



# October 23, 2025 | Royal University Hospital



# REACH **2025** RESIDENT RESEARCH DAY Showcase & Awards



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# Greetings

Dear residents and faculty members,

Welcome to the 2025 Resident Research Day offered jointly between the Postgraduate Medical Education office, the Office of the Vice Dean Research and the Saskatchewan Centre for Patient-Oriented Research at the College of Medicine, University of Saskatchewan.

Research by residents is a crucial part of residency education. It is central not only to contributing to the knowledge repertoire but also a tool for evaluating and applying practical knowledge.

As in the past, this year's resident research day highlights some of the stellar research done by our residents - which spans basic, applied, translational, and patient-oriented research.

Thank you for your contributions and best wishes for a successful Resident Research Day.



Marek Radomski MD, PhD, DSc  
Vice Dean, Research, University of Saskatchewan



To our Resident Researchers, Patient Partners and everyone at REACH Resident Research Day,

On behalf of the Saskatchewan Centre for Patient-Oriented Research, welcome to the 2025 REACH Resident Research Day. We are thrilled to once again be part of this exciting program, highlighting the important research being undertaken by residents right here in Saskatchewan.

As research advances in our province, it is rewarding to see more resident researchers engaging people with lived experience in their projects. Patient Partners help shape research priorities, program design, and service delivery in ways that reflect the real-world experiences of patients, families and caregivers. Through our SCPOR traineeship presentations, you will have an opportunity to also hear from Patient Partners and learn about their unique contributions to the research.

This year, we have some outstanding projects, and we're excited to see the impact these up-and-coming researchers have on the future of healthcare in Saskatchewan!



Christina Weise MPA  
Executive Director, Saskatchewan Centre for Patient-Oriented Research



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Dear Residents, Faculty and Patient Partners,

It is my pleasure to welcome you to the 2025 Resident Research Day, a collaborative initiative supported by Postgraduate Medical Education Office, the Office of the Vice Dean of Research, and the Saskatchewan Centre for Patient Oriented Research at the College of Medicine, University of Saskatchewan.

Resident research plays a vital role in medical education, enhancing patient care through fostering the integration of evidence-based practices within specialized training. This year I am especially proud to witness the breadth of contributions from our residents, spanning both independent investigations and patient-oriented research that engages patient partners in meaningful collaboration.

This event celebrates the outstanding scholarly work of our residents and reflects our collective commitment to advancing healthcare through research and innovation. By working together across disciplines and perspectives, we continue to improve outcomes for the patients and communities we serve. I extend heartfelt thanks to our patient partners, whose insights and engagement enrich the research journey.

To all who submitted their work for presentation, thank you for your dedication and scholarly contributions. I wish you continued success in your research and clinical practice.

Warm Regards,



Marla Davidson MD, FRCPC  
Associate Professor and Associate Dean,  
Postgraduate Medical Education, University of Saskatchewan



**REACH** **2025**  
**RESIDENT RESEARCH DAY**

Showcase & Awards

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# Dr. Anurag Saxena, MD, M.Ed., MBA, FRCPC, CCPE, CHE

Professor, Department of Pathology and Laboratory Medicine  
College of Medicine, University of Saskatchewan



## Keynote Address:

Curiosity , Evidence and Impact: Research for Care and Career

### Abstract:

The core mission of the medical education-health care continuum includes research, education and clinical care. Research could be viewed as one of these three trimuvirates or as being foundational to the other two areas. It is the latter viewpoint that undergirds this keynote.

Every single day offers opportunities to ask “why.” Turning everyday clinical questions into meaningful research not only sharpens clinical judgment but also challenges current thinking and pursue innovative solutions to enhance quality of care.

In addition to focusing on immediate clinical questions, it is helpful to consider,

- a) bio-psycho-social-ecologic approach to health and disease,
- b) larger socio-medical-political context, and
- c) human beings, society and healthcare as complex adaptive systems.

The convergence of natural sciences, social sciences and humanities with their own philosophies and research paradigms and methodology offers a unique opportunity for collaborative inter- and multidisciplinary approach to research.

Tapping into one’s curiosity and with a commitment to pursue excellence, the opportunities range from starting small with feasible projects e.g., case reports, QI initiatives, retrospective reviews to bigger projects as part of research programs. The talk also addresses common barriers, including time constraints, self-doubt, and finding opportunities and mentors, offering realistic approaches to navigate these and ensuring genuine impact of your research .

Residents will be encouraged to view research not as an optional extra, or as a burdensome “add-on,” but as an integral part of patient-centered care and personal and professional growth. The keynote concludes with a call to action: to pursue curiosity with purpose, to collaborate generously, and to help shape the future of medicine—one question at a time.

# Ava Bayat & Heather Dyck

## Co-developing a Multidisciplinary Delirium Prevention Pathway to Reduce Postoperative Delirium in Older Adults with Cognitive Frailty

During the first phase of our study, the development phase, ten facilitated workshops were held with 44 participants, including 3 patient partners who identified 36 Key Ideas for developing a POD pathway and co-developed a Process Map to visually outline the POD Pathway.

The process map included:

1. Before surgery: PCP screening geriatric referral frailty assessment informed consent with cognition risk explained.
2. Pre-op: Patient/family self-assessment, prehabilitation, delirium prevention education, medication review.
3. Intra-op: Minimize high-risk meds, maintain normothermia, regional blocks, keep sensory aids in place.
4. Post-op: Early removal of lines, promote sleep/nutrition, orientation, mobilization, pain management, delirium order set.
5. Discharge: Documentation of delirium history, patient/family education, structured follow-up, community supports (PCP, counseling).



# Pramath Kakodkar & Mitra Sabetghadam Moghadam

## Acceptance of Artificial Intelligence (AI) in Pathology Reporting for Oncology Patients and the Oncology Multidisciplinary Team

We built and demonstrated a QuPath-based AI pipeline that detects lung squamous cell carcinoma and scores PD-L1 to support immunotherapy decisions, then surveyed two stakeholder groups (pathology residents and cancer research graduate students) after a short educational video. Both groups reported strong enthusiasm for AI's efficiency and consistency, but emphasized safeguards: rigorous local validation, human-in-the-loop oversight, clear accountability, and targeted training. Residents highlighted workflow integration and standardization needs; graduate students stressed proper use/interpretability and avoiding over-reliance, collectively highlighting to education and clear validation as key trust builders.

SCPOR-enabled outputs include: patient-partnered co-design, three tailored 7-8-minute videos (patient, clinician, researcher), stakeholder -specific surveys, and completed datasets for residents and graduate students (with oncologist and patient data in progress). These deliverables position us to complete a multi-stakeholder analysis and submit our manuscript, Acceptance of Artificial Intelligence (AI) in Pathology Reporting for Oncology Patients and the Oncology Multidisciplinary Team

### Women Leading Philanthropy (WLP) Grant Opportunity

Are you a female physician, practitioner, or researcher at Royal University Hospital with a bold idea to advance health or research? Women Leading Philanthropy invites you to apply for a \$100,000 grant that supports innovative, high-impact projects led by women. Three finalists will be selected to present their proposals at the WLP voting meeting in September, where one project will receive full funding. This is your chance to bring your vision to life with the support of a powerful network of engaged female philanthropists.

Applications open  
December 1, 2025,  
and close March 31, 2026.



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For more information, please visit [ruhf.org/women-leading-philanthropy](https://ruhf.org/women-leading-philanthropy)

# Neel Mistry & Michelle Walsh

## Generating Synthetic Contrast-Enhanced CT Angiography Images from Non-Contrast Images Using a Slice-Consistent Brownian Bridge Diffusion Model

**Results:** On both the CAV and AV datasets, our proposed diffusion model/AI algorithm (SC-BBDM) resulted in higher peak signal-to-noise ratio and lower normalized root mean square error compared to the two current models available in literature. It also showed a robust structural similarity to the ground-truth model. Furthermore, on the multi-reader multi-case study performed by 2 radiologists, there was no statistically significant difference between the ground truth and synthetic images for each criteria assessed (anatomical detail, opacification of aorta, noise, artifacts, image quality, and diagnosis).

**Conclusion:** The diffusion-based approach (SC-BBDM) outperforms current state-of-the-art GAN-based approaches (CyTran, Pix2Pix) while preserving vascular detail (resulting in fewer artifacts and smoother vessel borders) and producing high-quality synthetic CTA images from non-contrast CT studies.

From a practical standpoint, this may reduce the need for iodinated contrast, resulting in safer and more accessible imaging. Currently, our findings apply to CT aorta studies only (for aortic pathologies like dissection and aneurysms); however, with more testing and refinement, we hope to expand our model to include other imaging modalities (MRIs) and organ systems (abdomen/pelvis, brain, etc.).

**POR:** Comparing synthetic (AI model generated) image vs. contrast-injected image and identifying level of confidence for clinical translation (i.e., would you trust only undergoing a synthetic study as opposed to current standard-of-care)?



# Mars Zhao & Christine Meier

## Assessment of Satisfaction of Total Knee Arthroplasty Patients Using CPAK Classification

**Rationale:** Total knee arthroplasty (TKA) is a successful operation for osteoarthritis, yet some patients remain dissatisfied despite seemingly optimal component positioning. The Coronal Plane Alignment of the Knee (CPAK) classification, which describes radiographic knee phenotypes, may provide insight into alignment-related outcomes. This study examines whether pre- and post-operative CPAK classifications correlate with Patient-Reported Outcome Measures (PROMs) after TKA.

**Methods:** A retrospective review was conducted on 365 primary TKA patients operated on by a single surgeon. Patient demographics, surgical details, and radiographic data were collected. PROMs, including the Oxford Knee Score (OKS) and KOOS-JR, were assessed. Pearson correlation analysis explored relationships between CPAK groups and outcomes. We engaged a patient partner in the development of the interview questions and data collection to ensure relevancy to patient-reported outcomes.

**Results:** A total of 247 patients were analyzed. Preoperatively, 37.9%, 19.6%, and 12.6% were in CPAK 2, 5, and 4, respectively. Postoperatively, 83.4% were classified as CPAK 5. Mean KOOS-JR and OKS scores were 62 and 42, indicating mild pain and satisfactory function. Only 25% retained the same CPAK classification. No significant difference in PROMs was found between matched and unmatched CPAK groups. However, patients with post-operative apex proximal joint line alignment (CPAK 7, 8, 9) had significantly worse outcomes ( $p < 0.05$ ).

**Conclusion:** Our results suggest that most CPAK group combinations did not impact PROMs, with high satisfaction in CPAK 5. However, patients in CPAK 7, 8, or 9 postoperatively had poorer outcomes. These findings suggest tailoring post-operative alignment based on CPAK may not improve satisfaction, except for avoiding apex proximal classifications.



# Myk Sackett & Alana Goertzen

Waiting on the world to change: Impact of a new urgent care Centre on Emergency department patient visits in a medium sized Canadian city

**Authors:** Donnelly, R., Goertzen, A., Sackett, M., Clay, A., Lamprecht, H.  
Department of Emergency Medicine, University of Saskatchewan, Saskatoon, SK.

**Background:** Canadian Emergency Departments (ED) have been under immense pressure due to numerous challenges including reduced access to primary care and delayed ward transfers for admitted patients. US data has shown Urgent Care Centers (UCCs) alleviate ED burden by offloading lower acuity presentations. In July 2024, Regina, SK, a medium sized Canadian city, opened an UCC to alleviate growing ED pressure. Preliminary publication from the Saskatchewan Health Authority claims success in offloading the EDs, however, this research aimed, to quantify this.

**Methods:** Usage data for the ED was extracted from the National Ambulatory Care Report System. Independent-Samples Kruskal-Wallis or Chi-square tests were used to compare ED volume and wait times six months before the opening of the UCC (July-December 2023, January-June 2024) to the six months after opening of the UCC.

**Results:** The UCC had 20,463 visits in its first 6 months. Of these, 2213 (11%) were high acuity (CTAS 1/2) and 381 (1.9%) were transferred to an ED by emergency medical services. There was no statistically significant difference in the number of monthly ED visits across the different time-periods ( $p=.064$ ). There was a significant difference in the median monthly physician assessment wait times in the ED ( $p<.001$ ), with post-hoc test showing a difference between July-December 2023 (137 minutes; interquartile range (IQR; 134-144 minutes) and July-Oct 2024 (88 minutes; IQR 52-91 min). There was a significant decrease in ED CTAS 4 (19.2 vs 22.2%) and CTAS 5 (3.9 vs 4.9%) presentations in July-December 2024 compared to July-December 2023.

**Conclusion:** In Regina, for the first six months since inception of the UCC, ED visits remained the same. However, both median monthly physician assessment wait times and lower acuity presentations decreased.



# Emily Li, Anson Lam, Ihor Hayda & Anthony Rousseaux

## Improving the Serious Conversation Led by Internal Medicine Residents

Serious illness is defined as having one or multiple conditions that could be life-limiting in the foreseeable future with either the high risk of recurrent hospitalizations or the patient's loss ability to function as independently. Good communication between doctors and patients is very important in delivering high quality health care that aligns with patients' values and preserves patients' quality of life. On the modern-day medicine ward, however, relevant conversations to discuss values, convey prognosis, and ultimately guide the approach to care can be infrequent, and often occur too late. The mismatch between the medical team's perception of the situation and the patient's understanding can lead to poor end of life care and planning. This, in turn, can lead to unnecessary investigations or interventions, contributing to patient suffering and more burden on our health care system.

Previous studies have identified multiple barriers that prevent doctors and patients from engaging in important discussions about end-of-life care. Among those barriers, many doctors feel they are inadequately trained or lack skills to deliver these difficult conversations. As part of an initiative to improve these conversations, Ariadne Labs at Harvard developed the "Serious Illness Conversation Guide" (SICG). This is a guide to help physicians to deliver these difficult conversations using patient-tested language.

As part of our QI project, we hope to improve proficiency and comfort of internal medicine residents in Saskatchewan towards serious illness conversations. We arranged a workshop for residents to practice using the SICG in small groups with coaching from a staff facilitator. Residents will take turns role-playing as patient or physician, following pre-defined patient scenario scripts. Measurement of impact of the intervention will take place through pre- and post-workshop surveys, which will also help to assess the local barriers to conducting serious illness conversations in Saskatchewan. The goal is to build a recurrent, sustainable workshop for all future internal medicine residents to enhance residents' competency for delivering serious illness conversations.



# Henrietta Ezegbe

## A Mixed-Methods Continuous Quality Improvement Initiative to Standardize Animal Bite Investigations in Saskatoon's Environmental Public Health Program

**Background:** Animal bite investigations are critical for timely rabies risk assessment and prevention. However, inconsistent practices, inefficient documentation systems, and workflow challenges can compromise both efficiency and quality.

**Objective:** To strengthen the quality and consistency of animal bite investigations using a mixed-methods continuous quality improvement (CQI) project grounded in the Plan-Do-Study-Act (PDSA) framework.

**Methods:** Guided by the PDSA framework, we combined staff engagement with a retrospective random file audit. Public Health Inspectors (PHIs) took part in a facilitated huddle, Public Health Nurses (PHNs) in the Communicable Disease Control (CDC) team provided semi-structured email responses, and Medical Health Officers (MHOs) contributed through one-on-one conversations. This mixed methods approach identified gaps and informed practical solutions.

**Results:** The audit and staff feedback revealed inconsistencies in documentation, rabies risk categorization, SBAR use, and referrals for RPEP/tetanus prophylaxis, alongside workflow delays and communication gaps. These findings informed an Integrated Best Practices Guide to standardize investigations, improve efficiency, and strengthen collaboration in Saskatoon's animal bite response.

**Conclusion:** This CQI project showed how public health response and interventions, grounded in staff insights, can enhance consistency, efficiency, and communication in animal bite investigations. Results may inform ongoing practice refinement, orientation processes, and team-led evaluation cycles.



# Julia Newton

## Best Practice Recommendations for the Clinical Care of Spinal Bulbar Muscular Atrophy

**Authors:** Schellenberg KL, Caspar-Bell G, Ellis C, Johnston W, King A, King M, Korngut L, Kushneriuk B, Lavoie AJ, McGonigle R, Newton J, O'Connell C, Shoesmith C, Suchowersky O, Warman-Chardon J, Wunder S, Pfeffer G. Presented by Julia Newton.

**Background:** Spinal Bulbar Muscular Atrophy (SBMA) is an X-linked recessive neuromuscular disorder that causes lower motor neuron dysfunction and multisystem changes due to a mutation of the androgen receptor gene. SBMA is a rare disease but recent studies have shown a higher prevalence of disease in First Nations and Metis peoples in western Canada. Currently there is only one existing clinical care guideline from France and other management is adapted from the Canadian ALS guidelines. The purpose of this project was to create clinical care guidelines for SBMA that reflect Canadian health care, are culturally responsive, and are specific to SMBA to include the multisystem manifestations that are not present in ALS.

**Methods:** Previous guidelines were evaluated using the AGREE II framework. A needs assessment was completed through a REDCap survey that went to clinicians across Canada. The needs assessment determined the topic list after refinement from a working group of 14 content experts and leaders from the Pewaseskwan Indigenous Wellness Research Group. Literature review was completed in MEDLINE and Embase databases with search terms adapted from the Canadian ALS guidelines. Abstracts of each topic were assessed by two members of the working group to determine relevancy and inclusion criteria. The development of recommendations was completed using the GRADE tool to develop evidence-to-decision tables. Recommendations were reviewed by the Pewaseskwan team and Community Guiding Circle to ensure cultural responsiveness.

**Results:** The topics identified in the needs assessment were: diagnosis, genetic counselling, multidisciplinary care, cardiac disease, limb symptoms, dysarthria, communication, respiratory dysfunction, metabolic abnormalities, emotional supports, female carriers, and considerations for Indigenous people. Forty-one recommendations regarding the clinical care of SBMA were developed and the strength of each recommendation and certainty of evidence is demonstrated based on the GRADE criteria and expert opinion.

**Conclusion:** The best practice recommendations for the clinical care of SMBA will be published in the CMAJ as a tool for health care providers of those with SBMA. Further studies are needed to improve the body of literature for SBMA and to strengthen the level of evidence.



# Sarah Larmour

## The RUMBLE Trial: A Randomized Clinical Controlled Trial Evaluating the Effect of Opioid-Free Anesthesia on Return of Gastrointestinal Function in Laparoscopic Colorectal Surgery

**Authors and Affiliations:** Dr. Larmour, Sarah; Dr. Deck, Megan; Dr. Lim, Ben; Dr. Gill, Dilip; Dr. Ginther, Nathan; Dr. Walker, Mary-Ellen; Ms. Goncin, Una; Ms. Carley, Samantha; Ms. Earle, Darcie; Dr. Gamble, Jonathan.

**Objectives:** The purpose of the RUMBLE trial was to assess whether intraoperative OFA reduces the time-to-return of gastrointestinal function in patients undergoing elective, laparoscopic colorectal surgery, compared to TOA.

**Methods:** The study is a prospective, monocentric, double-blinded, randomized clinical trial comparing intraoperative OFA versus TOA in patients undergoing elective laparoscopic colorectal surgery. Group allocation was 1:1 with a total sample size of 60. Participants included patients age  $\geq 18$ , ASA class I-III, undergoing elective laparoscopic colorectal surgery. Preoperatively, all patients received Acetaminophen and Gabapentin. In both groups, general anesthesia was maintained with Sevoflurane. The OFA group received Dexmedetomidine, Lidocaine, Ketamine, and magnesium analgesia, while the TOA group received intermittent boluses of Sufentanil. Both groups received bilateral Transversus Abdominus Plane (TAP) blocks prior to emergence, and postoperatively both groups received Hydromorphone and Fentanyl in PACU as needed and an opioid Patient Controlled Analgesia (PCA) pump for 48 hours thereafter.

**Specific outcomes of this study include:** (i) time-to-return of gastrointestinal function as quantified by the previously validated GI-2 composite outcome of tolerance of solid foods and first defecation,<sup>(15)</sup> (ii) quantified postoperative opioid consumption via review of the patient medical administration record and assessment of PCA usage up to 48h postoperatively, (iii) postoperative nausea and vomiting (PONV) in PACU, (iv) length of stay in PACU defined as time until Aldrete score  $\geq 9$ <sup>(16)</sup>, (v) time to discharge from hospital, (vi) previously validated Verbal Rating Scale (VRS) <sup>(17)</sup> score for postoperative pain at time of arrival to PACU, 1h post-op, upon discharge from PACU and at 12, 24, and 48 hours post-operatively, (vii) reported patient satisfaction upon discharge from PACU evaluated using the previously validated Quality of Recovery (QoR-15) questionnaire.<sup>(18)</sup> colorectal ERAS pathways and is an addition to the growing body of OFA literature.



**Results:** A total of 73 patients were enrolled in the study with 13 patients excluded and 30 patients analyzed in both the OFA and TOA groups. Data was summarized with medians, interquartile ranges (IQR), counts, and percentages. To determine if there were significant differences between the OFA and TOA groups, Mann-Whitney U tests were used for continuous variables, and Fisher's Exact test was used for categorical variables. Our primary outcome; return of bowel function, showed no significant difference between the groups (OFA: 44.1h [24.9 to 54.5] vs TOA: 32.7h [21.6 to 46.9],  $p=0.27$ ). Secondary outcomes ii – vii also showed no statistical difference between the study groups, except for a statistically significant- but clinically insignificant- increase in total dilaudid IV equivalents during the 12-24h time interval (OFA: 2.5mg [1.7 to 3.6], vs TOA: 1.6mg [0.6 to 2.8],  $p=0.013$ ). A limited safety analysis examined intraoperative and postoperative hemodynamics as well as postoperative oxygen saturation with a statistically significant increase in postoperative hypotension in the OFA group (36.7% of OFA patients and 0% of TOA patients had one or more SBP measurements < 90mmHg in PACU; Risk Ratio 23%,  $p=0.028$ ). While statistically significant, clinically the postoperative hypotension was self-limited with no patients requiring vasopressors or inotropes in PACU.

**Conclusion:** Given the prevalence of POI in colorectal surgery, and its pathophysiologic link with opioids, an improved understanding of OFA is warranted to guide future ERAS protocols. For this study population our results do not support the use of OFA to expedite bowel recovery or decrease postoperative opioid use. However, our results show OFA as a comparable method with respect to all outcomes investigated and thereby support its consideration in populations that may benefit or request avoiding opioids for other reasons. This data provides insight for future colorectal ERAS pathways and is an addition to the growing body of OFA literature.



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# Bashir Daud Shah & Suganya Giri Ravindran

## Dopa-Responsive Parkinsonism Secondary to Tauopathy: Clinical, Pathological, and Genetic Study

**Objective:** To report on the clinical, pathological, and genetic findings of four cases of benign levodopa-responsive parkinsonism tauopathy with long survival

**Background:** The most common form of parkinsonism (PS) is Lewy body disease (PD). The second most common degenerative cause of PS is progressive supranuclear palsy (PSP), where tau inclusions characterize the pathology. A relatively uncommon tauopathy with features of PS is corticobasal degeneration (CBD). Prognosis in each PSP and CBD is less favorable than PD. We report four cases of dopa-responsive PS tauopathy with unusually long survival.

**Methods:** Saskatchewan Movement Disorder Program (SMDP) has operated uninterrupted since 1968. Patients are seen on a first-come, first-served basis. Videos are made on all consenting individuals. Autopsy studies are offered to patients to establish a definitive diagnosis. Genetic analyses were done in the laboratory of Dr M. Farrer. Canadian certified neuropathologists performed pathology studies at no cost to the family.

**Results:** Four patients (3 males, 1 female) with clinical diagnosis of Parkinsonism are included. Median onset age was 28 years (range: 15-53 years) and median survival after onset was 52 years (range: 25-61 years). Genetic and pathological findings varied among the cases. One patient with a LRRK2 mutation showed substantia nigra degeneration with tau inclusions involving multiple brain regions, including the brainstem, cerebellum, cerebral isocortex, white matter, and limbic lobe. Another case with a DNAJC12 mutation exhibited mild tauopathy predominantly in the brainstem and deep grey structures. A third patient with a Parkin gene mutation displayed mild tauopathy with tau inclusions in the midbrain, hippocampal formation, and cingulate gyrus. The fourth case, without genetic study, had pathology consistent with PS-neurofibrillary tangles. Notably, all cases were levodopa-responsive. Tau distribution patterns in these cases differed from typical PSP and CBD, suggesting a distinct form of tauopathy-associated parkinsonism.

**Conclusion:** We show another mostly genetic form of tauopathy associated parkinsonism, distinct from PSP and CBD. These findings suggest that there are several different metabolic pathways for tau inclusion formation with widely varying outcomes. Further studies are needed to determine the pathophysiology of tau protein formation.



# James Macaskill & Shayan Shirazi

## Exploring the Influence of Near-Peer Teaching on Fourth-Year Medical Students' Readiness for the Postgraduate Residency Match in Canada: A Mixed-Methods Study Applying Self-Determination Theory

**Background:** The Canadian residency post-graduate match, administered through the Canadian Residency Matching Service (CaRMS), presents a high-stakes and often stressful milestone for medical students. Near-peer teaching (NPT), where senior trainees mentor junior peers, can help mitigate this stress through supportive learning environments. NPT has been informally used by students during the post-graduate match process, however, research is limited on formal curricular NPT interventions and their influence on student perceptions of readiness for the match process using a theoretical lens. We applied Self-Determination Theory (SDT) which emphasizes autonomy, competence, and relatedness to evaluate whether NPT fosters readiness for the post-graduate match.

**Methods:** We conducted a mixed-methods study with fourth-year medical students who attended a three-part "CaRMS Primer" lecture series delivered by junior residents. After each session, students completed surveys via One45 using adapted versions of the Learning Climate Questionnaire and Perceived Competence Scale. We assessed scale reliability using Cronbach's alpha and analyzed differences using one-way ANOVA. Simultaneously, we conducted semi-structured interviews and used thematic analysis to identify key themes, which we mapped to SDT domains.

**Results:** Fifty-six students of ninety-four (59.6%) completed surveys, and twenty-five students (26.6%) participated in semi-structured interviews. Learning climate scores were consistently high across all sessions. Perceived competence increased significantly by the final session on interviews ( $p < .001$ ). Qualitative data revealed four themes: stress and anxiety, perceived competence and readiness, autonomy and control, and relatedness and peer support. Students described NPT as credible, reassuring, and empowering, while also noting challenges related to peer comparison and limited presenter diversity.

**Conclusion:** NPT appears to support learner readiness for the post-graduate match, by fostering psychological safety, boosting self-efficacy, and through the relatability of near-peer experiences, which align with SDT principles. Structured near-peer interventions may serve as a replicable, theory-informed approach to supporting learners through high-stakes transitions in medical education.



# Mars Zhao

## Successful Conversion of a Surgical Program to a Night Float Call System

**Authors:** Zach Oleynik, Mars Zhao, David Sauder

**Background:** Our orthopedic program has switched from a traditional 24 hour call schedule to a night float system. We studied the impact this had on resident education, wellness and satisfaction.

**Methods:** This prospective study began data collection in May 2023. Orthopedic residents completed surveys at the end of 16 four-week rotation. These surveys assessed health status (SF-36 scores), educational outcomes, and resident satisfaction. We compared the data of three different cohorts: traditional 24-hour call residents, the night float resident, and non-night float residents working within a night float system. We conducted semi-structure interviews with residents after one year of data collection. Faculty also completed a survey regarding their satisfaction with the new system.

**Results:** A total of 92 submissions were collected across 16 academic blocks. Three study groups included orthopedic rotation resident (N=63), night float (N=11), and traditional 24-hour call resident (N=18). Across the three cohorts there were no significant differences in health-related outcomes which included individual SF-36 scores as well as physical and mental component scores (p-values >0.05). Orthopedic rotation residents strongly agreed (78.7%) and agreed (13.1%) that their educational experience was improved. Additionally, 77% strongly agreed and 14.8% agreed that their quality of life was improved. Junior residents took approximately 50 less post call days and 50 less 24-hour shifts within the night float system. Educational outcomes showed the residents working within a night float system had significantly more study time than the traditional 24-hour system. Qualitative analysis supported widespread acceptance and approval of the new system. The majority of faculty felt the program was improved with the night float.

**Conclusion:** We successfully converted our program to a night float call system. The night float decreases post call days and 24-hour shifts at the expense of one high volume month of call. There were no significant differences in health-related outcomes and most residents were satisfied with the new call system.



# Thank you to all attendees of and all contributors to



This event is made possible because of the dedicated Resident Researchers who pursue excellence in research to ensure continuous advancements and innovation in health and science. Their teams, including people with lived experience, ensure focus remains on what matters most to those affected by the research.

REACH Resident Research Day is a partnership between the University of Saskatchewan, College of Medicine's Post-Graduate Medical Education (PGME) and Office of the Vice Dean of Research (OVDR) and the Saskatchewan Centre for Patient-Oriented Research (SCPOR).

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Thank you to all who attended, and see you at REACH Resident Research Day 2026!

# REACH **2025**

## RESIDENT RESEARCH DAY

Showcase & Awards



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