

PATHOLOGY & LABORATORY MEDICINE

ANNUAL REPORT

2023|24



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Front Cover:
Dr. Areej Khatib, MD, MSC, FRCPC, EBP
Victoria Hospital Laboratory, Prince Albert

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.

May-May Quish #2 by Paul McKay





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

J. Frgall Magee, MD FRCPC MHS
Provincial Head, U of S College of Medicine
Department of Pathology & Laboratory Medicine



Brandi Keller
Executive Director, Laboratory Medicine
Saskatchewan Health Authority



It is our pleasure to welcome you to the eighth edition of the evolving Provincial Department of Laboratory Medicine (Saskatchewan Health Authority) and the Department of Pathology and Laboratory Medicine (U of S College of Medicine). The numerous accomplishments listed in this report speak to an extremely active Department devoted to effective delivery to all three of its mandates - Clinical Care, Academics and Public Health.

The current report contains an overview of the Residency Program (Dr. Rani Kanthan and Ms. Deb Quirion); a description of the Regina resident experience provided by Dr. Dan Alfano, Education Coordinator, Regina; a review of resident engagement in many research initiatives; images of many resident celebrations and a **congratulations** to Dr. Fang Wu on obtaining an RDOS 'Exceptional Teacher Award'.

This is followed by an impressive list of all the provocative and informative Grand Rounds of the Academic Year of 2023/24. The People section welcomes new arrivals, acknowledges farewells and celebrates the retirement of three very important individuals - Dr. Sheila Rutledge Harding, Dr. Andrew Lyon and our former Executive Director, Ms. Lenore Howey - all of whom will be missed.



In terms of Clinical Care, please read of recent successes in the areas of Human Genomics (Drs. Zafar Nawaz and Yanwei Xi), Transfusion Medicine (Dr. Oksana Prokopchuk-Gauk), Clinical Microbiology (Dr. Joseph Blondeau), an overview of the Regina Integrated Service Area (Dr. Donna Ledingham), the Division of Anatomic Pathology (Dr. Jill Woof) and an update of SHA successes provided by our new Executive Director, Ms. Brandi Keller. This is followed by images of our recent Department Planning Session June 7th - leading to the section on Laboratory Medicine which this year focuses on Victoria General Hospital, Prince Albert.

The section on Research describes recent successes in ADRL (Dr. John DeCoteau and HIL (Dr. Ahmed Mostafa), a list of initiatives supported by Department Endowments (almost \$46,000 in the past Academic year), followed by the list of Departmental publications in the past 4 years prepared for the current Self-Study. All who have contributed to this body of great work are to be commended. The Annual Report from the highly effective Department Wellness Committee provided by Dr. Henrike Rees follows, then activities supported by the Saskatchewan Association of Laboratory Medicine (SALM) has been provided by Dr. Viktor Zherebitskiy and an annual acknowledgment of the tremendous support that this Department receives from the many active Hospital Foundations in the province.

While all of these activities are worthy of great praise, they do not represent all of the contributions to the health care of the province - so once again, I would appeal to all Department members to contribute to next year's Annual Report to ensure that it truly captures all that we do!

Brandi and I would like to take this opportunity to thank all of Provincial Laboratory Medicine for their dedication, innovation and hard work during this time of significant health system stress. I would like to express special thanks to Loreen - who each year strives tirelessly to produce this report; Harold Shiffman, who behind the scenes, so adeptly manages the College of Medicine finance and administration issues; Mark Milne, our Research Facilitator, who greatly contributes to Department research production by effectively assisting faculty and Residents and (along with Dr. Fang Wu) is planning this November's Department Research Day. Also, to SALM, under Dr. Viktor Zherebitskiy's leadership, whose generous contributions contribute to Resident education expenses and - not least, a significant component of the production costs of this Annual Report.

As Dr. Henrike Rees completes her three-year role as Wellness Lead, on behalf of the Department, I would like to express sincere thanks for her great contribution in successfully promoting the concept of Wellness in our Department – well done Henni!

Finally, as always, we would like to express our deep gratitude for the on-going generous support that we continue to receive from our donors to the Department Endowment Funds and to all of our Hospital Foundations.

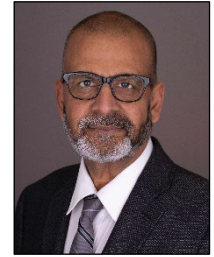
Brandi and I hope that you enjoy reading this report and wish all Department members success in the coming year.



EDUCATION

Postgraduate Medical Education

Submitted by Anurag Saxena, MD MBA Med FRCPC FCAP CHE CCPE
Associate Dean, PGME, College of Medicine



Postgraduate medical education (PGME) at our institution follows the national accreditation standards and is guided by the PGME strategic plan 2021-2025. The six strategic directions are:



At present, there are 28 (26 Royal College specialty and two Family Medicine) residency programs, which are all accredited for training. There is one Area of Focused Competence program (Clinician Educator Diploma). Generally, there are two-four *ad hoc* fellowships per year based upon clinical needs in the province or learner needs. New programs being developed include Plastic Surgery, ENT, Hematology, and Diagnostic and Molecular Pathology and initial discussions are underway for several other programs (e.g., Urology, Adult Critical care, and Vascular Surgery). Retention in the province over last ten years is approximately 50% from the MD program to residency programs and overall 56% from PGME to provincial workforce (70% in Family Medicine and 43% in Royal College specialties). There has been increasing research output from the residents across all programs. The Academic Programs Enhancement Committee (APEC) is a subcommittee of PGME that is responsible for accreditation standards and continuous quality improvement of residency education.

The key initiatives over the last few years have included development of new programs (e.g., Dermatology, Medical Oncology), implementation of competency-based medical education, utilization of Casper to assess non-cognitive attributes in PGME admissions, educational programming in EDI, Indigenous health, social accountability, quality improvement and consult education between family medicine and specialties) and internationalization.

Diagnostic and Clinical Pathology (formerly General Pathology) is a smaller program (two spots per year in the R-1match) and has demonstrated an upward trajectory in quality education and credibility. It does utilize distributed sites in the province. At the recently concluded site survey, the quality of education and academic rigor were assessed to be high. More and more Canadian medical graduates are choosing our program, more recently from the University of Saskatchewan. The program successfully adopted versioning in CBD and is one of the programs that has become comfortable with workplace-based assessments and evaluation of competence for resident progression decisions. I am grateful to the Department and Program leadership and administration for being proactive in steering the program towards excellence. We continue to look forward to the program's high-quality education, successful resolution of areas for improvement (predominantly non-educational issues across inter-organizational boundaries) and contributions to health workforce needs in our province.

Residency



A PURVIEW OF THE DIAGNOSTIC & CLINICAL PATHOLOGY RESIDENCY PROGRAM

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

The current strength of the program lies with the unified cohesive cohort of residents and the teaching faculty representing a *multigenerational, multicultural* group of young, committed physicians from across the various specialties and disciplines who value education and understand that teaching is not the same as learning and learning is not often the same as understanding.

Currently, we have a robust 5-year Diagnostic & Clinical Pathology residency program which is based out of the Royal University Hospital, located on the beautiful and bustling University of Saskatchewan campus. Training primarily occurs in both major centers of the Province of Saskatchewan: Saskatoon and Regina. In Saskatoon, training is provided at all three hospitals --the Royal University Hospital, St. Paul's Hospital, and Saskatoon City Hospital. In Regina, training is provided at the Regina Pasqua Hospital and the Regina General Hospital including a newly incorporated one-week rotation exposure at the Roy Romanov Provincial Laboratory. Off-site community hospital training is provided in Prince Albert at the Victoria Hospital. The overall goal of the Diagnostic & Clinical Pathology program is to develop skilled general pathologists who will serve the needs of diverse patients in diverse communities in our province and beyond. As the Diagnostic & Clinical Pathology program is now entirely a Competency-based medical education that is governed under the Competency Framework guidelines of the Royal College of Physicians and Surgeons of Canada. We host a complement of eleven residents between PGY-1 and PGY-5 in the various stages of training, ranging from Transition to Discipline, Foundations, Core, and Transition to Practice. As a general pathology training program this is an intensive residency comprised of educational exposure to the various subspecialties of Anatomic Pathology (including Forensics and Cytology), Medical Biochemistry, Hematopathology, Transfusion/Coagulation and Medical Microbiology. A great degree of *flexibility* is offered in our training program with graduating residents following fellowships and final career destinations in anatomical pathology and/or clinical pathology.

The program had a period of leadership instability in the 2020/21 and this was compounded with the onset of COVID that took its toll as well. Additionally, massive changes had to be undertaken in converting the program to be fully competency based as per the new guidelines of the Royal College. We were the first program at this University to undergo versioning and this led to another troublesome period of electronic data related challenges all of which was detrimental to the wellbeing of the program, its residents, and the faculty.

These challenges have been met head-on with revitalization of the program at all levels with revised policies, guidelines, faculty engagement, leadership buy-in and continued dedicated efforts to building bridges across all major stakeholders.

We still have work to do especially in Anatomical Pathology training in Saskatoon as cited in the last accreditation report by the Royal College in Jan 2024. Continued efforts are underway under the leadership of Dr. Magee as the Provincial Head for creative solutions to address these persisting areas for improvement. Cultural divides with negotiations between different contracts / different employers and different sections of employees continues to be a work in progress.

The program has a strong dedicated Residency Program Committee [RPC] with passionate members from diverse backgrounds who are committed to supporting and raising the program to greater heights. There is appropriate organization and structure in the committee to deliver the program in accordance with the Royal College standards. The RPC continues to actively pursue and oversee all educational interventions, including: maintaining well-organized educational sessions (didactic lectures, rotation based mini teaching sessions, etc.), helping maintain transparency of all resident related matters with continued monitoring of the residents' progress with scheduled Competency meetings, regular 6-month Exams and continued feedback with dedicated exam prep for the Royal College exam cohort. An organized, dedicated, consistent, strong, and communicative program administrator who is supervised by our Finance Manager supports this. There is good support from the PGME deanery, and we have the leadership of a supportive and dedicated department head who also oversees budget constraints for providing resources needed for the residency program promptly and is committed to enhancing residency education. The Program has significantly increased the travel allowances for the residents and secures funding for educational courses and conferences as per residents needs/wishes. The residents are well-resourced concerning learning materials, computers, microscopes, and desk spaces at all learning sites.

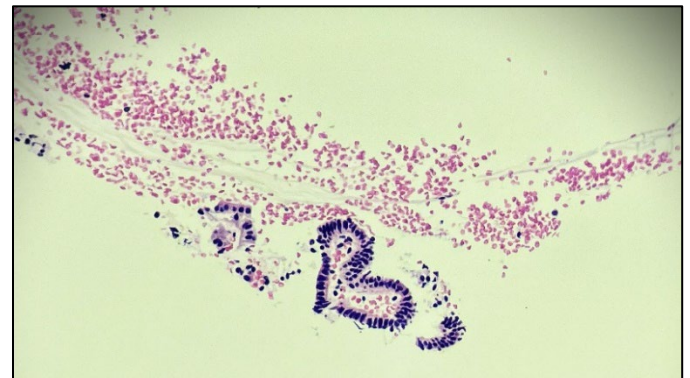
Research has been reinvigorated into the program with increased recognition amongst residents and faculty. A Departmental Research Day was held in October 2020 with recognition of research presentations from medical students and residents who despite the COVID / pandemic restrictions with restricted access to university-based research laboratories created unique alternate solutions to pursue resident driven research projects. This was followed by in-person/hybrid Departmental Research Day in 2022 wherein all residents except the first years [those who joined in July 2022] had a 15- minute presentation slot where they shared their research projects that were in varying stages of completion. The residents' efforts appropriate to the various stages of their training were evaluated by a panel of judges with prize allocations in the various predetermined categories. Our next Departmental Research Day is scheduled for November 2024 for which preparations are underway.

Resident wellness was recognized as being one of high priority during COVID and now remains a committed portfolio within the RPC that strongly advocates residents to take minibreaks and do some fun activities together to promote team building and forge friendships between their peers on a regular ongoing basis. We have dedicated funds for such monthly initiatives and also a yearly event away from the home program depending on the availability of funds. This residency is a dominant learner centered program and educational needs trumps service across all disciplines of pathology. Besides hands on exposure and apprenticeship style of training, dedicated time is set aside every week on Friday for academic activities representing discussions of anatomical, clinical, and other miscellaneous topics. This is available to all pathology residents through a digital Zoom portal in which they can share and

switch being hosts of the meeting. As COVID protocols have been lifted, some academic sessions are being held in person at the Thomas Cunningham Library, which is technologically equipped to connect live with multiple sites and has a facility for real-time slide sessions with connection via the microscope. Thus, though the majority of the academic half-day is based out of Saskatoon, the residents and faculty in Regina / Prince Albert / Moose Jaw/ Battleford are also able to participate by Zoom, videoconferencing, and virtual microscopy. Residents are also always encouraged to attend and present at multidisciplinary rounds in addition to the academic half day and the rotation supervisors are instructed to usually accommodate these educational resident driven requests as far as possible.

We are happy to share that the consolidated efforts have resulted in the program having a 100% success rate for the past three years at the Royal College exams, including our current exam-going residents who have secured a pass in their Part I Exam held in APR 2024, who we hope will continue the legacy as they prepare for their Part II in OCT 2024.

In conclusion, we freely admit we are not perfect, far from it, nevertheless we remain committed, passionate, and determined to succeed as a Diagnostic and Clinical Pathology / General Pathology Residency Program. 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. In this regard, as a team with committed residents, faculty and support staff, we will strive to succeed and excel ... 'till then we remain imperfectly perfect.



*"Heart" - Endometrial Biopsy Specimen
Dr. Javera Tariq PGY2*

Regina Residency Experience

By Dr. Dan Alfano, Education Coordinator, Regina



The Regina Resident experience is designed to meet the educational goals of each Resident.

During Regina anatomic pathology rotations, Residents are encouraged to ask questions and seek help at any stage of specimen handling.

The Regina Resident experience offers extensive hands-on exposure to gross dissection under the excellent guidance of pathologist assistants and staff pathologists.

Cases grossed by residents are typically assigned to them for initial review and diagnostic dictation before sitting with the attending pathologist for sign-out and constructive feedback.

On Thursdays, Residents attend our weekly departmental interesting case conference, where challenging or noteworthy cases are shared for intradepartmental education. Residents are often encouraged to participate and present interesting cases they have encountered.

In addition to the general anatomic pathology rotation, other rotations at the Regina site include cytology, autopsy/forensics, hematopathology, clinical chemistry, biochemistry, and microbiology.

Starting in 2024, a week-long rotation at the Roy Romanow Provincial Laboratory (RRPL) will expose residents to public health. This rotation can be customized according to the resident's interests and objectives and may include:

- Observing laboratory tests on technical benches
- Shadowing a laboratory clinician on-call
- Taking first-call and discussing inquiries with the laboratory clinician on-call
- One-on-one teaching from medical or scientific staff
- Participation in meetings and team huddles
- Assignments of reading material

Residents will have the opportunity to engage in research or quality improvement projects, depending on their commitment and available time.

Lab sections offered at the Provincial Laboratory include water lab/wastewater surveillance, toxicology/FFT testing, newborn screening/genetics, bacteriology/molecular diagnostics, and bacterial/molecular diagnostics.

Pathology & Lab Medicine Residents 2023 -2024 Academic Year



Phillippe Price
PGY5



Karan Vats
PGY5



Ingrid Tam
PGY4



Yayuan Zhao
PGY4



Henry Pan
PGY3



Daniel Markewich
PGY3



Pramath Kakodkar
PGY3



Joel Scott
PGY2



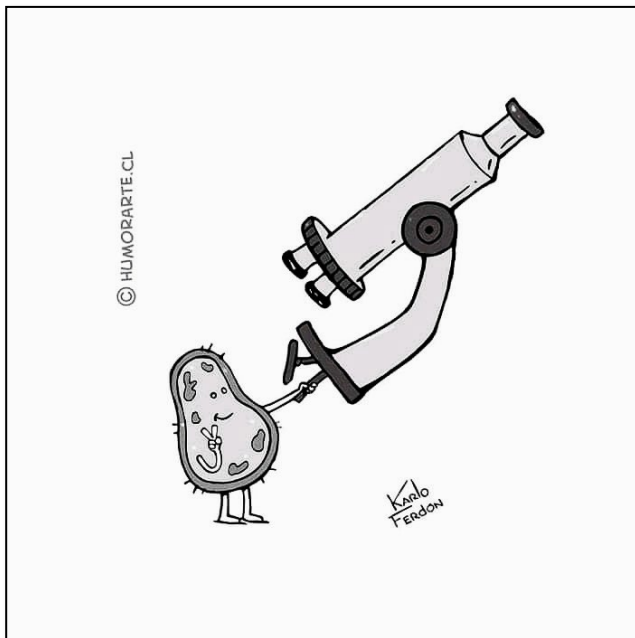
Javera Tariq
PGY2



Richard Zhu
PGY1



Dan Zhang
PGY1



“Cellfie” - A cell using a photomicroscope to take a selfie
Contributed by Dr. Roland Auer

Resident Research



Dr. Phillippe Price PGY5

I did my bachelor's of science in Life Sciences with a minor in Chemistry, and a Master's of Biochemistry at Queen's University. My master's thesis focused on gene editing of a rare liver enzyme deficiency called arginase deficiency via the CRISPR/Cas9 system. I went to medical school at University College Cork in County Cork, Ireland. I did my residency in General Pathology here at the University of Saskatchewan. My research interests in residency consisted of the perceived impact of Competency By Design on pathology residency education in Canada, of standardization for semi-quantitative scoring systems for immunohistochemical staining intensity, as well as a case report of misidentification of a risk-group 3 organism in microbiology leading to a potentially serious laboratory exposure event. Next year I have enrolled in a one-year Transfusion Medicine and Hematopathology fellowship at the University of Saskatchewan, a program that was constructed with the gracious help of my fellowship supervisors. I am very fortunate to have received such high-quality education and training at every stage of development!

Project 1: Standardized Nuclear H-Score: Inter-observer Reproducibility Study (Dr. Emina Torlakovic)

We are investigating the inter-observer reproducibility of the histo-score (H-score) system for scoring IHC staining intensity. H-score is a framework that combines the percentage of positively staining cells with the intensity of staining for a more robust scoring system. The first phase of this study focuses on MUM1 staining of lymph node tissue microarrays. We chose this IHC and tissue type because it has a clean staining profile with straightforward readout, the cell distribution is homogenous, and there is a high-quality online training tool (CBQA/CAP-ACP). We published this research in the journal of Applied Immunohistochemistry & Molecular Morphology.

Project 2: Pathology Royal College Exam Timing Survey and Opinion Piece (Dr. Allison Osmond)

With the introduction of CBME (CBD), the first cohort of pathology residents are scheduled to write the Royal College Exam (RCE) at the end of their fourth year of training. We have sent out an opinion survey to the Royal College Specialty Committee, a committee that influences Royal College decision making on how residency training is delivered, on a specialty-by-specialty basis. The survey asks participants when they feel would be the best time for residents to write the RCE, and if the practical and written portions should be given together. It also asks what are the potential benefits and drawbacks of moving the RCE up one year. We wrote a short paper for the Canadian Journal of Pathology.

Project 3: Burkholderia Pseudomallei case report (Dr. Camille Hamula)

We described a case of a leg wound infection that was erroneously identified as Burkholderia multivorans by MALDI-TOF MS. Further testing a referral to the National Microbiology Lab (NML) of Canada identified the isolate as Burkholderia pseudomallei. The Public Health Agency of Canada (PHAC) defines B. pseudomallei as a risk group 3 organism, with high individual risk from exposure, including laboratory exposure, whereas B. multivorans is risk group 2 (moderate risk). This misidentification gives a false sense of security and can lead to dangerous exposure from relaxing the biosafety standards when handling biological material.

Dr. Yayuan Zhao PGY4

Zhao Y, Kakodkar P, Pan H, Zhu R, Musa K, Hassan A, Shoker A, Webster D, Pearce T, Dokouhaki P, Wu F, Mostafa A. The Interplay Between Human Leukocyte Antigen Antibody Profile and COVID-19 Vaccination in Waitlisted Renal Transplant Patients. Arch Pathol Lab Med. 2024 Apr 11. doi: 10.5858/arpa.2023-0370-OA. Epub ahead of print. PMID: 38599589.

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SUPPLEMENTARY DATA

The Interplay Between Human Leukocyte Antigen Antibody Profile and COVID-19 Vaccination in Waitlisted Renal Transplant Patients

Yayuan Zhao, MD, PhD; Pramath Kakodkar, MD; Henry Pan, MD; Richard Zhu, MD; Khalid Musa, MD; Abubaker Hassan, MD; Ahmed Shoker, MD; Destinie Webster, MLT, CHA; Twyla Pearce, MLT, CHA; Pouneh Dokouhaki, MD, PhD; Fang Wu, MSc, PhD; Ahmed Mostafa, MD, PhD, F(ACH) 

Arch Pathol Lab Med (2024)

<https://doi.org/10.5858/arpa.2023-0370-OA> [Article history](#) 



Dr. Ingrid Tam PGY4

One of the projects I worked on this year was done while on a pediatric hematopathology elective at CHEO in Ottawa, Ontario – the first pediatric hospital in the country to receive pathogen-reduced platelets for transfusion. We found that the platelet increment with pathogen-reduced platelets in pediatric patients was reduced when compared to untreated platelets. However, the safety profile was more favourable overall. I presented this project at Grand Rounds as well as at the CSTM for 2024, and hopefully a publication will be coming soon!

Dr. Pramath Kakodkar PGY3

I am a PGY2 resident with a strong interest in neuropathology and molecular pathology. The Department of Pathology and Laboratory Medicine has been incredibly supportive of all my research endeavors. During my first month as a resident, Dr. Magee connected me with our department's research facilitator to get me started. Over these two years, I have published over 14 papers, with Dr. Magee playing a crucial role in securing funding for the article processing charges.

Some of my notable projects include my work with the Human Immunogenetics Lab under Dr. Ahmed Mostafa's supervision. We published our research on NGS-based chimerism monitoring in *Frontiers in Immunogenetics*. I presented this work at the American Society of Histocompatibility and Immunogenetics conference in Texas alongside my co-resident, Dr. H. Pan. I will also present a case series on chimerism testing at the European Congress of the Association of Molecular Pathology in Spain.

At the Advanced Diagnostic Research Lab, under Dr. DeCoteau's supervision, we are preparing a manuscript on the utility of optical genome mapping in diagnosing hemoglobinopathies and NGS-based methylation testing in solid organ tumors. Additionally, I am working with Drs. Zherebitskiy and Auer on a project focused on the methylation-based reclassification of molecularly high-grade gliomas with low-grade histology and progression-free survival.



I secured a grant from the Saskatchewan Centre for Patient-Oriented Research for a digital pathology project. Under Dr. Ravi's supervision, my co-residents Drs. H. Pan, D. Markewich and I (see photo above) are validating our AI PD-L1 scoring model in lung squamous cell carcinomas and GEJ adenocarcinomas. We are collaborating with the Saskatchewan Cancer Agency to explore the acceptance of AI in pathology reporting for oncology patients and teams. Additionally, five of my abstracts were selected for the ASCP 2024. I sincerely thank Dr. Magee, Dr. Kanthan (Program Director), Dr. Wu (research coordinator), and all my principal investigators for their support throughout these research endeavors.

Dr. Henry Pan PGY3

The 2023-24 academic year has been a busy year for research. Dr. Yayuan Zhao, Dr. Pramath Kakodkar and I have published and presented two posters at the 2023 American Society for Histocompatibility and Immunogenetics (ASHI) conference in San Antonio, Texas. The two articles were published in *Frontiers in Genetics* and *Archives of Pathology & Laboratory Medicine*. I'd like to thank my colleagues, Dr. Ahmed Mostafa and Dr. Fang Wu for their hard work and guidance.

A project which I am currently working on is using artificial intelligence to score PD-L1 in hepatocellular carcinoma, gastro-esophageal adenocarcinomas and lung carcinomas. We hope to use this data to optimize immunotherapy predictions and improve treatment outcomes. Dr. Pramath Kakodkar and Dr. Daniel Markewich are the two excellent colleagues I am working alongside; Dr. Deepti Ravi is our terrific supervisor. I am looking forward to the results of this project later in the year.

Dr. Javera Tariq PGY2

I have been involved a few projects. My first ongoing project with Dr. Roland Auer focuses on studying different levels of spinal cords for Lewy bodies to understand the pathophysiology of Parkinson's disease. Additionally, with the help of Dr. Hamula and Dr. Pramath Kakodkar, I participated in a project on Aerococcus as an emerging pathogen in Saskatchewan. This work is expected to be presented as a poster at the upcoming ASCP conference in September 2024, in Chicago.

Dr. Joel Scott PGY2

Reducing Unnecessary community thyroid testing in Saskatoon Saskatchewan:

Under the supervision of Dr. Fang Wu, I have been involved in an interdisciplinary quality improvement project that has seen forced reflexive testing algorithms reduce community free hormone thyroid testing by nearly 60% - an annual cost savings of \$700,000. I presented the details of this project at the Choosing Wisely National Meeting in Montreal on April 15th, 2024 (see picture to the right). Dr. Wu and I are excited to continue this work to ensure these efforts are sustained, and expand on this to continue optimizing laboratory services to better serve patients in the province.



Dr. Dan Zhang PGY1

During my first year of residency, I participated in several research projects alongside attending physicians and senior residents. These projects included:

1. Primary hepatic lymphoma. An enigmatic diagnosis
2. Diagnostic Challenges in Thymic Masses: A Case Series of Thymic Neoplasms.
3. A Multifaceted Approach to Multicystic Lymphangioma: Case Series and Literature Review.
4. Navigating the Gray Area: A Case Report of Congenital Wilms Tumor and Review of the Spectrum with Nephroblastomatosis
5. Eplet mismatch in renal transplantation

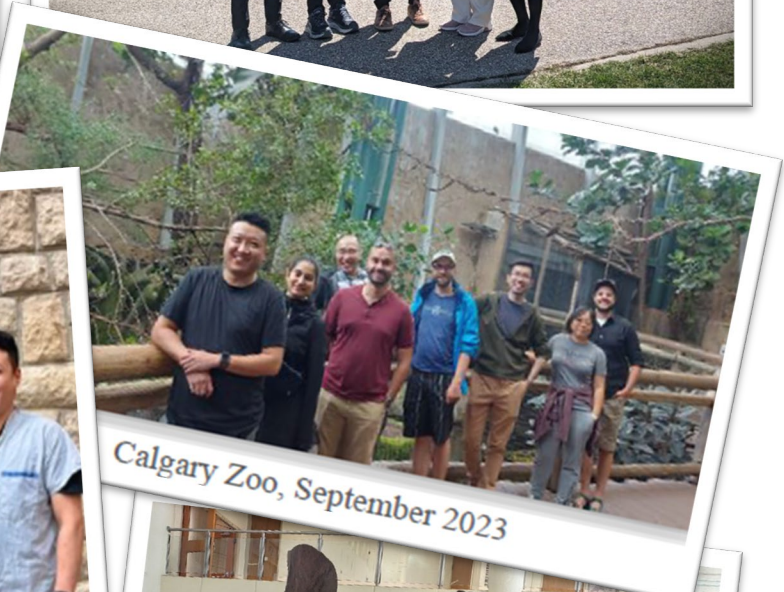


Dr. HuangRui (Richard) Zhu PGY1

During my off-service rotation in pediatric oncology, I was involved in the care of a patient with extra-skeletal Ewing's Sarcoma. Working with several pediatricians, as well as Dr. Alyssa Poulin, I am writing a case report on this rare manifestation with the intention to present at this year's International Pediatric Oncology Congress.



June 22/23 Resident Research Showcase & Award
Pramath Kakodkar



Calgary Zoo, September 2023



Dr Ninad Mehta - RDoS Award





Dr. Fang Wu - MAY 2024

Congratulations!

EXCEPTIONAL TEACHER AWARD WINNERS

Each year, residents have the opportunity to nominate individuals who have demonstrated exceptional skill in delivering resident education. Nominees are judged on a number of criteria, including the quality of their teaching, their positive role modelling, their rapport with residents, and their overall enthusiasm and commitment

Dr. Yayuan Zhao - AUG 2023



Congratulations to Dr. Yayuan Zhao!
Resident of the Month



Our Resident of the Month award promotes resident well-being by recognizing and awarding residents who make exceptional contributions, both in their academic field and in their extracurricular activities



Comparison of Global vs Highest Gleason Grade Groups in Matched Prostate Core Biopsy and Dominant Nodules of Radical Prostatectomy Specimens
Lucas AB Fischer MD¹ and Nicholas Baniak MD²

¹Department of Pathology and Laboratory Medicine, College of Medicine, University of Saskatchewan, Saskatoon, SK, Canada

Background

- Gleason scoring (GS) and grade groups (GG) assignment for prostate cancer is critical for determining prognosis and biochemical recurrence.
- For grade biopsies (GB), Gleason will usually whether GS is equal to highest GG committee before with the GS of radical prostatectomy (RP) specimens.
- Previous studies have shown that highest GS does not always concordance with RP and over-grades a significant portion of cases.
- However, RP can be better than GB based on global scoring of Gleason score (GS) and over-grades a significant portion of cases.
- Concordance between GS and GG is unclear.

Aim

- To compare the concordance between GS and GG in global biopsy and RP specimens.

Methods

- Retrospectively reviewed the GS of RP and corresponding GB between 2010 and 2023.
- Only GS cases with at least 12 cores were included.

Results

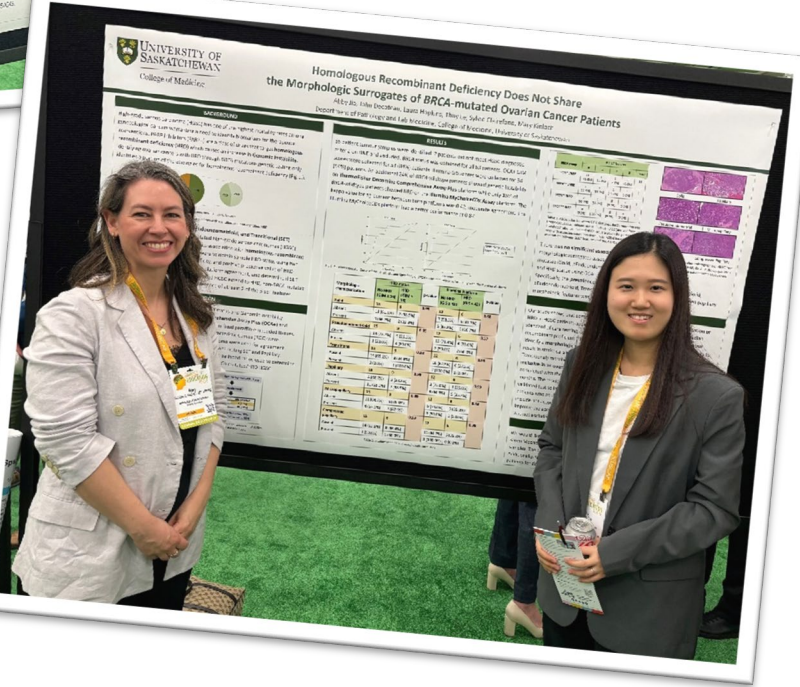
- For each GS, the highest GG was assigned.
- For each GS, the global GS was recorded, as well as the GS of each nodule. If there was one nodule with lower GS, the GS was assigned as the lowest with the highest GS.

Table 1: Global vs Highest Gleason Grade Groups of Radical Prostatectomy Specimens

Global GS	Highest GG	Count	Percentage
6	6	10	100%
7	7	100	100%
8	8	100	100%
9	9	100	100%
10	10	100	100%
11	11	100	100%
12	12	100	100%
13	13	100	100%
14	14	100	100%
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Lucas Fischer UGME3 (Dr. Nicholas Baniak)
USCAP - MAR 2024 Baltimore

Abby Jia UGME2 (Dr. Marilyn Kinloch)
USCAP - MAR 2024 Baltimore



Grand Rounds

By Dr. Viktor Zhrebitskiy

During the last academic year, the Pathology and Laboratory Medicine Grand Rounds Committee, led by Dr. Fergall Magee (Provincial Head) with participation of Dr. Viktor Zhrebitskiy (anatomical and clinical pathology representative), Dr. Maruti Uppalapati (basic medical research representative) and Dr. Pramath Kakodkar (general pathology residency program chief resident), actively recruited presenters from our Divisions as well as from the pool of various national and international invited speakers. Also, the Dr. Marc Omar Shokeir Memorial Lecture and the 1st lecture under the Maureen Fuller Memorial Lectureship Series 2024, became part of our Grand Rounds. All formats, including in-person, on-line via zoom and hybrid, were used to deliver those presentations efficiently and in timely manner.

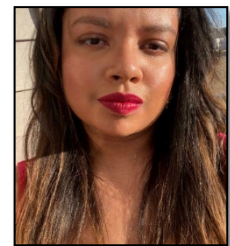


During 2023-2024 academic period, we had the following Grand Rounds presentations:



Dr. He Sarina Yang (12 JUN 2023) – Pathology and Laboratory Medicine, Weill Cornell Medicine, New York, NY, USA, invited by Dr. Fang Wu, presented **“Machine Learning in Clinical Laboratory Medicine: Promises, Challenges & Pitfalls”** provided an overview of machine learning models (MLMs) and their applications in the area of clinical laboratory medicine with emphasis on biochemistry. She also discussed her local experience with transfer of MLMs from the bigger academic institution to the smaller independent hospitals including some logistic challenges and financial constraints. Evaluation of model performance with various internal and external datasets and transparency of reported characteristics of the datasets used for model training are crucial for their performance.

Dr. Deepti Ravi (03 OCT 2023) – Pathology and Laboratory Medicine, U of S, Saskatoon, SK, presented **“Machine Learning and Pathology: Basics and Our Role.”** In her presentation, she discussed an algorithm of machine learning (ML) and its application to the area of anatomical pathology, particular gastrointestinal and pancreatobiliary pathology subspecialties. Also, the use of artificial intelligence (AI) in ML was discussed. She talked as well about the role of surgical pathologists in the training of AI/ML and using them as assisting aids, rather than either disregarding them completely or allowing them to make the final diagnostic decision.



Dr. C. Ron Geyer (30 OCT 2023) – Pathology and Laboratory Medicine, U of S, Saskatoon, SK presented **“Investigator-Led Clinical Trials at the U of S Using Engineered Biologic Therapeutics – Non-small cell lung cancer and Alzheimer’s disease.”** In his presentation, he shared his experience on the initiation of clinical trials locally, with particular focus on the developing image-guided surgery for non-small cell lung cancer and introduction of NeuroEPO therapy in clinical practice to treat Alzheimer’s disease and some other dementias or degenerative conditions (i.e. Parkinson’s disease, SCA). Intranasal pharmacologic vehicle was discussed as more preferable for those conditions compared to conventional injections and pills.

Dr. Robert Liwski (27 NOV 2023) – Division of Hematopathology, Pathology Department, Dalhousie University, Halifax, NS, invited by Dr. Donna Ledingham, presented **“Development and validation of flow cytometry-based methods for red blood cell antigen phenotyping and alloantibody detection”** described main steps in flow cytometry (FCM) and provided his local experience with FCM-based crossmatching for the purposes of solid organ transplantation. He also provided an overview of extended red cell antigen phenotyping techniques and touched base on the potential of FCM-based techniques for the purposes of red cell alloantibody detection and identification of specificity HLA antibody and transplant from antigen negative donors.



Dr. Ingrid Tam (29 JAN 2024) – PGY4 Resident, Diagnostic & Clinical Pathology program, U of S, in her presentation **“Pathogen-Reduced Platelets in Pediatrics” A Single Centre Audit of Platelet Transfusion** explained the rationale for use of pathogen-reduced platelets (PRPs) and described the process of pathogen inactivation. She also went over the benefits and drawbacks of use of PRPs in clinicals, particularly in settings of repeated transfusion in a pediatric hospital.



Dr. Yayuan Zhao (29 JAN 2024) – PGY4 Resident, Diagnostic & Clinical Pathology program, U of S, in his presentation **“COVID-19 Vaccination & HLA Antibodies Profile”** shared results of his research project emphasizing an impact of anti-COVID-19 vaccinations on different HLA groups with regards to local kidney transplant patients.



Dr. Jodi Carter (12 FEB 2024) – University of Alberta/Cross Cancer Institute, Edmonton, AB – part of the Maureen Fuller Memorial Lectureship Series, invited by Dr. Rani Kanthan, in her lecture **“Breast Biomarkers: Emerging Targets and Digital Platforms”** reviewed the current landscape of clinical breast biomarker testing, reviewed emerging clinical breast biomarkers and companion diagnostics for targeted therapies and discussed the utility of high-plex digital spatial platforms for biomarker discovery. She received a PaLM/SALM award for her outstanding presentation.

Dr. Leslie J. Donato (26 FEB 2024) – Mayo Clinic, Rochester, MN, USA – part of the EDI series, invited by Dr. Sukhbir Kaur, called her presentation **“Cardiovascular Risk Prediction – Should Patient Race Play a Role?”** In her talk, Dr. Donato described various risk factors for cardiovascular illnesses, including some important laboratory biomarkers such as lipoprotein a (Lp(a)) and some other lipoproteins. Her research demonstrated that LP(a) concentrations are two times higher in blacks compared to whites what might be responsible together with other factors for higher rates of myocardial infarctions in Afro-American populations. She also showed that Hispanic/Latino populations are much more diverse and require having knowledge of the heritage group and genetic ancestry.



Dr. Yoh Zen (04 MAR 2024) – Pathology, King’s College Hospital, London, UK, invited by Dr. Deepti Ravi, in his talk **“Diagnostic Challenges in IgG4 Related Disease – Collaboration among physicians, pathologists and clinical scientists”** provided us with the latest developments in the area of IgG4 related diseases (IgG4-RDs) including strategies how to avoid their overdiagnosis and also, with conditions that might mimick them. Using various cases as examples, he demonstrated the diversity of clinical and pathologic presentations of IgG4-RDs in different organs. He also stopped on modified 2012 consensus paper regarding morphologic, immunohistochemical and serological criteria for IgG4-RDs and updated algorithm on their management.

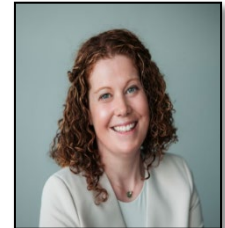
Dr. Ninad Mehta (25 MAR 2024) – Pathology and Laboratory Medicine, U of S, Saskatoon, SK, presented **“Convolutional Neural Network (CNN) Machine Learning in Microbiology.”** Based on his work in ARUP, he provided us with the description of the basis of Convolutional Neural Networks (CNNs). He also talked about their use for the identification of blood parasites (i.e. trypanosome, microfilariae) and touched base on the other areas in microbiology where the use of CNNs might be beneficial in the near future (i.e. ova and parasites, gram stain review). Issues of accuracy, TAT, strategies of CNN construction and their limits were also discussed.





Dr. Jennifer Billinsky (29 APR 2024) – Forensic Toxicology, Roy Romanow Provincial Laboratory, Regina, SK), in her presentation **“A Day in the Life of Death”** outlined the role that the postmortem toxicology section plays with the Provincial Coroner’s Service of Saskatchewan. She also discussed why postmortem specimens are not the same as clinical specimens, explored the challenges with postmortem drug level interpretation and went over the evolving opioid epidemic and challenges with novel psychoactive substances. Practical issues, including choice of specimen, transportation, TAT, testing technologies were discussed as well.

Dr. Amy Bromley (03 MAY 2024) – Hospital autopsy service, Pathology and Laboratory Medicine Department, University of Calgary, Calgary, AB, as part of the annual Dr. Marc Omar Shokeir Memorial Lecture, delivered a presentation **“The Art of Clinicopathologic Correlation, Quality Assurance and Collaborative Practice in Modern Medical Autopsy.”**



Dr. Marilyn Kinloch presenting PaLM/SALM Appreciation Award to Dr. Amy Bromley

In her presentation based on international, national and local experience, she analyzed how clinicopathologic correlation improves diagnostic accuracy. Also, she described a role of hospital autopsy in

quality assurance programs that are essential for improving patient safety. At the end of her talk, she emphasized the importance of

cultivation of collaborative skills among healthcare professionals in autopsy settings.



Dr. Joseph Blondeau (27 MAY 2024) – Clinical Microbiology Service, Pathology and Laboratory Medicine, U of S, Saskatoon, SK presented **“An Overview of the Vaccines for Respiratory Syncytial Virus and Herpes Zoster.”** He provided a thorough description of RSV and Herpes Zoster viruses including their burdens on individual and populational health. Also, he provided a detailed review of data on the efficacy of the vaccines, their safety profiles and on long-term follow-up for vaccinated individuals. The topic of vaccination impact on multidrug resistance was discussed as well. Finally, he reviewed cost-effectiveness of various vaccines targeting RSV and VZV immunization programs.



Dr. Marilyn Kinloch | Dr. John DeCoteau (24 JUN 2024) – Pathology and Laboratory Medicine, U of S, Saskatoon, SK, gave a joint presentation **“Clinical Implementation of Homologous Recombination (HR) Testing & Morphologic Correlations for HR-deficiency in High-Grade Serous Carcinoma.”** In their presentation, they provided the definition of homologous recombination repair (HRR) and its significance in the ovarian cancer development. Also, several platforms used for HRR testing were compared including Illumina, SOPHiA, OGM and ThermoFisher. Briefly, morphologic characteristics of HR-Deficient high-grade serous carcinoma were described.



After having a short summer break, we are planning to resume our PaLM Grand Rounds and will keep inviting prominent international and national speakers as well as providing an opportunity for our residents and faculty members to present their latest research results and topics of clinical interest.

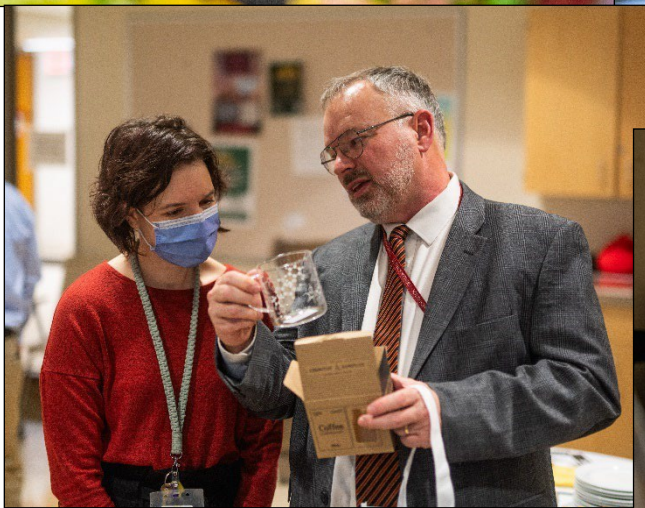
PEOPLE

*Retirement Tea: Dr. Sheila Rutledge Harding & Dr. Andrew Lyon
25 MAR 2024*







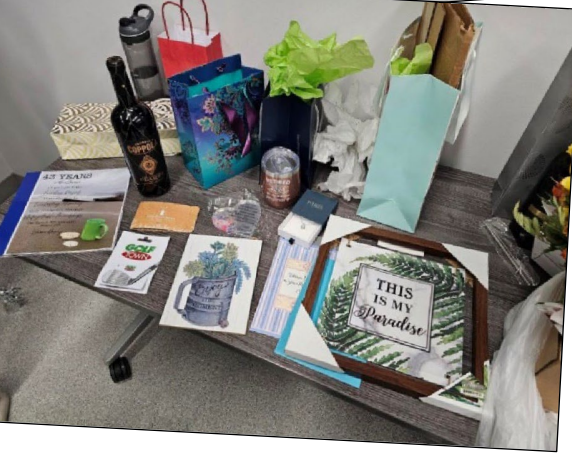
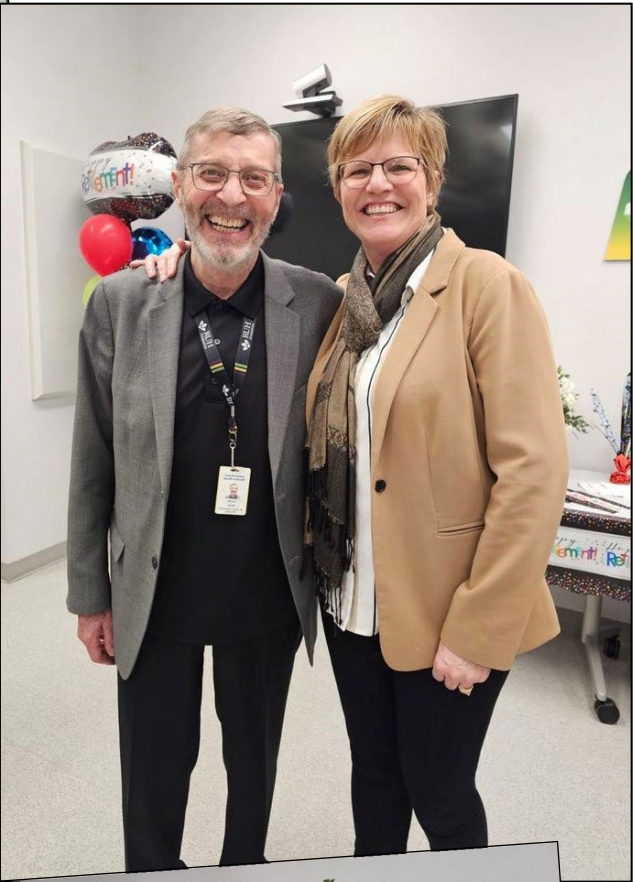


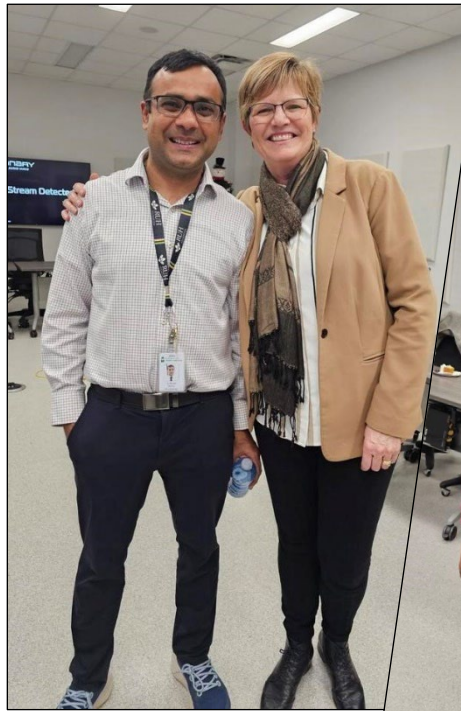
Faculty: New & Outgoing

WELCOME		FAREWELL	
Dr. Alicia Andrews	Saskatoon	Dr. Pouneh Dokouhaki	Saskatoon
Dr. Tessa Boyer	Saskatoon	Dr. Dino Grammatico	Regina
Dr. Bruce Cameron	Saskatoon	Dr. Angus Kirby	Regina
Dr. Areej Al Khatib	Prince Albert	Dr. Andrew Lyon	Saskatoon
Dr. Song Lu	Saskatoon	Dr. James Macpherson	Regina
		Dr. Allison Osmond	Saskatoon
		Dr. Ania Radomska	Saskatoon
		Dr. Kara Roncin	Saskatoon
		Dr. Sheila Rutledge Harding	Saskatoon
		Dr. Rommel Seno	Regina
		Dr. Rajendra Sharma	Saskatoon
		Dr. Zorah Taheri	Saskatoon
		Dr. Mariana Usati	Regina
		Dr. Chunjie Wang	Saskatoon

Farewell for Lenore Howey, Executive Director, Laboratory Medicine - 24 NOV 2023







PUBLIC HEALTH

By Dr. Jessica Minion, Science Director, Provincial Public Health Laboratory Network; Provincial Clinical Lead Public Health



Over the last year, the Provincial Public Health Laboratory Network (PPHLN) was able to reorient its priorities away from COVID-19 pandemic support and start revitalizing work neglected over the last several years. Some highlights include:

- The completion of the first **PPHLN Annual Report**, summarizing testing and organism typing information on Notifiable Diseases from across the province. This has long been a request to improve stakeholder access to this information and highlights the great work laboratory staff from all areas of the province contribute to in the tracking of conditions of public health interest. The PPHLN Annual Report is available to internal stakeholders on the PPHLN SharePoint site.
- In partnership with eHealth Saskatchewan, and supported by the Public Health Agency of Canada, work has begun on **building an electronic dashboard for Notifiable Disease typing information**. People have become familiar with the rich and valuable information available through genetic sequencing of SARS-CoV-2, and the goal of this project will be to make local typing data more easily available in an interactive dashboard.
- With the collaboration of up to 76 primary care clinics across the province, we have completed a 2nd year of **Community Respiratory Infection Surveillance Program (CRISP) Sentinel Surveillance**. This involves primary care providers identifying patients with symptoms suggestive of mild/moderate respiratory virus infections throughout the year and sending samples for testing to monitor what viruses are circulating in our communities. The full CRISP situation reports are available on the Ministry of Health's website: <https://publications.saskatchewan.ca/#/categories/5885>
- The Environmental Water Laboratory at the Roy Romanow Provincial Laboratory (RRPL) took on **wastewater surveillance testing of SARS-CoV-2, influenza A and B** in 2023. There are currently 18 Saskatchewan communities participating in this twice-weekly testing, and people can find their local results on the federal Health Infobase dashboard: <https://health-infobase.canada.ca/wastewater/>
- The Environmental Water Laboratory also supports the **monitoring of Fish Mercury levels in lakes across the province**. This program is a collaboration between the Saskatchewan Health Authority (SHA) and Ministry of Environment and is currently being re-envisioned with an emphasis on improving the reporting of this provincial surveillance program.

Additional ongoing priorities include the formalization of provincial laboratory surveillance protocols, the revitalization of Saskatchewan's participation in the Canadian Laboratory Response Network (CLRN), and multiple projects aimed at improving the access to and provision of testing for Sexually Transmitted and Blood Borne Infections (STBBIs).

LABORATORY MEDICINE

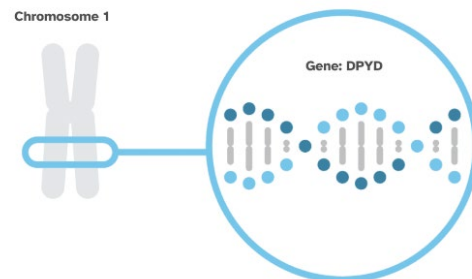
Genomics Laboratory

*By Dr. Zafar Nawaz and Dr. Yanwei Xi
Provincial Clinical Co-Leads, Genomics*

The Genomics Laboratory at Royal University Hospital (RUH), Saskatoon, has gone through dramatic changes and transformation since its creation. In 2018, the former Cytogenetics Laboratory and Human Molecular Genetics Laboratory were amalgamated to form a unified clinical Genomics Lab with a shared vision.

The **Genomics Lab** provides comprehensive genomic testing services in integrated clinical Cytogenetics and Molecular Genetics labs for acquired and inherited genetic disorders including prenatal, postnatal and oncology. Genomics laboratories offer testing services for the entire province. The **Cytogenetics** section is the only lab in the province that offers on-site Cytogenetic testing services, offering screening and diagnostic services for prenatal and postnatal genetic conditions such as congenital anomalies, developmental delay, autism spectrum disorders, infertility diagnosis and prognosis of hematological malignancies.

The **Molecular Genetics** section has recently, by collaborating with the Saskatchewan Cancer Agency (SCA), implemented an in-house pharmacogenomics DPYD test. Dihydropyrimidine-dihydrogenase (DPD) is the key enzyme responsible for the metabolism and inactivation of fluoropyrimidine drugs (i.e. 5-fluorouracil). Patients with reduced DPD enzyme activity are at high risk of severe and even fatal toxicity from standard dose of these drugs. Therefore, it is recommended by the Clinical Pharmacogenetics Implementation Consortium (CPIC) that the initial dose of 5-fluorouracil or capecitabine should be reduced for patients with DPYD genotypes associated with reduced DPD activity. This test, which went live for Saskatoon on May 14, 2024, and later for the entire province on July 9, 2024, will be used to guide dosing of chemotherapy drugs and prevent adverse side effects. Full gene sequencing is anticipated by September 2024. Saskatchewan is the third province in Canada to offer comprehensive in-house DPYD testing. This is an important step towards Personalized Medicine and improving outcomes for cancer patients across the province.



Stakeholders of Genomics Laboratory include Medical Genetics, Pediatricians, Maternal Fetal Medicine, Oncologist, Hematologist, and other specialists. By forming strong partnerships with these stakeholders, Genomics Laboratory prioritize new test development and repatriation related in these specialties. For instance, by working together with the Medical Genetics Clinic at Jim Pattison's Children's Hospital, an NGS-based Cardiovascular gene panel was validated and implemented to meet their ongoing demands.

By collaboration with Medical Genetics, the Genomics Lab has been involved in several clinically relevant cases studies. The Genomics Lab and Medical Genetics are also a member of a pan-Canada genome research project - Care4Rare Canada: Harnessing multi-omics to deliver innovative diagnostic care for rare genetic diseases in Canada (C4R-SOLVE).

Division of Transfusion Medicine

By Dr. Oksana Prokopchuk-Gauk
Division Head, Transfusion Medicine - Saskatoon
Clinical Lead, Provincial Transfusion Medicine Discipline Committee

Canadian Society of Transfusion Medicine Annual Conference held in Saskatoon

Members of the Division of Transfusion Medicine in Saskatoon, Transfusion Safety, and provincial Transfusion Medicine Lab Managers worked collaboratively with the Canadian Society of Transfusion Medicine (CSTM) Board to host this year's national meeting at TCU Place in Saskatoon on May 23-26, 2024. The conference theme "Bridging Transfusion Communities" highlighted that within our specialty, we continue to build and strengthen collaborations between medical and community partners throughout



CSTM 2024 local organizers and volunteers
(l-r Sheila Anthony, Dr. Oksana Prokopchuk-Gauk,
Edith Hein and Carla Watson)

our province and our country. We were so pleased to welcome 336 registrants, who attended sessions presented by 67 speakers at the conference.

Congratulations to all CSTM 2024 award winners, including local recipients: Elaine Blais, North Saskatchewan Transfusion Safety Manager, recipient of the Buchanan Award; and Stephanie Jinson, Saskatchewan Immune Globulin Stewardship Program Nurse, recipient of a CSTM Bursary.

We acknowledge the dedication of the CSTM 2024 core organizing team (Local Conference Co-leads, Dr. Sarah Tehseen and Dr. Oksana Prokopchuk-Gauk; Registration Co-Leads, Edith Hein and Sheila Anthony; Speaker Management Lead, Elaine Blais; and Volunteer Coordinator, Heather Panchuk), and express our sincerest gratitude to the many volunteers who participated throughout the weekend. All attendees experienced a truly memorable event!

Congratulations to Dr. Sheila Rutledge Harding on Her Retirement!

We bid a bittersweet farewell to Dr. Harding, who officially retired on March 31, 2024 from her work as a Hematologist and Transfusion Medicine Consultant based out of Royal University Hospital after 36 years of service. She has been an incredible mentor to many and a respected leader with an instrumental role in several projects throughout her career. Most recently, she was directly involved in the implementation of the Prevention of Alloimmunization in Mothers of Saskatchewan (PRAMS) Program and the Saskatchewan Immune Globulin Stewardship Program. Colleagues came together to celebrate Dr. Harding at retirement socials held by the Department of Pathology and Laboratory Medicine, University of Saskatchewan on March 24, 2024, and by the Division of Hematology, Saskatchewan Health Authority on March 27, 2024.

Dr. Sheila Rutledge Harding at her SHA Retirement Social, holding the print gifted to her by Transfusion Medicine Lab Staff.



The Division of Transfusion Medicine in Saskatoon currently has an open position for a Clinical Consultant; recruitment efforts are ongoing. We are deeply grateful to Dr. Harding and Dr. David Conrad, Hematopathologist from Halifax, NS, who are providing on-call services to help support Drs. Prokopchuk-Gauk and Tehseen until new staff can be hired.

Provincial Transfusion Utilization and Safety Interdisciplinary Committee (TUSIC) Steering Committee Officially Endorsed by SHA Leadership

Throughout 2023, Provincial Laboratory Executive Director, Lenore Howey, engaged in conversations with the SHA Chief Operating Officer (COO) team on behalf of Transfusion Medicine to advocate for the establishment of a TUSIC Steering Committee. The intent of this committee is to create a formal structure to enable clinical and laboratory medicine collaboration as it relates to transfusion safety, blood component and product stewardship and hemovigilance. A Terms of Reference for the TUSIC Steering Committee was written and ultimately approved by identified Executive Sponsors in January 2024. Discussions are forthcoming at the first TUSIC Steering Committee meeting about the establishment of four geographic Integrated Service Area (ISA) TUSIC Committees, to function as Transfusion Committees within these areas.

Collaboration with Clinical Standards to Develop a Provincial Blood Administration Standard

On June 19, 2024, an interdisciplinary team of individuals met in Davidson, Saskatchewan to participate in a day-long workshop to develop a provincial Clinical Standard for Blood Administration. Graciously sponsored by Provincial Lab Medicine, this workshop was incredibly productive as it enabled Transfusion Safety Staff, Clinical Standards and Clinical Nurse Educators from various geographic areas of the province to participate in a facilitated in-person discussion. Once finalized, this foundational document will replace former regional health authority procedures for blood administration and satisfy accreditation requirements within transfusing facilities.

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Division of Clinical Microbiology

*By Dr. Joseph Blondeau
Provincial Clinical Lead - Microbiology*

The clinical microbiology program based at Royal University Hospital has had a very successful year. First, we were successful in recruiting Dr. Clair Carson as an Associate Scientist in our division and since her arrival, Dr. Carson has worked with the clinical team in validating new assays as part of our molecular diagnostics program. To that point, an accreditation inspection in October, 2023 provided our division with the opportunity to upgrade and replace a number of older molecular assays with multi-plex assays that have expanded the range of potential pathogens tested in “real time” thereby shortening turn-around-time for results on critically ill patients. A provincial plan to offer testing for syphilis at 2 sites in the province has come to reality with testing now offered at the Roy Romanow Provincial Laboratory and at Royal University Hospital. Confirmatory testing is also now offered at both sites thereby reducing turn-around-time and positively impacting patient care. The introduction of STAT RPR (Rapid Plasma Reagin) testing at RUH has had a significant impact on “real time” detection of active syphilis cases facilitating immediate treatment particularly in patients that may be lost to follow up. Additionally, a new assay to detect and differentiate Herpes Simplex Virus and syphilis from skin lesions has been validated and put in use at Royal University Hospital. Assays for performing susceptibility testing on anaerobic bacteria and yeast have been successfully validated at RUH and are now offered as a provincial service. Molecular based assays for sexually transmitted infections are validated and operational at RUH and positively impact reduced turn-around-time and this is important for Public Health and contract tracing. HIV viral load testing has been introduced as a STAT (24/7) assay for high risk pregnant females at delivery where STAT testing impacts HIV treatment decisions. The introduction of quantitative viral assays at RUH have significant reduced turn-around-time as previously these assays were referred out for testing elsewhere.

Dr. Ninad Mehta has taken on the clinical dyad leadership role for pre-analytics in Saskatoon. This is an area requiring review as it also impacts turn-around-time from patient specimen collection to receipt in the laboratory prior to analytical testing.

The Provincial Microbiology Group continues to work harmoniously on provincial priorities. A pilot study in Melfort led by Dr. Camille Hamula is validating the use of a multiplex-PCR assay from positive blood cultures which provides “real time” detection of pathogens and resistance genes. These results help to ensure optimal antimicrobial therapy in critically ill patients. A similar pilot project led by Dr. Craig Soutar is also taking place in Swift Current. Discussions are ongoing to expand this assay to other provincial sites. Additionally, other point-of-care assays positively impacting patient care are also under discussion for expansion.

to rural sites. A new provincial requisition (Drs. Minion, Mehta and Sanche) is nearing completion and will help with our plans for standardized testing across the province.

A provincial plan to add Total Laboratory Automation (TLA) in the Microbiology Laboratories in Saskatoon and Regina has been drafted and a business case prepared and submitted to the government. Such automation is seen as essential in forward planning to deal with skilled staffing challenges at the 2 largest microbiology services in the province and anticipated increased workloads and specimen complexity.

Congratulations to Dr. Joseph Blondeau who has recently surpassed 200 career peer-reviewed publications.

Regina Integrated Service Area

*By Dr. Donna Ledingham
Area Department Lead - Regina Integrated Service Area*

We have marched through this last year to accomplish what seems like the impossible. It is the diligent work and dedication of our hard working Lab personnel that help us reach our successes and is what motivates us to continually provide the best care for our patients.

The Lab had the pleasure of being a part of a CAP (College of American Pathologists) inspection in Washington. We successfully underwent our own inspection, marking a significant achievement for our team.

A number of implementations in our area will help advance our technology:

- Cerebro slide tracking system has enhanced our operational efficiency and accuracy in handling biopsy slides
- New flow cytometry equipment –automated and will help minimize technologist handling
- Working on the expansion of the newborn screening program at Roy Romanow Provincial Laboratory to include clinically significant Hemoglobinopathies
- Urgent Care Centre implementation with help from Dr. Andrew Lyon (Saskatoon)
- Provincially standardized reference ranges for complete blood count (CBC) results, including pediatric and adult populations
- High-volume Chemistry Service transition from Roy Romanow Provincial Laboratory to Regina General Hospital, including implementation of an automated track and new HbA1c analyzer
- Student Rotation in AP to assist with Pathologist Assistant work, helping to bring down backlog numbers

Although many members of our laboratory contribute to leadership activities, we have recently formalized the following roles:

- Dr. Michael Presta – Immunohistochemistry Lead
- Dr. Dan Alfano – Education Coordinator
- Dr. Osama Al-Agha – Cytology Lead
- Dr. Reshma Khoosal – Area Division Lead and Medical Director, Hematopathology and Transfusions Medicine
- Dr. Janet Martin – Area Division Lead and Medical Director, Biochemistry and Toxicology
- Dr. Jalal Bhuiyan – Scientific Director, Pre-analytics, Regina

A special thank you to our lab team for their continued efforts and dedication throughout the year. With implementation of these new technologies, to your valuable expertise and knowledge, each member of our team plays a vital role in our success.

Division of Anatomic Pathology - Regina

*By Dr. Jill Wooff
Division Lead - AP*

The Department of Anatomic Pathology has seen its share of challenges this year. Our main priority remains on the backlog. Despite numerous factors contributing to the accumulation, our team has remained diligent and persevered to achieve significant progress

To address this issue, we have implemented several key initiatives. We are hosting students from Calgary who are rotating through Histology on a practicum, providing valuable hands-on experience while also helping to manage the workload. Additionally, we have engaged locum support every two weeks to focus on benign, large specimens, which has significantly alleviated the burden and helped staff focus their time on other specimens. Overtime opportunities have been offered to both technical and administrative staff. We are committed to continuing this momentum and are confident that with our team's dedication and the ongoing support measures in place, we will soon overcome this challenge.

We look forward to welcoming a new Pathologist to our team this year, but would like to extend our heartfelt gratitude to Dr. Angus Kirby and Dr. Dino Grammatico for their immense contributions to our department over their many years at the Lab and wish them the best on their retirement. Their dedication and expertise have greatly enhanced the overall performance of our lab, improving efficiency and setting high standards in our practice.

Saskatchewan Health Authority Successes

*By Brandi Keller
Executive Director, Laboratory Medicine*



This year has been marked by significant advancements in laboratory medicine, driven by innovation, collaboration, and a steadfast commitment to enhancing healthcare delivery. Through strategic initiatives and technological innovation, we have achieved notable successes that have strengthened diagnostic capabilities, improved patient outcomes, and improved access to essential healthcare services across our province.

Enhancements in technology have seen significant success this year. Improved platforms have streamlined laboratory workflows, increased efficiency, and reduced human error. Numerous CBC platforms have and continue to be updated across the province to improve technology and provide standardized equipment, reporting and processes provincially. The successful amalgamation of Biochemistry services in Regina will streamline workflows, improve efficiency and underscore our commitment to continuous improvement.

Ensuring the highest standards of quality and accreditation remains a cornerstone of our commitment to excellence. Saskatchewan Health Authority laboratories continue to uphold rigorous standards, achieving, and maintaining accreditation from national and international bodies. Dedication to quality assurance ensures that our diagnostic services are reliable, accurate, and trusted by healthcare professionals across the province.

Maintaining standards of quality remains fundamental to our operations. This year, our commitment was reaffirmed with the procurement of a provincial quality management system (QMS) software that will aim to enhance our ability to monitor and uphold Laboratory Quality across the province.

Collaboration has been pivotal in our success this year, exemplified by the launch of the Transfusion Utilization Steering Committee and the Point of Care Oversight Committee. These committees, developed in collaboration with other healthcare providers and numerous internal and external stakeholders, aim to optimize transfusion practices and enhance oversight of point-of-care testing across diverse healthcare settings. Such partnerships will facilitate knowledge exchange, drive innovation, and promote best practices in patient care.

Hosting the Canadian Society for Transfusion Medicine (CSTM) national conference in Saskatoon showcased our province's leadership in laboratory medicine. This event facilitated discussions on advancements and best practices, reinforcing our commitment to advancing transfusion medicine and enhancing patient care across Saskatchewan.

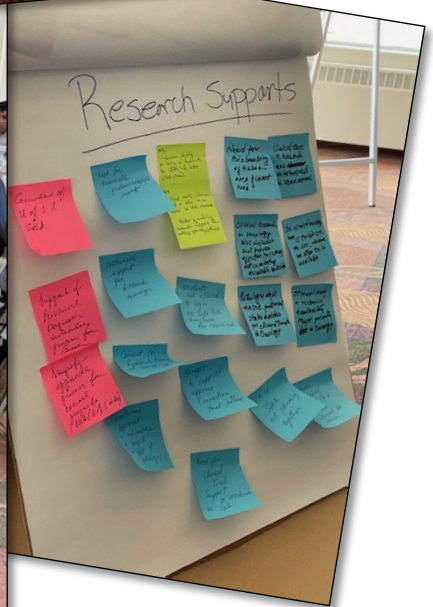
A continued commitment to rural and remote healthcare delivery was reinforced through the successful implementation of Point of Care testing in three rural locations. Point of Care testing has been instrumental in maintaining access to essential laboratory services and in improving healthcare outcomes for residents in rural and remote communities, allowing patients to stay close to home as possible.

Rural and North Laboratory Information Systems implementations are being completed and continue to be a priority in many rural and Northern communities, this will result in improved efficiencies within the lab, reduced chance for clerical errors and will provide patients and clinicians access to their Lab results electronically.

Reflecting on the many achievements this year, we are proud of the advancements and milestones that have shaped our healthcare landscape this year. Through innovation and collaboration, we have strengthened our capacity to deliver high-quality diagnostic services and improve health outcomes for individuals and communities across our province aligning to the SHA's vision of Health People, Healthy Saskatchewan. Looking ahead, we remain committed to making a positive impact on the health outcomes for patients, healthcare providers, and communities across our province, working together to improve health and well-being. Every day. For everyone.

Laboratory Medicine Planning Session (07 JUN 2024)



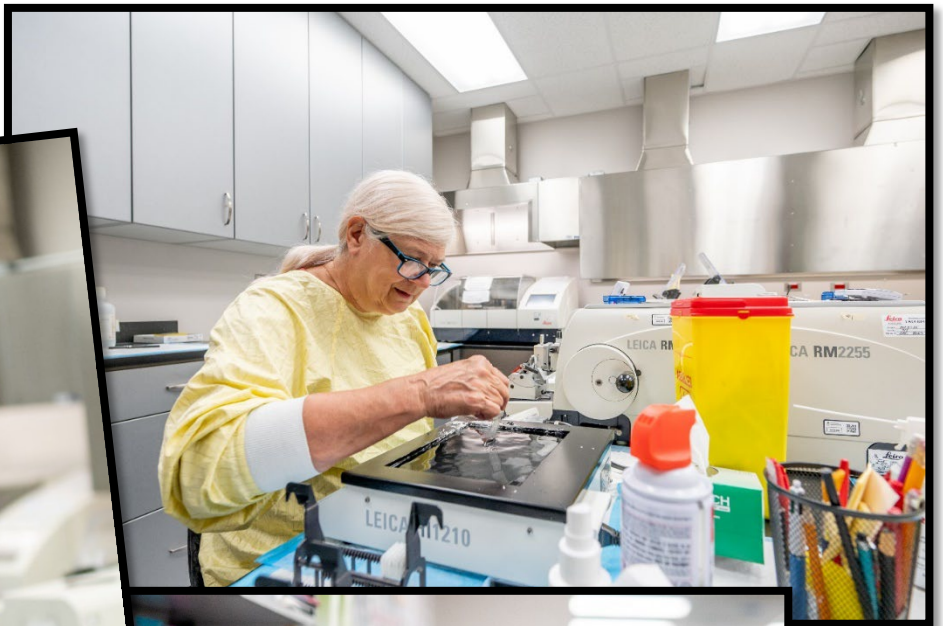


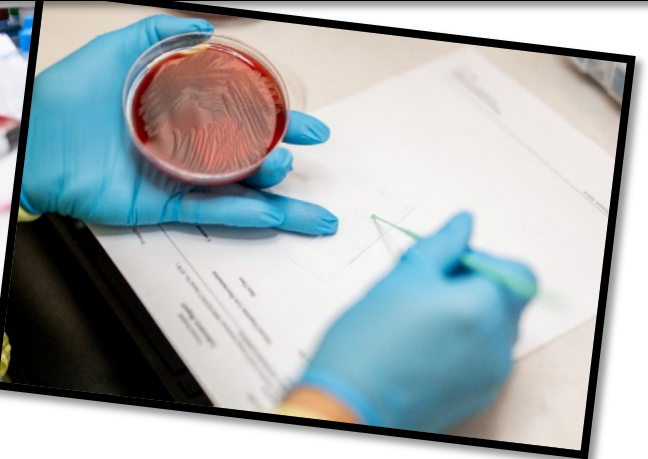
Victoria Hospital Laboratory

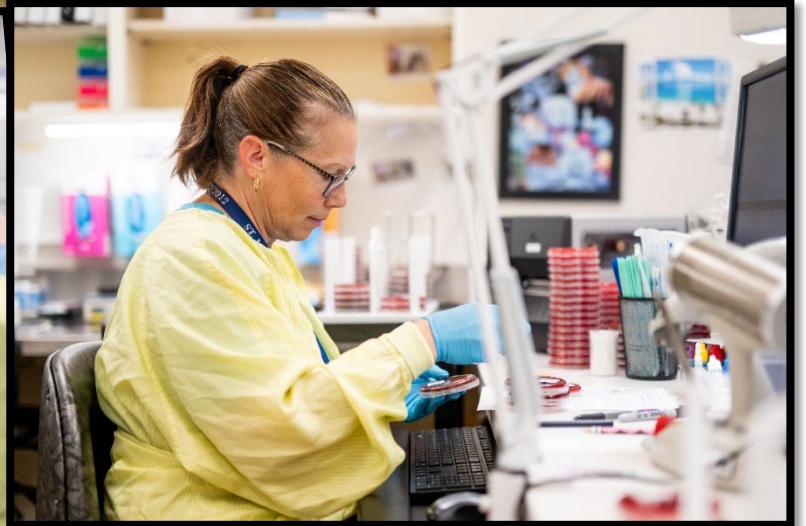
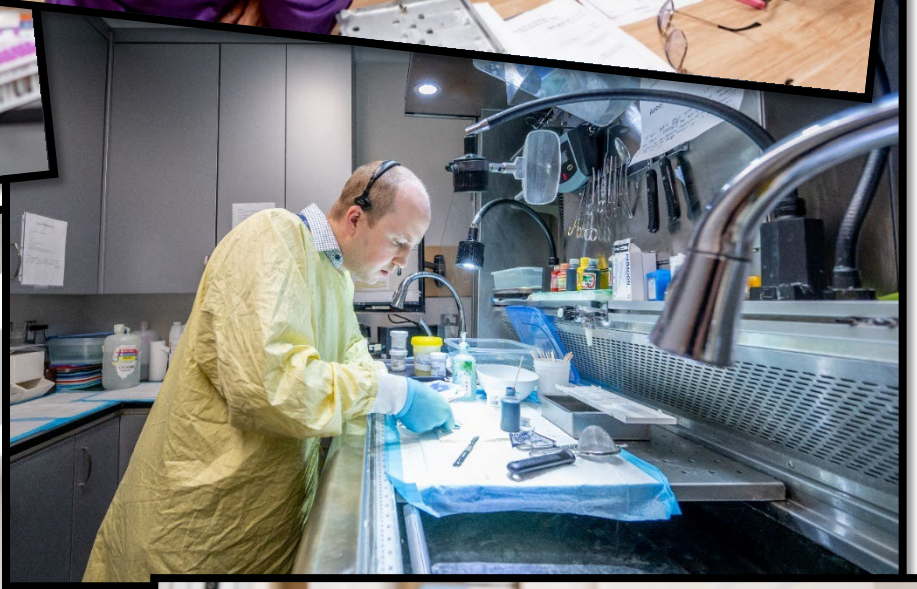
Prince Albert



Dr. Rathi Sabaratnam



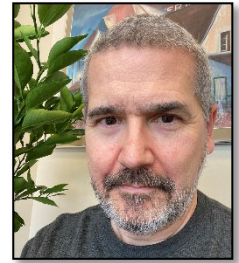




RESEARCH

Advanced Diagnostic Research Laboratory (ADRL)

By John DeCoteau, MD, FRCPC(C), Medical Director-ADRL



The Advanced Diagnostics Research Laboratory (ADRL) was created in 2012 with a mission to contribute to optimal cancer care in Saskatchewan by providing sustainable, state-of-the-art acquired cancer diagnostic and monitoring laboratory services, responsive to the evolving needs of patients and members of their care team, through the integration of research and clinical reporting activities.

The ADRL relies on a robust R&D capacity to keep pace with cancer discovery and rapidly respond to clinical demands for developing, validating, and implementing new high complexity cancer tests to support patient management decisions. These tests are vital to modern cancer care as they provide patients and their physicians with important prognostic and predictive information; ensure the appropriate and cost-effective delivery of new targeted cancer drugs; and vastly improve cancer patient monitoring by detecting early disease recurrence. All test development activities are directed by two multidisciplinary committees: the SCA Biomarker Prioritization Committee and the SHA Biomarker Quality Assurance and Development Committee comprising pathologists, hematologists, oncologists, pharmacists, and lab management to ensure that resources are focused appropriately and utilized efficiently.

Serving as the provincial reference center for molecular cancer diagnostics, the ADRL has experienced tremendous growth in test volumes and is on track to issue over 5,000 diagnostic reports in 2024 which represents a 737% increase since 2016. The majority of these tests utilize advanced technologies and methods including next generation sequencing, digital PCR, and most recently optical genome mapping (OGM), a novel DNA electrophoresis technique that can assess cancers for abnormalities in DNA structure with over 10,000 times greater sensitivity than conventional karyotyping.

The ADRL is also a key local resource that supports clinical trial activities; translational and patient oriented research; and the training of pathology residents, graduate students, and highly qualified technical personnel. In collaboration with Dr. Mark Bosch, the lab has developed novel liquid biopsy methods to monitor CAR T-cell therapy responses in patients with B-cell lymphoma. The ADRL continues to work closely with the Center for Biologic Imaging Research and Development (C-BIRD), directed by Dr. Ron Geyer, to support biologic imaging research projects and clinical trials. In collaboration with Drs. Laura Hopkins and Mary Kinloch, the lab has developed a state-of-the-art molecular diagnostics program to support the diagnosis and treatment of women with gynecologic malignancies. The ADRL is the academic lead on a recently awarded Genomic Applications Partnership Program (GAPP) project sponsored by Genome Canada to implement BRCA and HRD testing for ovarian cancer patients. The total value of this award is more than \$3M including over \$1.2M in federal grant funds.



Dr. Marc Baltzan Provincial Histocompatibility & Immunogenetics Laboratory (HIL)

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



As a pioneering laboratory in Histocompatibility and Immunogenetics, we are committed to advancing the field through innovative research, clinical breakthroughs, proficiency testing and educational training. Our team provides tailored testing and support for clinical trials and research, monitoring responses to experimental therapies. Beyond transplantation services, we conduct tests for HLA disease associations and HLA-pharmacokinetics and support platelet refractoriness.

The Histocompatibility & Immunogenetics Laboratory at St. Paul's Hospital is dedicated to delivering state of the art testing services for solid organ and stem cell transplantation, immune assessment and diagnosing diseases associated with Human Leukocyte Antigens (HLA). Annually, the laboratory generates over 10,000 test results for inpatients and outpatients across the province. Additionally, our program participates in the international stem cell donor program and the national solid organ-sharing program via OneMatch, the Canadian Transplant Registry and the Canadian Blood Service.

Our dedication to quality is evidenced by our accreditation from the American Society for Histocompatibility and Immunogenetics (ASHI) and licensing from the Saskatchewan Medical Laboratory, ensuring the highest standards in our practices. Recognized nationally as a reference laboratory for Histocompatibility and Immunogenetics testing, we take pride in our contributions to the field and our commitment to excellence in serving the medical community.



Endowment Funds (JUL 2023 - JUN 2024)

Department Endowment Funds are made available as a result of a gift made by a donor to the Department of Pathology and Laboratory Medicine. The Department Endowment Funds Committee approved the following applications this academic year:

SHR Pathologists Fund in Medicine

- \$2,114 for a faculty to update their skills in the Liver pathology service at King's College in London England
- \$1,500 for a faculty to present a U of S Clinical Biochemistry Fellowship training program to the Canadian Academy of Clinical Biochemistry Training Program Accreditation Committee in Winnipeg MB
- \$1,707 to cover article processing charges and allow for open access for a faculty manuscript in the journal Future Microbiology. (This project was a collaboration between Diagnostic & Clinical Pathology Residents and the Microbiology Laboratory MLTs)

Dr. Thomas A. Cunningham Memorial Fund

- \$3,500 for a Diagnostic & Clinical Pathology Resident to attend and present at the American Society of Dermatopathology Conference in Chicago IL
- \$3,050 for a Diagnostic & Clinical Pathology Resident to attend and present at the Connective Tissue Oncology Society Annual Meeting in Dublin Ireland
- \$543 for a Diagnostic & Clinical Pathology Resident to attend and present at the Canadian Society of Transplantation in Winnipeg MB
- \$3,500 for a UGME student (supervised by Dr. Jay Kalra) to attend and present at the International Conference on Applied Human Factors and Ergonomics (AHFE) conference in Hawaii USA
- \$2,752 for Diagnostic & Clinical Pathology Residents' subscriptions to the Osler AP/CP Review Lectures
- \$1,998 for a UGME student (supervised by Dr. Marilyn Kinloch) to attend and present at the USCAP Conference in Baltimore MD
- \$1,500 for a Diagnostic & Clinical Pathology Resident to attend and present at International Conference on Residency Education (ICRE) in Ottawa ON
- \$1,000 for a UGME student (supervised by Dr. Jay Kalra) to virtually present at the Applied Human Factors and Ergonomics (AHFE) Conference in Nice France
- \$7,225 for a faculty member to attend and present at The Transplant Society (TTS) Annual Meeting in Istanbul Turkey
- \$4,400 for a Saskatchewan Health Authority MLT to attend and present at the Annual Conference of the Association for Diagnostics & Laboratory Medicine (ADLM) in Chicago IL
- \$3,622 for a Saskatchewan Health Authority MLT to attend the American Society of Histocompatibility and Immunogenetics 50th Annual Meeting in Anaheim CA

D. F. Moore Memorial Lecture Fund

- \$1,000 for a Pediatric Resident (supervised by Dr. Jay Kalra) to virtually present at the Applied Human Factors and Ergonomics (AHFE) Conference in Nice France

Barbara Moore Memorial Trust Fund

- \$2,600 for a UGME student (supervised by Dr. Nicholas Baniak) to attend and present at the USCAP Conference in Baltimore MD
- \$3,582 for a Saskatchewan Health Authority Grossing Supervisor to attend the Nordic Immunohistochemical Quality Control (NordiQC) Workshop in Aalborg Denmark

Publications Grants Awards

Compiled for the 2020-2024 period By Mark Milne, Research Facilitator, for this years Department Self-Study

ANTONISHYN, Nick

Publications

1. Ashton NW, **Antonishyn NA**, Duckett JG. The curvature of Physcomitrium patens caulonemal filaments in relation to their capacity for phototropic and thigmotropic responses and nutation. bioRxiv preprint October 31, 2023.

Abstracts

1. Kalashnikova T, Pham-Huy A, Biggs C, Mudilage M, Sinclair G, Muranyi A Suresh A, Martin G, **Antonishyn NA**, Rubin T, Kim V, Kernohan K, Derfalvi B, Wright NA. Newborn Screening for Severe Combined Immune Deficiencies: The Canadian Landscape. CIS 2024 Annual Meeting May 1– 4, 2024, Minneapolis, Minnesota United States.

AUER, Roland

Publications

1. Hernandez-Ronquillo L, Mahabadi HM, Moien-Afshari F, Wu A, **Auer R**, Zhrebetskiy V, Borowsky R, Mickleborough M, Huntsman R, Urbancic M, Cayabyab FS, Taghibiglou C, Carter A, Tellez-Zenteno JF (2020) The Concept of an Epilepsy Brain Bank. Review. *Frontiers in Neurology* **11**:833, 1-11
2. Rajput AH, Khayyam AA, **Auer RN**, Robinson CA, Rajput A (2021) Evolving resting head tremor in parkinsonism: Clinicopathological study of a case. *Parkinsonism and Related Disorders* **86**:1-4
3. Fehr CM, **Auer RN** (2022) Simultaneous Presentation of Glioblastoma Multiforme in Divorced Spouses. *Case Reports in Oncology* **15**(1):231-237
4. **Auer RN** (2022) In Memoriam: Stirling Carpenter, MD February 27, 1929 - February 19, 2021. *Journal of Neuropathology and Experimental Neurology* **81**:236-238
5. Kundapur V, Mayer M, **Auer RN**, Alexander A, Weibe S, Pushie MJ, Cranmer-Sargison G (2022) Is Mini Beam Ready for Human Trials? Results of Randomized Study of Treating De-Novo Brain Tumors in Canines Using Linear Accelerator Generated Mini Beams. *Radiation Research* **198**(2):167-171
6. **Auer RN** (2022) A review of the life of John Plunkett (1947-2018). *Forensic Science International: Synergy* **5**:100282
7. Liu E, Kakodkar P, Pan H, Zhou A, Toyota P, Persad A, Marciniuk K, Wang C, **Auer RN**, Sanche S, Vitali A, Radic J (2023) Pediatric intracranial tuberculoma: illustrative case. *Journal of Neurosurgery: Case Lessons* **6**(4):CASE23236
8. Gustavsson EK, Follett J, Trinh J, Barodia SK, Real R, Liu Z, Grant-Peters M, Fox JD, Appel-Cresswell S, Stoessl AJ, Rajput A, Rajput AH, **Auer RN**, Tilney R, Sturm M, Haack TB, Lesage S, Tesson C, Brice A, Vilariño-Güell C, Ryten M, Goldberg MS, West AB, Hu MT, Morris HR, Sharma M, Gan-Or Z, Samanci B, Lis P, Tocino T, Amouri R, Sassi SB, Hentati F, Global Parkinson's Genetics Program (GP2), Tonelli F, Alessi DR, Farrer MJ (2024) A pathogenic variant in RAB32 causes autosomal dominant Parkinson's disease and activates LRRK2 kinase. [PMID: 38293014](#) *Lancet Neurology* (in press)
9. Kundapur V, Torlakovic E, **Auer RN** (2024) The Story Behind the First Mini-Beam Photon Radiation Treatment. What is Mini-beam and why is it such an advance? *Seminars in Radiation Oncology* (in press)

Abstracts

1. E Liu, P Kakodkar, P Toyota, N Pendleton, A Persad, V Zhrebetskiy, C Hamula, **RN Auer**, K Vats, L Hnenny and J Radic "P.139 Cerebral toxoplasmosis in an HIV-negative patient". *Canadian Journal of Neurological Sciences*, Volume 50, Supplement s2: Abstracts: Canadian Neurological Sciences Federation (CNSF) 2023 Congress, June 2023, pp. S94

Presentations

1. Jerzy Olszewski Lecture, "Unexpected Death Explained in Infants and Toddlers A Story of Breathing, Brain, Bone" 62nd annual meeting of the Canadian Association of Neuropathologists, Saskatoon, Saskatchewan, Canada, 8:00 AM, October 13, 2022.

BANIAK, Nick

Publications

1. **Baniak N.** Differential Diagnosis of Renal Neoplasia with Clear Cell Cytology. *Kidney Cancer*. In Press.
2. Torlakovic E, **Baniak N, et al.** *Fit-for-Purpose Ki-67 Immunohistochemistry Assays for Breast Cancer*. *Lab Invest*. 2024 May 8;102076. doi: 10.1016/j.labinv.2024.102076. Online ahead of print.
3. Haas NB, Kim SE, McDermott DF, Master VA, Signoretti S, Akgul M, **Baniak N**, Ning Tapia EL, Palmer M, Enamekhoo H, Leibovich BC, Shuch BM, Kapoor A, Michaelson MD, Bratslavsky G, Carducci MA, Allaf ME, EA8143 Authors' Group. PROSPER: Phase III Randomized Study Comparing PERIoperative Nivolumab versus Observation in Patients with Renal Cell Carcinoma (RCC) Undergoing Nephrectomy (ECOG-ACRIN EA8143). In Press.
4. Smith McKinley et al. Penile calciphylaxis masquerading as gangrene: a presentation and review of contemporary management. *Can J Pathol*. Aug 2023. Vol. 15, Issue 3.
5. Wyvekens N, Sholl LM, Yang Y, Tran I, Vasudevaraja V, Dickson BC, Al-Obaidy KI, **Baniak N**, Collins K, Gordetsky JB, Idrees MT, Kao CS, Maclean F, Matoso A, Ulbright TM, Wobker SE, Fletcher CDM, Hirsch MS, Hornick JL, Snuderl M, Acosta AM. Molecular correlates of male germ cell tumors with overgrowth of components resembling somatic malignancies. *Mod Pathol*. 2022 Dec;35(12):1966-1973. doi: 10.1038/s41379-022-01136-1. Epub 2022 Aug 27. PMID: 36030288.
6. Acosta A et al. Clinicopathologic Spectrum of Secondary Solid Tumors of the Prostate of Non-Urothelial Origin: Multi-Institutional Evaluation of 85 Cases". *Am J Surg Pathol*. 2022 Sep 1;46(9):1269-1276.
7. Wang H, **Baniak N**, Wang C. Mullerian glandular inclusions in axillary lymph nodes of patients with invasive breast carcinoma: A case report and literature review. *Can J Pathol*. Feb 2022; 14(1): 52-58.
8. Dhillon N, **Baniak N**, Nosib S. Hypertensive crisis precatheter ablation for resistant atrial fibrillation: a case of undiagnosed bilateral pheochromocytomas. *BMJ Case*. 2021 Oct 29;14(10):e244484.
9. **Baniak N**, Barletta J, Hirsch M. Key Renal Neoplasms with a Female Predominance. *Adv Anat Pathol*. 2021 Jul 1;28(4):228-250.
10. **Baniak N**, Sholl L, Mata D, D'Amico A, Hirsch M, Acosta A. Clinicopathologic and Molecular Characteristics of Prostate Cancer Diagnosed in Young Men Aged up to 45 Years. *Histopathol*. 2021 May;78(6):857-870.
11. **Baniak N**, Tsai H, Hirsch M. The Differential Diagnosis of Medullary Based Renal Masses. *Arch Pathol Lab Med*. 2021. 2021 Sep 1;145(9):1148-1170.
12. Acosta A, Sholl L, Fanelli G, Gordetsky J, **Baniak N**, Barletta J, Lindeman N, Hirsch M. Intestinal Metaplasia of the Urinary Tract Harbors Potentially Oncogenic Genetic Variants. 2021 Feb;34(2):457-468.
13. Cole A, Garber J, **Baniak N**, Hirsch M, Chang S, Kibel A. 'Case of the Month' from Harvard Medical School, Boston, MA, USA: a 70-year-old man with lung cysts and bilateral renal masses. *BJU Int*. 2020. Oct;126(4):428-432.
14. **Baniak N**, Flood T, Buchanan M, Dal Cin P, Hirsch M. Carbonic Anhydrase IX (CA9) Expression in Multiple Renal Epithelial Tumor Subtypes. *Histopathol*. 2020. Oct;77(4):659-666.
15. Ramakrishnan V, Ozambela Jr. M, **Baniak N**, Hirsch M, Kathrins M. Secondary Adenocarcinoma of the Urinary Bladder Attributed to Metastatic Gastroesophageal Cancer. *Can J Urol*. 2020 Oct;27(5):10415-10417.
16. **Baniak N**, Gilks CB, DeCoteau J, Kinloch M. Diagnostic Variation in p53 Usage for Endometrial Carcinoma Diagnosis: Implications for Molecular Subtyping. *Int J Gynecol Pathol*. 2020 Nov;39(6):514-521.
17. **Baniak N**, Fadare O, Köbel M, DeCoteau J, Parkash V, et al. Targeted Molecular and Immunohistochemical Analyses of Endometrial Clear Cell Carcinoma show that *POLE* mutations and DNA Mismatch Repair Protein Deficiencies are Uncommon. *Am J Surg Pathol*. 2019 Apr;43(4):531-537.

Book Chapter

1. Ovarian mesenchymal tumors. **Baniak N**, Nucci M. Springer Nature. *Pathology of the Ovary, Fallopian Tube, and Peritoneum*. Mar 2024. ISBN 978-3-031-39658-8

Abstracts

1. Haas NB, Kim SE, McDermott DF, Master VA, Signoretti S, Akgul M, **Baniak N**, Ning Tapia EL, Palmer M, Enamekhoo H, Leibovich BC, Shuch BM, Kapoor A, Michaelson MD, Bratslavsky G, Carducci MA, Allaf ME, EA8143 Authors' Group. Core biopsy (bx) accuracy and safety of biopsy and preoperative immunotherapy in predicting histological subtype and nuclear grade in ECOG-ACRIN EA8143 perioperative nivolumab (nivo) versus observation in patients (pts) with renal cell carcinoma (RCC) undergoing nephrectomy. *Journal of Clinical Oncology*. 41. 4541-4541.

Poster Presentations

1. Fisher L, **Baniak N.** Comparison of Global vs Highest Gleason Grade Groups in Matched Prostate Core Biopsy and Dominant Nodules of Radical Prostatectomy Specimens. United States & Canadian Academy of Pathology's 113th Annual Meeting, March 23rd-28th, 2024, in Baltimore, MD
2. Tam I, Acosta A, Hirsch M, Baniak N. Impact of Grading Small Tumor Volumes with Gleason Pattern 4, with an Emphasis on Global Biopsy Scoring. United States & Canadian Academy of Pathology's 112th Annual Meeting, March 11th-17th, 2023, in New Orleans, LA
3. Vats K, Tam I, **Baniak N.** Grading Intraductal Carcinoma in the Presence of Concurrent Prostatic Adenocarcinoma and its Impact on Grade Group Assignment. United States & Canadian Academy of Pathology's 111th Annual Meeting, March 19th-24th, 2022, in Los Angeles, CA
4. Kinloch M, **Baniak N,** Campbell K, Torlakovic E. Her-2 Expression in p53 abn Endometrial Cancers compared to Serous Carcinomas. United States & Canadian Academy of Pathology's 111th Annual Meeting, March 19th-24th, 2022, in Los Angeles, CA
5. Wyvekens N, Sholl L, Al-Obaidy K, Collins K, Idrees M, Gordetsky J, Wobker S, Matoso A, Maclean F, Fletcher C, Hornick J, **Baniak N,** Kao CS, Hirsch M, Dickson B, Acosta A. Molecular Correlates of Male Germ Cell Tumors with Overgrowth of Components Resembling "Somatic" Malignancies: Multi-Platform Analysis of a Collaborative Series. United States & Canadian Academy of Pathology's 111th Annual Meeting, March 19th-24th, 2022, in Los Angeles, CA
6. **Baniak N,** Dal Cin P, Hirsch M. Carbonic Anhydrase IX (CA9) Expression in Multiple Renal Epithelial Tumor Subtypes. United States & Canadian Academy of Pathology's 109th Annual Meeting, February 29th – March 5th, 2020, Los Angeles, CA
7. **Baniak N,** Dal Cin P, Ligon A, Dubuc A, Hirsch M. SNP Microarray Analysis is a Useful Diagnostic Tool for RCC Subtyping. United States & Canadian Academy of Pathology's 109th Annual Meeting, February 29th – March 5th, 2020, Los Angeles, CA
8. **Baniak N,** Hirsch M, D'Amico A, Acosta A. Histopathological, Clinical, and Molecular Characteristics of Prostatic Adenocarcinoma Diagnosed in Men Aged up to 45 Years. United States & Canadian Academy of Pathology's 109th Annual Meeting, February 29th – March 5th, 2020, Los Angeles, CA

BILLINSKY, Jennifer

Presentations

1. Conference presentation: "Forensic Toxicology at the Roy Romanow Provincial Laboratory". Coroners Conference, Regina (May 30-31, 2023) and Saskatoon (June 7-8, 2023).

CARSON (Freeman), Claire

Publications

1. Herman, E.K., Lacoste, S.R., **Freeman, C.N.**, Otto, S.J.G., McCarthy, E.L., Links, M.G., Stothard, P., Waldner, C.L. (2024) Bacterial enrichment prior to third-generation metagenomic sequencing improves detection of BRD pathogens and genetic determinants of antimicrobial resistance in feedlot cattle. *Front. Microbiol.* May 8; 15 (1):1386319
2. Adewusi1, O.O., Waldner C.L., Hanington, P.C., Hill, J.E., **Freeman, C.N.**, Otto, S.G. (2024) Laboratory diagnostic tools for the direct detection of bacterial respiratory infections and antimicrobial resistance, a scoping review. *Journal of Veterinary Diagnostic Investigation.* Mar 8; 10406387241235968.
3. **Freeman, C.N.**, Russell, J.N., Yost, C.K. (2024) Temporal Metagenomic Characterization of Microbial Community Structure and Nitrogen Modification Genes within an Activated Sludge Bioreactor System. *Microbiology Spectrum.* Jan 11;12(1):e0283223.
4. Bergbusch, N.T., Wong, A., Russell, J.N., Swarbrick, V.J., **Freeman, C.N.**, Bergsveinson, J., Yost, C.K., Courtenay, S.C. (2023). Impact of Wastewater Treatment Upgrade and Nitrogen Removal on Microbial Communities and their Interactions in Eutrophic Prairie Streams. *FEMS Microbiology Ecology.* Nov 6; 99 (12).
5. **Freeman C.N.**, Herman E.K., Abi Younes J., Ramsay D.E., Erikson N., Stothard P., Links M.G., Otto S.J.G., Waldner C. (2022). Evaluating the potential of third generation metagenomic sequencing for the detection of BRD pathogens and genetic determinants of antimicrobial resistance in chronically ill feedlot cattle. *BMC Veterinary Research.* Jun 2;18(1):211.
6. Russell, J.N., Perry, B.J., Bergsveinson, J., **Freeman, C.N.**, Sheedy, C., Nilsson, D., Braul, L. and Yost, C.K. (2021). Metagenomic and metatranscriptomic analysis reveals enrichment for xenobiotic-degrading bacterial specialists and xenobiotic-degrading genes in a Canadian Prairie two-cell biobed system. *Environmental Microbiology Reports,* 13: 720-727.
7. Bergsveinson, J., Roy, J., Maynard, C., Sanschagrin, S., **Freeman, C. N.**, Swerhone, G. D. W., Dynes, J. J., Tremblay, J., Greer, C. W., Korber, D. R., & Lawrence, J. R. (2020). Metatranscriptomic Insights into the Response of River Biofilm Communities to Ionic and Nano-Zinc Oxide Exposures. *Frontiers in Microbiology,* 11.

Presentations

1. **Freeman C.N.**, Herman E.K., Abi Younes J.*, Ramsay D.E., Erikson N., Stothard P., Links M.G., Otto S.J.G., Waldner C. (2022) Evaluating the potential of third generation metagenomic sequencing for the detection of BRD pathogens and genetic

determinants of antimicrobial resistance in chronically ill feedlot cattle. Invited Oral Presentation. 16th International Symposium of Veterinary Epidemiology and Economics. Halifax, Canada; International

Poster Presentations

1. Lehmann, M.*, Lacoste, S., **Freeman, C.**, Waldner C. (2022). Microbial Enrichment of Low Population, Complex, Bovine Deep Nasal Swab Samples for Next Generation Sequencing. University of Saskatchewan Student Poster Symposium.
2. Haubrich, K.*, **Freeman, C.**, Waldner, C. (2021). Comparing host depletion methods on deep nasal pharyngeal swabs. University of Saskatchewan Student Poster Symposium.

DeCOTEAU, John

Publications

1. Pastushok L, Sarda S, Mochoruk K, Hill W, Pickle LT, Toro M, Gonzalez C, Ostresh S, Looney TJ, Yang C, Stakiw J, Bosch MJ, Goubran H, Geyer CR, Lowman GM, **DeCoteau JF**. A Novel Single-Tube Next Generation Sequencing Assay for B-Cell Receptor Clonality Testing. *Journal of Molecular Pathology*. 2024, 5(1): 46-65
2. Jett KA, Baker ZN, Hossain A, Boulet A, Cobine PA, Ghosh S, Ng P, Yilmaz O, Barreto K, **DeCoteau JF**, Mochoruk K, Ioannou GN, Savard C, Yuan S, Abdalla OH, Lowden C, Kim BE, Cheng HM, Battersby BJ, Gohil VM, Leary SC. Mitochondrial Dysfunction Reactivates α -Fetoprotein Expression that Drives Copper-dependent Immunosuppression in Mitochondrial Disease Models. *Journal of Clinical Investigation*, 2023, 133(1), e154684
3. Stockley TL, Lo B, Box A, Gomez Corredor A, **DeCoteau JF**, Desmeules P, Feilotter H, Grafodatskaya D, Hawkins C, Huang WY, Izevbaye I, Lepine G, Papadakis AI, Park PC, Sheffield BS, Tran-Thanh D, Yip S, Tsao, M. Consensus Recommendations to Optimize the Detection and Reporting of NTRK Gene Fusions by RNA-Based Next-Generation Sequencing. *Current Oncology*, 2023 30(4), 3989–3997
4. Stockley TL, Lo B, Box A, Corredor AG, **DeCoteau JF**, Desmeules P, Feilotter H, Grafodatskaya D, Greer W, Hawkins C, Huang WY, Izevbaye I, Lépine G, Martins Filho SN, Papadakis AI, Park PC, Riviere JB, Sheffield BS, Spatz A, Spriggs E, Tsao MS. CANTRK: A Canadian Ring Study to Optimize Detection of NTRK Gene Fusions by Next-Generation RNA Sequencing. *Journal of Molecular Diagnostics*, 2023, 25(3), 168–174
5. Park PC, Kurek KC, **DeCoteau JF**, Howlett CJ, Hawkins C, Izevbaye I, Carter MD, Redpath M, Lo B, Alex D, Yousef G, Yip S, Maung R. CAP-ACP Workload Model for Advanced Diagnostics in Precision Medicine. *Am J Clin Pathol*. 2022 Jul 1;158(1):105-111
6. Bernhard W, Barreto K, El-Sayed A, **DeCoteau JF**, Geyer CR. Imaging Immune Cells Using Fc Domain Probes in Mouse Cancer Xenograft Models. *Cancers (Basel)*. 2022 Jan 8;14(2):300
7. Bernhard W, Barreto K, El-Sayed A, Gonzalez C, Viswas RS, Toledo D, Casaco A, **DeCoteau JF**, Fonge H, Geyer CR. Pre-clinical study of IRDye800CW-nimotuzumab formulation, stability, pharmacokinetics, and safety. *BMC Cancer*. 2021 Mar 12;21(1):270
8. Baniak N, Gilks CB, **DeCoteau JF**, Kinloch M. Diagnostic Variation in p53 Usage for Endometrial Carcinoma Diagnosis: Implications for Molecular Subtyping. *Int J Gynecol Pathol* 2020 Nov;39(6):514-521

Abstracts

1. Lowman, G., Pastushok, L., Mochoruk, K., Hill, W., Toro, T., Pickle, L., Gonzalez, G., Ostresh, S., Sarda, S., Yang, C., Stakiw, S., Bosch, MJ., Goubran, HA., Geyer, CR. & **DeCoteau, JF**. (April 2022). Evaluation of multiple myeloma research samples by analysis of B cell heavy and light chain receptors in a single NGS assay. In *Cancer Research*. Paper presented at American Association for Cancer Research Annual Meeting (pp.2293)
2. Lowman, G., Pastushok, L., Mochoruk, K., Hill, W., Toro, T., Pickle, L., Gonzalez, G., Ostresh, S., Sarda, S., Yang, C., Stakiw, S., Bosch, MJ., Goubran, HA., Geyer, CR. & **DeCoteau, JF**. (December 2021). Immune Repertoire Analysis of Multiple Myeloma Research Samples Using NGS Characterization of Multiple B Cell Receptors in a Single Reaction. In *Blood*. Paper presented at 64th Annual Meeting of the American Society of Hematology (ASH) (pp.1881)
3. Martins-Filho, S., Tsao, M., Lo, B., Torlakovic, E., Jung, S., Hyrcza, M., Cutz, J., Desmeules, P., Huang, W., Park, P., Bigras, G., Cheung, C., Berman, D., Box, A., Chevarie-Davis, M., **DeCoteau, J.**, Feilotter, H., Greer, W., Izevbaye, I., Leduc, C., Lepine, G., Sheffield, B., Spatz, A., Spriggs, E., Tran-Thanh, D., Zhaolin, X. & Stockley, T. (November 2020). CANTRK: A Canadian Multi-Centre NTRK Gene Fusion Testing Validation in Solid Tumors Project. In *J Mol Diagn*. Paper presented at Annual Meeting of the Association for Molecular Pathology (AMP) (pp.S60)
4. Kinloch, M., Bell, C. & **DeCoteau, J.** (February 2020). A Patient's Best Chance: Statistical Modelling Regarding Precision Medicine in Lung Cancer. In *Lab Invest*. Paper presented at United States and Canadian Academy of Pathology (USCAP) Annual Meeting (pp.1866)

Presentations

1. **DeCoteau, J.** (July 2021). Advances in Immune Repertoire Sequencing for the Study of Lymphoid Neoplasms. ThermoFisher Invited Expert Webinar Presentation, July 20, 2021

Grants

1. 2022-2026. Clinical Implementation of Oncogenomic Testing and Synoptic Reporting for Improved Ovarian Cancer Patient Care in Saskatchewan. Total funding \$1,101,792. Genomic Applications Partnership Program, Genome Canada. Principal Investigator.
2. 2023-2025. Enhancing the Quality of CLL patient Care Using Optical Genomic Mapping and Minimal Residual Disease Monitoring. Total funding \$102,852. Operating Grant, Saskatchewan Cancer Agency. Co Applicant.
3. 2022- 2025. Enhancing the Quality of AML Patient Care in Saskatchewan Using Optical Genome Mapping. Total funding \$100,000. Operating Grant, Pfizer Inc. principal Investigator.
4. 2022 - 2023. Role of DEAD-box Helicase DDX41 in Innate Immunity and MDS/AML. Total funding \$30,000. College of Medicine Research Award, College of Medicine. Co Applicant.
5. 2021 – 2023. An innovative approach designed to disrupt RNA binding protein aggregation and attenuate neurodegeneration in multiple sclerosis Total funding \$250,000 New Frontiers in Research Fund – Exploration. Co Applicant.
6. 2021 -2023. Tumour Testing and Ovarian Cancer Drug Prediction Program. Total funding \$834,999. Ovarian Cancer Canada. Co Applicant.
7. 2020 – 2024. Canadian NTRK (CANTRK) Assays Validation. Total funding \$29,736. University Health Network. Co Applicant.
8. 2020 – 2021. Improving Access to IGHV Somatic Hypermutation Testing for Chronic Lymphocytic Leukemia Patients in Saskatchewan. Total funding \$17,500. Operating Grant Janssen Inc. Principal investigator.
9. 2020 – 2023. Leveraging CIHR Funds to Support Patient Oriented Research. Total funding \$283,610., Saskatchewan Centre for Patient-Oriented Research. Principal investigator.
10. 2020 – 2023. Molecular Pathogenesis and Targeting of DDX41 in MDS/AML. Total funding \$50,000. Saskatchewan Health Research Foundation. Co Applicant.
11. 2020 – 2021. Validation Study to Implement Liquid Biopsy Monitoring of the EGFR T790M Resistance Allele at the ADRL. Total funding \$42,000. Astrazeneca Canada Inc. Principal investigator.



ADRL - CoM Team Achievement Award
JUN 2024

FREYWALD, Andrew

Publications

1. Dolgova N, Uhlemann EE, Boniecki MT, Vizeacoumar FS, Ara A, Nouri P, Ralle M, Tonelli M, Abbas SA, Patry J, Elhasasna H, Freywald A, Vizeacoumar F, Dmitriev OY. (2024).
2. Atomwise AIMS Program. (2024). AI is a viable alternative to high throughput screening: a 318-target study. Scientific Reports.
3. Bonni S, Brindley DN, Chamberlain MD, Daneshvar-Baghdadorani N, Freywald A, Hemmings DG, Hombach-Klonisch S, Klonisch T, Raouf A, Shemanko CS, Topolnitska D, Visser K, Vizeacoumar FJ, Wang E, Gibson SB. (2024). Breast Tumor Metastasis and Its Microenvironment: It Takes Both Seed and Soil to Grow a Tumor and Target It for Treatment. Cancers (Basel).
4. Köbel M, Yang RZ, Kang EY, Al-Shamma Z, Cook LS, Kinloch M, Carey MS, Hopkins L, Nelson GS, McManus KJ, Vizeacoumar FS, Vizeacoumar FJ, **Freywald A**, Fu YX, Reuss DE, Lee CH. (2023). Survey of NF1 inactivation by surrogate immunohistochemistry in ovarian carcinomas. Gynecol Oncol.

5. Hanover G, Vizeacoumar FS, Banerjee SL, Nair R, Dahiya R, Osornio-Hernandez AI, Morales AM, Freywald T, Himanen JP, Toosi BM, Bisson N*, Vizeacoumar FJ*, **Freywald A***. (2023). Integration of cancer-related genetic landscape of Eph receptors and ephrins with proteomics identifies a crosstalk between EPHB6 and EGFR. *Cell Reports*. (*Corresponding author).
6. El Zawily A, Vizeacoumar SV, Dahiya R, Banerjee SL, Bhanumathy KK, Hussain H, Hanover G, Sharpe JC, Sanchez MG, Greidanus P, Stacey RG, Moon KM, Alexandrov I, Himanen JP, Nikolov DB, Fonge H, White AP, Foster L, Wang B, Toosi BM*, Bisson N*, Mirzabekov TM*, Vizeacoumar FJ*, **Freywald A***. (2023). A Multipronged Unbiased Strategy Guides the Development of an anti-EGFR/EPHA2 Bispecific Antibody for Combination Cancer Therapy. *Clinical Cancer Research*.
7. Arna AB, Patel H, Singh RS, Vizeacoumar FS, Kusalik A, **Freywald A**, Vizeacoumar FJ, Wu Y. (2023). Synthetic lethal interactions of DEAD/H-box helicases as targets for cancer therapy. *Frontiers in Oncology*.
8. 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*.
9. Sepehri Z, Banerjee A, Vizeacoumar FS, **Freywald A**, Vizeacoumar FJ, Dolinsky VW, Davie JR. (2022). Differential expression of HNF1A and HNF1A-AS1 in colon cancer cells. *IUBMB Life*.
10. Babikr F, Wan J, Xu A, Wu Z, Ahmed S, **Freywald A**, Chibbar R, Wu Y, Moser M, Groot G, Zhang W, Zhang B, Xiang J. (2021). Distinct roles but cooperative effect of TLR3/9 agonists and PD-1 blockade in converting the immunotolerant microenvironment of irreversible electroporation-ablated tumors. (2021). *Cell Mol Immunol*.
11. Dong SXM, Vizeacoumar FS, Bhanumathy KK, Alli N, Gonzalez-Lopez C, Gajanayaka N, Caballero R, Ali H, **Freywald A**, Cassol E, Angel JB, Vizeacoumar FJ, Kumar A. (2021). Identification of novel genes involved in apoptosis of HIV-infected macrophages using unbiased genome-wide screening. *BMC Infect Dis*.
12. Vizeacoumar FS, Guo H, Dwernychuk L, Zaidi A, **Freywald A**, Wu FX, Vizeacoumar FJ, Ahmed S. (2021). Mining the plasma-proteome associated genes in patients with gastro-esophageal cancers for biomarker discovery. *Scientific Reports*.
13. Mason EO, Goldgur Y, Robev D, **Freywald A**, Nikolov DB, Himanen JP. (2021). Structure of the EphB6 receptor ectodomain. *PLoS One*.
14. Bhanumathy K, Balagopal A, Vizeacoumar FS, Vizeacoumar FJ, **Freywald A**, Giambra V. (2021). Protein Tyrosine Kinases: Their Roles and Their Targeting in Leukemia. *Cancers (Basel)*.
15. Cunningham CE, MacAuley MJ, Vizeacoumar FS, Abuhussein O, **Freywald A***, Vizeacoumar FJ.* (2020). The CINs of Polo-Like Kinase 1 in Cancer. *Cancers (Basel)*.

Book Chapters

1. Maranda V, Zhang Y, Vizeacoumar FS, Freywald A*, Vizeacoumar FJ*. (2023). A CRISPR Platform for Targeted In Vivo Screens. In: "The Tumor Microenvironment", *Methods Mol Biol*. p 397-409. Published by Springer Nature.
2. Vizeacoumar FJ and Freywald A. *Invited editors of Book Series for Springer Nature Publications. "Genetic Interactions Mapping: Methods and Protocols"* Volume 2381, ISBN: 978-1-0716-1739-7. Published in 2022.
3. Bhanumathy KK, Abuhussein O, Vizeacoumar FS, Freywald A, Vizeacoumar FJ, Phenix CP, Price EW, Cao R. (2021). *Computational Prediction of Chemical Tools for Identification and Validation of Synthetic Lethal Interaction Networks*. In: *Methods Mol Biol*. p. 333-358. Published by Springer Nature.
4. **Freywald A** and Vizeacoumar FJ. *Invited editors of Book Series for Elsevier Publications. "Biological Mechanisms and the Advancing Approaches to overcoming cancer drug resistance"*. Volume 12, 1st Edition. Hardcover ISBN: 9780128213100; eBook ISBN: 9780128213117. Published in 2020. A list of faculty and resident scholarly presentations during the current review period, illustrating trends if evident.

Poster Presentations

1. Sunny Y Yang, Malkon S Estrada, Tetiana Katrii, Neelam Giri, Sharon Savage, **Andrew Freywald**, Judy M Wong. (2023). Characterization of telomere maintenance defects following the in vitro transformation of x-linked dyskeratosis congenita cells. Telomeres & Telomerase meeting, Cold Spring Harbor, USA. Conference Date: 2023/05
2. Alain Morejon Morales, Frederick Vizeacoumar, Franco J. Vizeacoumar and **Andrew Freywald**. (2022). Analysis of the EphB6-EGFR crosstalk in cancer cells and tumors. Annual Protein Structure, Function and Malfunction Meeting (PSFaM), 9th Edition, Saskatoon, Saskatchewan, Canada. Conference Date: 2022/06
3. Malkon Sanchez Estrada, Alain Morejon Morales, Tetiana Katrii, Behzad Toosi and **Andrew Freywald**. (2022). Combination treatments for suppressing EphA2 and EGFR expressing tumors. Annual Protein Structure, Function and Malfunction Meeting (PSFaM), 9th Edition, Saskatoon, Saskatchewan, Canada. Conference Date: 2022/06

Grants

1. 2024-2026 Targeting the EGFR/EphA2 crosstalk in triple negative breast cancer. Canadian Institute of Health Research. Total funding 100,000. Principal investigator.
2. 2021-2026. Identification of therapeutically relevant targets in telomerase overexpressing prostate cancers. Canadian Institute of Health Research. Total funding 983,026. Co Principal investigator.

3. 2022-2025. Utilization of a novel bispecific antibody for tumor imaging in human and canine malignancies. Sylvia Fedoruk Canadian Centre for Nuclear Imaging. Total funding 80,500. Co applicant.
4. 2022-2024. Targeting mitochondrial fission machinery in tumor-initiating cells. Cancer Research Society. Total funding 119,218. Co Applicant.
5. 2022-2024. Targeting EphB6 deficiency in breast cancer. University of Saskatchewan. Total funding 40,000. Principal investigator.
6. 2021-2023. Applying Synthetic Dosage Lethality to Develop Therapeutic Strategies for Ovarian Clear Cell Carcinoma. Cancer Research Society / Ovarian Cancer Canada. Total funding 222,930. Co Principal investigator.
7. 2021-2023. Exploiting Synthetic Dosage Lethality Network for Suppressing Neuroendocrine Prostate Cancer. University of Saskatchewan. Total funding 50,000. Co Principal investigator.
8. 2020-2023. Prairie Cancer Research Consortium Project. Terry Fox Research Institute (Marathon of Hope Cancer Centers Network Pilots) Total funding 600,000. Co Principal investigator.
9. 2020-2023. Title: Targeting EphB6-deficiency in breast cancer. College of Medicine, University of Saskatchewan. Total funding 100,000. Principal investigator.
10. 2021. Re-purposing existing FDA-approved compounds for treating EphB6-deficient triple-negative breast cancer. College of Medicine, University of Saskatchewan (CoMRAD). Total funding 29,278. Principal investigator.
11. 2020-2021. Identification of therapeutically relevant targets in telomerase overexpressing prostate cancers. University of Saskatchewan. Total funding 50,000. Principal investigator.

GEYER, Clarence (Ron)

Publications

1. Landon Pastushok, Shrutii Sarda, Karen Mochoruk, Wayne Hill , Loni T. Pickle, Michelle Toro, Carolina Gonzalez, Stephanie Ostresh, Timothy J. Looney, Chenchen Yang, Julie Stakiw, Mark J. Bosch, Hadi Goubran, C. **Ronald Geyer**, Geoffrey M. Lowman and John F. DeCoteau. (2024). A Novel Single-Tube Next Generation Sequencing Assay for B-Cell Receptor Clonality Testing. *Journal of Molecular Pathology*. 5: 45-65.
2. Kris Barreto, Wendy Bernhard, Darien Toledo, Kimberly Jett, Angel Casaco, Gertrudis Rojas, Kalet León, C. **Ronald Geyer**. (2023). Preclinical evaluation of a near-infrared labelled antibody targeting N-glycolyl-neuraminic acid GM3 ganglioside. *EMBO Molecular Medicine*. NA: NA.
3. Wendy Bernhard, Kris Barreto, Darien Toledo, Ayman El-Sayed, Angel Casaco, Humphrey Fonge, C. **Ronald Geyer**. (2023). Evaluation of Nimotuzumab Fab2 as an optical imaging agent in EGFR positive cancers. *Scientific Reports*. 13(1): 10990.
4. Goncin U, Curiel L, **Geyer CR**, Machtaler S. (2023). Aptamer-functionalized microbubbles targeted to P-selectin for ultrasound molecular imaging of murine bowel inflammation. *Molecular Imaging and Biology*. 25(2): 283-293.
5. Una Goncin , Wendy Bernhard , Laura Curiel , **C Ronald Geyer** , Steven Machtaler. (2022). Rapid Copper-free Click Conjugation to Lipid-Shelled Microbubbles for Ultrasound Molecular Imaging of Murine Bowel Inflammation. *Bioconjugate Chemistry*. 33(5): 848-857.
6. B V Maruthachalam, K Barreto, D Hogan, A Kusalik, **C Ronald Geyer***. (2022). Generation of Synthetic Antibody Fragments with Optimal CDR Lengths for Notch-1 Recognition. *Frontiers in Microbiology*.
7. Landon Pastushok, Kris Barreto, **C, Ronald Geyer**. (2022). Short read-length next-generation DNA sequencing of antibody CDR combinations from phage selection outputs. *Methods in Molecular Biology*. 2313: 127-141.
8. Bernhard W, Barreto K, El-Sayed A, DeCoteau J, **Geyer CR**. (2022). Imaging Immune Cells Using Fc Domain Probes in Mouse Cancer Xenograft Models. *Cancers (Basel)*. 14(2): 16.
9. Elahe Alizadeh, Khan Behlol Ayaz Ahmed, Viswas Raja Solomon, Vijay Gaja, Wendy Bernhard, Amal Makhlof, Carolina Gonzalez, Kris Barreto, Angel Casaco, **C Ronald Geyer**, Humphrey Fonge. (2021). 89 Zr-Labeled Domain II-Specific scFv-Fc ImmunoPET Probe for Imaging Epidermal Growth Factor Receptor In Vivo. *Cancer*. 13(3): 560-576.
10. Wendy Bernhard , Kris Barreto , Ayman El-Sayed , Carolina Gonzalez , Raja Solomon Viswas , Darien Toledo , Angel Casaco , John DeCoteau , Humphrey Fonge, **Clarence Ronald Geyer**. (2021). Pre-clinical study of IRDye800CW-nimotuzumab formulation, stability, pharmacokinetics, and safety. *BMC Cancer*. 21(1): 270-283.
11. Viswas Raja Solomon, Kris Barreto, Wendy Bernhard, Elahe Alizadeh, Patrick Causey, Randy Perron, Denise Gendron, Md Kausar Alam, Adriana Carr, **C Ronald Geyer**, Humphrey Fonge. (2021). Nimotuzumab Site-Specifically Labeled with 89 Zr and 225 Ac Using SpyTag/SpyCatcher for PET Imaging and Alpha Particle Radioimmunotherapy of Epidermal Growth Factor Receptor Positive Cancers. *Cancers*. 12(11): 3449-3467.
12. Viswas Raja Solomon, Elahe Alizadeh, Wendy Bernhard, Amal Makhlof, Siddesh V Hartimath, Wayne Hill, Ayman El-Sayed, Kris Barreto, **Clarence Ronald Geyer**, Humphrey Fonge. (2021). Development and preclinical evaluation of cixutumumab drug conjugates in a model of insulin growth factor receptor I (IGF-1R) positive cancer. *Scientific Reports*. 10(1): 18549-18559.

13. Ashley R. Sutherland , Madeline N. Owens and **C. Ronald Geyer**. (2020). Modular Chimeric Antigen Receptor Systems for Universal CAR T Cell Retargeting. *International Journal of Molecular Sciences*. 21:7222-7236.
14. Vijay Gaja, Jacqueline Cawthray, **Clarence R Geyer**, Humphrey Fonge. (2020). Production and Semi- Automated Processing of 89Zr Using a Commercially Available TRASIS MiniAiO Module. *Molecules*. 5(25):26-36.

Grants

1. 2023-2028. Tumor targeted, radiolabeled, mimetic nanovesicle theranostics for imaging and treating head and neck cancer. Canadian Institutes of Health Research (CIHR). Total Funding - 963,900. Principal investigator.
2. 2021-2026. Simultaneous targeting of multiple domains of HER2 and EGFR using alpha particle labeled radioimmunoconjugates. Canadian Institutes of Health Research (CIHR) Total Funding - 970,000. Co Applicant
3. 2020-2024. Design of synthetic recombinant antibody devices for applications in molecular targeted imaging Natural Sciences and Engineering Research Council of Canada (NSERC) Total Funding - 145,000. Principal Investigator.
4. 2020-2021. Molecular Imaging as a Tool for Identifying Contaminated Water Sources in First Nations Communities of Saskatchewan. University of Saskatchewan COMRAD Total Funding - 30,000. Principal investigator.

HAMULA, Camille

Publications

1. Accepted. Mehta N, Freeman C, Rabari J, Kosar J, Blondeau J, and **Hamula C**. 2024. Implementation and clinical performance of BD Max Enteric Pathogen Testing at a Canadian tertiary care center. *Journal of Clinical Microbiology*..
2. Liu, E, Kakodkar P, Toyota P, Pendleton N, Persad A, Zhrebetskiy V, **Hamula C**, Auer R, Vats Karan, Henny L, Radic, J. 2023. Cerebral toxoplasmosis in an HIV-negative patient. *Canadian Journal of Neurological Sciences / Journal Canadien des Sciences Neurologiques*. 50. S94-S94. 10.1017/cjn.2023.227.
3. Kakodkar P and **Hamula C**. 2022. A 2-year Retrospective Case Series on Isolates of the Emerging Pathogen *Actinotignum sphaali* from a Canadian Tertiary Care Hospital. *Microorganisms* 9(10): 1608.
4. Blondeau LD, Deneer H, Rubin JE, Kanthan R, Sanche SE, **Hamula CL**, Blondeau JM. 2023. Zoonotic *Staphylococcus pseudintermedius*: an underestimated human pathogen? *Future Microbiology* April 18: 311-315.
5. Oliviera PH, Ribis JW, Garrett EM, Trzilova D, Kim A, Sekulovic O, Mead EA, Pak T, Zhu S, Deikus G, Touchon M, Lewis-Sandari M, Beckford C, Zeitouni NE, Altman DR, Webster E, Oussenko I, Bunyavanich S, Aggarwal AK, Bashir A, Patel G, Wallach F, **Hamula C**, Huprikar S, Schadt EE, Sebra R, van Bakel H, Kasarksis A, Tamayo R, Shen A, Fang G, et al. 2020. Epigenomic characterization of *Clostridioides difficile* finds a conserved DNA methyltransferase that mediates sporulation and pathogenesis. *Nature Microbiology* 5(1): 166-180.
6. Ackelsberg J, Liddicoat A, Szymczak W, Levi M, Ostrowsky B, **Hamula C**, Patel G, kopetz V, saverimuttu J, Sordillo EM, D'Souza D, Mitchell EA, Lowe W, Khare R, Tang YW, Bianchi AL, Egan C, Perry MJ, Hughes S, Rakeman JL, Adams E, Kharod GA, Tiller R, Saile E, Lee S, Gonzalez E, Hoppe B, Leviton I, hacker S, Ni KF, Orsini RL, Jhaveri S, Mazareigos I, Dingle T, Koll B, Stoddard RA, Galloway R, Hoffmaster A, Fine A, Lee E, Dentinger C, Harrison E, Layton M. 2020. *Brucella* Exposure Risk Events in 10 Clinical Laboratories, New York City, USA, 2015 to 2017. *Journal of Clinical Microbiology* 58(2):e01096-19

Book Chapter

1. **Hamula C** and Bernard K. Gram Positive Anaerobes. *Manual of Clinical Microbiology* 4th edition. ASM press 2022.

Presentations

1. **Hamula C**. IDSA AMR 2.0 guideline changes to AST reporting summary. Regina Antimicrobial Stewardship committee meeting. September 2023.
2. **Hamula C**. Syphilis testing laboratory update. May 2023. Infectious Diseases-Medical Microbiology Rounds, University of Saskatchewan Department of Medicine.
3. **Hamula C**. Malaria testing and update. 2022. Infectious Diseases-Medical Microbiology Rounds, University of Saskatchewan Department of Medicine.
4. **Hamula C**. Managing a Canadian microbiology laboratory during the COVID-19 pandemic. ASM Microbe 2021. American Society for Microbiology annual conference, June 23 2021.

Poster Presentations

1. Tariq J, Kakodkar P, Scott J, Liqin D, Wu F, Mehta N and **Hamula C**. 2024. Case series: Emerging Pathogens *Aerococcus* *urinae* and *Aerococcus* *sanguinicola* at a Canadian tertiary care hospital. Accepted to present at the American Society for Clinical Pathology Conference September 3-6 in Chicago, Illinois, USA.
2. Sanderson H, Perara S, Martin I, Minion J, **Hamula C**, Thorington R, Dillon JR. 2024. Molecular Epidemiology of *Neisseria gonorrhoeae* isolates Pre- and Post-COVID (2017-2022): Saskatchewan. Accepted to present September 17-20 at the 25th IUSTI World Congress 2024 in Sydney, Australia.

3. Perera SR, Sanderson H, Martin I, Minion J, **Hamula C**, Thorington R, Dillon JR. 2024. Genotypes of Penicillin Susceptible isolates in Saskatchewan, Canada Indicate that Susceptibility to Penicillin may be Predictable. Accepted to present September 17-20 at the 25th IUSTI World Congress 2024 in Sydney, Australia.
4. Blondeau L, **Hamula C**, Sanche S, Kanthan R, Rubin J, Blondeau JM. 2023. An overview of human infections with bacterial pathogens from animals: a series of cases from Saskatoon, Canada. Accepted to present December 5 2023 One Health Aotearoa Symposium, Aotearoa New Zealand.
5. Kayla Joyce, Ninad Mehta, **Camille Hamula**. 2023. The Laboratory Diagnosis of Bacterial Vaginosis (BV) Method Comparison. Wednesday October 18, 2023. College of Medicine Undergraduate Research Symposium, University of Saskatchewan, Saskatoon, Saskatchewan. 3rd place winner in quality improvement category.
6. **Camille Hamula**, Emmy Ogunjimi, Ninad Mehta. Blood culture utilization in sepsis and COVID-19 patients in a geographically vast Canadian province (Saskatchewan). European Congress of Clinical Microbiology and Infectious Diseases (ECCMID) 2023, 15-18 April, Copenhagen, Denmark.
7. Emmy Ogunjimi, Ninad Mehta, **Camille Hamula**. 2022. Trends in Provincial Blood Culture Utilization and the Effects of COVID-19. October 19, 2022. College of Medicine Undergraduate Research Symposium, University of Saskatchewan, Saskatoon, Saskatchewan, Canada. 2nd place winner in quality improvement.
8. Jay Rabani, Ninad Mehta, **Camille Hamula**. 2022. The significance of emerging stool pathogens and effect on patient outcomes with multiplex gastrointestinal PCR implementation in the clinical microbiology laboratory. October 19, 2022. College of Medicine Undergraduate Research Symposium, University of Saskatchewan, Saskatoon, Saskatchewan, Canada.
9. Kosar J, Peermohamed S, Northey R, Leung S, Sanche S, Blondeau J, **Hamula C**. Implementation of multiplex PCR stool pathogen testing (BD Max) at a Canadian tertiary care center
10. 31st annual European Clinical Microbiology and Infectious Diseases Conference (ECCMID) Online. July 9-12 2021.

Grants

1. 2021-2024. Roche HPV screening trial. Funding through a joint initiative of the Royal University hospital WLP fund and Roche Diagnostic. Total funding of 283,000. Co-Investigator.
2. 2024-2026. Seegene Open Innovation Award-Urinary Tract Infection 1,2,3.Total funding 351,771.20. Principal investigator.
3. 2024-2029. Addressing infectious and congenital syphilis in Canada. CIHR. Total funding 500,000. Co-Applicant.
4. 2024-2028. Techniques and diagnostic tests for pandemic preparedness and health equity. Canada Biomedical Research Fund. Total funding 9,482,666. Co-Applicant.

KALRA, Jawahar (Jay)

Publications

1. **Kalra J.**, Seitzinger, P. Bridging the Gap Between Autopsy Findings and Healthcare Through Artificial Intelligence. *J Forensic Sci & Criminal Inves.* 2023; 17(5): 555974. Pg. 1-3.
2. Daniel R. Beriault, Karina Rodriguez-Capote, Kristin Hauff, David Kinniburgh, Loralie Langman, Andre Mattman, Danijela Konforte, Curtis Olechuk, Lori Beach, Yu Chen, Manal Elnenaoui, 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
3. **Kalra J.**, Rafid-Hamed Z., & Seitzinger P. (2020). Autopsy Data to Refine Healthcare Quality: A Fresh Perspective. *Pathology and Laboratory Medicine*, 1(1): e11-e13.

Book Chapter

1. Seitzinger, P., **Kalra, J.** (2023). The Role of Emerging Technologies in Health Emergency Planning and Preparedness. In: Jay Kalra (eds) *Emerging Technologies in Healthcare and Medicine.* AHFE (2023) International Conference. AHFE Open Access, vol 116. Pg. 189-194. AHFE International, USA.
2. **Kalra, J.**, Saxena, A., Rafid-Hamed, Z. (2023). Medical Error Disclosure in Healthcare – The Scene across Canada. In: Jay Kalra (eds) *Emerging Technologies in Healthcare and Medicine.* AHFE (2023) International Conference. AHFE Open Access, vol 116. Pg. 182-188. AHFE International, USA.
3. Seitzinger, P., **Kalra, J.** (2023). Artificial Intelligence in Healthcare: The Explainability Ethical Paradox. In: Jay Kalra and Nancy Lightner (eds) *Healthcare and Medical Devices.* AHFE (2023) International Conference. AHFE Open Access, vol 79. Pg. 1-6. AHFE International, USA.
4. **Kalra, J.**, Seitzinger, P. (2023). Expanding Our Grasp: Artificial Intelligence as the Next Leap Forward in Healthcare Quality. In: Jay Kalra and Nancy Lightner (eds) *Healthcare and Medical Devices.* AHFE (2023) International Conference. AHFE Open Access, vol 79. Pg. 7-11. AHFE International, USA.

5. **Kalra, J., Rafid-Hamed, Z., Okonkwo, C., Seitzinger, P.** (2023). Quality Care and Patient Safety: A Best Practice Model for Medical Error Disclosure. In: Jay Kalra and Nancy Lightner (eds) Healthcare and Medical Devices. AHFE (2023) International Conference. AHFE Open Access, vol 79. Pg. 103-112. AHFE International, USA.
6. **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.
7. **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.
8. **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.
9. 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.
10. Seitzinger, P., Rafid-Hamed, Z., **Kalra J.** (2021). Global Trends in Clinical Practice and Healthcare Delivery: Opportunities for Growth and Innovation. In: Kalra J., Lightner N., Taira, R. (Ed.) *Advances in Human Factors and Ergonomics in Health Care and Medical Devices*. Springer Cham, p 9-15.
11. **Kalra J., Rafid-Hamed, Z., Seitzinger, P.** (2021). Artificial Intelligence and Humanistic Medicine: A Symbiosis. In: Kalra J., Lightner N., Taira, R. (Ed.) *Advances in Human Factors and Ergonomics in Health Care and Medical Devices*. Springer Cham, p 3-8.
12. Seitzinger, P., Rafid-Hamed, Z., **Kalra J.** (2021). Healthcare Delivery: Leveraging Artificial Intelligence to Strengthen Healthcare Quality. In: Kalra J., Lightner N., Taira, R. (Ed.) *Advances in Human Factors and Ergonomics in Health Care and Medical Devices*. Springer Cham, p 16-21.
13. Seitzinger, P., Rafid-Hamed, Z., **Kalra J.** (2021). Diagnostic Decision Making in the Face of Uncertainty: COVID-19 and Its Sequelae. In: Kalra J., Lightner N., Taira, R. (Ed.) *Advances in Human Factors and Ergonomics in Health Care and Medical Devices*. Springer Cham, p 763-769.
14. Seitzinger, P., Rafid-Hamed, Z., **Kalra J.** (2020). The Value of the Medical Autopsy as a Quality Improvement Tool in Modern Diagnostic Medicine. In: Kalra J. and Lightner N. (Ed.) *Advances in Human Factors and Ergonomics in Health Care and Medical Devices*. Springer Cham, p 77-82.
15. **Kalra J., Rafid-Hamed, Z., Seitzinger, P.** (2020). Disclosure of Medical Error: A Necessary Step in Healthcare Improvement. In: Kalra J. and Lightner N. (Ed.) *Advances in Human Factors and Ergonomics in Health Care and Medical Devices*. Springer Cham, p 11-16.

Books Edited

1. **Kalra, J.,** (Ed.) (2023). *Emerging Technologies in Healthcare and Medicine*. Proceedings of the AHFE International Conference on Human Factors in Design, Engineering, and Computing (AHFE 2023 Hawaii Edition), Hawaii Edition, Hawaii, USA. 4-6 December 2023. Open Access Science in Human Factors Engineering and Human Centered Computing. Volume 116
2. **Kalra, J.,** (Ed.) (2023). *Emerging Technologies and Future of Work*. Proceedings of the AHFE International Conference on Human Factors in Design, Engineering, and Computing (AHFE 2023 Hawaii Edition), Hawaii Edition, Hawaii, USA. 4-6 December 2023. Open Access Science in Human Factors Engineering and Human Centered Computing. Volume 117
3. Ahram, T., **Kalra, J.,** Waldemar, K., (Ed.) (2023). *Artificial Intelligence and Social Computing*. Proceedings of the 14th AHFE International Conference on Artificial Intelligence and Social Computing, San Francisco, USA July 20-24. Open Access Science in Human Factors Engineering and Human Centered Computing. Volume 72.
4. **Kalra, J.,** (Ed.) (2023). *Human Factors in Aging and Special Needs*. Proceedings of the 14th AHFE International Conference on Human Factors in Aging and Special Needs, San Francisco, USA July 20-24. Open Access Science in Human Factors Engineering and Human Centered Computing. Volume 88
5. **Kalra, J.,** Lightner N., (Ed.) (2023). *Healthcare and Medical Devices*. Proceedings of the 14th AHFE International Conference on Healthcare and Medical Devices, San Francisco, USA July 20-24. Open Access Science in Human Factors Engineering and Human Centered Computing. Volume 79
6. **Kalra, J.,** (Ed.) (2023). *Health Informatics and Biomedical Engineering Applications*. Proceedings of the 14th AHFE International Conference on Healthcare and Medical Devices, San Francisco, USA July 20-24. Open Access Science in Human Factors Engineering and Human Centered Computing. Volume 78
7. **Kalra, J.,** Ahram, T., (Ed.) (2022). *Global Issues: Disease Control and Pandemic Prevention*. Proceedings of the 13th AHFE International Conference on Global Issues Challenge: Human Factors in Disease Control and Pandemic Prevention, New York, USA. Vol. 24, 2022.
8. Ahram, T., **Kalra, J.,** Waldemar, K., (Ed.) (2022). *Artificial Intelligence and Social Computing*. Proceedings of the 13th AHFE International Conference on Artificial Intelligence and Social Computing, New York, USA. Vol. 28, 2022.

9. **Kalra, J.**, (Ed.) (2022). *Human Factors in Aging and Special Needs*. Proceedings of the 13th AHFE International Conference on Human Factors in Aging and Special Needs, New York, USA. Vol 38, 2022.
10. **Kalra, J.**, Lightner N., (Ed.) (2022). *Healthcare and Medical Devices*. Proceedings of the 13th AHFE International Conference on Healthcare and Medical Devices, New York, USA. Vol 51, 2022.
11. **Kalra, J.**, Lightner, N. J., Redha Taiar, (Ed.) (2021). *Advances in Human Factors and Ergonomics in Healthcare and Medical Devices*. Springer Nature Switzerland AG 2021. USA.
12. Ahram, T., Waldemar, K., **Kalra, J.**, (Ed.) (2021). *Advances in Artificial Intelligence, Software and Systems Engineering*. Springer Nature Switzerland AG 2021. USA.
13. **Kalra, J.**, Lightner, N. J., (Ed.) (2020). *Advances in Human Factors and Ergonomics in Healthcare and Medical Devices*. Springer Nature Switzerland AG 2020. USA.

Conference Abstracts

1. **Kalra, J.** (2022) Artificial Intelligence: Ethical Challenges. Indian J Clin Biochem. Volume 37. Abstract #IL-50. Page S23. November 2022.
2. **Kalra, J.** (2021). Quality Management and Assessment: Integration of Culture of Quality to Improve Patient Safety and Healthcare Delivery. Indian J Clin Biochem. Volume 36. Abstract #IL-42. Page S26-27. 2021.
3. **Kalra, J.**, Rafid-Hamed, Z., Seitzinger, P. (2021)/ Comparison of medical error disclosure policies among health regions of western Canada. Canadian Society of Clinical Chemist Annual Conference. Niagara Falls, Canada. June 2021.

Invited Presentation

1. Seitzinger, P., **Kalra, J.** (2023). The Role of Emerging Technologies in Health Emergency Planning and Preparedness. AHFE International Conference on Advances in Intelligent System and Computing. Honolulu, Hawaii, USA. December 6, 2023.
2. **Kalra, J.**, Saxena, A., Rafid-Hamed, Z. (2023). Medical Error Disclosure in Healthcare – The Scene across Canada. AHFE International Conference on Advances in Intelligent System and Computing. Honolulu, Hawaii, USA. December 6, 2023.
3. Seitzinger, P., **Kalra, J.** (2023). Artificial Intelligence in Healthcare: The Explainability Ethical Paradox. AHFE (2023) International Conference on Advances in Intelligent System and Computing. Advances in Human Factors and Ergonomics in Healthcare and Medical Devices. San Francisco, California, USA. July 22, 2023.
4. **Kalra, J.**, Seitzinger, P. (2023). Expanding Our Grasp: Artificial Intelligence as the Next Leap Forward in Healthcare Quality. AHFE (2023) International Conference on Advances in Intelligent System and Computing. Advances in Human Factors and Ergonomics in Healthcare and Medical Devices. San Francisco, California, USA. July 22, 2023.
5. **Kalra, J.**, Rafid-Hamed, Z., Okonkwo, C., Seitzinger, P. (2023). Quality Care and Patient Safety: A Best Practice Model for Medical Error Disclosure. AHFE (2023) International Conference on Advances in Intelligent System and Computing. Advances in Human Factors and Ergonomics in Healthcare and Medical Devices. San Francisco, California, USA. July 22, 2023.
6. **Kalra, J.** Roundtable Leader – Artificial Intelligence: Ethical Issues and Challenges. Joint Annual Scientific Meeting of the Canadian Society of Clinical Chemist and Canadian College of Medical Geneticists. Winnipeg, Manitoba, Canada. June 19, 2023
7. **Kalra, J.** Ethics In Artificial Intelligence. Department of Biochemistry. Lady Harding Medical College, New Delhi, India. December 5, 2022.
8. **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.
9. **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.
10. **Kalra, J.** Quality Management and Assessment: Integration of Culture of Quality to Improve Patient Safety and Healthcare Delivery. 47th Association of Clinical Biochemist of India (ACBICON) – “Towards a Better Tomorrow”. Session – Quality Control. The West Bengal University of Health Sciences, Kolkata, India. December 14, 2021
11. **Kalra, J.** Foundation Day Orator. Medical Error Disclosure: A Quality Perspective and Ethical Dilemma. 109th Foundation Day Celebration 2021 & Pathology Annual Oration. Department of Pathology, King George’s Medical University, Lucknow, India. December 2, 2021
12. **Kalra, J.** Quality Management: Trends in Medical Error Disclosure and its Implications. Leader - Roundtable Presentation. Canadian Society of Clinical Chemist Annual Conference. Niagara Falls, Canada. June 2021.
13. **Kalra J.** (March 2020). Medical Error and Disclosure – A Best Practice Model for Error Disclosure. All India Institute of Medical Sciences. New Delhi, India. March 4, 2020
14. **Kalra J.** (February 2020). Quality Management and Assessment: Concordance and Discordance Rates between Clinical and Post-Mortem Diagnoses. 9th International Conference of Indian Academy of Biomedical Science. Kolhapur, Maharashtra, India. February 27, 2020
15. **Kalra J.** (February 2020). Medical Error Disclosure: A Global View. D.Y. Patil Medical College, Kasaba Bawada, Kolhapur, Maharashtra, India. February 26, 2020

Oral Presentations

1. 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.
2. **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.
3. **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.
4. **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.
5. Seitzinger, P., **Kalra, J.** Incorporating Artificial Intelligence into Medical Practice: Navigating Ethics, Opportunities, and the Path Forward. University of Saskatchewan Resident Research Day – Virtual REACH. July 7, 2021
6. Seitzinger, P., Rafid-Hamed, Z., **Kalra, J.** (July 2021). Global Trends in Clinical Practice and Healthcare Delivery: Opportunities for Growth and Innovation. International Conference on Advances in Intelligent Systems and Computing. Advances in Human Factors and Ergonomics in Health Care and Medical Devices (AHFE). USA. July 28, 2021.
7. Seitzinger, P., Rafid-Hamed, Z., **Kalra, J.** (July 2021). Healthcare Delivery: Leveraging Artificial Intelligence to Strengthen Healthcare Quality. International Conference on Advances in Intelligent Systems and Computing. Advances in Human Factors and Ergonomics in Health Care and Medical Devices (AHFE). USA. July 28, 2021.
8. **Kalra, J.**, Rafid-Hamed, Z., Seitzinger, P. (July 2021). Artificial Intelligence and Humanistic Medicine: A Symbiosis. International Conference on Advances in Intelligent Systems and Computing. Advances in Human Factors and Ergonomics in Health Care and Medical Devices (AHFE). USA. July 28, 2021.
9. Seitzinger, P., Rafid-Hamed, Z., **Kalra, J.** (July 2021). Diagnostic Decision Making in the Face of Uncertainty: COVID-19 and its Sequelae. International Conference on Advances in Intelligent Systems and Computing. Advances in Human Factors and Ergonomics in Health Care and Medical Devices (AHFE). USA. July 29, 2021.
10. Seitzinger, P., Rafid-Hamed, Z., **Kalra, J.** (July 2020). The Value of the Medical Autopsy as a Quality Improvement Tool in Modern Diagnostic Medicine. International Conference on Advances in Intelligent Systems and Computing. Advances in Human Factors and Ergonomics in Health Care and Medical Devices (AHFE). USA. July 16, 2020.
11. **Kalra, J.**, Rafid-Hamed, Z., Seitzinger, P. (2020). Disclosure of Medical Error: A Necessary Step in Healthcare Improvement. International Conference on Advances in Intelligent Systems and Computing. Advances in Human Factors and Ergonomics in Health Care and Medical Devices (AHFE). USA. July 16, 2020.
12. **Kalra, J.** (October 2020). Medical Error Disclosure: A Professional Obligation and Ethical Dilemma. Department of Pathology and Lab Medicine Research Day. Saskatoon, Saskatchewan. October 27, 2020.
13. Rafid-Hamed, Z., **Kalra, J.** (October 2020). Quality Care and Patient Safety: A Best Practice Model for Medical Error Disclosure. Department of Pathology and Lab Medicine Research Day. Saskatoon, Saskatchewan. October 27, 2020.
14. Seitzinger, P., **Kalra, J.** (October 2020). Quality Assessment and Management: Autopsy as a Quality Improvement Tool in Diagnostic Medicine. Department of Pathology and Lab Medicine Research Day. Saskatoon, Saskatchewan. October 27, 2020.

Poster Presentations

1. **Kalra, J.**, Rafid-Hamed, Z., Seitzinger, P. (2023). Quality Care and Patient Safety – A Suggested Model for Medical Error Disclosure across Canada. Joint Annual Scientific Meeting of the Canadian Society of Clinical Chemist and Canadian College of Medical Geneticists. Winnipeg, Manitoba, Canada. June 18-21, 2023

Grants

1. 2023. Adopting and Enhancing Artificial Intelligence in Laboratory Medicine. Royal college of Physicians and surgeons of Canada. Total funding 4,000. Principal Applicant.

KANTHAN, Rani

Publications

1. Kakodkar P, Diudea D, Kanthan SC, **Kanathan R** (2024) Metastatic Merkel Cell Carcinoma In The Splenic Flexure Of The Colon Mimicking Primary Colonic Carcinoma-A Case Report With Literature Review. Arch Surg Clin Case Rep 7: 219. DOI:10.29011/2689-0526.100219
2. Blondeau LD, Deneer H, Rubin JE, **Kanathan R**, Sanche SE, Hamula C, Blondeau JM (2023) Zoonotic *Staphylococcus pseudintermedius*: An underestimated human pathogen? Future Microbiology (2023) 18(6), 311-315. <https://doi.org/10.2217/fmb-2023-0069>

3. Chibbar R, Foerstner S, Suresh J 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
4. Tharmaradinam S, Kanthan S, Duidea 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
5. 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
6. Yanko, E.; Le, D.; Mahmood, S.; Ginther, D.N.; Chalchal, H.I.; **Kanthan, R.**; Haider, K.; Zaidi, A.; Dueck, D.-A.; Ahmed, O.; Gowrishankar, B.; Ahmed, S. (2022) Outcomes of Patients with Small Intestine Adenocarcinoma in a Canadian Province: A Retrospective Multi-Center Population-Based Cohort Study. *Cancers* 2022, 14, 2581.
7. Ahmed, Shahid & Anderson, Deborah & Chalchal, Haji & Dwernychuk, Lynn & Gill, Dilip & Gitlin, Josh & Hammond, Austin & **Kanthan, Rani** & Le, Duc & Lim, June & Rakheja, Rajan & Sari, Nazmi & Vizeacoumar, Franco & Zaidi, Adnan & Moser, Michael. (2021). Conversion from unresectable to resectable liver metastases in real-world patients with liver-only metastatic colorectal cancer (mCRC) treated with FOLFOXIRI plus bevacizumab: The Conversion trial.. *Journal of Clinical Oncology*. 39. TPS147-TPS147. 10.1200/JCO.2021.39.3_suppl.TPS147.
8. L. D. Blondeau, M. Deutscher, J. E. Rubin, H. Deneer, **R. Kanthan**, S. Sanche & J. M. Blondeau (2021) Urinary tract infection in a human male patient with *Staphylococcus pseudintermedius* transmission from the family dog. *Journal of Chemotherapy*
9. Leah D. Blondeau , Stephen Sanche , David J. Sauder , Harry Deneer , **Rani Kanthan**, Joseph E. Rubin , Beverly J. Morrison & Joseph M. Blondeau (2021): Recovery of borderline oxacillin-resistant *Staphylococcus pseudintermedius* (BORSP) from bone and soft tissue of a rheumatoid arthritis patient with severe osteoporosis: transmission from the family dog. *Journal of Chemotherapy*.
10. Tharmaradinam S, Kanthan S and **Kanthan R** (2020). Hyperganglionosis in Pneumatosis Cystoides Intestinalis- A Clinicopathological Review in Adults Gastroint Hepatol Dig Dis. 2020; 3(2): 1-7
11. Tharmaradinam S, Brits S and **Kanthan R** (2020). Non Traumatic Rupture of Splenic Metastases as the First Presentation of Clinically Occult Disseminated Primary Lung Cancer. *American Journal of Surgery and Clinical Case Reports*: 2(4) :1-5
12. **Kanthan R**, Tharmaradinam S, Asif T, Ahmed S, Kanthan SC (2020). Mixed epithelial endocrine neoplasms of the colon and rectum – An evolution over time: A systematic review. *World J Gastroenterol* 2020 September 14; 26(34): 5181-5206
13. Tharmaradinam S, Kanthan S and **Kanthan R** (2020). Cytokeratin 20 Positive with HepPar-1 Negative in Hepatocellular Carcinoma - A Potential Diagnostic Pitfall in the Pathological Interpretation of Needle Core Liver Biopsy. *Gastroenterology & Hepatology International Journal* 2020, 5(2): 000173
14. L.D. Blondeau, J.E. Rubin, H. Deneer, **R. Kanthan**, B. Morrison, S. Sanche, C Beshard N, Mpofu C & J.M. Blondeau (2020). Bacteremia with *Staphylococcus pseudintermedius* in a 4 month old pediatric oncology patient. *Journal of Chemotherapy*.
15. L.D. Blondeau, J.E. Rubin, H. Deneer, **R. Kanthan**, B. Morrison, S. Sanche, C. Rypien, D. Dueck, G. Beck & J.M. Blondeau (2020) Persistent infection with *Staphylococcus pseudointermedius* in an adult oncology patient with transmission from a family dog, *Journal of Chemotherapy*, 32:3, 151-155.
16. S. Tharmaradinam, S. Kanthan, **R. Kanthan** (2020). Pneumatosis cystoides intestinalis and hyperganglionosis – Cause or effect? A review. *Pathology Research and Practice Pathology - Research and Practice* 216 (2020) 152879

Conference Abstracts

1. **Cancer Care Team** Pinter C, Sharma S, Abid A, Ahmed O, Chalchal, HI, Dueck DA, Gill D, Gitlin J, Gowrishankar B, Graham P, Haider K, Hagel KM, Iqbal M, Kanthan R, Kanthan SC, Le D, Moore J, Mahmood S, Zaidi A, Ahmed S (2024) Outcomes of elderly patients with node-positive colon cancer: A multi-center population-based cohort study. *Journal of Clinical Oncology* Vol: 42, Num 3 https://doi.org/10.1200/JCO.2024.42.3_suppl.33
2. **Cancer Care Team** Toussi N, Daida K., Alsafar N, Ahmed O, Chalchal H, Dueck DA, Gitlin J, Gowrishankar B, Hagel K , Haider K, Iqbal M, Kanthan R, Le D, Mahmood S, Moore J, Moser M, Ravi D, Shaw J, Zaidi A, Shahid A . (2024). Prognostic factors of gallbladder cancer (GBC) in patients diagnosed over a period of 20 years: A Canadian province experience.. *Journal of Clinical Oncology*. 42. 437-437. 10.1200/JCO.2024.42.3_suppl.437.
3. Blondeau L, Hamula C, Sanche S, **Kanthan R**, Rubin J, Blondeau J (Dec 2023). An overview of human infections with bacterial pathogens from animals: A Series of Cases from Saskatoon, Canada. *One Health Aotearoa [OHA] 9th Symposium , New Zealand 05th-07th Dec*
4. **Kanthan R**, Markewich D, Pan H, Kakodkar P(2022). The pebble in the shoe- residency wellness deterrents –residency wellness initiatives –International Conference on Residency Education. October 19th -21st 2023, Halifax, Canada-conference proceedings
5. **Kanthan R**, Sperandio F {2023} Demystifying ‘hyaline angiopathy’ of pulse granuloma in oral and extraoral surgical pathology- a case series of thirteen oral and five extraoral cases. *Virchows Archiv* (2023) 483 (Suppl 1):S1–S391: S204
6. **Kanthan R**, Kanthan S. (Sep 2023). Unexpected pathological lesions encountered in the gall bladder: a surgical pathology review of 5,626 consecutive gall bladder surgical specimens *Virchows Archiv* (2023) 483 (Suppl 1): S1–S391 [S225]

7. **Kanthan R** , Sabaratnam R (Sep 2023) Uncommon thyroid pathology encountered in a surgical pathology review of 3,427 consecutive adult thyroid lesions Virchows Archiv (2023) 483 (Suppl 1): S1–S391 [S247]
8. **Kanthan R (May2023)** 5th World Congress on Surgical Pathology and Oncology Research Invited Speaker on “Gall Bladder Lesions: The Expected and the Unexpected”- May08th-10th Prague, Czech Republic -Conference proceedings
9. **Kanthan R (March 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 09th and 10th-Conference proceedings booklet
10. **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 26th-30th -conference proceedings
11. **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 24th 2022 –Royal College Summit Proceedings
12. Kanthan SC, Tharmaradinam S. **Kanthan R (2022)** Surgical updates of anal adenocarcinomas with pathological correlation The Royal College of Surgeons of Edinburgh International Conference Chennai 2022-Oct 06th-08th Chennai, India - conference proceedings
13. **Kanthan R**, Tharmaradinam 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 11-15th October 2022 34th International Congress of the International Academy of Pathology 11-15 October 2022 Sydney, Australia Histopathology Volume 81 Supplement1 October 2022 Page 5
14. **Kanthan R**, Tharmaradinam S. Kanthan SC (2022) Tubulopapillary Neoplasms [TPN] of the Pancreatobiliary Tract . XXXIV - International Academy of Pathology (IAP) Sydney Australia 11-15th October 2022 34th International Congress of the International Academy of Pathology 11-15 October 2022 Sydney, Australia Histopathology Volume 81 Supplement1 October 2022 Page 8
15. Yanko, Emma & Le, Duc & Mahmood, Shazia & Ginther, Nathan & Chalchal, Haji & **Kanthan, Rani** & Haider, Kamal & Zaidi, Adnan & Dorie-Anna, Dueck & Ahmed, Shahid. (2022). Outcomes of patients with small intestine adenocarcinoma (SIA) in a Canadian province: A population-based cohort study. Journal of Clinical Oncology. 40. 641.10.1200/JCO.2022.40.4_suppl.641
16. Suresh J, Chibbar R, Lai R, Cheng-Han Lee, Förstner S, Chibbar R, Agrawal A, **Kanthan R**, KundapurV [2021] Clinical, Pathological and Molecular Correlates of Recurrent/Metastatic Low Grade Endometrial Endometrioid Carcinoma. Abstract # 627 Modern Pathology 2021; 34 (suppl 2): pages 749-50.
17. Tharmaradinam S, Kanthan S, Diudea D, **Kanthan R [2021]** Uncommon Mucosal Metastases in Endoscopic Colorectal Biopsies: A 20-year Single Institution Review From 13,564 Specimens abstract #393 Modern Pathology 2021; 34 (suppl 2): pages 480-82
18. **Kanthan R**, Kanthan S, Tharmaradinam S (2020). Mixed Tumors of the Rectum. 32nd Congress of the European Society of Pathology and XXXIII International Congress of the International Academy of Pathology 06th-08th December, PS -21-039 Virchows Archiv (2020) 477 (Suppl 1):S1–S390 [S187]
19. **Kanthan R**, Tharmaradinam S, Kanthan S (2020). Hyperganglionosis in pneumatosis coli-cause or effect - chicken or egg-a case series 32nd Congress of the European Society of Pathology and XXXIII International Congress of the International Academy of Pathology 06th-08th December, PS-21-040 Virchows Archiv (2020) 477 (Suppl 1):S1–S390 [S187]
20. **Kanthan R**, Swaminathan R, Sundaram S, Nagarajan P (2020). The evaluation of homegrown digital scanner as learning and assessment tool of haematoxylin and eosin stained slides in pathology. 32nd Congress of the European Society of Pathology and XXXIII International Congress of the International Academy of Pathology 06th-08th December, PS-17-004 Virchows Archiv (2020) 477 (Suppl 1):S1–S390-[S152]
21. **Kanthan R (2020)**. Thyroid Lesions in the Pediatric Age Group. 04th International Pediatrics and Perinatal Conference, Feb 05th -08th, Chennai, India
22. Saxena A and **Kanthan R (2020)**. Leadership for Inclusivity and Cultural appropriateness 17th Asia Pacific Medical Education Conference Pre conference workshop 08th Jan 2020 Singapore
23. **Kanthan R (2020)**. Curriculum mapping in Post Graduate Medical Education. 17th Asia Pacific Medical Education Conference 10th Jan 2020, Singapore

Grants

1. 2019-2026. Conversion from Unresectable to Resectable Liver Metastases in Patients with Liver only Metastatic Colorectal Cancer. Treated with FOLFOXIRI Plus Bevacizumab. The CONVERSION TRIAL. Total funding \$ 100,000. Canadian Institutes of Health Research. Co Applicant

KINLOCH, Marilyn (Mary)

Publications

1. In Support of Magnani and Taylor. DJ Dabbs, LA Chiriboga, B Jasani, MA Kinloch, KD Miller, S Nielsen, Archives of pathology & laboratory medicine 148 (1), 11-11, 2024.
2. Survey of NF1 inactivation by surrogate immunohistochemistry in ovarian carcinomas. M Köbel, RZ Yang, EY Kang, Z Al-Shamma, LS Cook, M Kinloch, Gynecologic Oncology 178, 80-88, 2023.
3. CCTG EN10: A phase II study of tailored adjuvant therapy in POLE-mutated and p53-wildtype/NSMP early-stage endometrial cancer (EC)—RAINBO BLUE. JN McAlpine, KCZ Han, M Kinloch, M Barkati, SE Ferguson, AW Fyles, Journal of Clinical Oncology 41 (16_suppl), TPS5632-TPS5632, 2023.
4. Grade and estrogen receptor expression identify a subset of no specific molecular profile endometrial carcinomas at a very low risk of disease-specific death A Jamieson, J Huvila, D Chiu, EF Thompson, S Scott, S Salvador, D Vicus, Modern Pathology 36 (4), 2023.
5. Molecular subtype stratified outcomes according to adjuvant therapy in endometrial cancer. A Jamieson, J Huvila, S Leung, D Chiu, EF Thompson, A Lum, M Kinloch, Gynecologic Oncology 170, 282-289, 2023.
6. Variability in endometrial carcinoma pathology practice: opportunities for improvement with molecular classification EF Thompson, J Huvila, A Jamieson, S Leung, A Lum, S Offman, A Lytwyn, Modern Pathology 35 (12), 1974-1982, 2022.
7. Molecular subtype stratified response to adjuvant therapy in endometrial cancer (086). A Jamieson, S Leung, E Thompson, A Lum, M Kinloch, L Helpman, Gynecologic Oncology 166, S58-S59, 2022.
8. Variation in practice in endometrial cancer and potential for improved care and equity through molecular classification A Jamieson, J Huvila, EF Thompson, S Leung, D Chiu, A Lum, Gynecologic oncology 165 (2), 201-214, 2022.
9. Her-2 Expression in p53 and Endometrial Cancers compared to Serous Carcinomas. M Kinloch, N Baniak, K Campbell, E Torlakovic, CB Gilks. LABORATORY INVESTIGATION 102 (SUPPL 1), 777-778, 2022.
10. OP008/# 194 P53ABN molecular subtype encompasses a morphologically diverse subset of endometrial cancers and identifies therapeutic opportunities to improve outcomes A Jamieson, E Thompson, J Huvila, S Leung, A Lum, L Helpman, International Journal of Gynecological Cancer 31 (Suppl 4), A14-A14, 2021.
11. OP020/# 524 Heath care resource and cost implications of integration of molecular classification in the management of endometrial cancer G Hanley, E Thompson, S Scott, M Kinloch, J Irving, S Leung, S Salvador, International Journal of Gynecologic Cancer 31 (Suppl 4), 2021.
12. Comparison of p53 immunohistochemical staining in differentiated vulvar intraepithelial neoplasia (dVIN) with that in inflammatory dermatoses and benign squamous lesions in the. YA Liu, JX Ji, N Almadani, RI Crawford, CB Gilks, M Kinloch, L Hoang. Histopathology 78 (3), 424-433, 2021.
13. OP015/# 492 Further stratification of no specific molecular profile (NSMP/P53WT) endometrial carcinomas to refine prognosis and identify therapeutic opportunities. LNMIN ENDOETRIAL. Int J Gynecol Cancer 31 (4), A1-A153, 2021.
14. 4 Refining pathologic interpretation of endometrial carcinomas: lessons learned from a nationwide study in a new era of molecular classification. E Thompson, J Huvila, S Leung, J Irving, N van der Westhuizen. International Journal of Gynecologic Cancer 30 (Suppl 3), 2020.
15. 6 Variation in practice in endometrial cancer (EC); can molecular classification direct care and reduce costs associated with management? E Thompson, A Lum, J Huvila, S Scott, V Lui, E He, T Salisbury, S Keane. International Journal of Gynecologic Cancer 30 (Suppl 3), 2020.
16. Diagnostic variation in p53 usage for endometrial carcinoma diagnosis: implications for molecular subtyping. N Baniak, CB Gilks, J DeCoteau, M Kinloch. International Journal of Gynecological Pathology 39 (6), 514-521, 2020.
17. Baniak, N., Gilks, B., Decoteau, J. & Kinloch, M. (2020). Diagnostic Variation in p53 Usage for Endometrial Carcinoma Diagnosis: Implications for Molecular Subtyping. *International Journal of Gynecologic Pathology*, (39): 6-514.
18. Molecular classification of endometrial carcinoma across Canada: Variation in practice and opportunities to move towards consistency of care. EF Thompson, S Leung, A Lum, J Irving, SA Scott, L Helpman, S Salvador. Gynecologic Oncology 159, 241-242, 2020.
19. Calcified Sister Mary Joseph nodule as the presenting complaint of advanced low-grade serous ovarian cancer. L Yang, M Kinloch, V Martin, F Rashidi. Radiology Case Reports 15 (9), 1638-1642, 2020.
20. Endometrial Carcinoma Molecular Subtype is Associated with Pathologic and Prognostic Indices: Findings from a National Study. E Thompson, S Leung, A Lum, J Senz, J Huvila, M Kinloch, S Offman. LABORATORY INVESTIGATION 100 (SUPPL 1), 1146-1147, 2020.
21. A Patient's Best Chance: Statistical Modelling Regarding Precision Medicine in Lung Cancer. M Kinloch, C Bell, J DeCoteau. LABORATORY INVESTIGATION 100 (SUPPL 1), 1866-1866, 2020.

Book Chapter

1. Hoang, L. & Kinloch, M. (May 2020). Inflammatory Diseases of the Vulva.. In Nucci M., Parra-Herran C. (Ed.), *Gynecologic Pathology* (pp.1-46). Philadelphia: Elsevier

Presentations

1. USCAP 2024 – Short Course Presentation – “Read Around your Cases! A better way to give Feedback”

2. **Kinloch, M.** (November 2021). Updates in Gynecologic Pathology. BC Pathology Day, Vancouver, November 24, 2021 to November 24, 2021.
3. **Kinloch, M.** (November 2021). The ProMisE of a Molecular Classification in Endometrial Cancer. Department of Obstetrics & Gynecology Grand Rounds, November 24, 2021 to November 24, 2021.
4. **Kinloch, M.** (December 2020). Do we need sub-specialist pathologists and do the fellowships need to be accredited?. XXXII Congress of the International Academy of Pathology, Glasgow, December 6, 2020 to December 8, 2020.
5. **Kinloch, M.** (September 2020). Variation in practice in endometrial cancer (EC); can molecular classification direct care and reduce costs associated with management?. 2020 International Gynecologic Cancer Society (IGCS) Annual Global Meeting - Virtual, September 10, 2020 to September 13, 2020.
6. **Kinloch, M.** (September 2020). Refining Pathologic Interpretation of Endometrial Carcinomas: Lessons Learned from a Nationwide Study in a new Era of Molecular Classification. 2020 International Gynecologic Cancer Society (IGCS) Annual Global Meeting - Virtual, September 10, 2020 to September 13, 2020.

Poster Presentations

1. USCAP 2024 – Poster Presentation – “Morphologic Correlates of Homologous Recombination Repair in High-grade Ovarian Carcinoma” – Abby Jia (Dean’s student)

Grants

1. 2024-2028. Defining the “Grey Zone” in Homologous Recombination Pathways in Ovarian Cancer and Using Artificial Intelligence to predict Homologous Recombination Deficiency. Total funding 90,000. Mitacs. Principal Investigator.
2. 2022- 2025. Development of 3D tissue engineered tumor microtissue models for precision medicine. Total Funding 120,000.0. Saskatchewan Health Research Foundation. Co Applicant.
3. 2022-2023. Establishment of an ovarian tissue cryopreservation optimization: a multidisciplinary approach. Total funding 50,000.0. Jim Pattison Children’s Hospital Foundation. Co Applicant.
4. 2021-2023. Tumour Testing and Ovarian Cancer Drug Prediction Program. Total funding 834,999.40 Ovarian Cancer Canada. Co Applicant.
5. 2020-2021. Comparison of p53 Immunohistochemistry staining patterns and TP53 sequencing for benign inflammatory and squamous vulvar lesions in comparison to dVIN. Total funding 5,000. University of Saskatchewan. Primary Investigator.
6. 2020- 2022. Detection of Salivary Biomarkers of 2019 Novel Coronavirus Using Mass Spectrometry-based Proteomics. Total funding 10,000. 2020 Rapid Response COVID-19, College of Medicine. Co Applicant.

LANG, Amanda

Publications

1. Tsybina, P. et al. Repeated false reactive ADVIA centaur® and bio-rad Geenius™ HIV tests in a patient self-administering anabolic steroids. *Bmc Infect Dis* 20, 9 (2020).
2. LeBlanc, J. J. et al. Real-time PCR-based SARS-CoV-2 detection in Canadian laboratories. *J Clin Virol* 128, 104433 (2020).
3. LeBlanc, J. et al. Age-stratified burden of pneumococcal community acquired pneumonia in hospitalised Canadian adults from 2010 to 2015. *Bmj Open Respir Res* 7, e000550 (2020).
4. Phillips, Z. C., Holfeld, K. I., Lang, A. L. & Richels, L. D. A case of milker’s nodules in Saskatchewan, Canada. *Sage Open Medical Case Reports* 8, 2050313X20984118 (2020).
5. Burak, K. W. et al. COVID-19 outbreak among physicians at a Canadian curling bonspiel: a descriptive observational study. *Cmaj Open* 9, E87–E95 (2021).
6. Charlton, C. et al. Practical guidance for clinical laboratories for SARS-CoV-2 serology testing. *Can Commun Dis Rep* 47, 171–183 (2021).
7. Stein, D. R. et al. Evaluation of commercial SARS-CoV-2 serological assays in Canadian public health laboratories. *Diagn Micr Infect Dis* 101, 115412 (2021).
8. Anderson, M. et al. An outbreak of COVID-19 associated with a fitness centre in Saskatchewan: Lessons for prevention. *CDCR* 47, 485–490 (2021).
9. Charlton, C. et al. Practical guidance for clinical laboratories for SARS-CoV-2 serology testing. *Can Commun Dis Rep* 47, 171–183 (2021).
10. Facciolo, A. et al. High-resolution analysis of long-term serum antibodies in humans following convalescence of SARS-CoV-2 infection. *Sci Rep* 12, 9045 (2022).
11. Dibernardo, A. et al. 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).
12. Banerjee, A. et al. 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).

13. LeBlanc, J. J. et al. 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).
14. Pires, L. et al. Translational feasibility and efficacy of nasal photodynamic disinfection of SARS-CoV-2. *Sci Rep-uk* 12, 14438 (2022).
15. O'Brien, S. F. et al. Cross-Canada Variability in Blood Donor SARS-CoV-2 Seroprevalence by Social Determinants of Health. *Microbiol. Spectr.* 11, e03356-22 (2023).
16. Murphy, T. J. et al. The evolution of SARS-CoV-2 seroprevalence in Canada: a time-series study, 2020–2023. *CMAJ* 195, E1030–E1037 (2023).
17. Atkinson, A. et al. Canadian SARS-CoV-2 serological survey using antenatal serum samples: a retrospective seroprevalence study. *Can. Méd. Assoc. Open Access J.* 11, E305–E313 (2023).

McNAIR, Erick

Publications

1. Bally J, Spurr S, Hodgeson-Viden H, **McNair E.** (2022). Using an Interprofessional Competency Framework to Enhance Collaborative Pediatric Nursing Education and Practice. *Biomed Central Nursing*, June; 21(147).
2. **McNair E**, Bezaire J, Moser M et al. (2021). The association of matrix metalloproteins with acute kidney injury following cardiopulmonary bypass supported cardiac surgery. *Canadian Journal of Kidney Health and Disease*, 8:1–13.
3. Gamble J, McKay W, Norton J, Grant M, **McNair E**, et al. (2021). A Performance Comparison of the Most Commonly Used Minimally Invasive Monitors of Cardiac Output. *Canadian Journal of Anaesthesia*, 68(11):1668-1682.
4. Moser M, Schmidt S, Banerjee T, **McNair E**, Sawicki G. (2020). Prearrest doxycycline protects donation after circulatory death kidneys. *Scientific Reports*, 10:22272.
5. **McNair E**, McKay WP, Mondal PK, Bryce RD. (2020). Transfusion Use and Hemoglobin Levels by Blood Conservation Method Post Cardiopulmonary Bypass. *Annals of Thoracic Surgery*, 11: S0003-4975(20)30541-5.
6. Spurr S, Bally J, Bullin C, Allan D, **McNair E.** (2020). The prevalence of undiagnosed Prediabetes/type 2 diabetes, prehypertension/ hypertension, and obesity among ethnic groups of adolescents in Western Canada. *Biomed Central Pediatrics*, 23;20(1):31.

Conference Abstracts

1. **McNair E.** Assessment of Proteome Changes in the Development of Acute Kidney Injury following Cardiopulmonary Bypass-supported Cardiac Surgery. Black Excellence in Science, Technology Mathematics and Medicine (BE-STEMM) 2022 Virtual Conference.
2. **McNair E.** Assessment of Proteome Changes in the Development of Acute Kidney Injury following Cardiopulmonary Bypass-supported Cardiac Surgery. Department of Pathology Faculty Research Day. 2022.
3. **McNair E.** Novel biomarkers of acute kidney injury following cardiopulmonary bypass supported cardiac surgery. Department of Surgery Virtual Faculty Research Day. 2022.
4. **McNair E.** Novel biomarkers of acute kidney injury following cardiopulmonary bypass supported cardiac surgery. Black Excellence in Science, Technology Mathematics and Medicine (BE-STEMM) 2022 Virtual Conference.
5. **McNair E.** Novel biomarkers of acute kidney injury following cardiopulmonary bypass supported cardiac surgery. The 2021 Canadian Society of Clinical Perfusion (CSCP) & Western Canada Cardiac Anesthesia Symposium (WCCAS) Virtual Joint National Meeting.

Presentations

1. **McNair E.** Novel biomarkers of acute kidney injury following cardiopulmonary bypass supported cardiac surgery. Colloquium of the Cardiovascular Perfusion Sciences Graduate Program, CoM, University of Arizona, Annual Conference, April 2022, USA.
2. **McNair E.** Novel biomarkers of 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, 2022
3. **McNair E.** Novel biomarkers of acute kidney injury following cardiopulmonary bypass supported cardiac surgery. Cardiothoracic Research and Educational Forum (CREF). September 2021, Annual Conference San Diego, California, USA
4. **McNair E.** Techniques in blood conservation during cardiac surgery. Cardiothoracic Research and Educational Forum (CREF). September 2021, Annual Conference San Diego, California, USA
5. **McNair E.** Novel biomarkers of acute kidney injury following cardiopulmonary bypass supported cardiac surgery. Cardiothoracic Research and Educational Forum (CREF). Postponed to the following year due to COVID-19. September 2020, Annual Conference San Diego, California, USA

Poster Presentations

1. Spurr S, Bally J, **McNair E**. Pediatric Nurses Need to Act Now: Undiagnosed Prediabetes and Type 2 Diabetes Among Ethnic Groups of Adolescents in Canada. Society of Pediatric Nurses 32nd Annual Conference, April 2022, Anaheim, California, USA.
2. **McNair E**. The Association of Matrix Metalloproteins with Acute Kidney Injury following CPB-supported Cardiac Surgery. Virtual Poster presentation. Saskatchewan Health Research Showcase. November 2020.
3. Spurr S, Bally J, **McNair E**, Spurr S, Bally J, **McNair, E**. Engaging with Families in Research Designed to Prevent Prediabetes and Type 2 Diabetes in Adolescents Living in Canada. The 14th Annual International Family Nursing Association. September 2019, Washington, DC. USA.
4. **McNair E**. Prevention of Acute Kidney Injury during Cardiopulmonary Bypass-supported cardiac surgery: Role of Matrix Metalloproteinases. Third Annual CoMRAD Virtual Symposium, March 2020.
5. Krieger E, Shavadia J, **McNair E**, Harding S, Orvold J, Serviss J. Correlation between point-of-care activated clotting times and laboratory-determined anti-Xa unfractionated heparin levels to guide management of sheath removal. Annual Canadian Cardiovascular Congress, 2020 Virtual.

Grants

1. 2021-2023. Role of Matrix Metalloproteinases in Acute kidney injury in patients undergoing cardiopulmonary bypass-supported surgery. College of Medicine Graduate Student Research Award.
2. 2021-2022. Assessment of Proteome Changes in the Development of Acute Kidney Injury following Cardiopulmonary Bypass-supported Cardiac Surgery. University of Saskatchewan, College of Medicine Research Award (CoMRAD).

MOSTAFA, Ahmed

Publications

1. Zhao Y, Kakodkar P, Pan H, Zhu R, Musa K, Hassan A, Shoker A, Webster D, Pearce T, Dokouhaki P, Wu F, Mostafa A*. The Interplay between Human Leukocyte Antigen Antibody Profile and COVID-19 Vaccination in Waitlisted Renal Transplant Patients. Arch Pathol Lab Med (2024).
2. Zhang Z, Yu H, Wong-Ma E, Dokouhaki P, Mostafa A, S.Shavadia J, Wu F, Huan T. Reducing Quantitative Uncertainty Caused by Data Processing in Untargeted Metabolomics. Anal Chem. 2024.
3. Kakodkar P, Zhao Y, Pan H, Wu F, Pearce T, Webster D, Elemetry M, Sabry W, Kwan L, Pelzer L, Bosch M, Tran J, Sherwood K, Lan J, Keown P, Liwski R and Mostafa A. Validation of Next-Generation Sequencing (NGS) Based Chimerism Testing for Accurate Detection and Monitoring of Engraftment in Hematopoietic Stem Cell Transplantation. Front. Genet., Sec. Immunogenetics 2023.
4. Tran J, Sherwood K, Mostafa A, Benedicto RV, ElaAlim A, Greenshields A, Keown P, Liwski R and Lan JH. Novel alleles in the era of next-generation sequencing-based HLA typing calls for standardization and policy. Front. Genet., Sec. Immunogenetics Volume 14 - 2023
5. 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.
6. Abdelfatah N, Mostafa AA, French CR, Doucette LP, Penney C, Lucas MB, Griffin A, Booth V, Rowley C, Besaw JE, Tranebjærg L, Rendtorff ND, Hodgkinson KA, Little LA, Agrawal S, Parnes L, Batten T, Moore S, Hu P, Pater JA, Houston J, Galutira D, Benteau T, MacDonald C, French D, O'Rielly DD, Stanton SG, Young TL A Pathogenic Deletion in Forkhead Box L1 (FOXL1) Identifies the First Otosclerosis (OTSC) Gene. Hum Genet. 2022 Apr;141(3-4):965-979.

Book Chapter

1. Title: Engraftment Monitoring published, Module 5 Chapter 5.02. Publisher Name: ASHI University (Online). July, 2023.
2. Title Guidelines for the Discovery and Documentation of Novel HLA Alleles: A Standard Operating Procedure. ASHI Quarterly, Fourth Quarter 2023 Volume 47, Issue 4 Page 8-11.

Conference Abstracts

1. Kakodkar P, Zhao Y, Pan H, Elemetry M, Sabry W, Pelzer L, Kwan L Pearce T, Webster D, Mostafa A*. Improving monitoring and detection of engraftment in hematopoietic stem cell transplantation through next-generation sequencing (NGS) based Chimerism testing: A robust validation study. Human Immunology. 2023 Sep 1;84:112-3.
2. Pan, H., Zhao, Y., Kakodkar, P, Mainra, R Webster, D., Pearce, T., Mostafa A*. Cracking the code: Exploring the connection between COVID-19 vaccines and HLA antibodies in kidney transplant candidates. Human Immunology. 2023 Sep 1;84:149-50.
3. 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.
4. 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) p75.

5. 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.
6. Davidovic F, Dokouhaki P, Pearce T, Mostafa A*. Overutilization of HLA Testing for Celiac Disease Screening. *Human Immunology* 82 (2021) page 165.
7. Mostafa A*, Webster D, Twyla Pearce T, Gorkoff K, Shanofer C, Seasonal Influenza vaccine impacted HLA antibody formation in a kidney transplant recipient with history of blood transfusion: A case study *Human Immunology* 82 (2021) page 64.
8. Mostafa AA*, Berka Y, Kalra A, Khan K, Berka A. The Significance Of Monocyte Crossmatch In Solid Organ Transplantation. *Human Immunology* 81 (2020) Page: 147.

Presentations

1. Mostafa AA (2024): Enhancing the HLA Toolbox: Introducing Epitope Matching and Analysis. Qasr El Aini Medical School Lecture, Cairo University, Cairo, Egypt, May 7th, 2024
2. Mostafa AA (2024): Enhancing Deceased Donor Donation: Insights from the Histocompatibility Lab with Case Studies, Summit of Urology and Nephrology 2023 Annual Meeting, Triumph Luxury Hotel Cairo, Egypt, May 8th 2024.
3. Mostafa AA (2024): Advancing the HLA Toolkit: Unveiling Epitope Matching and Analytical Techniques. HLA By Luminex Overview and Products Workshop, Summit of Urology and Nephrology 2023 Annual Meeting, Triumph Luxury Hotel Cairo, Egypt, May 9th, 2024
4. Mostafa AA (2024): Unlocking the future: Revolutionizing research with AI tools, Summit of Urology and Nephrology 2024 Annual Meeting, Triumph Luxury Hotel Cairo, Egypt, May 9th, 2024.
5. Mostafa AA (2024): Basic Transplant Immunology and Histocompatibility. 3rd Renal and Organ Transplantation Immunology- Novotel Cairo Airport, Egypt January 11th, 2024.
6. Mostafa AA (2024): Creating Synergy between the HLA Lab and Transplant Team for Optimal Patient Care. 3rd Renal and Organ Transplantation Immunology- Novotel Cairo Airport, Egypt January 12th, 2024.
7. Mostafa AA (2024): Standardization of HLA typing Report. 3rd Renal and Organ Transplantation Immunology- Novotel Cairo Airport, Egypt January 13th, 2024.
8. Mostafa AA (2023): Unlocking New Horizons Exploring the Vitality of Lineage-Specific Chimerism Analysis after HSCT49th Annual ASHI Meeting- San Antonio, Texas, USA. STEMCELLS User Group October 19th, 2023.
9. Mostafa AA (2023): Revolutionizing Chimerism Analysis: Harnessing the Power of NGS and SNP Panels for Superior Results. 49th Annual ASHI Meeting- San Antonio, Texas, USA. CareDx User Group October 18th, 2023
10. Mostafa AA (2023): Unlocking the Versatility of Real-Time PCR: Expanding Horizons Beyond Deceased Donor Typing. 49th Annual ASHI Meeting- San Antonio, Texas, USA. One Lambda User Group October 17th, 2023
11. Mostafa AA (2023): Advancements in Engraftment and Chimerism Monitoring: Bridging Imagination with Scientific Achievement. National HLA Advisory Board Committee (NHLAAC) Monthly Journal Club, Canada, October 12th 2023.
12. Mostafa AA (2023): Revolutionizing Stem Cell Engraftment Monitoring with Next-Generation Sequencing Groundbreaking Discoveries from a Canadian Laboratory. 12th Oriental Congress of Lab Medicine-Shanghai, China September 15th, 2023.
13. Mostafa AA (2023): Beyond the Bench: Navigating Immunological Risk Assessment with Our HLA Lab Experience. The 42nd AND the 38th CURRENT didactic and laboratory Courses on Immunogenetics & Molecular Genetics, Mexico City Mexico, August 9th 2023
14. Mostafa AA (2023): History of Transplantation Immunology: Ancient Legends to Modern Practice, the North American Chinese Clinical Chemists Association (NACCCA) webinar, June 26th, 2023.
15. Mostafa AA (2023): Epitope Mismatch as a Tool for Predication of Graft Outcome. Summit of Urology and Nephrology 2023 Annual Meeting, Royal Maxim Palace Kempinski Cairo, Egypt, May 3rd-5th 2023.
16. Mostafa AA (2023): Expanding the HLA Toolbox: Introducing the Epitope for Enhanced HLA Antibodies Analysis, Summit of Urology and Nephrology 2023 Annual Meeting, Royal Maxim Palace Kempinski Cairo, Egypt, May 3rd-5th 2023.
17. Mostafa AA (2023): Interpretation of Donor/Recipient HLA Typing (Clinical scenarios and interactive discussion). 3rd Kidney Transplant Update. Dubai Hospital-United Arab Emirates. February 25th, 2023. Keynote Speaker. Virtual Conference (Over 300 participants).
18. Mostafa AA (2023): Two cases of kidney transplantation: challenges and solutions. Practical approach to renal transplant Immunology 2nd course, Novotel Cairo Airport, Egypt. 19th January 2023.
19. Mostafa AA (2023): Principles of Virtual Crossmatch for organ matching Practical approach to renal transplant Immunology 2nd course, Novotel Cairo Airport, Egypt. 20th January 2023.
20. Mostafa AA (2022): A Roadmap for Novel HLA Alleles from Discovery to Submission. One Lambda Webinar Transplant Immunology Series December 14th and 15th, 2022.
21. Mostafa AA (2022): Lessons on Adopting AllType™ FASTplex™ HLA Typing: Innovation Across the Pre- and Post-NGS Journey SBTMO, Centro de Convencoes Frei Caneca, São Paulo, Brazil August 23-26th, 2022
22. Mostafa AA (2022): History of Transplantation Immunology: Ancient Legends to Modern Practice, Arabian Society of Histocompatibility and Immunogenetics (ARSHI) first annual meeting, Riyadh Saudi Arabia 4-5 March 2022.

23. Mostafa AA (2021): AllType™ FASTplex™ v2: Our HLA Laboratory Experience. ASHI 2021 annual meeting. Orlando, Florida USA, September 26- October 1st, 2021.
24. Mostafa AA (2021): AllType™ FASTplex™ NGS and MiniSeq: Our Lab Combo for HLA Typing. ASHI 2021 Regional Educational Virtual Workshops June 4th 2021.
25. Mostafa AA, (2020): NGS for HLA Typing: A Tale of Two Cities. National HLA Advisory Board Committee (NHLAAC) Monthly Journal Club, Canada, December 10th, 2020
26. Mostafa AA, (2020): Monocyte Flow Cell Crossmatch as an Alternative Approach for Patients under Rituximab Therapy. Flow Cytometry Virtual Workshop King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia December 19th, 2020.
27. Mostafa AA, (2020): Monocyte Flow Cell Crossmatch as an Alternative Approach for Patients under Rituximab Therapy. Annual Department of Pathology and Laboratory Medicine Residents' & Graduate Students' Research Day, College of Medicine, University of Saskatchewan, Saskatoon, SK, Canada October 26th, 2020

Poster Presentation

1. Wang E, Wu F, Mostafa A*. Eplet Mismatch Thresholds: A High-Resolution Approach for Risk Assessment and Prognosis in Renal Transplant Patients. 2024 CST Annual Scientific Meeting held at the Le Westin Montréal, in Montreal, Quebec, October 14 - 18, 2024.
2. Kakodkar P and, Mostafa A*. Shekari N, Johnston B, Webster D, Pearce T, Wu F, Case Report: Emergence of de novo Donor-Specific HLA antibodies post Pneumococcal & Varicella Zoster Vaccinations in Waitlisted Renal Transplant Candidate. American Society of Clinical Pathology (ASCP) 2024 annual Meeting, Chicago, IL, USA, September 3-6 2024
3. Wang E, Wu F, Mostafa A*. Unveiling Precision in Kidney Transplantation: Harnessing the Utility of High-Resolution HLA Typing by Applying Molecular Mismatch for Post-Transplant Risk Assessment. Alberta Transplant Institute (ATI) Research Day 2024, University of Alberta, Edmonton, Alberta Canada, May15, 2024.
4. Kakodkar P and, Mostafa A*. Harnessing the Power of Cell Lineage Analysis for Captivating Insights into Engraftment Monitoring and Clinical Outcome in Allogeneic Hematopoietic Transplant. AMP (Association for Molecular Pathology) EUROPE 2024 June 24-26 Madrid, Spain.
5. Pan H, Zhao Y, Kakodkar P, Zhu R, Musa K, Hassan A, Shoker A, Mainra R, Webster D, Pearce T, Wu F, Dokouhaki P, Mostafa A*. Cracking the code: exploring the connection between COVID-19 vaccines and HLA antibodies in kidney transplant candidates. 2023 ASHI Annual Meeting held at San Antonio Marriott River Center, San Antonio, Texas, October 16 - 20, 2023
6. Kakodkar P, Zhao Y, Henry Pan, Pearce T, Webster D, Kwan L, Elemetry M, Sabry W, Pelzer L, and Mostafa A*. Improving monitoring and detection of engraftment in hematopoietic stem cell transplantation through next-generation sequencing (NGS) based Chimerism testing: a robust validation study. 2023 ASHI Annual Meeting held at San Antonio Marriott Rivercenter, San Antonio, Texas, October 16 - 20, 2023
7. Kakodkar P, Zhao Y, Henry Pan, Pearce T, Webster D, Kwan L, Elemetry M, Sabry W, Pelzer L, and Mostafa A*. Validation of Next-Generation Sequencing (NGS) Based Chimerism Testing for Accurate Detection and Monitoring of Engraftment in Hematopoietic Stem Cell Transplantation. 7th Annual REACH - Resident Research Day, College of Medicine, at the University of Saskatchewan, June 22nd 2023.
8. 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
9. 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
10. 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.
11. 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.
12. 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
13. Murthy S I, Dokouhaki P, Mostafa A* Wu F. Thyroid Function Testing: Choosing Unwisely in Saskatchewan. Virtual Undergraduate Summer Research Showcase, College of Medicine USASK. October 15th 2021.
14. Davidovic F, Mostafa A*, Dokouhaki P, Wu F. Overutilization of HLA Testing for Celiac Disease Screening. Virtual Undergraduate Summer Research Showcase, College of Medicine USASK. October 15th, 2021.
15. Davidovic F, Dokouhaki P, Pearce T, Mostafa A*. Overutilization of HLA Testing for Celiac Disease Screening. 1st, 47th American Society of Histocompatibility and Immunogenetics annual meeting, Orlando, FL, USA, September 27-October 2021.

16. Mostafa A, Webster D, Twyla Pearce T, Gorkoff K, Shanofer C, Seasonal Influenza vaccine impacted HLA antibody formation in a kidney transplant recipient with history of blood transfusion: A case study, 47th American Society of Histocompatibility and Immunogenetics annual meeting, Orlando, FL, USA, September 27-October 2021.

Grants

1. 2022-2026. A National prospective eplet-compatibility matching program for Canadian renal transplant patients (GENOMIC APPLICATIONS PARTNERSHIP PROGRAM (GAPP) Total funding \$10,834,538. Co-Applicant.
2. 2024. Eplet Mismatches in Organ Transplantation Bridging the Knowledge Gap. College of Medicine, University of Saskatchewan. Total funding \$5000. Principal investigator.
3. 2024. Enhance The Identification Of Potential Immunological Mismatches in Kidney Transplantation By Using Computational Algorithm. College of Medicine, University of Saskatchewan. Total funding \$5000 Principal investigator.
4. 2023.. Epitope analysis as a tool for prediction of graft failure. College of Medicine, University of Saskatchewan. Total funding \$5000. Principal investigator.
5. 2023. Vitamin Testing: Do We "Choose Wisely" in Saskatchewan? College of Medicine, University of Saskatchewan. Total funding \$5000. Principal investigator.
6. 2022. The Impact of Laboratory Testing for SARS-CoV-2 on Quality and Patient Safety. Investigation of COVID-19 Vaccines on Kidney Transplant. College of American Pathologists (CAP). Total funding USD\$17,500. Principal investigator.
7. 2022. Cytokine profile and disease severity in patients with COVID-19. College of Medicine, University of Saskatchewan. Total funding \$5000. Principal investigator.
8. 2021. Title of project: Modeling for Risk Stratification of Patients Infected with COVID-19 Based on Cytokine Profile and Other Immune-Related Biomarkers. Total funding \$10,000. College of Medicine, Respiratory Research Centre, and the University of Saskatchewan. Co-Applicant.
9. 2021. Choosing Wisely: Thyroid Function Testing. College of Medicine, University of Saskatchewan. Principal investigator.

REES, Henrike

Publications

1. Price P, Ganugapati U, Gatalica Z, Kakadekar A, Macpherson J, Quenneville L, [Rees H](#), Slodkowska E, Suresh J, Yu D, Lim HJ, Torlakovic EE. Reinventing Nuclear Histo-score Utilizing Inherent Morphologic Cutoffs: Blue-brown Color H-score (BBC-HS). *Appl Immunohistochem Mol Morphol*. 2023 Aug 1;31(7):500-506.
2. Fang –I Lu, Anna Plotkin, Hala Faragalla, Zusana Kos, Danh Tran-thanh, [Henrike Rees](#), Penny Barnes A National Consensus Approach to the Pathologic Assessment of Breast Specimens Post-Neoadjuvant Therapy Posted on the CAP-ACP website, October 2021.

Book Chapter

Abstracts

1. Fang-I Lu, Danh Tran-Than, Louise Quenneville, Nico Brits, Penny Barnes, Elzbieta Slodkowska, [Henrike Rees](#), Raymond Maung. Multicenter Workload Assessment Of Breast Cancer Post-neoadjuvant Therapy CAP-ACP poster 17, Academic Session, June 23-24, 2021.

Presentations

1. Presented as poster: [Fang-I Lu](#), Danh Tran-Thanh, Louise Quenneville, Nico Brits, Penny Barnes, Elzbieta Slodkowska, [Henrike Rees](#), Raymond Maung: *Multicenter Workload Assessment Of Breast Cancer Post-neoadjuvant Therapy At CAP-ACP Academic Session* held virtually June 23-24, 2021.

SOUTAR, Craig

Publications

1. Youn JH, Walker L, Carlson S, **Soutar C**, Frank K, Zelazny A, Das S. (2024) Mitigation of Errors on an FDA Approved Platform for Cytomegalovirus Viral Load Assay. *J. Clin. Microbiol.* JCM00416-24R1.
2. Totten AH, Uzel G, Khil PP, Youn JH, Treat J, **Soutar CD**, Holland SM, Dekker JP, Zerbe CS. (2022) Disseminated *Mycoplasma orale* infection in patients with Phosphoinositide-3-Kinase Regulatory Subunit 1 Mutations. *Open Forum Infect. Dis.* 9(9): ofac472.
3. **Soutar CD**, & Stavriniades J. (2022) Phylogenomic analysis of the *Erwiniaceae* supports reclassification of *Kalamiella piersonii* to *Pantoea piersonii* comb. nov. and *Erwinia gerundensis* to the new genus *Duffiyella* gen. nov. as *Duffiyella gerundensis* comb. nov. *Mol. Genet. Genomics.* 297, 213-225.
4. **Soutar CD** & Stavriniades J. (2020) A phylogenetic analysis supporting the taxonomic revision of eight genera within the bacterial order *Enterobacterales*. *Int. J. Syst. Evol. Micr.* 70(12): 6524-6530.

5. McDougall DL, **Soutar CD**, Perry BJ, Brown C, Alexander D, Yost CK, Stavrinides J. (2020) Isolation and Characterization of vB_PagP-SK1, a T7-Like Phage Infecting *Pantoea agglomerans*. PHAGE. 1(1): 45–56.

Presentations

1. **Soutar CD**, Totten AH, Jones P, Ly MA, & Zelazny AM. Limited Verification of the Sensititre™ RAPMYCO2 and NOCARDIA Susceptibility Panels at the NIH Clinical Center. ASM Microbe 2022, Walter E. Washington Convention Center, Washington, DC, United States.
2. **Soutar CD**, Porterfield H, & Zerbe CS. Infection with an unclassified member of *Burkholderiaceae* in a CGD patient leading to HLH and death: A case report. AMMI Canada-CACMID Annual Conference 2022, Sheraton Vancouver Wall Centre, Vancouver, BC, Canada.

SAXENA, Anurag (2023-2024)

Peer-reviewed Publications

1. **Saxena A**, Desanghere L, Dore K, Reiter H. Incorporating a situational judgment test in residency selections: clinical, educational and organizational outcomes. BMC Medical Education. 2024 March.
2. **Saxena A**, Desanghere L. A framework for residents' pursuit of excellence based upon non-cognitive attributes. Postgraduate Medical Journal. 2023; 99(1167):17-24.

Conference Presentations

1. Desanghere, L., **Saxena, A.**, Robertson-Frey, T., Shirazi, S., & Saxena, A. A Disorienting Dilemma In Medical Education: Understanding the impact of large-scale organizational changes on learning and healthcare provision in medical residents and students. AAMC, November, 2023.
2. **Saxena, A.**, Desanghere, L., Johnston, B. & Robertson-Frey, T. Exploring developmental readiness and organizational factors on leader development, practice, and effectiveness in postgraduate medical education. ICRE, October, 2023.
3. Desanghere, L., Robertson-Frey, T. & **Saxena, A.** Learning environment evaluations in Postgraduate Medical Education: An exploration of individual factors impacting ratings. ICRE, October, 2023.
4. Robertson-Frey, T., Okunola, O., Livingston, G., Desanghere, L. & **Saxena, A.** Development and evaluation of the quality referral and consultation education (QRCE) curriculum at the University of Saskatchewan. ICRE, October, 2023.
5. Desanghere, L., **Saxena, A.**, Robertson-Frey, T., Shirazi, S., & Saxena, A. Disorienting Dilemma: Understanding the impact of large-scale organizational changes on learning and healthcare provision in medical residents and students. AMEE, August, 2023.
6. **Saxena, A.**, Desanghere, L. & Robertson-Frey, T. Learner perceptions and suggestions to enhance inclusion, belonging and workplace kindness. AMEE, August, 2023.
7. Desanghere, L., **Saxena, A.**, Johnston, B. & Robertson-Frey, T. Developmental readiness and organizational factors: impact on leader development, practice, and effectiveness. RISE, June, 2023.
8. Okunola, O., Robertson-Frey, T., Livingston, G., Desanghere, L. & **Saxena, A.** Development and Evaluation of the Quality Referral and Consultation Education (QRCE) Curriculum at the University of Saskatchewan. RISE, June, 2023.
9. Shirazi, S., **Saxena, A.**, Desanghere, L., Saxena, A., Robertson-Frey, T. A Disorienting Dilemma: Understanding the impact of large-scale organizational changes on learning and healthcare provision in medical residents and students. RISE, June, 2023
10. Robertson-Frey, T., Desanghere, L. & **Saxena, A.** The impact of individual factors on learning environment. RISE, June, 2023.

Grants / Contracts

Commissioned work for the Ministry of Immigration and Career Training, Government of Saskatchewan. Project: Improving International Medical Graduate (IMG) Routes to Clinical Placement in Saskatchewan.

Summer student supervision

Dean's project: Evaluation and enhancement of learning environment at postgraduate training sites. Summer 2023 Ms. Noor Rehman.

Workshops (national and international)

Workshop (in -person): College of Medicine, Provincial Department Head Forum, Saskatoon, SK, 01 Feb 2024	Topic: Building better relationships for better outcomes	Co-facilitators: Anurag Saxena, Sharon Bishop, Graham Dickson, Bill Tholl. Time: 6 hours.
Workshop (in-person): International Conference on Residency Education, Halifax, Canada. 21 October 2023.	Topic: Applying Leader Developmental Readiness to enhance personal and organizational leadership	Co-facilitators: Anurag Saxena and Tanya Robertson-Frey. Time 1 hr 45 min.
Workshop (in-person): Canadian Conference on Physician Leadership, Vancouver, Canada. 27 May 2023,	Topic: Reconciling physician leadership dualities	Co-facilitators: Anurag Saxena, Marla Davidson, Karan Vats. Time 1.5 hours.
Workshop (in-person): Canadian Conference on Physician Leadership, Vancouver, Canada. 25 May 2023,	Topic: Critical success factors for physician leadership	Co-facilitators: Anurag Saxena and Graham Dickson. Time 6 hrs.
Workshop (in-person): King Abdul Aziz University Hospital. Jeddah, Saudi Arabia. 17 May 2023.	Topic: Strengths-based leadership	Facilitator: Anurag Saxena. Time: 6 hrs.
Workshops (in-person): King Abdul Aziz University Hospital. Jeddah, Saudi Arabia. 18 May 2023.	Topic: Effective communication: engaging others in an organization	Facilitators: Anurag Saxena. Time: 6 hrs.
Workshop (in-person): College of Medicine, Saskatoon, SK, 28 April 2023	Topic: Trust, access and joint decision-making; foundations of effectively leading together	Facilitator: Anurag Saxena. Time: 3.5 hrs.
Workshop (in-person): Maulana Azad Medical College and Lok Nayak Jai Prakash Hospital New Delhi, India, April 2023	Topic: Future of healthcare and education	Co-facilitators: Anurag Saxena, Ritu Saxena, Graham Dickson, Arun Garg. Time: 5.5 hrs.
Workshop (in-person): Consortium for HealthCare Organizations in India (CAHO) annual meeting, Hyderabad, India, April 2023.	Topic: LEADS for leadership in healthcare	Co-facilitators: Anurag Saxena, Graham Dickson, Arun Garg, Shweta Prabhakar. Time: 6 hrs.

Review of scholarly work

Manuscript review (for manuscripts submitted to): Academic Medicine, Journal of Healthcare Leadership, BMJ Leader, Medical Education online, Medical Education, BMC Medical Education, Journal of Urban Sustainable Development, Education for Health, International Journal of Leadership Education, Nursing Research and Reviews, Psychology Research and Behavior Management, Risk Management and Health Care Policy, and Journal of Multidisciplinary Healthcare.

Grant review: for the Royal College of Physicians and Surgeons of Canada, Education Research grants (April-May 2023).

Reviewer of abstracts submitted to a conference: for the 24th annual conference of the International Leadership Association (March-April 2023).

Committees and professional organizations

1. Member, Council of 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 and Advisor, national and international residency programs, the Royal College of Physicians and Surgeons of Canada
4. Planning advisory board member, The International Conference on Residency Education (ICRE)

Publications

1. Giri, S., Allen, KJH., Prabaharan, CB., Ramirez, JB., Fiore, L., **Uppalapati, M.** & Dadachova, E. (2024). Initial insights into the interaction of antibodies radiolabeled with Lutetium-177 and Actinium-225 with tumor microenvironment in experimental human and canine osteosarcoma.. *Nuclear medicine and biology*, 134-135
2. Njotu, FN., Ketchemen, JP., Tikum, AF., Babeker, H., Gray, BD., Pak, KY., **Uppalapati, M.** & Fonge, H. (2024). Efficacy of [67Cu]Cu-EB-TATE Theranostic Against Somatostatin Receptor Subtype-2-Positive Neuroendocrine Tumors.. *Journal of nuclear medicine : official publication, Society of Nuclear Medicine*, 65(4): 533-539.
3. Prabaharan, CB., Giri, S., Allen, KJH., Bato, KEM., Mercado, TR., Malo, ME., Carvalho, JLC., Dadachova, E. & **Uppalapati, M.** (2023). Comparative Molecular Characterization and Pharmacokinetics of IgG1-Fc and Engineered Fc Human Antibody Variants to Insulin-like Growth Factor 2 Receptor (IGF2R).. *Molecules*, 28(15)
4. Allen, KJH., Kwon, O., Hutcheson, MR., Grudzinski, JJ., Cain, SM., Cruz, FA., Vinayakamoorthy, RM., Sun, YS., Fairley, L., Prabaharan, CB., Dickinson, R., MacDonald-Dickinson, V., **Uppalapati, M.**, Bednarz, BP. & Dadachova, E. (2023). Image-Based Dosimetry in Dogs and Cross-Reactivity with Human Tissues of IGF2R-Targeting Human Antibody.. *Pharmaceuticals*, 16(7):
5. Jang, J., Tang, K., Youn, J., McDonald, S., Beyer, HM., Zurbriggen, MD., **Uppalapati, M.** & Woolley, GA. (2023). Engineering of bidirectional,cyanobacteriochrome-based light inducible dimers (BICYCL)s. *Nature Methods*, 20(3):432-441.
6. Babeker, H., Ketchemen, JP., Annan, Sudarsan A., Andrahennadi, S., Tikum, AF., Nambisan, AK., Fonge, H. & **Uppalapati, M.** (2022). Engineering of a Fully Human Anti-MUC-16 Antibody and Evaluation as a PET Imaging Agent. *Pharmaceuticals*, 14(12): 2824.
7. Woloschuk, R.M., Reed, P.M.M., Jaikaran, A.S.I., Demmans, K.Z., Youn, J., Kanelis, V., **Uppalapati, M.** & Woolley, G.A. (2021). Structure-based design of a photoswitchable affibody scaffold.. *Protein Science*, 30(12): 2359-2372.
8. Broqueza, J., Prabaharan, C.B., Allen, K.J.H., Jiao, R., Fisher, D.R., Dickinson, R., MacDonald-Dickinson, V., **Uppalapati, M.** & Dadachova, E. (2021). Radioimmunotherapy Targeting IGF2R on Canine-Patient-Derived Osteosarcoma Tumors in Mice and Radiation Dosimetry in Canine and Pediatric Models. *Pharmaceuticals*, 15(1): 10.
9. Strozen, T.G., Sharpe, J.C., Harris, E.D., **Uppalapati, M.** & Toosi, B.M. (2021). The EphB6 Receptor: Kinase-Dead but Very Much Alive. *International Journal of Molecular Sciences*, 22(15): 8211.
10. Broqueza, J., Prabaharan, CB., Andrahennadi, S., Allen, KJH., Dickinson, R., MacDonald-Dickinson, V., Dadachova, E. & **Uppalapati, M.** (2021). Novel Human Antibodies to Insulin Growth Factor 2 Receptor (IGF2R) for Radioimmunoimaging and Therapy of Canine and Human Osteosarcoma. *13(9): 2208.*
11. Marinec, PS., Landgraf, KE., **Uppalapati, M.**, Chen, G., Xie, D., Jiang, Q., Zhao, Y., Petriello, A., Deshayes, K., Kent, SBH., Ault-Riche, D. & Sidhu, SS. (2021). A Non-immunogenic Bivalent d-Protein Potently Inhibits Retinal Vascularization and Tumor Growth. *American Chemical Society Chemical Biology*, 16(3): 548-556.
12. Woloschuk, RM., Reed, PMM., McDonald, S., **Uppalapati, M.** & Woolley, GA. (2020). Yeast Two-Hybrid Screening of Photoswitchable Protein-Protein Interaction Libraries.. *Journal of Molecular Biology*, 432(10): 3113-3126.
- 13.

Book Chapter

1. McDonald, S., Annan, Sudarsan A., Babeker, H., Budharaju, K. & **Uppalapati, M.** (May 2021). Generation of Protein Inhibitors for Validation of Cancer Drug Targets Identified in Functional Genomic Screens. In FrancoVizeacoumar and Andrew Freywald (Ed.), *Genetic Interactions Mapping: Methods and Protocols*.

Abstracts

1. Ryan, Woloschuk*, Maximilian, Reed., Anna, Jaikaran., Karl, Demmans., Jeffery, Youn., Voula, Kanelis., Maruti, Uppalapati. & Andrew, Woolley. (January 2023). Structure-based design of a photoswitchable affibody scaffold. Paper presented at 37th Annual Symposium, The Protein Society.
2. F, Njotu*, A, Nambisan., J, Ketchemen., F, Tikum., H, Babeker*, K, Pak., M, Uppalapati. & H, Fonge. (September 2022). Initial evaluation of the effectiveness of Cu-67-EB-TATE theranostic as an alternative to Lu-177-DOTATATE in pancreatic neuroendocrine tumour models. Paper presented at Annual Congress of the European Association of Nuclear Medicine, 2022.
3. Broqueza, J., Andrahennadi, S., Allen, K., Dickinson, R., MacDonald-Dickinson, V., **Uppalapati, M.** & Dadachova, E. (May 2020). Using comparative oncology approach to develop radioimmunotherapy for osteosarcoma. In *Journal of Nuclear Medicine*, Volume 61, Supplement S1, 1222. Paper presented at SNMMI 2020 Annual Meeting Society of Nuclear Medicine and Molecular Imaging.

Presentations

1. **Uppalapati, M.** (June 2022). Development of affinity reagents based on antibodies, protein domains and D-proteins. 4th Protein Engineering Canada Conference.

2. Njotu, F.N., Ketchemen, J.P., Tikum, A.F., Babeker, H., Gray, B.D., Pak, K.Y., **Uppalapati, M.** & Fonge, H. (November 2023). Dosimetry and peptide receptor radionuclide therapy of neuroendocrine tumors using the somatostatin analogue [67Cu]Cu-EB-TATE.. 2023 Canadian Cancer Research Conference, Halifax, November 12, 2023 to November 14, 2023.
3. Njotu, F.N., Nambisan, A.K., Ketchemen, J.P., Tikum, A.F., Babeker, H., Pak, K.Y., **Uppalapati, M.**, Fonge & H. Initial evaluation of the effectiveness of 67Cu-EB-TATE theranostic as an alternative to 177Lu-DOTATATE in pancreatic neuroendocrine tumour models.. European Association for Nuclear Medicine Congress 2023, Barcelona, October 15, 2022 to October 19, 2022.

Poster Presentations

1. Giri, S., Allen, K.J.H., Uppalapati, M., Dadachova & E. Effects of Radioimmunotherapy on Human and Canine Osteosarcoma Microenvironment. AACR-NCI-EORTC International Conference on Molecular Targets and Cancer. Therapeutics, Boston, October 11, 2023 to October 15, 2023.
2. Babeker, H., Njotu, F.N., Ketchemen, J.P., Tikum, A.F., Doroudi, A., Nwangele, E., Uppalapati, M., Fonge & H. 225Ac/89Zr labeled anti nectin 4 radioimmunoconjugates as theranostics against nectin 4 positive triple negative breast cancer. AACR Annual Meeting 2024, San Diego, April 5, 2024 to April 10, 2024.
3. Babeker, H., Ketchemen, J.P., Annan, Sudarsun., A., Andrahennadi, S., Tikum, A.F., Nambisan, A.K., Khan, M., Njotu, F.N., Uppalapati, M. & Fonge, H. Development and initial evaluation of a fully human anti-nectin-4 antibody as theranostic probes for nectin-4 positive triple negative breast cancers.. SNMMI 2022 Annual Meeting, Vancouver, June 11, 2022 to June 14, 2022.

Grants

1. 2024-2026. *Priming nectin-4 positive NSCLC cells for enhanced effectiveness of immune check point inhibitor immunotherapy using actinium-225-labeled anti-nectin-4 radioimmunoconjugate.* Impact Grant, Saskatchewan Health Research Foundation. Total funding 150,000. Co-Applicant.
2. 2023-2025. *225Ac-labeled anti-nectin-4 radioimmunoconjugate with/without immune checkpoint blockage in triple negative breast cancer.*, 62500.0 (CAD). Operating Grant, Cancer Research Society. Total funding 625,000. Co Applicant.
3. 2023-2028. *Priming MUC-16 positive ovarian and pancreatic cancer cells for immunotherapy using an alpha particle labeled radioimmunoconjugate.* Project Grant, Canadian Institutes of Health Research. Total funding 979,200. Co Applicant.
4. 2022. *Alpha particle radioimmunotherapy of nectin-4 positive triple negative breast cancer*, 30000.0 (CAD). College of Medicine Research Award, College of Medicine. Total funding 30,000. Co Applicant.
5. 2021-2023. *Development of molecular imaging probes targeting Nectin4 (PVRL4) expression in cancer*, CIHR - ICR / Cancer Research Society Partnership. Total funding 60,000. Principal Investigator.
6. 2021- 2024. *Optogenetic gap junctions - tools to allow control of tissue patterning.* University of Toronto. Total funding 75,000. Principal investigator.
7. 2020-2021. *Developing reagents for radioimmunotherapy of pancreatic cancer*, College of Medicine Research Award, College of Medicine. Total funding 30,000. Principal investigator.

WU, Fang

Publications

1. Kakodkar P, Shekari,N., Johnston,B., Webster, D., Pearce, T., **Wu*, F.**, Mostafa*, A.*. The Emergence of de novo Donor-Specific HLA Antibodies Post Standard Pneumococcal and Varicella Zoster Vaccinations in A Waitlisted Renal Transplant Candidate: A case presentation with mechanism insights. HLA Immune Response Genetics: Brief Communication (Submitted) 2024
2. Zhao, Y., Kakodkar P, Pan, H., Zhu R., Musa, K., Hassan, A., Shoker, A., Dokouhaki*, P., **Wu*, F.**, Mostafa*, A. The Interplay between HLA Antibody Profile and COVID-19 Vaccination in Waitlisted Renal Transplant Patients. (co-senior author) Arch Pathol Lab Med. 2024 Apr 11. doi: 10.5858/arpa.2023-0370-OA. (impact factor: 5.868)
3. Zhang, Z., Yu, H., Wong-Ma, E., Dokouhaki, P., Mostafa, A., Shavadia, J., **Wu, F.** Huan, T., (2023). Reducing Quantitative Uncertainty Caused by Data Processing in Untargeted Metabolomics, Analytical Chemistry (accepted) (impact factor: 8.008)
4. Kakodkar P, Zhao, Y., Pan, H., **Wu, F.**, Pearce,T., Webster,D., Elemetry, M., Sabry, W., Kwan, L., Pelzer, L., Bosch, M., Tran, J., Sherwood, K., Lan, J., Keown, P., Liwski, R., Mostafa, A. Validation of next-generation sequencing-based chimerism testing for accurate detection and monitoring of engraftment in hematopoietic stem cell transplantation, Front. Genet., 23 October 2023. Sec. Immunogenetics Volume 14 - 2023 | <https://doi.org/10.3389/fgene.2023.1282947> (impact factor:2.621)
5. Kakodkar P, Dokouhaki P, **Wu F**, Shavadia J, Nair R, Webster D, Sawyer T, Huan T, Mostafa A (2023). The role of the HLA allelic repertoire on the clinical severity of COVID-19 in Canadians, living in the Saskatchewan province. Hum Immunol. 2023 Jan 20:S0198-8859(23)00003-4. doi: 10.1016/j.humimm.2023.01.003. (impact factor: 2.21)
6. Lyon, M. E., Bajkov, A., Haugrud, D., Kyle, B. D., **Wu, F.**, & Lyon, A. W*. (2021). COVID-19 Pandemic Planning: Simulation Models to Predict Biochemistry Test Capacity for Patient Surges. The journal of applied laboratory medicine, 6(2), 451-462. <https://doi.org/10.1093/jalm/jfaa231> (impact factor: 2.21)

Book Chapter

1. Lyon, A. W., Zherebitskiy, V. A., **Wu, F.** Chapter 20.1 - Evaluation of Toxicity following Ammonia Exposure: a Case Report, Editor(s): Hema Ketha, Uttam Garg, Toxicology Cases for the Clinical and Forensic Laboratory, Academic Press, 2020, Pages 397-399, ISBN 9780128158463.
2. **Wu, F.**, Lyon, A. W., Lyon, M. E., Chapter 10.3 - The Importance of Selecting an Appropriate Method for Measuring Methotrexate Concentration after Glucarpidase Rescue: Immunoassay or LC-MS/MS?, Editor(s): Hema Ketha, Uttam Garg, Toxicology Cases for the Clinical and Forensic Laboratory, Academic Press, 2020, Pages 161-163, ISBN 9780128158463.

Conference Abstracts

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 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.

Invited Presentations

1. **Wu, F (2023)**, Keynote Speaker, Personalized Drug Therapy& Pharmacogenetic Testing, Oriental Congress of Laboratory Medicine, Shanghai, China, September 14-16, 2023
2. **Wu, F (2023)**. Scientific Session Speaker, Optimal Test: AACC's Guide to Lab Test Utilization, Annual Meeting, American Society of Clinical Chemistry, Anaheim, USA, July 25, 2023.
3. **Wu, F (2023)**, Invited Presentation, Overview of SK Clinical Biochemistry Fellowship, Training Program Accreditation Committee Meeting, 2023 CSCC June 18
4. **Wu, F (2023)**, Speaker, AACC SPCC Committee Weekend, April 21, 2023, Washington DC, USA
5. **Wu, F (2023)**, Keynote Speaker, Clinical Mass Spectrometry and Personalized Drug Therapy, International Clinical Mass Spectrometry Symposium, Shanghai, China, March 10, 2023
6. **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.
7. **WU, F (2022)**. Biochemistry Testing: Are We Choosing Wisely, Speaker, Pathology Grand Rounds, University of Saskatchewan, Saskatoon June 27, 2022
8. **Wu, F. (2020)**. Applications of Clinical Mass Spectrometry. Invited Speaker, Virtual Meeting, the 2020 Saskatchewan Medical Laboratory Technologist Annual Conference, September 29, 2020

Oral Presentations

1. Scott, J., Murthy S., Dokouhaki, P., **Wu, F.** Reducing unnecessary thyroid function testing through optimizing test ordering protocols, 2024 April 15-16 Choosing Wisely Canada National Meeting
2. Eric Wang, Mostafa, A, Wu, F Unveiling Precision in Kidney Transplantation: A Paradigm Shift in Risk Stratification through Molecular Mismatch Analysis, our 38th Annual HLA and Transplant Workshop, March 13-16, 2024 California
3. Zhao Y, **Wu, F**, Dokouhaki, P, Mostafa, A. The Interplay between HLA Antibody Profile and Covid-19 Vaccination in Renal Transplant Patient, the Canadian Society of Transplantation's Annual Scientific Meeting, October 16-20, 2023, in Winnipeg, Manitoba.
4. Murthy, S., Dokouhaki P, Mostafa A, **Wu F***. Thyroid Function Testing: Choosing Unwisely in Saskatchewan, Pathology Department Research Day, Nov 7, 2022; (co-supervisors Drs. **Wu, F.**, Dokouhaki P., & Mostafa, A.)
5. Yang, A., Do We "Choose Wisely" with Prostate Specific Antigen (PSA) Testing in Saskatchewan? Pathology Department Research Day, Nov 7, 2022; (co-supervisors Drs. **Wu, F.**, **Dokouhaki P.**, & Mostafa, A.)
6. Zhao, Y, **Wu, F.**, Dokouhaki P., & Mostafa, A SARS-COV2 Vaccination could induce HLA antibodies and impact the renal transplant Pathology Department Research Day, Nov 7, 2022 (co-supervisors Drs. **Wu, F.**, Dokouhaki P., & Mostafa, A.)
7. Kakodkar, P., 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.)
8. Dokouhaki P., **Wu, F.**, (2022) Laboratory Stewardship: are we doing enough? Saskatoon. Pathology Grand Rounds, University of Saskatchewan, June 2022
9. Karki, E., Hasan, M.N., **Wu, F.**, Dokouhaki, P. A Need for Laboratory Medicine Utilization Teaching in Medical Education based on Regional Thyroid Function Testing Patterns the Research Innovation and Scholarship in Education (RISE) Symposium, University of Saskatchewan, College of Medicine June 11, 2021

Poster Presentations

1. Nottingham, C., Crews,B., Li, Y., Zhao,Z., Dokouhaki, P., **Wu, F.**, Gherasim,C., Examination of the roles and responsibilities of clinical chemists as determined by an international peer response-based survey. 2024 Association for Diagnostics & Laboratory Medicine (ADLM) Annual Meeting
2. Nogier, K., Jay Kalra, J., Lu, S., **Wu, F.** Validation and Implementation of the Stanbio Beta-Hydroxybutyrate Assay on Roche c502 Analyzer, 2024 Association for Diagnostics & Laboratory Medicine (ADLM) Annual Meeting
3. Wang, Eric, Mostafa A, **Wu, F.**, Harnessing the Utility of High-Resolution HLA Typing by Applying Molecular Mismatch for Post-Transplant Risk Assessment, Alberta Transplant Institute Research Day May15 2024

4. 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
5. Zhao Y, Kakodkar P, Pan H, Zhu R, Musa K, Hassan A, Shoker A, Mainra R, Webster D, Pearce T, **Wu F,** Dokouhaki P, Mostafa A*. The interplay between HLA antibody profile and COVID-19 vaccination in renal transplant patients. 2023 CST Annual Scientific Meeting held at the Fairmont Winnipeg, in Winnipeg, Manitoba, October 16 - 20, 2023.
6. Zhao Y, Kakodkar P, Pan H, Zhu R, Musa K, Hassan A, Shoker A, Mainra R, Webster D, Pearce T, **Wu F,** Dokouhaki P, Mostafa A*. Cracking the code: exploring the connection between COVID19 vaccines and HLA antibodies in kidney transplant candidates. 2023 ASHI Annual Meeting held at San Antonio Marriott Rivercenter, San Antonio, Texas, October 16 - 20, 2023
7. 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.
8. 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
9. 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.
10. Zhao, Y., Murthy,S., Karki, E., Hasan,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;
11. Kakodkar P., **Wu F,** Dokouhaki, P., Mostafa, A., A3.0: The role of the HLA allelic repository on the clinical severity of COVID-19, 2022 June REACH, the University of Saskatchewan, College of Medicine;
12. Murthy S., Karki, E., Hasan, M. N., Daniels B, Dokouhaki, P, **Wu, F.** Thyroid Function Testing: Choosing Unwisely in Saskatchewan May 2022 Choosing Wisely Canada National Meeting
13. Murthy S., Karki, E., Hasan, M. N., Daniels B, Dokouhaki, P, **Wu, F.** Thyroid Function Testing: Choosing Unwisely in Saskatchewan 2021 Undergraduate Research Showcase, University of Saskatchewan, College of Medicine October 2021.
14. Murthy S., Karki, E., Hasan, M. N., Daniels B, Dokouhaki, P, **Wu, F.** Thyroid Function Testing: Choosing Unwisely in Saskatchewan 2021 Saskatchewan Health Research Showcase
15. Davidovic F, Mostafa A*, Dokouhaki P, **Wu F.** Overutilization of HLA Testing for Celiac Disease Screening. Virtual Undergraduate Summer Research Showcase, College of Medicine USASK. October 15th 2021.
16. Karki, E., Hasan, M. N., Dokouhaki, P., **Wu, F.** Laboratory Test Utilization: Are We Using Thyroid Function Tests Appropriately? 2020 Undergraduate Research Showcase, University of Saskatchewan, College of Medicine October 2020.

Grants

1. 2022. Investigation of COVID-19 Vaccines on Kidney Transplant. CAP Foundation. John Rippey Grant for Expedited Research. Total funding \$ 17,500 (USD); co-PI.
2. 2022. Metabolomic Profiles in Methotrexate Treated Juvenile Arthritis. North America Chinese Clinical Chemists Association clinical mass spectrometry. Total funding 2,500 (USD). co-PI.
3. 2022-2023. Metabolomic Profiling to Predict Methotrexate Treatment Response in Juvenile Arthritis. College of Medicine Research Award (CoMRAD). Total funding 30,000. Principal applicant.
4. 2021-2023. Serum Proteomics, Left Ventricular Systolic Function and Clinical Outcomes following ST-Elevation Myocardial Infarction. RUH Foundation. Total funding \$25,000. Principal Applicant
5. 2021. Choosing Wisely: Thyroid Function Testing. College of Medicine, University of Saskatchewan. Total funding \$5,000. Principal Applicant.
6. 2020-2021. Modeling for Risk Stratification of Patients Infected with COVID-19 Based on Cytokine Profile and Other Immune-Related Biomarkers. College of Medicine University of Saskatchewan. Total funding \$10,000. Co Applicant.
7. 2020. Identifying Patterns of Local Laboratory Test Utilization and Implementation of Choosing Wisely Canada Recommendations for Laboratory Tests. College of Medicine, University of Saskatchewan. Total funding \$5,000. Principal applicant.

XI, Yanwei

Publications

1. Hashemi, B., Huntsman, R.J., Li, H., Zhang, D., Xi, Y., New presentation of CLIFAHDD syndrome with a novel variant in NALCN gene: A report of a rare case. Clin Case Rep. 2023 Jul 17;11(7):e7647.
2. Gibbs, M., Poulin, A., Xi, Y., Hashemi, B., A Prenatal Presentation of CDK13-Related Disorder with a Novel Pathogenic Variant. Case Rep Genet. 2023 Jun 14;2023:3437706.

Grants

1. 2020. Care4Rare Canada: Harnessing multi-omics to deliver innovative diagnostic care for rare genetic diseases in Canada (C4R-SOLVE), Saskatoon site Lead. Co Principal Investigator.
2. 2020-2021. Genetic polymorphisms in IgA Nephropathy, Department of Pathology, University of Saskatchewan. Co Principal Investigator.

Residents

KAKADEKAR, Archana

Publications

1. P Price, U Ganugapati, Z Gatalica, A Kakadekar, J Macpherson, L Quenneville, H Rees, E Slodkowska, J Suresh, D Yu, H J Lim, and E Torlakovic. "Reinventing Nuclear Histo-score Utilizing Inherent Morphologic Cutoffs: Blue-brown Color H-score (BBC-HS). Applied Immunohistochemistry & Molecular Morphology. 2023 Publish Ahead of Print.
2. Kakadekar A, Greene D, Schmidt R, Khalifa M, Andrews A. Non-hormone-related histologic findings in post-surgical specimens from transgender persons: A systemic review. Am J Clin Pathol. 2022 Mar 3;157(3):337-344.
3. Andrews A, Kakadekar A, Greene D, Khalifa M, Santiago V, Schmidt R. Histologic findings in surgical pathology specimens from individuals taking masculinizing hormone therapy for the purpose of gender transition: A systematic scoping review. Arch Pathol Lab Med. doi: 10.5858/arpa.2020-0774-RA
4. Andrews A, Kakadekar A, Schmidt R, Murugan P, Greene D. Histologic findings in surgical pathology specimens from individuals taking feminizing hormone therapy for the purpose of gender transition: A systematic scoping review. Arch Pathol Lab Med. 2022 Jan 2;146(2):252-261.

Presentations

1. A Rare Case of Reticulated Acanthoma with Sebaceous Differentiation on a Male Areola; Surgical and Hormone Related Complications in Transgender Persons; Skin of Colour: Variations in Inflammatory Dermatopathology, Department of Pathology & Laboratory Medicine, University of Saskatchewan. 2022.
2. An Unusual Presentation of Merkel Cell Carcinoma, University Health Network Toronto, ON. 2021.

Poster Presentation

1. Tumour Diameter as a Novel Prognostic Indicator in Vulvar Melanoma. M. Kinloch, A. Osmond, A. Kakadekar, C. McGuin. Saskatoon SK. 2022.

KAKODKAR, Pramath

Publications

1. Kakodkar P, Dokouhaki P, Wu F, Shavadia J, Nair R, Webster D, Sawyer T, Huan T, Mostafa A. The role of the HLA allelic repertoire on the clinical severity of COVID-19 in Canadians, living in the Saskatchewan province. Hum Immunol. 2023 Mar;84(3):163-171. Epub 2023 Jan 20. PMID: 36707385. <https://doi.org/10.1016/j.humimm.2023.01.003>
2. Park SH, Kakodkar P, Toral Smith L, ICRN et al. Nonpharmaceutical interventions reduce the incidence and mortality of COVID-19: A study based on the survey from the International COVID-19 Research Network (ICRN). J Med Virol. 2023 Feb;95(2):e28354. PMID: 36447130. <https://doi.org/10.1002/jmv.28354>
3. Kakodkar P, Hamula C. A 2-Year Retrospective Case Series on Isolates of the Emerging Pathogen Actinotignum schaalii from a Canadian Tertiary Care Hospital. Microorganisms. 2022 Aug 9;10(8):1608. PMID: 36014029. <https://doi.org/10.3390/microorganisms10081608>
4. Kakodkar P. (STARSurg Collaborative) and TASMAN collaborative. STARSurg Collaborative and TASMAN Collaborative. Evaluation of prognostic risk models for postoperative pulmonary complications in adult patients undergoing major abdominal surgery: a systematic review and international external validation cohort study. Lancet Digit Health. 2022 Jul;4(7):e520-e531. PMID: 35750401. [https://doi.org/10.1016/s2589-7500\(22\)00069-3](https://doi.org/10.1016/s2589-7500(22)00069-3)
5. Sgrò A, Kakodkar P. (Regional Lead Ireland, STARSurg Collaborative) and EuroSurg Collaborative. (2022). Intraoperative drain placement and outcomes after elective colorectal surgery: international matched, prospective, cohort study. Br J Surg. <https://doi.org/10.1093/bjs/znac069>.
6. Ramy Abou Ghayda, Kakodkar P. (International COVID-19 Research Network (ICRN) collaborators). (2022). The global case fatality rate of coronavirus disease 2019 by continents and national income: A meta-analysis. J Med Vir. 94(6):2402-2413. PMID: 35099819. <https://doi.org/10.1002/jmv.27610>.

7. Kakodkar P. (STARSurg Collaborative) and EuroSurg Collaborative. (2022). Validation of the OAKS prognostic model for acute kidney injury after gastrointestinal surgery, *Br J Surg*, 6(1), zrab150, <https://doi.org/10.1093/bjsopen/zrab150>
8. Yap C., Ali A., Prabhakar A., Prabhakar A., Pal A., Lim Y.Y., and Kakodkar P. (2021). Comprehensive Literature Review on COVID-19 Vaccines and Role of SARS-CoV-2 Variants in the Pandemic. *Therapeutic Advances in Vaccines and Immunotherapy*. PMID: 34870090. <https://doi.org/10.1177/25151355211059791>.
9. Pal A., Ali A., Young T.R., Oostenbrink J., Prabhakar A., Prabhakar A., Deacon N., Arnold A., Eltayeb A., Yap C., Young D.M., Tang A., Lakshmanan S., Lim Y.Y., Pokarowski M., Kakodkar P. (2021). Comprehensive literature review on the radiographic findings, imaging modalities, and the role of radiology in the COVID-19 pandemic. *World Journal of Radiology*. 13(9): 258-282. PMID: 34630913 <https://doi.org/10.4329/wjr.v13.i9.258>.
10. Kakodkar P. (Regional Lead Ireland, STARSurg Collaborative) and COVIDSurg Collaborative. (2021). Death following pulmonary complications of surgery before and during the SARS-CoV-2 pandemic. *British Journal of Surgery*. 108(12):14481464. PMID: 34871379. <https://doi.org/10.1093/bjs/znab336>
11. Kachapila M., Ademuyiwa A.O., Biccard B.M., Ghosh D.N., Kakodkar P. (Regional Lead Ireland, STARSurg Collaborative), STARSurg and COVIDSurg Collaborative. (2021). Preliminary model assessing the cost-effectiveness of preoperative chlorhexidine mouthwash at reducing postoperative pneumonia among abdominal surgery patients in South Africa. *PLOS ONE* 16(8): e0254698. PMID: 34383776. <https://doi.org/10.1371/journal.pone.0254698>
12. Kakodkar P., Fallah A., and Tu A. (2021). Systematic Review on use and efficacy of Selective Dorsal Rhizotomy (SDR) for the Management of Spasticity in Non-Pediatric Patients. *Child's Nervous System*. PMID: 33928427. <https://doi.org/10.1007/s00381-021-05167-y>
13. Kakodkar P., Houlihan L.M., Bermingham N., Preul M.C., and Lim C. (2021) Primary and metastatic paraganglioma of the cranial vault. *British Journal of Neurosurgery*. PMID: 33739182. <https://doi.org/10.1080/02688697.2021.1902477>
14. Houlihan L.M., Staudinger Knoll A.J., Kakodkar P., Zhao X., O'Sullivan M., Lawton M.T., and Preul M.C. (2021). Transorbital neuroendoscopic surgery as a mainstream neurosurgical corridor: a systematic review. *World Neurosurgery*. PMID: 33940270. <https://doi.org/10.1016/j.wneu.2021.04.104>
15. Shaikh Yousef M., Idris. N.S., Yap C., Alsubaie A.A., Kakodkar P. Systematic review on the clinical presentation and management of the COVID-19 associated multisystem inflammatory syndrome in children (MIS-C). *AIMS Allergy and Immunology*, 2021, 5(1): 38-55. <https://doi.org/10.3934/Allergy.2021004>
16. Kakodkar P., Neo W.X., Khan M., Baig M. and Khan T. (2020). An Incidental Discovery of Amyand's Hernia: A Case Study and Literature Review on its Intraoperative Management. *Cureus*. PMID: 33409092. <https://doi.org/10.7759/cureus>
17. Kakodkar P., More S., András K., Papakonstantinou N., Kelly S., Makrooni M.A., Ortutay C., and Szegezdi E. (2020). Aspartyl aminopeptidase is an early-stage biomarker of aggressive Chronic Lymphocytic Leukemia. *Cancers (Basel)*. 12(7): 1876. PMID: 32664705 <https://doi.org/10.3390/cancers12071876>

Book Chapters

1. Kakodkar P., Girgis H., Nabhan P., Chee S.S., and Tu A. (2022). Efficacy of Selective Dorsal Rhizotomy and Intrathecal Baclofen Pump in the management of spasticity. *Advances and Technical Standards in Neurosurgery*. 45:379-403. https://doi.org/10.1007/978-3-030-99166-1_13. PMID: 35976458.
2. Abdul-Fattah, S., Pal, A., Kaka, N., Kakodkar, P. (2021). History and Recent Advances in Coronavirus Discovery. In: Roy, K. (eds) *In Silico Modeling of Drugs Against Coronaviruses*. *Methods in Pharmacology and Toxicology*. Humana, New York, NY. https://doi.org/10.1007/978-3-030-99166-1_13
3. Kaka, N., Pal, A., Abdul-Fattah, S., Kakodkar, P. (2020). The Origin, Transmission, and Clinical Therapies in the Management of Coronavirus Diseases. In: Roy, K. (eds) *In Silico Modeling of Drugs Against Coronaviruses*. *Methods in Pharmacology and Toxicology*. Humana, New York, NY. https://doi.org/10.1007/978-3-030-99166-1_13

Conference Abstract

1. Kakodkar P., Kaka N., and O'Grady P. (2020, March). Traumatic Dislocations of the knee in athletes: case series and review of the literature.

Presentations

1. Kakodkar P., Girgis H., Nabhan P., Chee S.S., and Tu A. Efficacy of Selective Dorsal Rhizotomy and Intrathecal Baclofen Pump in the management of spasticity. (Dec 2022). *International Society of Pediatrics Neurosurgery (ISPN)*, Singapore.
2. Kanthan R., Price P., Quirion D., Pan H., and Kakodkar P. Universal Master Rotation Blueprint for GP residency program. (Oct 2022). *Competency-Based Medical Education Program Evaluation Summit*.
3. Pan H., Markewich D., Kakodkar P., Quirion D., and Kanthan R. Transition academic advisor, embodying Kakodkar P., Tu A., Makoshi Z., Fallah A., Weil A., Singhal A., Ibrahim G., Robison A., Steinbok P. (2021, Nov) Management of Middle Cranial Fossa Arachnoid Cysts: A pilot survey study of members of the Canadian Pediatric Neurosurgery Study Group. *International Society of Pediatrics Neurosurgery*, Singapore.

Poster Presentations

1. Pan H., Markewich D., Kakodkar P., Quirion D., and Kanthan R. Transition academic advisor, embodying CanMEDS roles for the 'sopho-moric' year of residency. (Oct 2022). International Conference on Residency Education, Montreal Canada.
2. Kakodkar P, Dokouhaki P, Wu F, Shavadia J, Nair R, Webster D, Sawyer T, Huan T, Mostafa A. The role of the HLA allelic repertoire on the clinical severity of COVID-19 in Canadians, living in the Saskatchewan province. (Oct 2022). American society of histocompatibility and immunogenetics (ASHI), Las Vegas USA.
3. Kakodkar P., Hamula C. (2021, Nov). A Provincial Retrospective Case Series and Literature Review on the Spread of the Emerging Pathogen Actinotignum schaalii. Sask Health Research Showcase.
4. Kakodkar P., Fallah A., and Tu A. (2021, Nov). Systematic Review on use and efficacy of Selective Dorsal Rhizotomy (SDR) for the Management of Spasticity in Non-Pediatric Patients. International Society of Pediatrics Neurosurgery, Singapore.
5. Idris N.S., Shaikh Yousef M., Yap C., Kakodkar P. (2021, Feb) Systematic review on the clinical presentation and management of the COVID-19 associated multisystem inflammatory syndrome in children (MIS-C) King's College London Paediatrics In Pandemic Conference.

MARKEWICH, Daniel

Publication

1. Kalra JJ, Markewich DJ, Rafid-Hamed Z, Seitzinger P. Enhancing the Quality and Delivery of Healthcare: A Decade Review of Autopsy Data. Healthcare and Medical Devices. 2022 Jul 24;51:91.

Presentations

1. Markewich DJ, Osmond A, Campbell K, Wright G. Patient Safety Rounds Dermatopathology QA Project. January 24, 2023 Patient Safety Rounds.
2. Markewich DJ, Rafid-Hamed Z, Seitzinger P, Kalra JJ. Enhancing the Quality and Delivery of Healthcare: A Decade Review of Autopsy Data. Department of Pathology and Laboratory Medicine Research Day. November 2022.

PAN, Henry

Publications

1. R. Kanthan; P. Kakodkar; D. Markewich; H. Pan; F. Magee. Transition academic advisor, embodying CanMEDS roles for the 'sopho-moric' year of residency. Canadian medical education journal 2022, 13(6).

Poster Presentations

1. Pramath Kakodkar, Daniel Markewich. Innovations in residency teaching and assessment. International Conference on Residency Education (ICRE) 2022, Montreal, Canada.

PRICE, Phillipe

Publications

1. Phillipe R. Price; Katherina Baranova; Emily A. Goebel; Monalisa Sur; Allison Osmond. Pathology residents transitioning to practice: A short survey on the potential benefits and challenges of bringing forward the Royal College exam in competency-based medical education. Canadian Journal of Pathology, (4) 12, p. 31-34, 2022.

TAM, Ingrid

Publications

1. Arwini B, Tam IS, Al Agha O, Lee S. A Case of Cervical Giant Condyloma Acuminatum. JOGC 2022 44(3)294-7.
2. Almandi A, Noël KC, Aljassim NA, Maratta C, Tam I, Papenburg J, Quach C, Thampi N, McNally JD, Dendukuri N, Lefebvre MA, Zavalkoff S, O'Donnell S, Jouvett P, Fontela PS. Bronchiolitis management and unnecessary antibiotic use across 3 Canadian PICUs. Hosp Pediatr 2022 3:e2021006274.
3. Aljassim NA, Noël KC, Maratta C, Tam I, Almadani A, Papenburg J, Quach C, Thampi N, McNally JD, Dendukuri N, Lefebvre MA, Zavalkoff S, O'Donnell S, Jouvett P, Fontela PS. Antimicrobial Stewardship in Bronchiolitis: A Retrospective Cohort Study of Three PICUs in Canada. Pediatr Crit Care Med 2022 23(3):160-70.
4. Kemps PG, Picarsic J, Durham BJ et al. (including Tam IS). ALK-related histiocytosis: a new clinicopathologic spectrum highlighting neurologic involvement and responses to ALK inhibition. Blood 2022 139(2):256-80.
5. Tam IS, Vats K, Wang C. The Challenges and Pitfalls of Diagnosing Adenomyoepithelioma in Needle Core Biopsies of the Breast. Human Pathology Reports 2021; 26: 300572.

6. Shah L, Tam I, Nosib S. Non-compact cardiomyopathy, Becker muscular dystrophy, neuropathy and recurrent syncope. *BMJ Case Rep* 2021; 14(11):e244745.

Poster Presentation

1. Ingrid Tam, Andres Acosta, Michelle S. Hirsch, Karan Vats, and Nick Baniak. The impact of grading small tumor volumes with Gleason pattern 4, with an emphasis on global biopsy scoring. *USCAP 2023*. Los Angeles, CA, USA. 11-16 March 2023.
2. Karan Vats, Ingrid Tam, and Nick Baniak. Grading intraductal carcinoma in the presence of concurrent prostatic adenocarcinoma and its impact on Grade Group assignment. *USCAP 2022*. Los Angeles, CA, USA. 19-24 March 2022.
3. Ingrid Tam, Mohamed Elemery, John DeCoteau, and Emina E. Torlakovic. Morphologic clues of acute monocytic leukemia in COVID-19 induced transient leukoerythroblastic reaction with monocytosis. *EuroLeuk* 2021. Virtual. 30 October 2021.
4. Ingrid Tam, Alysa Poulin, and Kathleen Felton. A rare case of solitary cutaneous ALK-positive histiocytosis in an infant. *ASPHO 2021*. Virtual. 16 April 2021.

TARIQ, Javera

Publications

1. Asghar R, Tariq J, Naeem N, Zafar A, Qureshi K, Majeed S. Comparison of peripheral blood smear examination with automated haematology analyzer for diagnosing different types of anemia. *The Professional Medical Journal*. 2021;28(10):1433-7.
2. Qureshi K, Naeem N, Tariq J, Chaudhry MS, Pasha F. New-Onset Insulin Allergy After COVID-19 Infection in an Insulin-Dependent Type-2 Diabetic Patient: A Rare Complication. *Cureus*. 2021;13(9).
3. Qureshi K, Tariq J, Chaudhry MS, Pasha F. Oral Isotretinoin Resulting in Recurrence of LASIK-Treated Myopia: A Rare Side Effect. *Cureus*. 2021;13(8).
4. Ali S, Tariq J, Asghar R, Jiskani S.A, Tariq. Haematological parameters in covid-19 infection with emphasis on neutrophil-lymphocyte ratio (NLR) and platelet lymphocyte ratio (PLR). *Pakistan Journal of Pathology*. 2021; 32(1):24-28.
5. Ali S, Tariq J, Sohail A, Rizwan H. Bone Marrow Oxalosis in a Two-Year-Old Child with Congenital Hypoplastic Kidneys—A Case Report. *Journal of Haematology and Stem Cell Research*. 2021;1(1):46-9.
6. Ali S, Chaudry SS, Khan AQ, Shiekh AK, Tariq J, Tariq M, Nazli S, Khaliq T, Riaz SK. Dynamics of hemogram and biochemical parameters in COVID-19 patients and their implication—A single-center prospective study in tertiary care hospital Islamabad, Pakistan. *International journal of laboratory hematology*. 2021;43(3):148-51.

VATS, Karan

Publications

1. Vats K., Spafford M., Groot G., Graham P., Banerjee T., Deobald R., Osmond A. 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. *Annals of Diagnostic Pathology*. 2022 Apr 28;60:151958. doi: 10.1016/j.anndiagpath.2022.151958. PMID: 35636095.
2. Sun R. *, Vats K. *, Baptiste J. J., Adeeb S., Jomha N., Westover L. Comparison of Wear on Articular Cartilage by Titanium Alloy, Ultra-High-Molecular-Weight Polyethylene, and Carbon Fibre Reinforced Polyether Ether Ketone. Submitted for publication
3. Vats K., Al-Nourjhi O., Wang H., Wang C. Primary epithelioid angiosarcoma of the mediastinum, cytomorphologic features of a rare entity – a case report and literature review. *Diagnostic Cytopathology*. 2022 Jul;50(7):E181-E187. doi: 10.1002/dc.24946. Epub 2022 Feb 9. PMID: 35142097.
4. Dokouhaki P., Van Der Merwe, D.E., Vats K., Said S.M., D'Agati V.D., Nasr S.H. Histiocytic Glomerulopathy Associated with Hemophagocytic Lymphocytosis. *Kidney Medicine*. 2021 Dec 8;4(2): <https://doi.org/10.1016/j.xkme.2021.10.009>. PMID: 35243308.
5. Vats, K., & Turner, S. (2021). Secondary Breast Lymphoma. Case ID: 31986. *ACR Institute for Radiologic Pathology Archive (ACAS)*. Silver Spring, Maryland, USA.
6. Tam I., Vats K., Wang C., The challenges and pitfalls of diagnosing adenomyoepithelioma in needle core biopsies of the breast. *Human Pathology Reports*. 2021;26.
7. Vats K., Banerjee, T., Lee C.H., Wang C., Osmond A. Recurrent malignant Triton tumour (MTT) as isolated exclusive angiosarcomatous component: utility of the novel antibody H3K27me3 in establishing divergent differentiation in malignant peripheral nerve sheath tumours (MPNST) with review of the literature. *Canadian Journal of Pathology*. 2021;13(4):62-70.

Presentations

1. Probyn L., Atkinson A., Vats K., Bentley H. The Potential of Competence by Design in Diagnostic Radiology Post-Graduate Medical Education: Getting the Most from the Transition to Competence by Design. Plenary Presentation. *Canadian Association of Radiologists Annual Scientific Meeting 2023*. Virtual. April 27, 2023

2. Vats K., Spafford M., Groot G., Graham P., Banerjee T., Deobald R., Osmond A. 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. Platform Presentation, Department of Pathology and Laboratory Medicine Research Day. Saskatoon, SK. November 7, 2022.
3. Saxena A., Vats K., Kurji A., Davidson M., Education for Reconciling Leadership Dualities, The International Summit on Leadership Education for Physicians (TISLEP) 2022. Montreal, QC. October 26, 2022.
4. Vats K, Tam I., Baniak N., Grading intraductal carcinoma in the presence of concurrent prostatic adenocarcinoma and its impact on grade group assignment, Poster Presentation, United States and Canadian Academy of Pathology (USCAP) Annual Meeting 2022. Los Angeles, CA. March 23, 2022.
5. Resident Doctors of Canada Workshop in Preparation for the Regular Accreditation Visit, Northern Ontario School of Medicine. Virtual. September 23, 2021
6. Resident Doctors of Canada Workshop in Preparation for the Regular Accreditation Visit, University of Calgary. Virtual. August 11, 2021
7. Resident Doctors of Canada Resiliency Training Webinar, University of Saskatchewan Incoming PGY1 Cohort. Virtual. June 29, 2021
8. Vats K. "A Rare Form of Esophageal Carcinoma – Esophageal Carcinoma Cuniculatum", Gut Club, Mount Sinai Hospital, Toronto, ON. June 18, 2021
9. Resident Doctors of Canada Resiliency Training Webinar, McMaster University General Pathology and Medical Microbiology Programs. Virtual. June 16, 2021
10. Resident Doctors of Canada Workshop in Preparation for the Regular Accreditation Visit, Northern Ontario School of Medicine. Virtual. June 8, 2021
11. Resident Doctors of Canada Resiliency Training Webinar, University of Ottawa Anatomical Pathology Program. Virtual. April 12, 2021
12. Vats K., Banerjee T., Deobald R., Graham P., Osmond O. A 10-year review of all sarcomas in Saskatoon, SK, Canada, Department of Anatomical Pathology Patient Safety Rounds, Saskatchewan Healthy Authority. Saskatoon, SK. March 23, 2021
13. Vats K., Dokouhaki P., Obtaining adequate kidney biopsies with bedside assessment: a quality assurance study of the kidney biopsy practice in Saskatchewan, Platform Presentation, Department of Pathology and Laboratory Medicine Research Day. Saskatoon, SK. October 23, 2020
14. Resident Doctors of Canada Resiliency Training Webinar, Dalhousie University Anatomical Pathology Program. Virtual. July 15, 2020
15. Resident Doctors of Canada Resiliency Training Webinar, University of Saskatchewan Incoming PGY1 Cohort. Virtual. June 25, 2020

ZHAO, Yayuan

Publications

1. Kenny B, Zhao Y, Banerjee T, Osmond A. Pigmented apocrine hamartoma: A distinct and uncommon pigmented lesion with dendritic melanocytes and appraisal of terminology. *J Cutan Pathol.* 2022; 49(2): 172-175. doi:10.1111/cup.14139

Conference abstract

1. Zhao Y, Musa K, Hassan A, Shoker A, Wu F, Dokouhaki P, Mostafa A. SARS-COV2 Vaccination could induce HLA antibodies and impact the renal transplant. 2022 Banff-CST Joint Meeting
2. Zhao Y, Murthy S, Karki E, Hasan N, Dokouhaki P, Wu F. Thyroid Function Testing: Choosing Unwisely in Saskatchewan. 2022 Resident Research Day
3. Zhao Y, Nikzad N, Yaholnitsky J, Xiong W, Trotter M. Effect of Breast Surgery Types on Tissue Procurement for Biobanking and Research. 2019 CAP-ACP conference.

SALM

Saskatchewan Association of Laboratory Medicine

By Dr. Viktor Zhrebitskiy
SALM President



The goal of SALM to promote and popularize Pathology and Laboratory Medicine across Saskatchewan, as well as provide support for professional advancement and the personal wellbeing of SALM members, will guide further SALM actions in the future. At the same time, SALM welcomes new initiatives and innovations!

After full recovery from COVID pandemics, SALM resumed its regular operations keeping the on-line format of our semi-annual meetings as preference, though. The fall SALM meeting took place on October 17, 2024 before SMA RA meeting in Saskatoon. SALM membership listened to the remarks of Mr. Ed Hobday, SMA Administrative Director and Dr. Steven Angel, SALM representative in the SMA Intersectional Committee regarding SMA & MoH contract negotiations and reaffirmed SALM position on proposed terms of the contract including grid base salary, CME fund, retention fund, and other contract items. The target numbers supported by the SALM membership were close to the federal government servant's level. The other topics of discussion included support of hematopathology and molecular biomarkers programs, standardization of contracts, benefits for medical professional corporations, recruitment difficulties, IT issues, development of rural sites, laboratory accreditation by CAP and WCDA, support of the Diagnostic & Clinical Pathology Residency Program (formerly General Pathology) and PaLM wellness program. Also, a creation of SALM Negotiation and Constitution committees was discussed.



Dr. Dino Grammatico at his residence with his PaLM / SALM Lifetime Achievement Award Presented by Dr. Jill Wooff 25 SEP 2023

At the fall 2023 SMA RA meeting in Saskatoon (November 3-4, 2024), Dr. Viktor Zhrebitskiy, SALM President, spoke to the Hon. Everett Hindley, Minister of Health during questions from

the floor - part of Minister of Health's address. He drew attention of the MoH to the need of reinstatement of the provincial PaLM program as a high priority program and proposed to have regular MoH-SALM meetings that was accepted by the Minister with significant degree of enthusiasm. Dr. Deepti Ravi, SALM RA Representative with support of Dr. Jay Kalra, Saskatoon RA

Representative prepared SMA/SALM resolution aiming to support provincial hematopathology program with additional FTEs for Saskatoon and Regina sites. Dr. Donna Ledingham, PaLM Area Lead for Regina and Regina RA Representative followed up on SMA/SALM motion regarding IT issues that was introduced by her at the spring 2023 SMA RA meeting.

At the beginning of December 2023, SALM leadership had several preparation meetings in response to the Minister of Health's invitation to have a first MoH-SALM on-line meeting where strategies and main topics of conversation were discussed. Also, four SALM spokespersons were elected (Dr. V. Zhrebitskiy as a moderator, Dr. S. Angel as a representative for Saskatoon, Dr. J. Wooff as a representative for Regina and Dr. B. Murray as a representative for rural sites). The meeting with the Minister took place on December 18, 2023. Dr. Angel provided concise but fairly thorough introduction of provincial PaLM program to Hon. Everett Hindley and MoH team. In response, Mr. Hindley raised an issue of breast biopsy crisis in Regina. Dr. J. Wooff provided a detailed root-cause analysis of the crises and also raised an issue of short staffing on all levels including pathologists, pathologist assistants, histology MLTs etc. Issues of workload, TAT, gross specimen backlog, compensation, benefits for med. prof. corporation and contract harmonization were also discussed. Dr. Ted Alport who stepped in as a replacement for sick Dr. Murray, expended on the need of MoH support for large and expensive programs such as digital pathology, IT optimization, new biochemical and microbiologic analyzers, rural sites development etc. Dr. John DeCoteau, ADRL director who was in the audience, spoke about the necessity to support provincial cancer biomarker molecular program. Mr. Hindley and MoH team thanked SALM participants and promised to come up with their joint opinion on how to resolve burning issues and support other SALM initiatives. As the result of this meeting, MoH fully funded additional equipment and staffing for breast biopsy repatriation from Calgary back to Regina. Other topics also found some response in the Mr. Hindley's response letter to SALM in January 2024.



Dr. Sheila Rutledge Harding from Saskatoon transfusion program and Dr. Andrew Lyon from Saskatoon biochemistry program were



presented Lifetime and Service Achievement awards by the Department's Provincial Head, Dr. Fergall Magee, at a March 25, 2024 retirement event, for 36 and 18 years of service to the Province of Saskatchewan respectively.

The spring SALM meeting took place on April 24, 2024 before the spring SMA RA meeting. One of the main topics of discussion was regarding MoH-SMA four-year contract that was signed in December 2023, endorsed by SMA membership in January 2024 and officially ratified by both parties in February 2024. Drs. Angel and Zherebitskiy went over the details of the contract including 12.5% net and 13.1% cumulative raise of grid base salary and increases in the CME reimbursements; retention fund raises and retroactive payments for 2022-23 and 2023-24 4 periods of time. Overall, SALM membership was satisfied with the accomplished contract conditions and provided its unanimous support to SMA negotiation team.

Nevertheless, the issue of backlog and understaffing in surgical pathology felt to be acute, particular in Regina and Dr. Ted Alport proposed to the SALM board to raise it as SMA/SALM motion at the coming spring 2024 SMA RA meeting that took place in Regina on May 9-10, 2024. The motion was shaped up by mainly Regina AP team and put on the floor for discussion and voting by Dr. Ravi, SALM RA representative with support of Dr. Andrey Vizhul (Regina surgery program). SMA RA almost unanimously (93%) supported our initiative to advocate for increase of surgical pathologists FTEs across the province, but with emphasis to Regina. Also, following Minister of Health's address, Dr. Zherebitskiy on behalf of SALM, thanked Hon. Everett Hindley for his intervention and successful outcome for the Regina breast biopsy repatriation program.

However, he reminded him that unfortunately other discussed issues still had not been resolved. Mr. Hindley promised to get in touch and set up another meeting with SALM representatives.

The second MoH-SALM on-line meeting with the Hon. E. Hindley and his team took place on June 17, 2024. The main topic for discussion was a backlog of gross specimens, particular in Regina. Dr. Jill Wooff suggested to bring more FTEs for surgical pathologists,



Screenshot from Zoom MoH / SALM meeting June 17, 2024 with representatives from North Battleford, Prince Albert, Regina, Saskatoon: Hon. Everett Hindley (Minister) with Ms. Ingrid Kirby (Assistant to the Minister) and Drs. Steven Angel, Roland Auer, Bruce Cameron, Bruce Murray, Rathi Sabaratnam, Jill Wooff and Viktor Zherebitskiy

PAAs, histology MLTs and MLAs to Regina and other sites if needed. Mr. Hindley promised to check with provincial budget and come back with possible solution. Also, Drs. B. Murray and R. Sabaratnam provided a brief introduction for the Northern Laboratory Medicine Unit project and asked MoH to take in account a need for additional equipment and manpower while calculating the future MoH budgets. The follow-up on contract harmonization, benefits for med. prof. corporation, eHealth/IT issues and molecular biomarkers was provided and those outstanding issues were also discussed. In the meeting debriefing both sides emphasized that there will be no momentary solution for all discussed topics, but regular meetings between MoH/Minister of Health and SALM should become regular events that hopefully significantly improve the situation on the ground with the provincial PaLM program. Mr. Hindley suggested to have also a separate meeting with Mr. S. Chard, SHA Practitioner Staff Affair to discuss further contract and benefit's issues.

Similar to previous years, SALM has continued funding and support of certain 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, Residency Program Director), PaLM Wellness program (in close collaboration with Dr. Henrike Rees), PaLM AP and Patient Safety meetings (in close collaboration with Ms. Rhonda Hartz, Laboratory Director - Saskatoon), provincial biomarker initiative (in close collaboration with Drs. John . DeCoteau and Marilyn Kinloch) and some other activities closely related to SALM membership.

WELLNESS

Wellness Committee's Annual Report

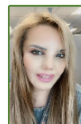
By Dr. Henrike Rees, Wellness Director



Dr. Henrike Rees
Chair



Dr. Amanda Lang



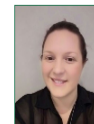
Dr. Areej Khatib



Dr. Katelynn Campbell



Dr. Henry Pan



Dr. Glenda Wright



Dr. Ingrid Tam



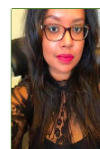
Dr. Luke Blower



Harold Shiffman



Dr. Cody Lewis



Dr. Deepti Ravi



Dr. Joel Scott



The 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 then 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, Areej Khatib, Amanda Lang, Cody Lewis, Henry Pan, Deepti Ravi, Henrike Rees (chair), Harold Shiffman, Ingrid Tam, Joel Scott and Glenda Wright. 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.

More than 30 regular and well attended monthly Wellness Lunch and Learn Sessions on a variety of topics have been organized so far. In 2023/24 these sessions included presentations on safeguarding a conducive working environment, incivility, making a personal wellness plan, understanding the power of allyship, indigenous health, making a basic financial plan, the role of civility, estate planning including making a will and designating a power of attorney as well as making a health directive. As of early 2022 lunches have been provided during these sessions to anyone who wishes. The sessions are now being recorded and are fully accredited for CME section 1 credits to those who attend.

Additional wellness initiatives include a monthly wellness email to all members, 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 monthly birthday gift (in 2023 it was a water bottle and wild flower seed initiative and in 2024 it is a wireless charger), where members of the department who share their birth month with the Wellness Committee receive a present as well as a birthday card in their birth month. These initiatives have been very well received.



Smaller initiatives included a First Day hike, where some members of the Department in Saskatoon and their families as well as others participated, 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 an interactive game where 5-6 colleagues are featured every month. An ongoing effort to collect the photographs of all staff members and recipes for a recipe collection initiative to help create a departmental cookbook has also been made.

The committee initially focused on the organization of social events and other wellness initiatives to help build a community as well as find ways to increase engagement and the sense of inclusivity. Then it began to address some of the more difficult issue identified in the wellness survey in 2021 such as issues with bullying and harassment.

The committee had its first retreat in January of 2024 with funding support from the SMA and facilitated by Dr Alana Holt, current wellness lead of the College of Medicine, who presented a well-received very practical session on psychological safety.

In the last few months the committee worked on creating a repeat Departmental wellness survey as part of the ongoing QA project pertaining to the departmental wellness, and making sure everyone was aware of this survey, which was identical to that administered in 2021. This survey was conducted in March of 2024 and had a very good participation rate. The results were presented to the entire Department on June 25, 2024 in a Departmental meeting and then shared via email with everyone. The new results were presented by a representative from Mc Lean and Company, the company who had administered the survey and evaluated the data. The presentation compared the new data to the data of the 2021 survey. These results will inform the future work of the wellness committee.

A new Wellness Committee Chair will be appointed this fall as Dr. Rees’ 3-year term as Chair ended June 2024.

McLEAN & COMPANY

Department of Pathology and Laboratory Medicine Wellness Survey

Time Zone Selected: (GMT-06:00) America/Chicago

Survey Schedule

Open Date	2024-03-13 08:30:05 -0500
Close Date	2024-03-28 00:00:00 -0500

Survey Email Schedule

Invitation Emails	Disabled
Reminder Emails	None

Survey Completion Stats

	Count	Percentage
Completed	54	50.00%
Partial	6	5.56%
Not Started	48	44.44%

% of Total Responses Completed

Last Updated: 2024-03-28 12:00:08 AM CDT

HOSPITAL FOUNDATIONS



The Health Foundation - Yorkton

Ortho Workstation purchased by The Health Foundation for use at the Yorkton Regional Health Centre – OCT 2023

Moosomin & District Healthcare Foundation

Lisa Butler, MLT, using the Chemistry Analyzer (Vitros 5600) purchased by the Moosomin & District Healthcare Foundation for use at the Southeast Integrated Care Centre



<i>FACILITY</i>	<i>COMMUNITY</i>	<i>FOUNDATION</i>	<i>DESCRIPTION</i>
Humboldt District Health Complex	Humboldt	Humboldt & District Health Foundation	Hematology Analyzer
Kelvindell Hospital/Lodge	Kelvington	Kelvington District Healthcare Facility Foundation	Urinalysis Instrument
Kipling Integrated Health Centre	Kipling	Kipling & District Health Foundation	Hematology Analyzer
Saskatoon City Hospital	Saskatoon	Saskatoon City Hospital Foundation	FISH Stainer
Saskatoon City Hospital	Saskatoon	Saskatoon City Hospital Foundation	Blood Gas Analyzer Interface
SDoutheast Integrated Care Centre	Moosomin	Moosomin & District Healthcare Foundation	Chemistry Analyzer
Yorkton Regional Health Centre	Yorkton	The Health Foundation	Electric Powered Phlebotomy Chairs
Onion Lake Health Centre	Onion Lake	Onion Lake Health Board	Laboratory Microscope
Southeast Integrated Care Centre	Moosomin	Moosomin & District Health Care Foundation	Hematology Analyzer

Remembering

Rowan Dáithí Lynch

(son of Dr. Alicia Andrews)

December 7, 2020 - April 21, 2024





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DEPARTMENT OF PATHOLOGY AND
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