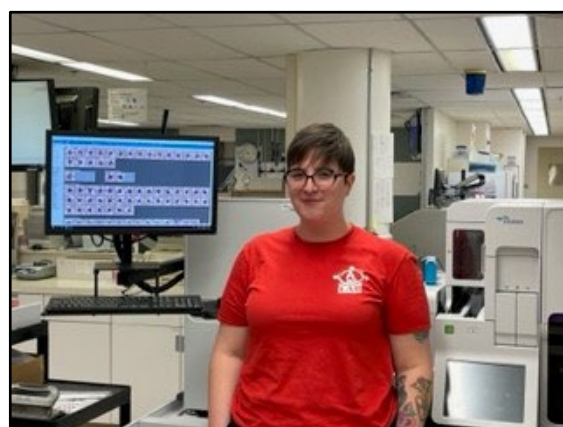


**Cellavision**  
**Humboldt District Health Foundation**  
*Staff: Kathy Hilbert*



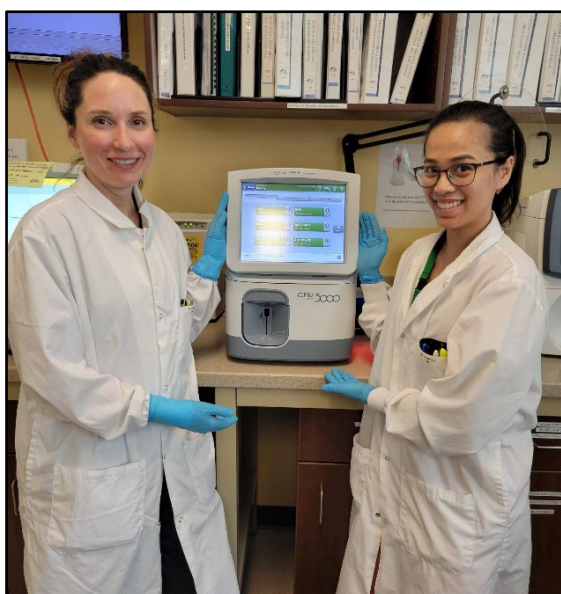
**Cellavision**  
**St. Paul's Hospital Foundation**  
*Staff: Trina Classen (foreground) & Chantelle Edworthy*

**Cellavision**  
**Reginal General Hospital Foundation**  
*Staff: Colette Bezaire*





**Cellavision**  
**Royal University Hospital Foundation**  
*Staff: I-r Ruth Norelius and Jennifer Bortsmayer*



**GEM5000**  
**Moose Jaw Health Foundation**  
*Staff: I-r Allison Alix & Shara Simeros*



**ACLTOP 350**  
**Noble Irwin Foundation – Swift**  
**Current**  
*Staff: Tanya Power*



**CENTRIFUGE**  
**Rosetown Foundation**  
*Staff: Ola Mofolasayo*





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