

DEPARTMENT OF SURGERY

ANNUAL REPORT 2020/2021



UNIVERSITY OF
SASKATCHEWAN



Saskatchewan
Health Authority

Fighting COVID-19 in Saskatchewan



Dr. Abbas Khani-Hanjani, Division of Cardiac Surgery



MESSAGE FROM THE PROVINCIAL HEAD



As I write these lines, the Province of Saskatchewan is facing the effects of a severe fourth COVID-19 wave. We are feeling again the pressures of lack of inpatient and ICU capacity. This has prompted a second major slowdown of our surgical services. We have learned the lessons from the initial phases of the COVID pandemic and the Department was ready to face the challenges of this current wave and continue to fulfil its clinical mandate and academic mission.

I am proud at the resilience of the Department members to maintain exemplary surgical care and keep research, educational and quality improvement productivity under these strenuous pandemic circumstances. After the initial lockdown in March of 2020, research was reinitiated under strict COVID guidelines and formal educational activities were resumed using virtual technology platforms. This report is a testimony of the dedication and commitment of the members of our Department to the people of Saskatchewan and our clinical and academic institutions.

We are working very hard to achieve a 100% vaccination rate for all the members of the Department and the surgical teams. Our proprietary smart phone App Inventory has been used through the pandemic to provide real-time information of the COVID-19 status of surgeons in all our surgical centers. Thankfully, the surgical manpower has remained stable in all surgical specialties across the province.

The Saskatchewan Surgical Council has coordinated all surgical services during the pandemic and has been key in articulating the reopening surgical strategy to ramp up services to deal with the pandemic backlog. Surgical algorithms to provide safe services to COVID and non-COVID patients had been successfully deployed in all sites since the start of the pandemic. Guidelines to triage emergency, urgent and cancer surgeries in response to COVID surges and challenges in ICU and inpatient capacity were implemented and continue to guide our services.

As I reflect on the past academic year when the Department had to face the brunt of the initial waves of COVID-19, I cannot help but to be thankful to all and each member of the Department. They have faced the challenges of the pandemic with dedication, efficiency, and compassion. If there is a silver lining to these difficult times, it is highlighting these qualities that make us human.

A handwritten signature in black ink, appearing to read 'Iv Mendez'.

IVAR MENDEZ, MD, PhD, FRCS, FACS, DSc (hon), FCAHS

Fred H. Wigmore Professor of Surgery

Provincial Head of Surgery

University of Saskatchewan & Saskatchewan Health Authority

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SURGERY AT THE FOREFRONT



Dr. Nick Peti, Division of Vascular Surgery & Clerkship Medical Student

Mission

To provide world-class care to the citizens of Saskatchewan and beyond, train the surgeons of the future and foster innovation and collaborative research.

Vision

To establish the Department of Surgery as a premier center for world-class patient care, excellence in research, innovation and surgical education. Our goal is nothing short of becoming one of the leading surgical departments worldwide.

Values

As a member of the Department of Surgery of the University of Saskatchewan and the Saskatchewan Health Authority, it is expected that each member will:

- Maintain the highest standards of personal, professional and academic honesty and integrity.
- Respect privacy and confidentiality.
- Communicate truthfully and compassionately with patients, families, learners, colleagues and staff.
- Treat patients and their families with respect and dignity.
- Not discriminate on the grounds of age, race, color, ancestry, place of origin, political belief, religion, physical or mental disability, gender, marital or family status.
- Conduct professionally in demeanor, language and appearance in the professional health care setting.
- Contribute to an atmosphere conducive to learning, professional and scholarly activity.
- Assure that interactions with learners are always respectful and considerate.
- Conduct research in an ethical and unbiased manner, report results truthfully, and credit ideas developed and work done by others.
- Respect personal boundaries of others, including but not limited to, refraining from making unwanted romantic or sexual overtures, protecting personal information, and respecting individual workspace.
- Be accountable for personal decisions.
- Adopt strategies to deal with errors or misjudgments.
- Declare any actual or potential conflict of interest.
- Participate in the collegial activities of the Department of Surgery.
- Participate in established processes of professional self-regulation.

SURGERY BY THE NUMBERS



234 FACULTY
60 RESIDENTS

73,411 SURGICAL CASES

ALL SURGICAL SPECIALTIES



14 SURGICAL CENTERS

ACROSS SASKATCHEWAN

2,008 REMOTE ROBOTIC CARE

REMOTE PRESENCE EVALUATIONS



1,071 QI EVALUATIONS

SASKATOON NSQIP SITE

115 PEER REVIEWED PAPERS



15 VISITING PROFESSORS

411 MEDICAL STUDENTS



7,734 TEACHING HOURS

4 PROPRIETARY PHONE APPS

FOR QUALITY IMPROVEMENT, CLINICAL CARE & TEACHING



SASKATCHEWAN SURGICAL Centers

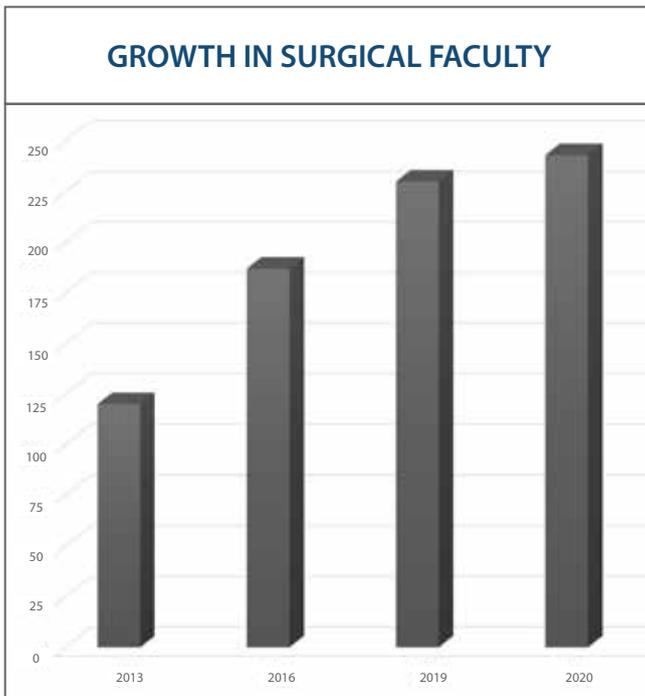


Saskatoon City Hospital, Saskatoon, SK



North Battleford Hospital, Battleford, SK

LOCATION	TOTAL # OF CASES 2020-2021
Saskatoon	33,379
Regina	22,476
Prince Albert	4,186
Moose Jaw	3,038
Lloydminster	2,504
Battlefords	2,203
Yorkton	1,726
Swift Current	1,494
Melfort	669
Weyburn	565
Humboldt	337
Meadow Lake	300
Nipawin	287
Estevan	179



Map of the Province of Saskatchewan, Canada & the Surgical Centers

SASKATCHEWAN SURGICAL Council



Image taken during COVID-19 Pandemic (Missing from the picture Dr. Malcolm Retief)

The Saskatchewan Surgical Council is composed of the Area Department Leads from across the province and is chaired by the Provincial Head of Surgery, Dr. Ivar Mendez. The Council has been key in the management of the surgical services during the pandemic. The Council meets regularly every week to review the surgical activity in all centers of Saskatchewan. Every other week the meetings include the regional surgical directors and the OR nurse managers. These meetings provide an in-depth look into the surgical activity in the different regions and allows us to identify in real time systemic problems that need resolution.

The Saskatchewan Surgical Council has been instrumental in the standardization of surgical guidelines to regulate surgical activity during the different COVID waves. More importantly, the Council has guided the ramp up of surgical services to deal with the pandemic backlog.

For the first time, we have a coordinated approach to the provision of surgical care across the whole province. Excellent communication and collaboration of all the surgical centers in Saskatchewan has been achieved. This interaction has been key during COVID surges where surgical capacity has been diminished in certain regions and surgical services needed to shift to other regions.

Coordination of surgical strategies for the future such as surgical manpower, standardization of equipment and promotion of research education and quality improvement have been greatly facilitated by the Surgical Council of Saskatchewan.

Dr. Ivar Mendez
Provincial Head, Department of Surgery



Dr. Nishaan Cheddie
Area Department Lead, Moose Jaw/Swift Current, Saskatchewan

Dr. Sharon Koubi
Area Department Lead, Yorkton, Saskatchewan



Dr. Oladapo Mabadeje
Area Department Lead, Prince Albert, Saskatchewan

Dr. Malcolm Retief
Area Department Lead, Battlefords, Saskatchewan



Dr. John Tsang
Area Department Lead, Regina, Saskatchewan

Dr. Bill Dust
Area Department Lead, Saskatoon, Saskatchewan



Dr. Joan Wheat-Hozack
Area Department Lead, Lloydminster, Saskatchewan

Surgical Leadership



DR. IVAR MENDEZ
Provincial Head
Department of Surgery



DR. ABBAS KHANI-HANJANI
Division Head, Cardiac Surgery
Saskatoon, SK



DR. JOHN SHAW
Division Head, General Surgery
Saskatoon, SK



DR. MIKE KELLY
Division Head, Neurosurgery
Saskatoon, SK



DR. ANTHONY KING
Division Head, Orthopedic Surgery
Saskatoon, SK



DR. ANIL SHARMA
Division Head, Otolaryngology
Saskatoon, SK



DR. ELKE MAU
Division Head, Pediatric Surgery
Saskatoon, SK



DR. IAN SUNDERLAND
Division Head, Plastic Surgery
Saskatoon, SK



DR. RICHARD BIGSBY
Division Head, Thoracic Surgery
Saskatoon, SK



DR. KUNAL JANA
Division Head, Urology
Saskatoon, SK



DR. BRUCE DUVAL
Division Head, Vascular Surgery
Saskatoon, SK



DR. STEPHEN KORKOLA
Division Head, Cardio-Thoracic Surgery
Regina, SK



DR. DAN AVRAM
Division Head, Dental Surgery
Regina, SK



DR. STEPHEN POOLER
Division Head, General Surgery
Regina, SK



DR. JOSEPH BUWEMBO
Division Head, Neurosurgery
Regina, SK



DR. LINDSEY ONG-TONE
Division Head, Ophthalmology
Regina, SK



DR. KAHLED RODWAN
Division Head, Orthopedic Surgery
Regina, SK



DR. DIETER FRITZ
Division Head, Otolaryngology
Regina, SK



DR. KRZYSZTOF SACZEK
Division Head, Pediatric Surgery
Regina, SK



DR. MEGAN LYONS
Division Head, Plastic Surgery
Regina, SK



DR. CHRIS REDIGER
Division Head, UROLOGY
Regina, SK



DR. DON MCCARVILLE
Division Head, Vascular Surgery
Regina, SK



DR. AQEEL GHORI
Lead, Division of Surgery
Swift Current, SK



DR. TRUSTIN DOMES
Director, Undergraduate Education
Department of Surgery



DR. GARY GROOT
Director, Patient Safety & Quality
Department of Surgery



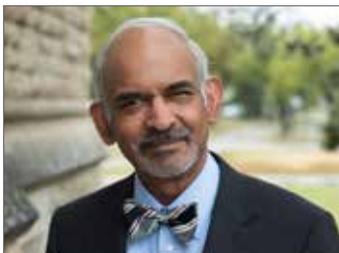
DR. DARYL FOURNEY
Director, Research
Department of Surgery



DR. NIROSHAN SOTHILINGAM
Director, Trauma Program
Saskatoon, SK



DR. JAGADISH RAO
Director, Trauma Program
Regina, SK



DR. FRANCIS CHRISTIAN
Program Director, Surgical Humanities
Program (2020)



DR. GAVIN BECK
Program Director, General Surgery
Residency Program



DR. DAVID SAUDER
Program Director, Orthopedic Surgery
Residency Program



DR. LISSA PEELING
Program Director, Neurosurgery
Residency Program



Regina, Saskatchewan Operating Room

Clinical Care

REGINA CARDIO-THORACIC PROGRAM

The Regina Cardio-Thoracic Surgery Program consists of Dr. Stephen Korkola (Division Lead), Dr. Ahmad Moustapha and Dr. John Tsang. We are a close knit team who have been providing collaborative care for almost 20 years together for the patients of Regina and other referring centres throughout Saskatchewan. Dr. Korkola has been a member of the Royal College Cardiac Surgery Exam board and just completed a six year term of service. Dr. Moustapha was a representative on the Royal College Cardiac Surgery Specialty program committee along with our Regina Trauma Committee. Dr. Tsang is the Area Department Lead for Surgery in Regina.



(left to right) Drs. Ahmad Moustapha, John Tsang & Stephen Korkola

The diversity of care offered include cardiac rhythm devices, all aspects of cardiac surgery, benign and malignant thoracic surgical care. There has been close collaboration with the ICU teams for ECMO support prior to and during the present pandemic surge. The team has been working to develop an Enhanced Recovery After Surgery pathway for cardiac surgery patients in conjunction with our Saskatoon colleagues. Our group has also been leading the way in surgical fixation of rib fractures in trauma patients. We continue to strive to deliver advances in cardiac and thoracic surgical care for our patients.



(left to right): Drs. Lauren Allen, Anne Dzus, Katherine Rooks & Alexandra Mortimer

PEDIATRIC ORTHOPEDIC SURGICAL PROGRAM

Drs. Anne Dzus, Lauren Allen, Alex Mortimer and Katie Rooks work as a team to provide Pediatric Orthopaedic Specialty care to the children and adolescents of this province. Dr. Rooks is building on her interests in Trauma, Upper Extremity and Pediatric Hip surgery. Dr. Mortimer has significantly progressed the approach to Cerebral Palsy management and Pediatric Foot surgery in the Prairies, while Dr. Allen has advanced the management of Complex Pediatric Spine Surgery in Saskatchewan. Dr. Dzus has managed complex and general pediatric orthopaedic cases for over 30 years, and has served as mentor to her junior colleagues, and many students.

Dr. Mortimer is Surgery Clerkship Rotation Co-Director in Saskatoon. Dr. Dzus has been the Coordinator of Undergraduate

Orthopedic Surgery for well over 30 years. Dr. Rooks is a Member-at-Large with the Canadian Pediatric Orthopaedic Group and moderated several paper sessions at the Canadian Orthopaedic Association Annual Meeting this year.

Pediatric Orthopaedics is often busy with trauma, particularly in the summer. Childhood MSK injury makes this team one of the busiest services in the Pediatric Outpatient Department, as well as one of the highest Flex and after hours OR users.



Dr. Silvana Papagerakis, Department of Surgery Faculty & Researcher

Research

The Research Committee has been very busy over the last year. COVID-19 continues to challenge resources at all levels in our health system and has shown how important trustworthy clinical evidence is necessary to guide our practices. Despite the pandemic, research output from our Department has continued to grow, with the number of peer-reviewed publications at an all-time high.

We had an exciting Virtual Faculty Research day back in May, and are on track for the return of Resident Research Day in November. Our Research Newsletter, “Resurgency”, was introduced last year to help update faculty and residents on upcoming research events and funding opportunities.

In September, I addressed the Department at Grand Rounds to outline a new direction to facilitate more sustainable research infrastructure at the Divisional level. If you look across Departments of Surgery in Canada, there is a decline in research funding. There are many other challenges that affect research productivity such as clinical demands, unpredictable surgical schedules due to limited operating room resources, administrative demands, and an aging population with more complex clinical needs. Institutional change is required more than ever to develop and maintain surgical research programs.

While there are some Departmental resources that help support this, we need to look both internally and externally to make these programs sustainable in the long term. I have been working to reorganize the make-up of the Research Committee to better reflect the Divisions it serves. While steering resources to where they are most needed to facilitate programs, we are also trying to build a more formalized structure for mentorship from experienced surgeon scientists. I look forward to input from all of our faculty and residents as we work with Divisions to develop these programs.



**DARYL FOURNEY,
MD, FRCSC, FACS**

PROFESSOR OF SURGERY

DIRECTOR OF RESEARCH,
DEPARTMENT OF SURGERY

PEER REVIEWED PUBLICATIONS IN THE DEPARTMENT OF SURGERY



Faculty Publications



Aniket Kumar, Postdoctoral Fellow
Cell Transplantation Laboratory

**DEPARTMENT OF SURGERY
RESEARCH HANDBOOK
FOR FACULTY AND RESIDENTS**



<https://medicine.usask.ca/documents/surgery/SurgeryResearchHandbook.pdf>



University of Saskatchewan, Medical Student, Suturing Lab

Education

Despite the challenges, surgical education activities continue to thrive throughout the Department of Surgery, thanks in large part to the commitment of the surgical teaching faculty and staff across the entire province and the resilience of our learners over the last eighteen months. As always, we continue to deliver high quality education using adaptable and innovative approaches.

Our faculty members, individually and in teams, have stepped up by thinking outside the box and leveraging technology to find new ways of accomplishing our teaching and learner goals. Many divisions have successfully transitioned their pre-clerkship clinical skills curriculum to the virtual environment, creating helpful student resources that are accessible online. Video-conferencing technology has not only been used for delivery of virtual lectures but our leaders in clerkship and residency education have been using it for many other functions, including mandatory meetings and oral examinations. These platforms have improved the access for remote learners and has decreased travel time and disruption from clinical duties. The post-graduate surgical programs persevered through a completely virtual CaRMS cycle and have successfully recruited top notch PGY1s! Our medical students too have taken initiative by organizing and delivering a virtual surgery journal club with students, residents and faculty members, to keep the networking and scholarly activities flowing despite COVID-19 restrictions.

As we reflect on the past year as surgeons and as educators, it is important to see how far we have come, celebrate what we have accomplished together and look to the future. We have had to be adaptable, patient and flexible in our approaches. There are certainly some silver linings and disruptive innovations due to COVID-19 that will continue but returning some aspects of our lives to the old normal will certainly be happening too. As we come out of this pandemic, we cannot forget about our learners and we need to be proactive in our educational approach and engage them as we take these next steps together.



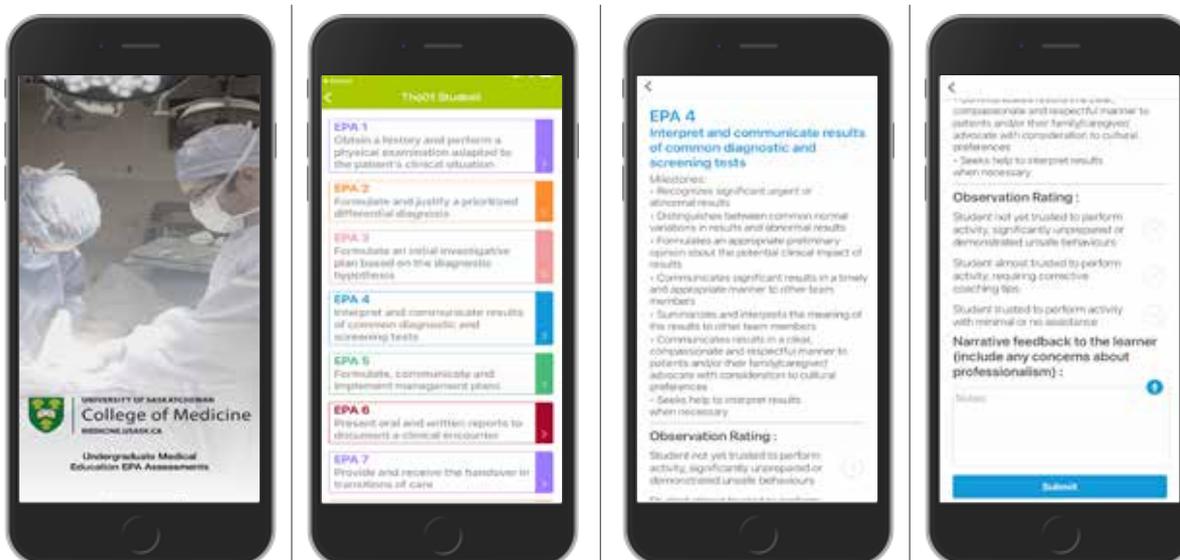
**TRUSTIN DOMES,
MD, FRCSC**

ASSISTANT PROFESSOR OF
SURGERY

DIRECTOR OF UNDERGRADUATE
EDUCATION, DEPARTMENT OF
SURGERY

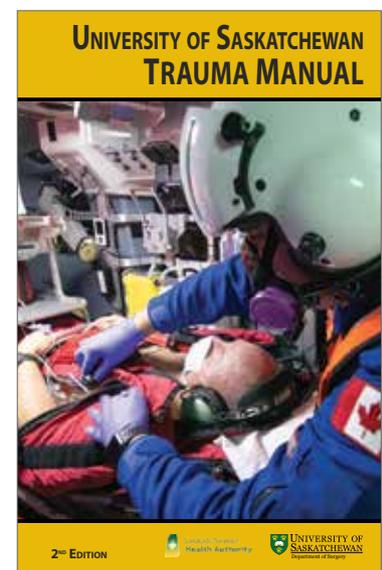
UGME EPA APPLICATION

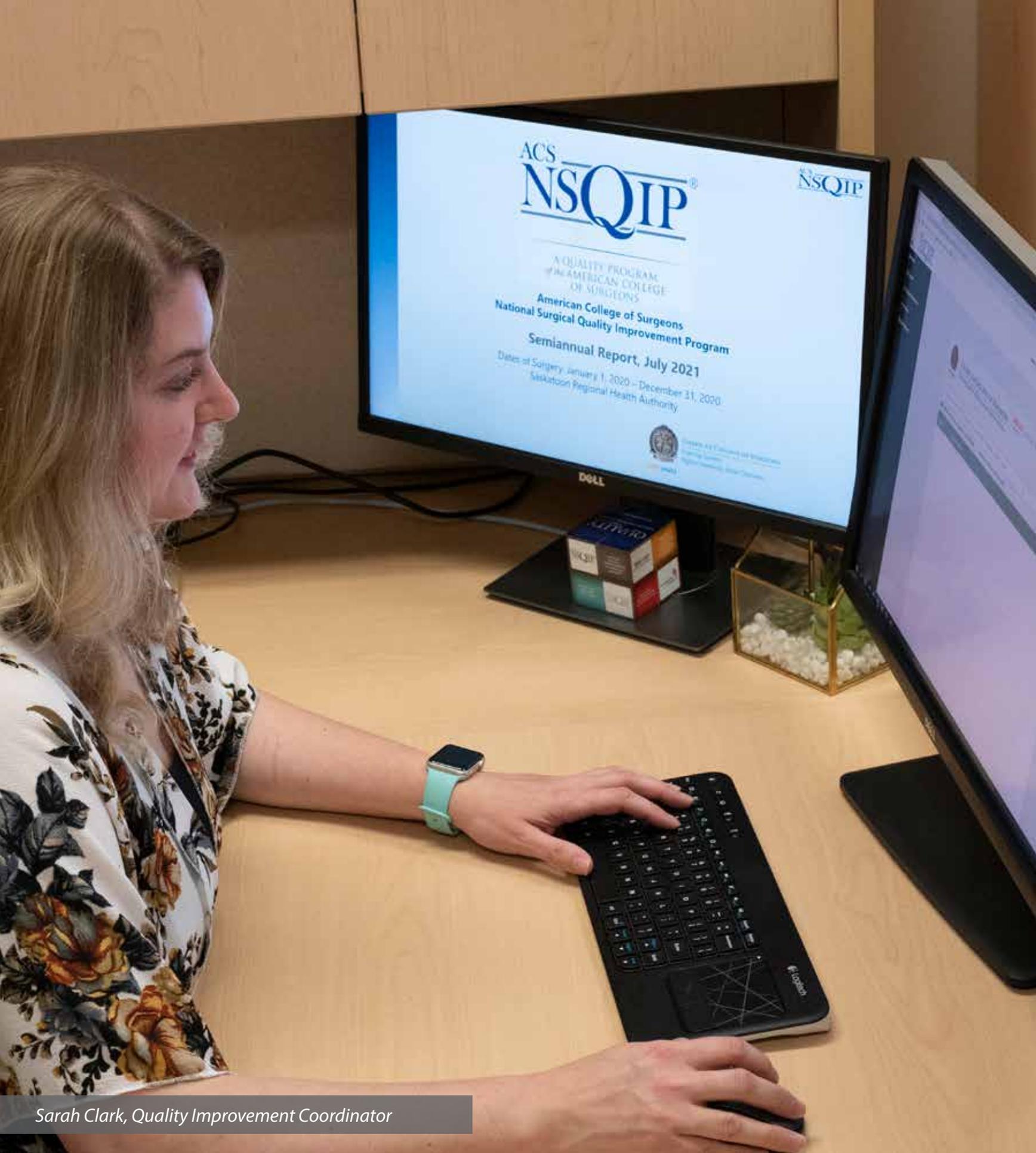
Proprietary Mobile Phone Evaluation App for Physicians & Clerkship Students



TRAUMA MANUAL

Department Trauma Manual for Surgical Residents





Sarah Clark, Quality Improvement Coordinator

Quality & Safety

The Covid-19 pandemic created and continues to create significant challenges for our healthcare system. The unintended consequences of managing the pandemic have been significant and are readily visible in surgery with rapidly increasing wait lists and anecdotal stories of patients presenting late with more complex surgical problems. As we emerge from the pandemic there will be opportunities to use well established implementation science and leadership skills offered by the provincial QI training offered by Saskatchewan's Health Quality Council in collaboration with the SMA, SHA and Ministry of Health to address complex system problems and improve the care we provide to our patients; the Department of Surgery can lead the way in this regard.

In the summer of 2020, we received the second ACS NSQIP report that provides reporting on several quality indicators for the Department of Surgery in Saskatoon benchmarked against similar surgical departments nationally and internationally. We are currently in the process of understanding and responding to the report given the unique context of the pandemic and limited data input during that time.

2021 saw a transition in Quality and Safety leadership within the Department. Building on the foundation laid by Dr. Francis Christian the Department will continue to integrate its quality and safety efforts into existing SHA organizational structures.



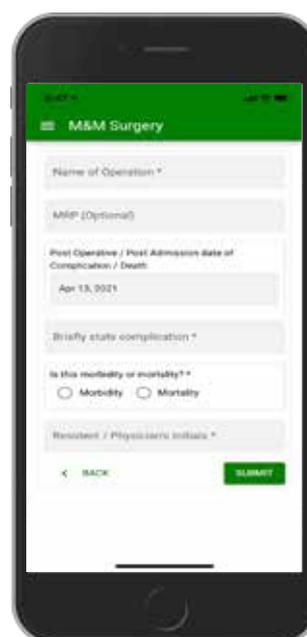
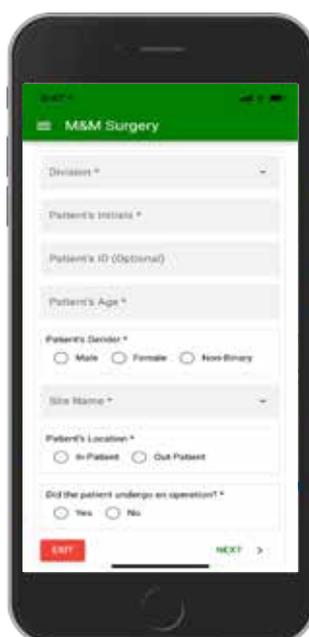
**GARY GROOT,
MD, PHD, FRCSC, FACS**

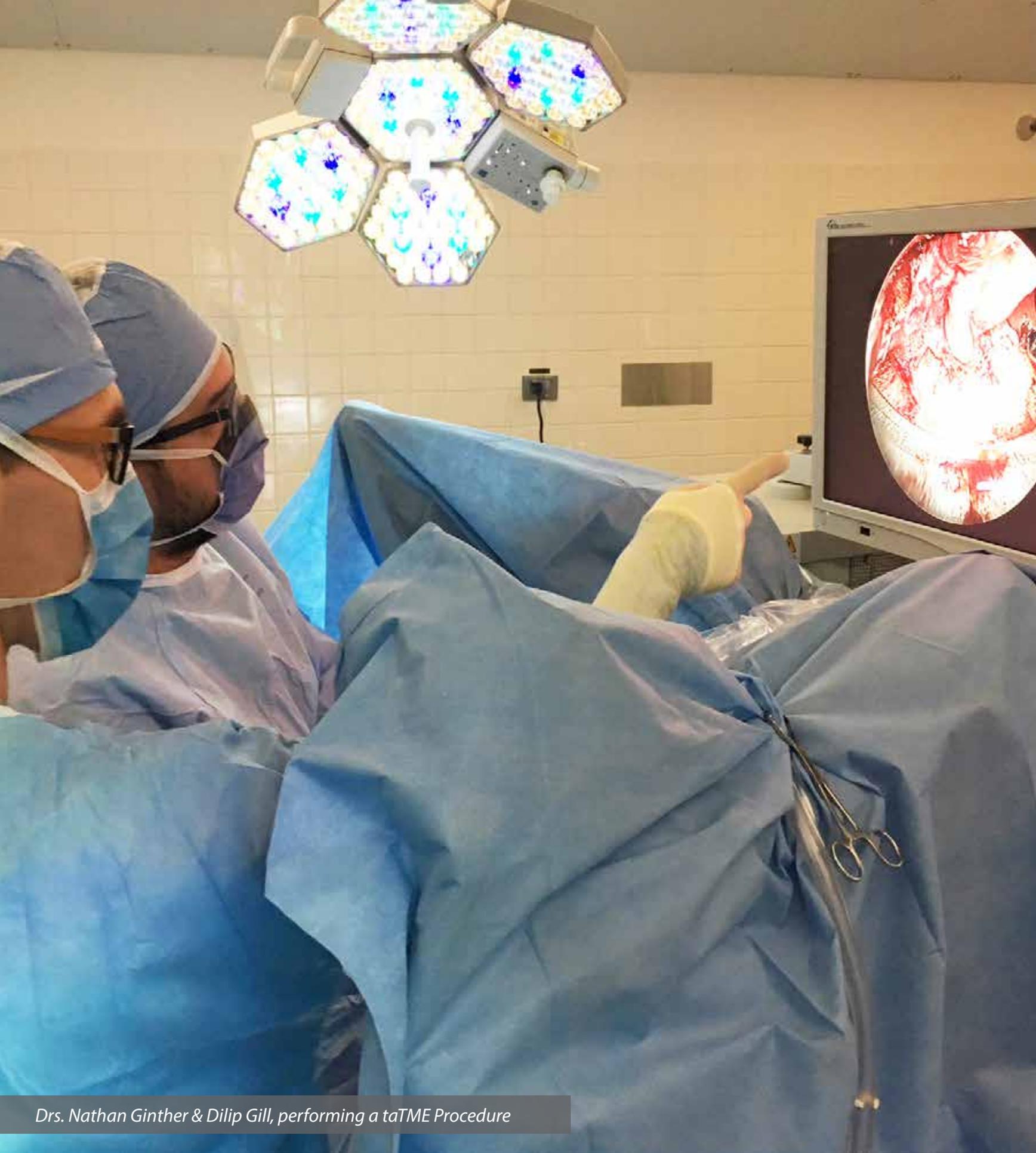
PROFESSOR OF SURGERY

INTERIM DIRECTOR OF
QUALITY IMPROVEMENT &
PATIENT SAFETY,
DEPARTMENT OF SURGERY

MORBIDITY & MORTALITY APP

Proprietary M&M Smart Phone Application for Surgical Services Quality Improvement and Patient Safety for the Province of Saskatchewan





Drs. Nathan Ginther & Dilip Gill, performing a taTME Procedure

Surgical Advances

ERAS PROGRAM, PRINCE ALBERT, SASKATCHEWAN



(left to right): Melissa Van Otterloo, Karen Grenier, Dr. Dapo Mabadeje, Angie Emmerson, Sharon Griffin, Sheila Cooper

The Victoria Hospital in Prince Albert has developed an Enhanced Recovery after Surgery program (ERAS) for patients undergoing colorectal surgery. Dr. Dapo Mabadeje, a General surgeon and Area Lead for Surgery, introduced the program in the spring of 2018. The program provides practitioners with evidence-based strategies to improve outcomes for patients undergoing elective colorectal surgery. It is based on six core principles of patient engagement, optimization of nutrition, early mobilization, fluid and pain management and surgical best practices. An order set was

developed and the program has encouraged collaboration between health care providers.

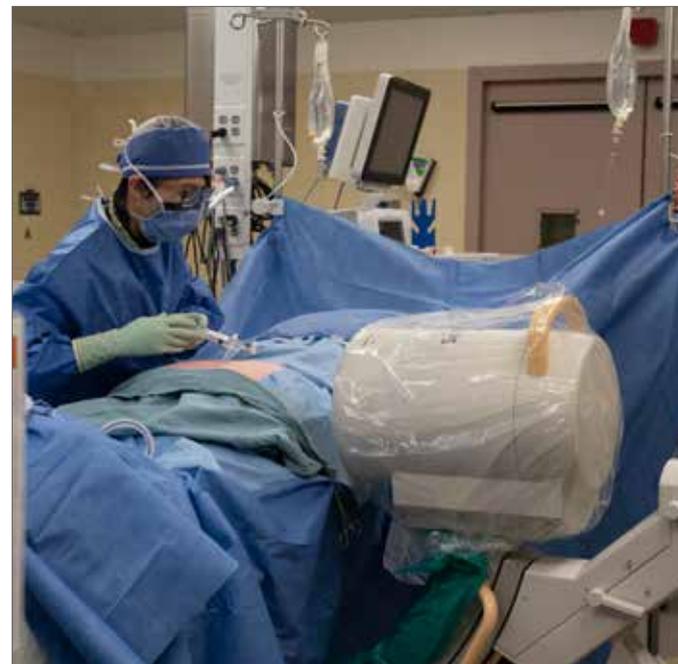
They were one of seven hospitals in the country selected to participate in a patient safety learning collaborative on ERAS by the Canadian Patient Safety Institute from April 2018 to October 2020. Significant patient outcomes have been sustained, including a 50% reduction in hospital stay, reduced complication rates and increased patient satisfaction. The plan is to expand ERAS to other surgeries in Prince Albert, including Orthopedics and Gynecology.

SASKATCHEWAN SACRAL NEUROMODULATION PROGRAM

The newly developed sacral neuromodulation (SNM) program is the first of its kind in the province for the treatment of refractory lower urinary tract symptoms (LUTS). This procedure is approved to treat chronic functional disorders of the pelvis, lower urinary and intestinal tract. Patients that have failed treatment for urinary urge incontinence, urinary urgency-frequency, and urinary retention may be candidates for this procedure. In more recent years, SNM therapy has also been approved for the treatment of fecal incontinence.

Saskatoon is currently only one of two centres in western Canada to offer this specialized treatment. Currently, Edmonton is the only such program in all of Western Canada.

The continually improving technology in SNM provides patients with an attractive option for diseases often refractory to the first-line treatments. Key advances include new patient and physician programmers, transition to percutaneous/minimally invasive implantation and development of smaller devices. Newer changes on the horizon include fully MRI compatible devices and long lasting rechargeable devices.



Dr. Garscon Chan, Division of Urology



Dr. Ivar Mendez, Remote Surgical Mentoring (VUZIX Glasses)

New Technologies

NEW EQUIPMENT IN CANCER DETECTION, SPY-PHI PROBE

The Royal University Hospital Operating Room was excited to receive the delivery of the handheld SPY-PHI probe generously acquired by the donors of the RUH Foundation. This technology utilizes indocyanine green fluorescence in order to visualize blood flow and tissue perfusion and has application across multiple subspecialties.

FGS (Flourescence Guided Surgery) is gaining traction for many reasons. Specifically, it allows for the accurate assessment of tissue perfusion at resection margins when performing difficult watershed anastomoses, thereby decreasing morbid post-operative leaks. It allows for accurate mapping of lymph node basins allowing for more accurate and extended lymphadenectomy in oncological resections. From a hepatobiliary point of view, SPY-PHI enables detailed real-time mapping of the bile duct and is invaluable in reconstruction after complex biliary injuries. Exciting advances are being made in mapping of the intra-hepatic blood supply of liver tumors to facilitate accurate and more limited resections.



MOOSE JAW UROLOGY PROGRAM

The Urology program in Moose jaw has undergone an immense change. In the last year, we have brought flexible cystoscopy to the operating rooms, cutting the operative time in one-third, and dramatically increasing patient comfort. Flexible ureteroscopes have been purchased for more versatile treatment of kidney stones. We have also performed the first full-template transperineal ultrasound-guided prostate biopsies in the province, improving the detection rate of prostate cancer, and hope to formalize this program in the near future. Major pelvic urologic surgery and retroperitoneal dissections are now offered through this service line and more recently, we have moved toward complex minimally invasive cases including laparoscopic partial nephrectomy and radical prostatectomy. It is my mission to provide the patients of this community with the highest quality treatment for urologic diseases and cancers of the genitourinary tract.

WEARABLE TECHNOLOGY

The Virtual Care & Robotics program is currently testing new wearable devices that will allow healthcare workers to have their hands free while attending to a patient. The expert provider can be “remotely present” in real-time and see the patient from the perspective of the remote healthcare worker and offer guidance and support at the point of care. These devices have great potential to be used for real-time surgical mentoring.





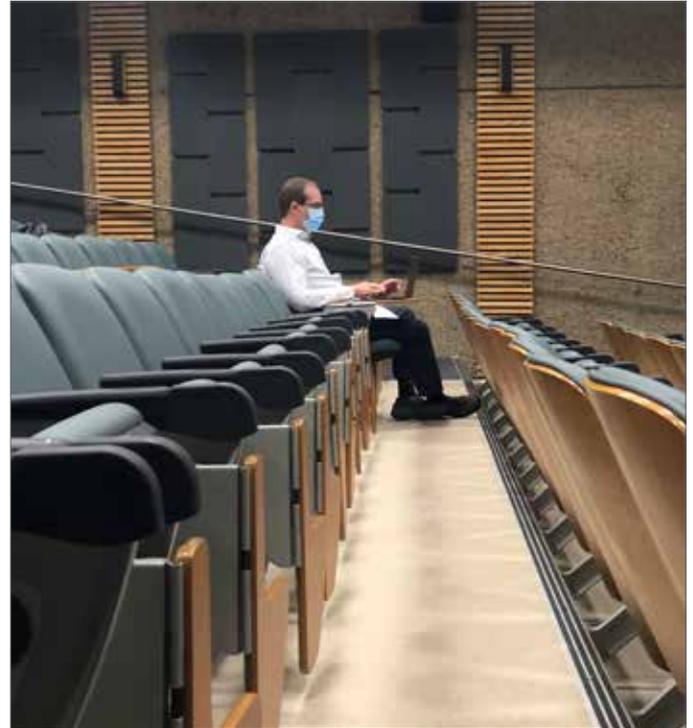
Department of Surgery 2020 Virtual Resident Research Day

COVID-19

After the initial surgical slowdown in March of 2020, when our focus was on emergency, urgent and cancer surgeries, our surgical teams across the province worked very hard to ramp up surgical services. The pandemic backlog of surgical cases fully engaged us during the rest of the academic year. Our surgical manpower app Inventory continued to be used to track realtime availability of our members.

Educational activities were resumed mainly in virtual technology platforms. The participation in rounds, conferences and lectures of our learners and faculty was exceptional during this period. Research throughout the department was re-initiated under strict mitigation guidelines to avoid COVID transmission. By the end of 2020, the first vaccination stages were started in our institution. An aggressive vaccination program for all members of the Department was instituted.

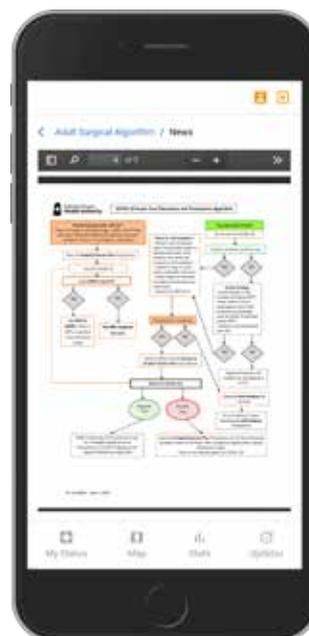
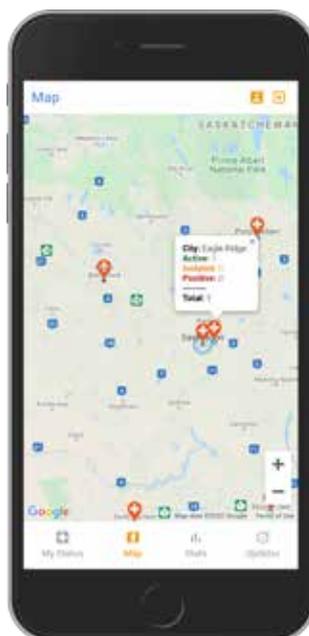
Our surgical leaders together with their teams performed exceptionally well to maintain the highest quality of surgical care and fulfill our academic mission across the province while facing extremely challenging circumstances.



Dr. John Shaw attending Resident Research Day

SURGICAL MANPOWER APPLICATION

Proprietary Provincial Surgical Manpower App for the Province of Saskatchewan





Dr. William Dust, Area Department Lead, Saskatoon

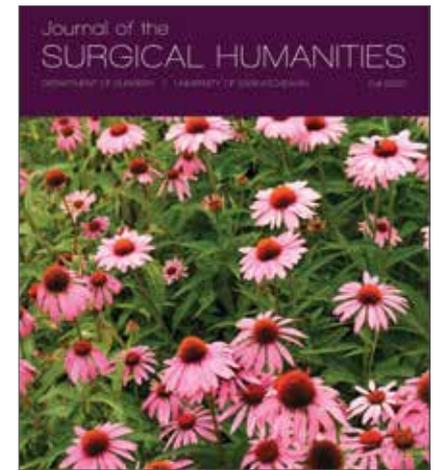
Surgical Humanities

At the height of the pandemic, the Surgical Humanities Program continued and a new issue of the Journal of the Surgical Humanities under the Editor Chief, Dr. Francis Christian came to light. This issue highlighted stories related to the COVID-19 pandemic and reflected the pressures of the pandemic on our faculty, our learners and surgical teams. It was recognized that the Surgical Humanities were extremely relevant in times of crisis.

Although the Annual Art Exhibition and the Classical Music Concert did not take place, the spirit of the Surgical Humanities Program permeated throughout our department.

As the Director of the Surgical Humanities, Dr. Francis Christian continued to work hard on its programs and in preparing the 13th issue of the Journal of Surgical Humanities. His contributions to establishing the Surgical Humanities Program in our department have been greatly appreciated.

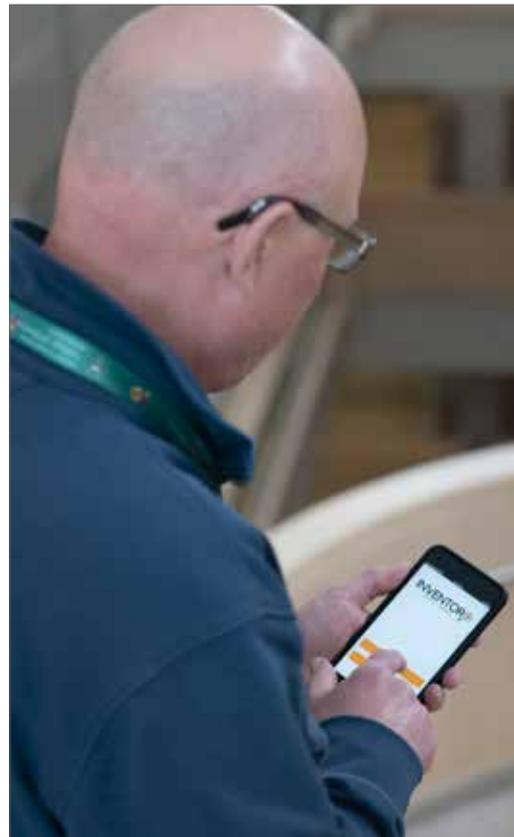
JOURNAL OF THE SURGICAL HUMANITIES



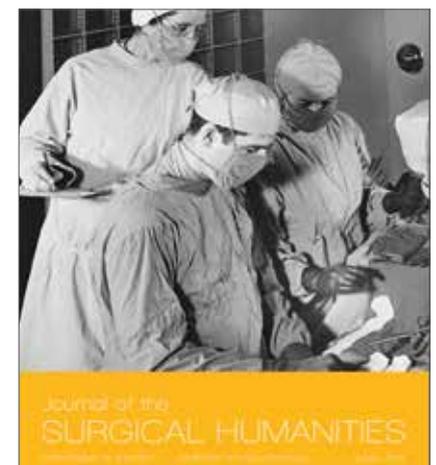
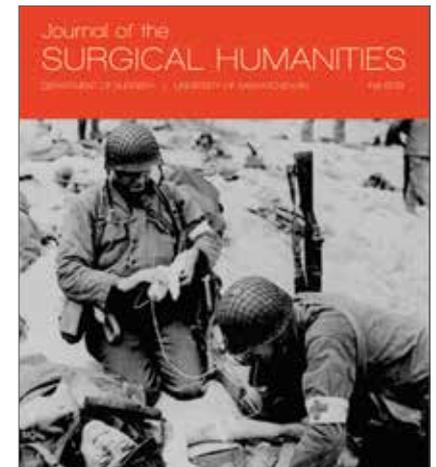
2020 JOURNAL OF THE SURGICAL HUMANITIES (COVID ISSUE)



From the article 'Dispatches from the Front Lines - Canadian Nurses in the Epicentre of COVID-19 Pandemic in Italy'



From the article 'COVID-19: A Surgeons Reflections from the Prairies'





Remote Presence Technology for Acute Trauma Assessment in Bolivia

Global Surgery



Teaching in Haiti



Hew & Hennie Rees Travelling Fellowship Graduate

GLOBAL FELLOWSHIP IN ORTHOPEDIC SURGERY

A Global Fellowship in Orthopedic Surgery at the University of Saskatchewan is being established. We believe that special surgical training in a setting of mutual understanding and collaboration is the best way to deliver sustainable, long-term benefit to orthopedic patients and surgeons in low and middle income countries.

Traditional short-term itinerant orthopedic missions to low and middle income countries have significant limitations. There is controversy regarding the benefit of these missions because follow-up patient care may be deficient or absent, and collaboration with local staff is often limited. Also, lately, the traditional surgical mission has been virtually shut down due to travel restrictions caused by the global pandemic.

Reliance on the short-term surgical mission has never been the best way to accomplish optimal medical or surgical care in low and middle income countries. The way forward is to enhance medical/surgical expertise in the under-resourced environment and provide ongoing support and collaboration. A global fellowship in orthopedic surgery at the University of Saskatchewan is a step toward achieving this goal.

Surgical trainees from low and middle income countries are not typically considered for traditional surgical fellowship training programs. This is due to financial and licensing constraints, among other challenges. Our global fellowship program will be specifically tailored to the needs of the trainees from these countries, both from the perspective of admission criteria and relevant training.

With the solid support of the Department of Surgery, the Division of Orthopedic Surgery, and the College of Medicine at the University of Saskatchewan, we look forward to the establishment of this new program. We expect that this program will allow the development of long-term relationships with global surgeons. This will provide significant benefit for everyone involved and will be sustainable over time. We also expect, with the success of this model, that it will become a template to be used for the introduction of similar programs in other surgical and medical subspecialty areas.



Dr. Trustin Domes, 2020 recipient of the Silver Shovel Award

Honors & Awards

2020 Teaching Awards Banquet

Dr. Trustin Domes, Silver Shovel Award

Awarded annually to the faculty member with the most outstanding contribution to Surgical Education.

Dr. Nawaf Abu-Omar, Bronze Shovel Award

Awarded annually to the resident with the most outstanding contribution to Surgical Education.

Dr. Kishore Visvanathan, Gold Scalpel Award (Pre-clerkship)

Awarded annually to the faculty member with the most significant contribution during the pre-clerkship phase of the MD program.

Dr. Steve Pooler, Gold Scalpel Award (Clerkship)

Awarded annually to the faculty member with the most significant contribution during the surgical clerkship phase of the MD program.

Dr. Raymond Deobald, Gold Scalpel Award (Residency Teaching)

Awarded annually to the faculty member demonstrating the highest level of teaching excellence as acclaimed by the surgical residents.

Dr. Paul Weckworth, Lifetime Achievement Award

Awarded for outstanding contribution to Surgical Education.



Dr. Nawaf Abu-Omar, General Surgery Resident recipient of the Bronze Shovel Award

2020 Resident Research Day

Dr. Kristen Marciniuk (Division of Neurosurgery), 1st Place - Podium

Presentation: Conformation-Specific Immunotherapy for Proteinopathies Based on Disease Specific Epitopes

Dr. Kristi Billard (Division of Orthopedic Surgery), 2nd Place - Podium

Presentation: Comparing Superficial vs. Deep Local Anesthetic Infiltration to Improve Patient Experience during Carpal Tunnel Release

Dr. Amit Persad (Division of Neurosurgery), 3rd Place - Podium

Presentation: Antibacterial Envelopes for Prevention of Infection in Neuromodulation Implantable Pulse Generators

Emmitt Hayes (Medical Student, Supervisor: Dr. David Sauder), Dash Reed Research Award

Presentation: Union Rate and Clinical Outcomes Following Four-Corner Arthrodesis with a Dorsal Locking PEEK Plate: A Retrospective Case Series

Dr. Amit Persad, Resident Research Publication Award

College of Medicine, University of Saskatchewan



**2020 VIRTUAL RESIDENT RESEARCH DAY
DEPARTMENT OF SURGERY**

UNIVERSITY OF
SASKATCHEWAN

Saskatchewan
Health Authority

2021 Faculty Research Day

Elisabet Jakova (Neuroscience Research Cluster), 1st Place

Presentation: New Parkinson's Disease (PD) Models and Emerging Roles of Adenosine A1 Receptors in PD-Related Alpha-Synucleinopathy and Dopaminergic

Michael Zaki (Neuroscience Research Cluster), 1st Place

Presentation: Istradefylline, an FDA-Approved Anti-Parkinsonian Drug, is Neuroprotective in a Preclinical Animal Ischemic Stroke Study

Dr. Mike Moser (Division of General Surgery), 2nd Place

Presentation: A Research Day Project About Research Day Projects

Dr. Jonathan Norton (Division of Neurosurgery), 3rd Place

Presentation: SaskStim: A Novel Approach to Spinal Cord Stimulation Provides Both Modulation of Sensory Inputs to the Nervous System and Generates Locomotor-Like Patterns



**2021 DEPARTMENT OF SURGERY
VIRTUAL FACULTY RESEARCH DAY**

UNIVERSITY OF
SASKATCHEWAN

Saskatchewan
Health Authority



Dr. Andrew Seely



Stephen Gowing



Visiting Professors

Resident Research Day

May 2020 Dr. Lloyd Mack, University of Calgary, *Evolution of Cytoreductive Surgery and Heated Intraperitoneal Chemotherapy; It All Starts with the Appendix*

Faculty Research Day

May 2021 Dr. Andrew Seely, University of Ottawa, *Developing Surgeon Scientists and Surgical Research*

Surgery Grand Rounds

April 2021 Drs. Brian Ulmer & Francis Christian, University of Saskatchewan, *Morbidity & Mortality (M&M) App and Provincial Standardized M & M Rounds*

March 2021 Dr. Trustin Domes, University of Saskatchewan, *Delivering Surgical Education During the COVID-19 Era*

February 2021 Dr. Kevin Wasko, Saskatchewan Health Authority, *Saskatchewan's COVID-19 Immunization Program*

January 2021 Dr. Gary Groot, University of Saskatchewan, *Evidence to Policy and Back (Learning Health System): Settle Time*

December 2020 Elizabeth Ulmer, McKercher LLP, *Wait ... Did I Write that Down?*

November 2020 Drs. Brian Ulmer, Ivar Mendez & Francis Christian, University of Saskatchewan, *Surgical Morbidity & Mortality Report*

Multidisciplinary Trauma Rounds

May 2021 Dr. Carlos Smits, Acute Care Surgery, *Trauma in South Africa, A Different Experience*

March 2021 Dr. A. Power, Western University, *A Deep Dive into REBOA: Complications, Technology & Future Applications*

November 2020 Constable Matt Ingrouille, Guns and Gang Unit & Constable Josh Kennedy, Drug Unit, Saskatoon City Police, *Street Drugs of Saskatoon: History, Current Status & Harm Reduction*

Neuroscience Grand Rounds

April 2021 Dr. Ashkan Shoamanesh, McMaster University, *The Emerging Spectrum of Cerebral Amyloid Angiopathy*

April 2021 Dr. Bijoy K. Menon, University of Calgary, *Light, Shades and Colors; Why Understanding Imaging is Key to better Acute Stroke Treatment*

March 2021 Dr. Andres Kanner, University of Miami Health System, *The Psychiatric Co-Morbidities of Epilepsy*

March 2021 Dr. Janis Miyasaki, University of Alberta, *Neuropalliative Care: Increasing your Toolkit for Chronic, Progressive Neurologic Illnesses*

March 2021 Dr. Shailly Jain, University of Alberta, *Common Metabolic Conditions as Rare Causes of Strokes in Adults*

February 2021 Dr. Jorge Burneo, Western University, *Seizure Semiology: A Video is Worth 1 Million Words*

February 2021 Dr. K. Ming Chan, University of Alberta, *Activity Dependent Therapies to Enhance Nerve Regeneration - Potentials for Clinical Translation*

January 2021 Dr. Gerald Pfeffer, University of Calgary and Drs. Kerri Schellenberg, Alexandra King & Malcolm King, University of Saskatchewan, *Highly Elevated Prevalence of Spinobulbar Muscular Atrophy in Indigenous Communities in Western Canada due to a Founder Effect*

January 2021 Dr. Mandar Jog, Western University, *New Topics in the Treatment of Parkinson Disease*

January 2021 Dr. Sam Weibe, University of Calgary - Canadian Epilepsy Teaching Network, *Seizure and Epilepsy Classification: End or Beginning*

November 2020 Dr. Jason Karamchandani, McGill University, *Brain Tumours: Advanced Diagnostics and Patient-centered Care in the 21st Century*

November 2020 Dr. Brian Thiessen, BC Cancer Agency, *A Career in Neuro-Oncology: A 25 Year Retrospective*



ANNUAL TRAUMA LECTURE

Sponsored by RUH Foundation in honour of the Humboldt Broncos

Surgical Committees

Surgical Quality & Safety Committee (SQSC)

Dr. Gary Groot, Chair, (Interim) Director of Surgical Quality and Safety, Department of Surgery, Division of General Surgery

Dr. Ivar Mendez, Provincial Head of Surgery

Dr. John Shaw, Division of General Surgery

Dr. Luke Hnenny, Division of Neurosurgery

Dr. Lei Xia, Division of General Surgery

Sarah Clark, Administrative Assistant

Cindy Graham, Executive Director of Surgical Services, SHA (Saskatoon & Regina)

Dr. Abbas Khani-Hanjani, Division of Cardiac Surgery

Dr. Mateen Raazi, Provincial Head of Anesthesiology

Dr. Vicki Cattell, Division Head, Pediatric Emergency Medicine

Research Committee

Dr. Daryl Fourney, Chair, Director of Research, Department of Surgery, Division of Neurosurgery

Dr. Francisco Cayabyab, Neuroscience Research Cluster

Dr. Stephen Gowing, Division of Thoracic Surgery

Dr. Ritesh Kumar, Division of Neurosurgery (Regina)

Dr. Yigang Luo, Division of General Surgery

Dr. Jonathan Norton, Division of Neurosurgery

Dr. Nick Peti, Division of Vascular Surgery

Dr. Emily Chan, Orthopedic Surgery Residency Program

Dr. Zarrukh Baig, General Surgery Residency Program

Dr. Nathan Ginther, Division of General Surgery

Dr. Gary Groot, Division of General Surgery

Dr. David Kopriva, Division of Vascular Surgery (Regina)

Dr. Paul Mick, Division of Otolaryngology

Dr. Silvana Papagerakis, Cancer Research Cluster

Dr. Katie Rooks, Division of Orthopedic Surgery

Dr. Kristen Marciniuk, Neurosurgery Residency Program

Karen Mosier, Administrative Assistant

Undergraduate Education Committee

Dr. Trustin Domes, Chair, Provincial Director of Undergraduate Medical Education Program, Department of Surgery, Division of Urology

Dr. Alexandra Mortimer, Co-director, Undergraduate Medical Education Program, Division of Orthopedic Surgery

Dr. Laura Sims, Co-director, Undergraduate Medical Education Program, Division of Orthopedic Surgery

Dr. Jordan Buchko, Division of Orthopedic Surgery (Regina)

Dr. Anne Dzus, Division of Orthopedic Surgery

Dr. Taylor Bereti, Division of General Surgery (Regina)

Dr. Allison Hunter, Division of General Surgery (Prince Albert)

Surgical Foundations Committee

Dr. Kylie Kvinlaug, Co-Chair, Surgical Foundations Program Director

Dr. Gavin Beck, General Surgery Residency

Dr. David Sauder, Orthopedic Surgery Residency Program Director

Alisa Worobetz, Administrative Assistant

Dr. Mark Sheridan, Co-Chair, Surgical Foundations Program Director

Dr. Lissa Peeling, Neurosurgery Residency Program Director

Dr. Darrien Rattray, Department of OBGYN Representative

General Surgery Residency Program Committee (RPC)

Dr. Gavin Beck, Chair, Residency Program Director

Dr. Kylie Kvinlaug, Surgical Foundations Program Director

Dr. Gordie Kaban, Teaching Coordinator (Regina)

Dr. Tanner Hall, PGY2, Junior Resident Representative

Dr. Haven Roy, PGY5, Senior Resident Representative

Dr. Hong Pham, PGY5, Administrative Resident

Karen Bader, Program Administrative Assistant and Recording Secretary

Dr. Dilip Gill, Residency Program Associate Director

Dr. John Shaw, Head, Division of General Surgery

Dr. Gary Groot, Division of General Surgery Research Program Director

Dr. Nicole Labine, PGY2, Junior Resident Representative

Dr. Alexis Jeannotte, PGY5, Administrative Resident

Keri Dewar, Program Administrative Assistant

Neurosurgery Residency Program Committee (RPC)

Dr. Lissa Peeling, Chair, Residency Program Director

Dr. Daryl Fourney, Program Research Director

Dr. Jonathan Norton

Dr. Zane Tymchak

Dr. Adam Wu

Dr. Aleksander Vitali

Dr. Turker Dalkilic (Regina Representative)

Dr. Bryan Renne, Elected Resident Representative

Dr. Michael Kelly, Head, Division of Neurosurgery

Dr. Kotoo Meguro

Dr. Julia Radic

Dr. Aleksander Vitali

Dr. Luke Hnenny

Dr. Adam Wu

Dr. Sarah Edwards, Appointed Resident Representative

Kimberly Moss, Program Administrative Assistant

Orthopedic Surgery Residency Program Committee (RPC)

Dr. David Sauder, Chair, Residency Program Director

Dr. William Dust, Competency Committee Chair

Dr. Lee Kolla, Foot & Ankle Representative

Dr. Anne Dzus, Pediatric Representative

Dr. Michael Spiess, Spine Representative

Dr. Emily Chan, PGY5, Administrative Resident

Dr. Tony King, Head, Division of Orthopedic Surgery

Dr. Laura Sims, Research Chair

Dr. Andrew Urmson, Trauma Representative

Dr. Mark Ernst, Sports Medicine Representative

Dr. Ian Lutz, Hip & Knee Representative & CBD Lead

Selected Publications

- Adams SJ, Babyn P, Mendez I. *Access to mammography among Indigenous Peoples in North America*. *Academic Radiology* [May 2021] 28(7):950-952. doi:10.1016/j.acra.2021.04.002.
- Adams SJ, Burbridge B, Chatterson L, McKinney V, Babyn P, I Mendez I. *Telerobotic ultrasound to provide obstetrical ultrasound services remotely during the COVID-19 pandemic*. *Journal of Telemedicine and Telecare* [October 2020] 1357633X20965422. doi:10.1177/1357633X20965422.
- Adams SJ, Burbridge B, Obaid H, Stoneham G, Babyn P, Mendez I. *Telerobotic sonography for remote diagnostic imaging: Narrative review of current developments and clinical applications*. *Journal of Ultrasound in Medicine* [October, 2020] 40(7):1287-1306. doi:10.1002/jum.15525.
- Adams SJ, Burbridge B, Chatterson L, McKinney V, Babyn P, Mendez I. *Telerobotic ultrasound to remotely provide obstetrical ultrasound services during the COVID-19 pandemic*. *Ultrasound in Obstetrics & Gynecology* [October 2020] 56:10-11. doi:10.1177/1357633X20965422.
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- Baig Z, Ljubojevic V, Christian F. *The diagnostic dilemma of a gallbladder volvulus: An unusual case report and review of the literature*. *International Journal of Surgical Case Reports* [February 2021] 80:105614. doi:10.1016/j.ijscr.2021.01.108.
- Barratt R, Chan G, La Rocca R, Dimitropoulos K, Martins FE, Campos-Juanatey F, Greenwell TJ, Waterloos M, Riechardt S, Osman NI, Yuan Y, Esperto F, Ploumidis A, Lumen N, on behalf of the European Association of Urology Urethral Strictures Guidelines Panel. *Free graft augmentation urethroplasty for bulbar urethral strictures: Which technique is best? A Systematic Review*. [April 2021] 80(1):57-68. doi:10.1016/j.eururo.2021.03.026.
- Bhatti T, Moser M, Tan KT, Chalchal H, Souied O, Le D, Shaw J, Zaidi A, Gill D, Ahmed S. *Rate of curative surgery in real-world patients with unresectable metastatic colorectal cancer treated with FOLFOXIRI±Bevacizumab: A western Canadian province experience*. *Journal of Gastrointestinal Cancer* [March 2021] doi:10.1007/s12029-021-00634-w.
- Blondeau LD, Sanche S, Sauder DJ, Deneer H, Kanthan R, Rubin JE, Morrison BJ, Blondeau JM. *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*. [February 2021] 1-6. doi:10.1080/1120009X.2021.1879581.
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- Dressler D, Adams SJ, McWalter E, Shepel M, Lutz I, Obaid H. *Bone-cartilage mismatch in the medial tibial plateau: A MRI study*. *Knee* [March 2021] 29:262-270. doi:10.1016/j.knee.2021.01.024.
- Dubois L, Harlock J, Gill HL, Chen JC, Rheume P, Jetty P, Boyd AJ, Roche-Nagle G, Hill A, Kopriva D, Lee M, Nutley M, Gowing R, Kapila V. *A Canadian multicenter experience describing outcomes after endovascular abdominal aortic aneurysm repair stent graft explantation*. *Journal of Vascular Surgery* [February 2021] 74(3):720-728.e1. doi:10.1016/j.jvs.2021.01.049.
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- Gould L, Kress S, Neudorf J, Gibb K, Persad A, Meguro K, Norton J, Borowsky R. *An fMRI, DTI and neurophysiological examination of atypical organization of motor cortex in ipsilesional hemisphere following post-stroke recovery*. *Journal of Stroke and Cerebrovascular Diseases* [March 2021] 30(3): 105593. doi:10.1016/j.jstrokecerebrovasdis.2020.105593.
- Groot G, Baer S, Badea A, Dalidowicz M, Yasinian M, Ali A, Carr T, Reeder B. COVID-19 Evidence Support Team (CEST). *Developing a rapid evidence response to COVID-19: The collaborative approach of Saskatchewan, Canada*. *Learning Health Systems* [June 2021] e10280. doi:10.1002/lrh2.10280.
- Hämäläinen A, Pichora-Fuller MK, Wittich W, Phillips N, Mick P. *Self-report of hearing and vision in older adults participating in the Canadian longitudinal study of aging are explained by behavioral sensory measures, demographic and social factors*. *Ear and Hearing* [March 2021] 42(4):814-831. doi:10.1097/AUD.0000000000000992.

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Funded Research

Internal Funding

Groot, Gary – College of Medicine Mingling Minds Rapid Response Funding, *Refining Realist Program Theory to Evaluate Saskatchewan COVID-19 Vaccine Implementation*, \$9,850.

Groot, Gary – College of Medicine, College of Medicine Research Award (CoMRad), *COVID-19 Evidence Response Team: A Realist Evaluation* \$27,148.

Groot, Gary – College of Medicine, *Building Capacity for Patient-Oriented Research and Shared Decision Making*, \$150,000.

Groot, Gary – College of Medicine, *Building Capacity for Patient-Oriented Research and Shared Decision Making*, \$17,500.

Mendez, Ivar – College of Medicine, CoM Department Head Discretionary Research Funding, \$3,712.

Mendez, Ivar – College of Medicine Mingling Minds Rapid Response Funding, *Development of a Web and a Mobile Application to Share COVID-19 Emergent Medical Protocols, and Support Remote Medical Healthcare During the COVID-19 Pandemic*, \$9,996.

Mick, Paul – College of Medicine, College of Medicine Research Award (CoMRad), *Multisensory Impairment Among Older Canadian Adults: An analysis of the Canadian Longitudinal Study on Aging*, \$30,000.

TOTAL INTERNAL FUNDING \$248,246

External Funding

Cayabyab, Francisco – Natural Sciences and Engineering Research Council of Canada Undergraduate Student Research Award (Thomas Lowe), *Adenosine Signaling Regulates HCN Channels*, \$8,081.

Groot, Gary – Saskatchewan Health Research Foundation Solutions Program - Innovation Grant, *Engaging Caregivers of Persons with Dementia in the Virtual Delivery of and Access to Health Information and Services*, \$48,714.

Groot, Gary – Saskatchewan Health Research Foundation, *Research Connections: COVID-19 Rapid Response. COVID-19 Evidence Support Repository: An Innovative Approach to Knowledge Mobilization*, \$7,800.

Groot, Gary – File Hills Qu'Appelle Tribal Council, *Canadian Consortium on Neurodegeneration in Aging (CCNA) Team 18: Issues in Dementia Care for Indigenous Populations*, \$94,000.

Groot, Gary – Canadian Institutes of Health Research Catalyst Grant - Patient-Oriented Research, *Harm Reduction and Residential Supportive Care for High-risk Pregnant Women living with HIV: A Realist Evaluation*, \$10,295.

Groot, Gary – Saskatchewan Health Authority, *Economic Analysis of Clinical Quality Improvement Program: A Methodological Application in the Context of COVID-19 Acute Care Pathways*, (PI Nazmi Sari, co-applicant Gary Groot) \$50,000.

Groot, Gary – Royal University Hospital Foundation, *Novel Irreversible Electroporation Ablation Combined with TLR Agonist and PD-1 Blockade Eradicates Metastatic Melanoma*, (PI Jim Xiang, co-applicant Gary Groot) \$25,000.

Kaban, Gordie – Office of the President - Respiratory Research Centre, *Development and Testing of a Prototype Mouthpiece to Reduce Aerosol Production During Upper Endoscopic Procedures*, \$10,000.

Kelly, Michael – Mitacs Accelerate Internship Program (Miranda Messmer), *Establishment of an X-ray CT and FTIR Mouse Brain Reference Atlas*, \$15,000

Kelly, Michael – Idorsia Pharmaceuticals Ltd, *REACT: A Prospective, Multi-center, Double-blind, Randomized, Placebo-controlled, Parallel-group, Phase 3 Study to Assess the Efficacy and Safety of Clazosentan in Preventing Clinical Deterioration Due to Delayed cerebral Ischemia (DCI), in Adult Subjects with Aneurysmal Subarachnoid Hemorrhage (aSAH)*, \$2,000.

Kelly, Michael – University Hospital of Berlin, *Solitaire™ With the Intention For Thrombectomy Plus Intravenous t-PA Versus DIRECT Solitaire™ Stent-retriever Thrombectomy in Acute Anterior Circulation Stroke (SWIFT DIRECT)*, \$35,638.

Kelly, Michael – The Governors of the University of Calgary, *EVOLVE: Evaluating Oral Peri-operative Acetylsalicylic Acid in Subjects Undergoing Endovascular Coiling-only of Unruptured Brain Aneurysms*, \$35,500.

Funded Research (continued)

External Funding

Kelly, Michael – Population Health Research Institute (PHRI), *ENRICH-AF: Edoxaban for IntraCranial Hemorrhage Survivors with Atrial Fibrillation*, (PI Brent Graham, co-applicants Lissa Peeling/Mike Kelly) \$2,015.

Kelly, Michael – Canadian Institutes of Health Research (CIHR), *Pilot RCT Study to Assess Feasibility of “Supra-marginal” Surgical Resection of Malignant Glioma (G-SUMIT: Glioma Supra Marginal Incision Trial)*, (PIs Alireza Mansouri, Farhad Pirouzmand, Damon Scales, co-applicant Mike Kelly) \$378,673.

Mendez, Ivar – Saskatchewan Health Research Foundation (SHRF) Impact Grant. *Empowering Northern Indigenous Communities to Ensure Equitable, Appropriate and Community-based Access to Musculoskeletal Care using Virtual Technology*, (PI Stacey Lovo, co-applicant Ivar Mendez), \$149,987.

Moser, Mike – Royal University Hospital Foundation, *A Step Towards Personalized Treatments of Large Liver Tumors by Combining Radiofrequency Ablation and Irreversible Electroporation*, (PI Chris Zhang, co-applicant Mike Moser), \$25,000.

Norton, Jonathan – Royal University Hospital Foundation Research Grant, *Neurophysiology and Acute Stroke: Prediction and Encryption*, \$24,900.

Norton, Jonathan – NIH, *Impairment of Spinal Motor Development in Cerebral Palsy*, (PI Dr. Quilan, co-applicant Jonathan Norton) \$136,578.

Papagerakis, Silvana – Jim Pattison Children’s Hospital Foundation Grant, *Oral Health as a Determinant of Childhood Arthritis Occurrence and Outcomes: Towards Improving Care of Childhood Arthritis by Optimizing Oral Health*, (PI Alan Rosenberg, co-applicant Silvana Papagerakis) \$120,000.

Papagerakis, Silvana – Laval University Réseau de Recherche en Santé Buccodentaire et Osseuse (RSBO) Infrastructure Grant, *Oral Cancer Biobank Establishment Of Canadian Population*, (PI A Semlali, co-applicant Silvana Papagerakis) \$20,000.

Papagerakis, Silvana – Dean’s Scholarship (Negin Faramarzi Garous), *Understanding the Links Between Nutrition, Circadian Clock and Oral Cancer*, \$22,000.

Papagerakis, Silvana – Saskatchewan Center for Patient-oriented Research (SCPOR), STEP funding (PhD student Meenakshi Pundir), *Understanding the Impact of Circadian Disruption in Patients with Sleep Disorders*, \$1,250.

Papagerakis, Silvana – Saskatchewan Center for Patient-oriented Research (SCPOR) STEP funding (PhD student Zohre Gheisary), *The Association Between Lifestyle Factors, Circadian Clock and Sleep Pattern Disruption and Depression in Patients with Rheumatoid Arthritis*, \$1,000.

Papagerakis, Silvana – Saskatchewan Center for Patient-oriented Research (SCPOR) STEP funding (PDF Razi Mahmood), *Investigating the Role of Sleep Disorders in the Onset, Outcome Prediction, and Quality of Life Among Patients with Head and Neck Cancer*, \$1,000.

Papagerakis, Silvana – Health Sciences Graduate Scholarship (HSGS)/Graduate Research Fellowship Program (MS student Greg Guenther), *Development of New Products for the Management of Oral Health in Patients with Reduced Mobility*, \$19,000.

Papagerakis, Silvana – Saskatchewan Center for Patient-oriented Research (SCPOR) fellowships (MS Student Aparna Harri), *Investigating the potential links between sleep, circadian rhythms, and outcomes in head and neck cancer*, \$13,350.

Papagerakis, Silvana – Saskatchewan Center for Patient-oriented Research (SCPOR) fellowships (PhD student Meenakshi Pundir), *Understanding the Impact of Circadian Disruption in Patients with Sleep Disorders*, \$30,000.

Papagerakis, Silvana – Saskatchewan Center for Patient-oriented Research (SCPOR) fellowships (PDF Razi Mahmood). *Investigating the Role of Sleep Disorders in the Onset, Outcome Prediction, and Quality of Life Among Patients with Head and Neck Cancer*, \$54,000.

Papagerakis, Silvana – Saskatchewan Center for Patient-oriented Research (SCPOR) fellowships (MS student Greg Guenther), *Development of New Products for the Management of Oral Health in Patients with Reduced Mobility*, \$10,000.

Peeling, Lissa – University of Calgary, *AcT: Alteplase Compared to Tenecteplase in Quality Improvement & Clinical Research* (PI Gary Hunter, co-investigator Lissa Peeling), \$1,500.

Peeling, Lissa – Population Health Research Institute (PHRI), *ENRICH-AF: Edoxaban for IntraCranial Hemorrhage Survivors with Atrial Fibrillation*, (PI Brent Graham, co-applicants Lissa Peeling/Mike Kelly) \$2,015.

TOTAL INTERNAL FUNDING \$1,352,241

TOTAL FUNDED RESEARCH \$1,600,487

Surgical Faculty

By Region

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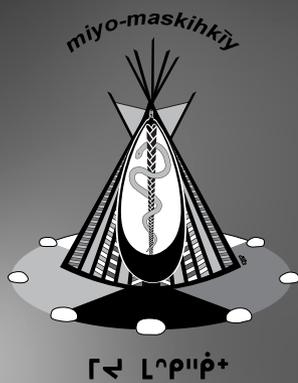
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