



Department of Anesthesia, Pain Management
and Perioperative Medicine

Annual Report

2022 - 2023

Our Vision

The patients and communities we serve benefit from the highest quality, evidence-based anesthesia, pain management and perioperative medical care by committed clinicians, researchers, educators, and staff.

Our Mission

We are leaders providing innovative, high-quality education, research, and patient and family-centred clinical care across the lifespan. In all that we do, we respect and value the diversity of the people and communities we work with and serve, with an ongoing commitment to responsible stewardship.

Our Values

Innovation

We embrace curiosity and evidence and seek new knowledge from diverse perspectives.

Quality

We strive to set the highest standard of quality in everything we do and constantly challenge ourselves to improve.

Integrity

We strive to be fair, ethical, and transparent in all that we do and in the decisions that we make; we strive to act in the best interests of patients.

Respect

We demonstrate to our patients, learners, and colleagues that we respect, value and appreciate them through our words, actions, and relationships.

Accountability

We responsibly use the Department's resources to provide the best quality service possible and strive to exceed expectations as we meet our obligations. We advocate for better health outcomes and understand the importance of giving back to our communities, both locally and globally.

Equity, Diversity, and Inclusion

In all our work and in the way we interact with each other, we strive to remove barriers to equity and create an environment that fosters diversity and inclusion.

Dalhousie University is located in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq. We are all Treaty people.

Table of Contents

Greetings	1
Message from the Department Head, Associate Head and Chief Operating Officer	1
About Us	2
Who We Are	2
Our Executive Team	2
Cabinet	2
Where We Work	2
What We Do	3
A Year in Review	5
Clinical Excellence & Quality	7
Meeting the Needs of Our Patients	7
Leading in Perioperative Medicine	8
Striving for Quality Improvement and Patient Safety	8
Reflecting on Our Achievements	10
Transformational Education	15
Our Residency Program	15
Internal Accreditation Review	15
Support for Internationally Educated Physicians	16
The Rwanda Connection	16
Residents & Fellows	17
Research, Innovation and Discovery	19
Research Accountability Project	19
Medical Education as a Growing Research Area of Interest	19
Improving Shared Decision-Making for Patients	20
Hollywood Films and Medical Education	21
Enhancing Patient Recovery After Cesarean Delivery	21
International Connections in Brain Research	22
Anesthesia Research Day 2023: A Great Success	22
Valuing People	24
Prioritizing Wellness	24
Equity, Diversity, Inclusion and Accessibility (EDIA)	24
Celebrating Achievements	25
Appendix	27
Appendix A 2022-23 Research Projects	A1
Appendix B 2022 Publications	A6



Greetings

Message from the Department Head, Associate Head and Chief Operating Officer



We are pleased to present to you the 2022-2023 Dalhousie University Department of Anesthesia, Pain Management and Perioperative Medicine annual report. This report is our opportunity to highlight the people, the projects, and the amazing work of our team.

This year, we experienced the gradual recovery from the *COVID-19* global pandemic that had completely dominated all aspects of our work and personal lives since early 2020. As the health, education and research sectors adjusted to the changes and the new ways of working brought on by the pandemic, our departmental members showed their resilience by continuing to adapt and remain nimble to serve patient care needs, and to meet our academic mandate at Dalhousie University.

We wish to express great appreciation to all departmental members, the senior leadership team, the medical directors, the administrative team and our partners for their commitment and collaboration. Through their compassion and passion, we continue to make a difference in the lives of patients.

We deeply value our people and are striving to build a workplace culture that is vibrant, supportive, and safe for all team members, one that embraces wellness and integrates equity, diversity, and inclusion in everything we do. We are excited about what the future holds.

Sincerely,

Janice Chisholm, MD, FRCPC
Head and Professor,
Dalhousie University
Head, Central Zone,
Nova Scotia Health

André Bernard, MD, FRCPC
Associate Head and Assistant
Professor, Dalhousie University
Associate Head, Central Zone,
Nova Scotia Health

Carmelle d'Entremont, MA
Chief Operating Officer,
Dalhousie University

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About Us

Who We Are

We are a clinical and academic Department affiliated with Dalhousie University's Faculty of Medicine, including its Saint John, New Brunswick site, Nova Scotia Health and the IWK Health Centre. Some clinicians with academic appointments also work in hospitals across the Maritimes.

- Over 180 Dalhousie faculty in PEI, Nova Scotia and New Brunswick, with approximately 100 working in the Halifax area as part of our Clinical Academic Funding Plan (CAFP) within NSH Central Zone, IWK Women's & Obstetric and IWK Pediatrics.
- More than 25 administrative staff, who are employees of the various partner institutions and support research, education, finance, and administration functions.
- Supported by healthcare workers at Nova Scotia Health and the IWK such as anesthesia assistants, anesthesia technicians, nurses and other allied health and support staff.

Our Executive Team

- **Dr. Janice Chisholm**, Dalhousie University Department Head, and NSH Central Zone Head
- **Dr. André Bernard**, Dalhousie University Department Associate Head and NSH Central Zone Associate Head
- **Dr. Narendra Vakharia**, Chief, Women's and Obstetric Anesthesia, IWK Health Centre
- **Dr. Scott Drysdale**, Chief, Pediatric Anesthesia, IWK Health Centre
- **Ms. Carmelle d'Entremont**, Chief Operating Officer

Cabinet

Cabinet is the committee that advises the Department Head on financial and academic matters and plays a central role in strategic planning, priority, and policy setting.

- **Dr. André Bernard**, Chair, Associate Head
- **Dr. Janice Chisholm**, Head
- **Dr. Narendra Vakharia**, Chief, Women's and Obstetric Anesthesia, IWK Health Centre
- **Dr. Scott Drysdale**, Chief, Pediatric Anesthesia, IWK Health Centre
- **Dr. Christian Lehmann**, Medical Director, Research
- **Dr. Robyn Doucet**, Program Director, Postgraduate
- **Dr. Tracy Kok**, Medical Director of Wellness
- **Dr. Shannon Bradley**, Medical Director, Education
- **Dr. Andrei Khorovets**, Member at Large
- **Dr. Allana Munro**, Member at Large
- **Dr. Parvinder Sodhi**, Member at Large / Medical Director of Equity, Diversity, Inclusion and Accessibility

Ex-officio non-voting members: **Carmelle d'Entremont**, **Carl Stevens**, **Laura Harris Buffett**, **Dr. Heather Butler (PhD)**, **Sarah Pietarinen** and **Sarah Zwaan**

Where We Work

Faculty who hold academic appointments with our Dalhousie University Department are based throughout the Maritimes.

Within Nova Scotia, members of our Clinical Academic Funding Plan deliver patient care primarily at the following sites:

- IWK Health Centre

- NSH Central Zone
 - QEII Health Sciences Centre
 - Halifax Infirmary (HI) site, Halifax
 - Victoria General (VG) site, Halifax
 - Dartmouth General Hospital, Dartmouth
 - Hants Community Hospital, Windsor
- Scotia Surgery, Dartmouth

What We Do

We Provide Quality Patient Care

We provide full spectrum specialty anesthesia care to patients in Atlantic Canada, as well as nationally and internationally, through outreach initiatives and innovation in airway management.

- Leading-edge programs and services in perioperative medicine, perioperative blood management, and chronic and acute pain management
- General, neuraxial, regional and monitored anesthesia care to patients undergoing surgery, including:

General	Ear, Nose and Throat
Obstetrics/Gynecology	Plastic surgery
Orthopedics surgery	Neurosurgery
Ophthalmology surgery	Thoracic surgery
Oral & Maxillofacial surgery	Transplantation
Cardiac surgery	Urology
Vascular surgery	

- Adult and pediatric trauma cases and administering epidural analgesia to pregnant people in labour
- Anesthesia care to patients receiving procedures outside of the operating rooms, such as:

- Electrophysiological ablation procedures
- Transcatheter aortic valve implants
- Cardioversion
- General and neuro-interventional radiologic procedures
- Diagnostic imaging and radiation oncology/therapy



We Teach

We welcome learners annually who receive classroom and on-the-job clinical teaching from our clinical faculty. Learners include undergraduate medical students, post-graduate anesthesia residents, and health professions such as nurses, paramedics, and respiratory therapists. We also offer up to seven fellowship opportunities for anesthesiologists seeking additional sub-specialty training.

We Research

We foster relevant research that leads to impactful patient care, with a research program that includes clinicians, scientists, PhD researchers, and graduate students at Dalhousie University and beyond. Much of the focus of our research efforts is in areas of pain, airway management, and perioperative care, spanning bench to bedside and across all ages.



 **Dr. Ben Schelew**
Physician
Anesthesia
nova scotia
health authority

Lidocaine mg/ml
Ketamine mg/ml
Glycopyrolate mg/ml
Fentanyl micrograms/ml
Propofol mg/ml
Rocuronium mg/ml
Sugammadex

A Year in Review—By the Numbers

Dalhousie University Faculty

188	Faculty Members (comprised of primary, cross-appointed, and adjunct appointments)
18	Professors
26	Associate Professors
139	Assistant Professors
3	Lecturers

Surgical Procedures by Site

10,188	Halifax Infirmary
14,711	Victoria General
5,300	Dartmouth General
1,414	Hants
3,406	IWK Women and Obstetrics
5,749	IWK Pediatrics
551	Scotia Surgery

Patient Interactions by Specialized Program

1,216	Acute Pain Services consultations
2,470	Regional Anesthesia procedures

ADULT CHRONIC PAIN SERVICES

10,401	Total appointments
1,750	Blocks
1,507	New patients
7,144	Returning patients
150	Patients seen through the Pain Self-Management Program (Halifax)

PEDIATRIC PAIN MANAGEMENT

321	Pain Clinic patients
1,062	In-patient care

PERIOPERATIVE BLOOD MANAGEMENT PATIENT VISITS

1,625	Total Visits
245	Outpatient IV Iron at HI Site
430	Patient consultation
303	Chart reviews
647	Referrals

Postgraduate Education

4	Fellows
32	Anesthesia Residents
54	Off-service and Visiting Elective Postgraduate Residents in NSH Central Zone
15	Off-service and Visiting Elective Postgraduate Residents at the IWK
3	Off-service Residents at Saint John, NB

Undergraduate Education

34	Year 1 and 2 Medical Students
26	Year 3 Medical Students
71	Year 4 Medical Students
1	Practice Ready Assessment Candidate
10	Students Shadowing Physicians
34	PREP Students
104	Other Learners
48	Faculty Involved in Undergraduate Teaching
837.5	Undergraduate Teaching Hours Delivered

Cont. Faculty Professional Development

27	Grand Rounds
5	Mortality & Morbidity Rounds
3	Cardiac Anesthesia Rounds
2	Women's & Obstetrics Rounds
3	Journal Clubs

Research

21	Faculty researchers (total equivalent protected time = 6.29 FTE)
\$4.9 M	Grants and industry funding
24	New research projects
94%	Collaborative projects
58	Peer-reviewed publications
73	Invited presentations



Clinical Excellence

Meeting the Needs of Our Patients

Focusing on Access to Care

As the health system began to recover from the effects of the pandemic, the Department turned its attention to surgical recovery and addressing waitlists at Nova Scotia Health and the IWK Health Centre. *“Clinically, we remained focused on patient care and quality, with a primary goal this year of improving access to care for those we serve,”* says **Dr. André Bernard**. *“Our teams demonstrated great flexibility and resilience, once again, to adapt to changing surgical needs”.*

Collaborating with partners, staff provided leadership in perioperative services and participated in system planning to address surgical backlogs and expand surgical and pain management services in hospitals in the Halifax area. Our scheduling teams worked diligently to make sure that any anesthesia staff shortages for the day were filled to the best of our ability, in order to reduce impacts on patients. **Dr. Arnim Vlaten**, scheduler for the NSH Central Zone, received an Award of Excellence for his outstanding work in managing our complex scheduling needs.

“Throughout the pandemic, our team stepped up to deliver the care required. We’re pleased to say that there were no OR cancellations due to our staff being unavailable to staff care areas at the IWK,” says **Dr. Narendra Vakharia**, Chief of Women’s and Obstetric Anesthesia.

By introducing new anesthesia assistants at the Dartmouth General Hospital and the IWK pediatric department, the Department was able to strengthen the perioperative anesthesia team. *“The anesthesia assistants have been a great addition to our care delivery model. With their unique set of skills and abilities, they contribute to us delivering safer anesthesia care,”* says **Dr. Scott Drysdale**, Chief of Pediatric Anesthesia.

The Department was successful in supporting business cases to obtain new funding to expand services in adult, pediatric and women’s and obstetrics anesthesia. To build our capacity to deliver on the government mandate for “more healthcare, faster”, we undertook the largest physician recruitment effort ever carried out by the Department, with great results. *“In 2022-2023, in this time of worldwide anesthesia shortages and health human resource challenges, the Department welcomed and onboarded nine new physicians as a part of our recruitment efforts and hired an additional 10 staff who will start in 2023-2024. We also recruited a number of short-term locums tenens positions,”* says **Dr. Janice Chisholm**. *“Great care and time were taken to strengthen our recruitment and onboarding processes to help new clinicians transition into the Department, particularly for those coming from outside of Canada. We appreciate the Nova Scotia Health support for site visits and relocation allowances which greatly helped the recruitment process.”* With these new recruits, the Department is positioned to expand the number of OR days across sites in late 2023.



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– Dr. André Bernard



Leading in Perioperative Medicine

Perioperative medicine is an emerging field that considers multidisciplinary, integrated care for patients from the planning of surgery throughout the surgical pathway to recovery. In other words, it consists of three phases: before, during, and after surgery. As a Canadian leader in perioperative medicine, our Department, led by **Dr. David MacDonald**, Medical Director, is championing the way, creating protocols and pathways that encourage better perioperative care. Our clinical faculty have shaped and supported the implementation of cutting-edge practices, including 'Early Recovery after Surgery' protocols and improved preoperative testing and assessment. We collaborated widely across NSH and IWK to streamline the preoperative preparation of patients, including bringing preop testing and investigations in line with the values espoused in Choosing Wisely. This includes glycemic control (blood sugar, in patients living with diabetes) and a preoperative health questionnaire, allowing the sensible, secure, and constrained use of preoperative in-person anesthetic consultation and completely changing the way we practice.

"Working with system partners and the province-wide Perioperative Network, we updated our Preoperative Health History Questionnaire to improve preoperative care for patients. We also added the Canadian Nutrition Screening Tool and we're working with dietitians to ensure our high-risk patients are nutritionally optimized before surgery," says Dr. MacDonald. *"Our IM/IT analyst, Darren Bishop, has done a fantastic job creating the electronic fillable questionnaire and we're working with NSH to expand its use preoperatively."*

Striving for Quality Improvement (QI) and Patient Safety

The Department is committed to the ongoing fostering of an organizational culture of quality and patient safety.

The Department is committed to the ongoing fostering of an organizational culture of quality and patient safety. Within the NSH central zone, we said a fond farewell to **Paul Brousseau**, who retired after many years of dedicated service and welcomed **Melissa Berry** to her new role as Quality Leader. Over the past year, the QI office organized and moderated multiple Mortality and Morbidity rounds, with positive feedback from our staff on the importance of these rounds in terms of education and patient safety. The team posts safety bulletins to alert staff of potential critical medication and safety issues and have created a new program called **QTIPS** where important topics in QI and patient safety are posted to our electronic bulletin boards at the HI and VG sites.

On an ongoing basis, the team responds to any perioperative safety events from the hospital safety incident reporting system and addresses any issues from the patient relations office. *"We developed and started using an automated tracking system to scan our electronic anesthetic records for unexpected or adverse events without adding the administrative burden of reporting by our staff. This system will enable us to respond to events in a timely manner, follow up with patients, and provide assistance to our staff as needed,"* says Dr. Milne. *"A clinical performance evaluation is nearing completion on a membrane-based, non-*

disposable CO2 absorber (memsorb™) that has the potential to lessen our environmental impact. We thank both the neuroanesthesia group and anesthesia technician team for participating in this project.”

“I have been working with first year residents to provide quality improvement curriculum,” says Dr. Sweet. “This curriculum is evidence-based for quality improvement and CPD accredited. Additionally, we’re very excited to offer a new quality improvement fellowship position starting in 2024.”

At the IWK, the Women’s and Obstetric Anesthesia quality office has been developing an electronic database to capture complications related to obstetric anesthesia. *“This has resulted in greater detail, consistency of recording / reporting of information, clarity of information and better capture of data,”* says Dr. Sjaus. *“Plans are underway to expand areas for capture to make QI for our Department even more robust.”*

Within the IWK Pediatric Anesthesia department, the implementation of the National Surgical Quality Improvement Program guided anesthesia care management efforts. The Surgical Safety Checklist was successfully redesigned to be more streamlined and tailored to pediatric needs. *“Dr. Matthew Kiberd and Sami Jreige, the team leaders for our anesthesia assistant group, deserve special recognition for their commitment to improve timely and appropriate vascular access for pediatric patients. They led initiatives that reduced the amount of trauma children and youth experience when vascular access is required, reducing the number of repeat IVs and the number of patients who require a second sedation or GA for PICC line placement. This is a huge success not only for the patients, but also for other colleagues who were trying to offer pleasant and appropriate care,”* says Dr. Bird.



The Surgical Safety Checklist was successfully redesigned to be more streamlined and tailored to pediatric needs.

ANESTHESIA QUALITY AND PATIENT SAFETY LEADS

Dr. Andrew Milne – NSH Co-Medical Director

Dr. Greg Dobson – NSH Co-Medical Director

Dr. Vanessa Sweet – NSH Associate Director

Dr. Ana Sjaus – IWK Women’s and Obstetric Medical Director

Dr. Sally Bird – IWK Pediatric Medical Director

Reflecting on our Achievements

IWK Health Centre

IWK Pediatric Anesthesia Department

Dr. Scott Drysdale, Chief

"The pediatric anesthesia team continues to be nimble in meeting our patient care and academic needs. The highlight this year has been the formation of the anesthesia assistant team and the provision of 24/7 support to our surgical efforts. Pediatric surgical waitlists, however, continue to be an area of concern. Working with government and other partners, we have been successful in increasing the OR footprint to provide better access to timely care to address pediatric surgical wait times. Another development has been the increasing use of regional anesthetic to manage post-operative pain in pediatric patients."



IWK Women's and Obstetric Anesthesia Department

Dr. Narendra Vakharia, Chief

"This year, we improved the collaborative work between the scheduling groups at both NSH and the IWK. I am extremely proud of the degree of resilience and grace that all members of the Women's and Obstetric Anesthesia have demonstrated, not only in the last year, but over the last few years. They have all been steadfast in dealing with the challenges presented by the changes in leadership, funding, COVID-19, workload and anesthesia assistant staffing shortage, to name

a few. Despite all the distractions everyone has remained focused on delivering the best clinical care to our patients."

Nova Scotia Health Central Zone



Dartmouth General Hospital

Dr. Kevin Bent, Anesthesia Site Chief

"There have been many big changes at the Dartmouth General Hospital, including the introduction of anesthesia assistants and the welcoming of more anesthesiologists from the QEII Health Sciences Centre to the Dartmouth site to meet additional OR capacity. The growing number of patients visiting our emergency room continues to be a challenge. A procedure has been implemented that allows inpatients to receive beds while also allowing us to focus on our ambulatory perioperative program. I appreciate our leadership for constantly encouraging and challenging us to think differently and better, and for fully supporting changes that can result in better patient care and a supportive workplace environment."

Hants Community Hospital

Dr. Jocelyn Foran, Anesthesia Site Lead

"Hants Community Hospital's team continues to provide exceptional ambulatory surgical care to approximately 2000 patients each year. This year was significant for the addition of ophthalmology surgical services and the updated MH carts to match sister sites in the central zone. As well, we also increased access to regional anesthesia options and implemented precise OR start times."

QEII Health Sciences Centre, Halifax Infirmary Site

Dr. Blaine Kent, Anesthesia Site Chief

"Our clinical services have continued to expand with the addition of the new 'Hybrid OR' used by vascular, cardiac surgery, interventional radiology and select interventional cardiology cases within the OR space. Our anesthesia presence has also grown in the cardiac catheterization/electrophysiology labs on the sixth floor, and the interventional radiology suites and MRI on the third floor. The Regional Anesthesia Block Room /Acute Pain Service and Peri-op Blood Management services continue to set records month after month with numbers of patient encounters. Despite equipment and medication shortages we were all able to work together to optimize patient care and experiences."

QEII Health Sciences Centre, Victoria General Site

Dr. Colin Audain, Anesthesia Site Chief

"2023 was the year we attempted to put the pandemic behind us and to provide services to the people of Nova Scotia. Despite challenges with human health resources, we were able to reduce the number of patients on surgical waitlists and complete more surgeries than prior to the pandemic. This is a testament to the dedication and hard work of everyone in the perioperative portfolio. As a department, we are thrilled to be able to meet the challenges of 2024 with a brand-new fleet of cutting-edge Draeger anesthesia machines."

Horizon Health Network

Dr. Todd Chedore, Site Chief

"We are continuing to provide exemplary anesthesia services and chronic pain services. Recruitment is an ongoing struggle in New Brunswick, especially in cardiac anesthesia, but a new contract and fee schedule improvement in the province will hopefully help with future retention and recruitment. Our biggest news, however, is that discussions are underway to explore a stand-alone Royal College certified Anesthesia Residency Program in New Brunswick"



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Over the past year, initiatives to improve clinical efficiency have been put in place.

Anesthesia Subspecialties

Acute Pain Management and Regional Anesthesia

Dr. Kwesi Kwofie, Medical Director

*"We have put in place a new ketamine policy for burn dressing changes and collaborated with thoracic surgery and the trauma consult service to target rib fracture patients with paravertebral blocks and epidurals to improve the pain control for this high-risk population. We successfully implemented the new CADD Solis pumps at both the VG and HI sites for both IV modalities and local anesthetics. Our acute pain nurses, **Lynn Langille** and **Paula Hammond** created and implemented a program to train 570 nurses in four weeks on this new equipment, including evening spot training sessions targeting nurses who only work nights. This is a miraculous accomplishment and would not have been possible without their immense dedication and skill."*

Adult Chronic Pain Management

Dr. Ian Beauprie, Medical Director

"In a time when great people are hard to come by, we were successful in recruiting physicians, and securing funding to expand our Pain & Addiction Albro Lake clinic. Over the past year, initiatives to improve clinical efficiency have been put in place. The clerical staff's role was expanded to include preparing exam rooms and escorting patients into rooms. This

*freed up nursing staff to take on new responsibilities such as administering injections like sublocade and botox which in turn has allowed doctors to see more patients. Much of the credit goes to **Vicky Mills**, Health Services Manager of Pain Services. Vicky never fails to achieve what she sets out to do."*

*"Chronic pain has been a big part of my life almost as long as I can remember. Pain doesn't just hurt, it's lonely, isolating and scary. When I started my very long journey with pain clinic, that changed. Pain Clinic was the light at the end of a cold, dark, tunnel," says patient **Lauren Spurrell**. "I truly believe that first referral saved my life, and I will forever be grateful for the doctors and nurses that don't just treat you as a pain patient, they treat you with understanding and kindness."*

Cardiac Anesthesia

Dr. Paula Kolysher, Chief

"In cardiac anesthesia, we placed an application for new transcatheter aortic valve implantation billing codes, and welcomed our first Canadian cardiac anesthesia fellow, as well as a new staff member. Additionally, we worked with the Department of Cardiology to expand and improve the anesthetic services with their ever-growing needs. Within the next year we hope to be able to get more cardiac anesthesia presence in the CVICU, in conjunction with the cardiac surgeons, to improve patient care."

Liver Transplantation Anesthesia

Dr. Adrienne Carr, Chief

"We completed enrolment for an international ELIPTO-2 study run out of Université de Montréal in December 2022, and completed data collection in July 2023. We have benefitted from having new staff join our team recently, and they are all eager learners, and our experienced staff are mentoring the new members by using their exceptional teaching abilities. In a nutshell, our facility only does about 30 liver transplants annually. Despite this, as a group, we continue to engage in research and offer our patients quality, evidence-based treatment. It is evident that every member of our staff is enthusiastic in learning more about liver transplantation."

Neuroanesthesia

Dr. Carlo Mariotti, Chief
Dr. Genevieve McKinnon,
Incoming Chief

"Our neuroanesthesia group is a true model of a supportive, cohesive group of dedicated clinicians. We strive to provide the best possible care to the diverse population of neurosurgical patients in the Atlantic provinces while also providing a most rewarding and impactful educational experience for our students. Our members have been actively involved in providing outstanding research, teaching, and learning opportunities over the past year and continue to be world leaders in airway management."

Blood Management Services

Dr. Blaine Kent, Medical Director

"As we transition back to the 'new normal', the entire anesthesia team has been amazingly flexible-pivoting on a dime to get extra cases done and adapting to new equipment, medication and equipment backorders /shortages, and the increased acuity of many of the patients. Our ongoing successes are a testament to all the patient-facing members of the Department, as well as all the administrative staff who support our clinical, research, administrative, and education activities."

Thoracic Anesthesia

Dr. David Watton, Chief

"Over the last year we have expanded our thoracic anesthesia group while continuing to provide quality care to patients across the Maritimes."





Transformational Education

Whether you are a student, resident, fellow, or other health care provider, you can be sure that you will experience the highest quality anesthesia education with the Office of Education.

*“As we look back on the past year, I’m proud of many accomplishments including welcoming various types of learners who received on-the-job clinical teaching from our faculty, the development of a new fellowship promotional video, the return of in-person staff simulations and a robust Continuing Professional Development program,” says **Dr. Shannon Bradley**, Medical Director, Education.*

Our Residency Program

Our residency program continued to be highly sought after, and the post-Covid environment provided some opportunity for gatherings and in-person events. **Dr. Julia Wright** did a great job serving as Chief Resident, providing required leadership. This year, we said a fond farewell to **Jessie Purvis** after many years of committed service as Education Manager and welcomed **Allister Barton** into this role. We also acknowledge the leadership of **Dr. Robyn Doucet** who completes her six-year term as Residency Program Director. Both Jessie and Robyn were acknowledged by receiving Dalhousie Faculty of Medicine awards.

“As I finish my term as program director, I’m proud of how the program has dealt with all of the changes and ups and downs that have come with competency-based medical education implementation and pandemic over the years. Over this time, the program has

maintained and grown its reputation as a great program, as evidenced by a record number of applications this year despite no electives,” says Dr. Doucet.

For the 2023 application cycle, the Department received 178 residency program applications which was a new record representing a 20% increase over 2022. The selection committee reviewed 178 applicants, interviewed 54 candidates, and selected six of them to be our residents in summer 2023.

Internal Accreditation Review

In November 2022, the Anesthesia Residency Program underwent an Internal Review as required by the Royal College of Physicians and Surgeons. The Department was very satisfied that no major deficiencies were found and remains committed to addressing the areas of improvement noted by the reviewers. Adequate resident education space remains a challenge within the current hospital blueprint, as noted in the Internal Review Report. However, we continue to advocate with the health authority for better space for academic sessions and study. Time commitment from residents to maintain eportfolios was also identified as an area that required some attention and will continue to be worked on by the program.

Office of Education Leadership Team

Laura Harris Buffett, Managing Director, Education

Dr. Shannon Bradley, Medical Director, Education

Dr. Robyn Doucet, Program Director, Postgraduate

Dr. Andrew Jarvie, Associate Program Director, Postgraduate

Dr. Bukky Akindele, Medical Director, Undergraduate

Dr. Cathy Delbridge, Medical Director, Simulation

Dr. Jon Bailey, Medical Director, Serving & Engaging Communities

Dr. Tim Mullen, Medical Director, Fellowship

Dr. Mallory Garza, Medical Director, Continuing Professional Development

Dr. Karim Mukhida, Resident Scholarly Project Coordinator

Drs. Trisha Doyle and Jane Seviour, IWK Education Coordinators

One way that the Department helps build human resource capacity in other zones of the province is by delivering a Practice Ready Assessment to internationally-trained physicians.



Support for Internationally Educated Physicians

One way that the Department helps build human resource capacity in other zones of the province is by delivering a Practice Ready Assessment to internationally-trained physicians. Supported by the College of Physicians and Surgeons Nova Scotia, Nova Scotia Health and the Nova Scotia government, this educational process allows an international physician to demonstrate that they meet competencies and skills to be eligible for a license to practice medicine in Nova Scotia.

In spring 2023, the Department conducted a 16-week practice assessment led by **Dr. Ben Schelew**. Upon successful completion of the assessment, the anesthesiologist participant obtained licensure to practice in Yarmouth, Nova Scotia, which is an area of great need of anesthesia resources. “The practice ready assessment is a wonderful opportunity to support more anesthesiologists to be able to be licensed to practice in the province,” says Dr. Schelew.

The Rwanda Connection

To support global health, the Department fosters a longstanding educational relationship with Rwanda University. In the Spring of 2022, four international faculty from Rwanda, India and Ethiopia were sponsored by the Department and in part through a grant from the Canadian Anesthesiology Society International Education Foundation to come to Halifax for training in acute pain and post-graduate medical education. Later in the academic year, the Department

welcomed two Rwandan anesthesia residents to Halifax for two months as part of their residency elective education. As volunteers with the Canada-Rwanda Open Heart Program, **Drs. Braden Dulong** and **Mathew Kiberd** dedicated a week of their time this past year to provide teaching and cardiac anesthesia services in Rwanda.

In the Fall of 2022, **Dr. Jon Bailey** volunteered in Rwanda for a month, accompanied by Dalhousie resident, **Dr. Julia Wright**. Another resident, **Dr. Katija Bonin** accompanied the group for two weeks to support delivery of the Vital Anesthesia Simulation Training (VAST) SIMposium and to present research at the All Africa Anesthesia Congress (AAAC). The VAST SIMposium brought together 42 simulation educators from 12 countries for one day of VAST Wellbeing, a new course to reduce burnout and promote well-being, and two days of the VAST Facilitator Course. **Drs. Orlando Hung, Patricia Livingston** and Bailey delivered presentations at AAAC as invited speakers.

In recognition of his significant international contributions over the past ten years, primarily in Rwanda, Dr. Bailey received the *Dr. John Savage Memorial Award* for Faculty Leadership in Global Health in 2023, nominated by his mentor Dr. Livingston.

“I am deeply honored to be given this award. Looking through the past recipients, it’s a list of incredibly impressive people and organizations that I am surprised to be joining. More than what this represents for me, this represents recognition of the fantastic work being done by the organizations that I’m a small part of,” says Dr. Bailey.

Residents and Fellows

Congratulations to our 2022-2023 Graduates

FELLOWS



Dr. Garrett Barry
Regional Anesthesia
and Acute Pain



Dr. Darin Evoy
Chronic Pain
Management



Dr. Fraser Johnson
Pediatric Anesthesia



Dr. Stephanie Power
Cardiac Anesthesia
and Transesophageal
Echocardiography

RESIDENTS



Dr. Chris Cheung



Dr. Brendan Morgan



Dr. Anna Nunokawa



Dr. Ollie Poole



**Dr. Apiraami (Abi)
Thanapaalasingham**





FALCONS

FALCONS

Dr. David Blackman

FALCONS

Lauren Hemphill

Get It Straight
Reduce the Wait

Research, Innovation and Discovery

The Office of Research consists of a purpose-driven team that strives for quality research, best ethics and equity, diversity, and inclusion practices.

“Our team of researchers is committed to working together with research consultants and patients to find evidence-based solutions leading to the best possible pain management and perioperative care for our Maritime families and global communities. As some of our more experienced researchers retire, we are looking at ways to stimulate and grow our research efforts,” says **Dr. Christian Lehmann**, Medical Director, Research.

Research Accountability Project

Accountability is an important value of the Department. Over the past two years, the Department’s Office of Research has championed the development of a *Research Accountability Framework* that supports the transparent allocation of research time and assessment of associated research activities. Engagement of researchers and department members were central to the successful development of the measurement tool and rolling out the trial implementation phase. The result is, for the first time ever, a comprehensive framework, based on evidence. It will guide how research outputs are evaluated and how research protected time will be allocated – maintained, increased, or decreased – based on agreed upon metrics and data.

“I want to express my sincere appreciation to all those who contributed to the Research Accountability Project. I particularly want to acknowledge the leadership of **Dr. Richard Hall**, Professor Emeritus in the development phase and **Dr. Adam Law** in chairing the assessment committee. I also wish to recognize the excellent work of **Dr. Heather Butler, PhD** who shepherded the project from the very beginning through all its stages,” says Dr. Chisholm.

Medical Education as a Growing Research Area of Interest

Several of our researchers are turning their scholarly attention to medical education research. In 2022-2023, medical education research accounted for 46% of new projects in the Department. Researchers took part in forward-thinking initiatives to educate Canadian and overseas physicians for improving clinical skills and patient well-being.

A project led by **Drs. Ana Sjaus** and **Krista Ritchie, PhD** is underway to explore how residents’ experiences in the operating room and preparing for the Royal College of Physicians and Surgeons of Canada qualifying exam stimulate or inhibit the consolidation of adaptive expertise. The project intends to provide valuable insights to facilitate further applied educational research and assist residents in their continuing professional development. “*Since the final examination, I have often reflected on*

Office of Research Leadership Team

Dr. Heather Butler, PhD
Managing Director, Research

Dr. Christian Lehmann
Medical Director, Research

Dr. Tristan Dumbarton
Associate Director, Pediatric Anesthesia

Dr. Jason McDougall, PhD
Associate Director, Tupper site

Dr. Allana Munro
Associate Director, Women’s and Obstetric Anesthesia

Dr. Vishal Uppal
Associate Director, Central Zone Adult

I never would have expected myself—as just a regular person—to have a voice in the medical field. That is such a privilege; it is so gratifying to know that I have a say in the arena of medical professionals striving to refine their approaches and contribute to future improvements.

– Mal Maguire



various aspects of exam preparation, both as a life-long learner and a teacher,” says Dr. Sjaus with the IWK Health Centre. “This qualitative work will contribute to our understanding of the process as a component of our ongoing development as anesthesia experts. Yet, the residents’ participation must remain confidential. I cannot access the data until after their residency.”

Dr. Victor Neira and his team launched ‘Crisis Management in Advanced Cardiac Care’ last year, a project supported by the Maritime Heart Centre Innovation Fund. It aims to better prepare specialists to respond to rare, emergency situations that arise during cardiac procedures. The project received a custom-made, highly sophisticated manikin for the entire cardiac team. “*The main objective is to use simulated scenarios and advanced simulation technology to facilitate Crisis Management Checklists and Cognitive Aids with Role Definition for cardiac crisis scenario that requires extra-corporeal life support,*” says Dr. Neira.

How to reduce burnout, anxiety and depression amongst healthcare providers in resource-limited settings is the question being asked by **Dr. Jon Bailey**. “*Burnout and mental health are increasingly recognized as an area of need for healthcare providers in high-resource settings. However, the risk factors for burnout are all amplified in low-resource settings and mental health support may also be stigmatized or unavailable,*” says Dr. Jon Bailey, project investigator of Vital Anesthesia Simulation Training (VAST) Wellbeing. “*VAST Wellbeing course is now given all around the world. It has already been delivered in Canada, Rwanda, Tanzania, India, Guatemala and Senegal. Future courses are planned in Negal, Fiji, and Sierra Leone,*” says Dr. Bailey.

Improving Shared Decision-Making for Patients

Can we improve the shared decision-making process for patients? In 2019, the Department formed the Anesthesia Research Consultants Committee (ARCC) as a group of community members who provide the perspectives of patients, families, and caregivers to research happening in the Department. Last year, the Department’s Anesthesia Research Fund awarded a project grant to the committee to develop a questionnaire to measure patients’ satisfaction with shared decision making in healthcare consultations.

Dr. David MacDonald and members of the ARCC are co-leading this project. The team developed a patient-focused measure of Satisfaction with Shared Decision-Making (SDMS). It differs from other shared decision-making measurement tools currently in use because it places less emphasis on the perspective and influence of the physician. Instead, it concentrates on the viewpoint and treatment preferences of the patient. In this study the team is investigating the SDMS tool as a valid and reliable tool for assessing patients’ satisfaction with shared decision-making in their healthcare interactions. The questionnaire will be distributed to 100 patients who will decide with their doctor whether to have general anesthesia or regional anesthesia for hip or knee surgery.

“I never would have expected myself—as just a regular person—to have a voice in the medical field. That is such a privilege; it is so gratifying to know that I have a say in the arena of medical professionals striving to refine their approaches and contribute to future improvements,” says **Mal Maguire**,

a member of the patient-led committee. *“I’ve stuck with this because it’s been such a fulfilling thing. It’s a rare opportunity to be involved with something that seems to make a difference in society, and I love that. I’m a guitar player, so to have a voice in the medical sphere – even if it’s just a little drop in the bucket – feels unbelievably gratifying.”*

Hollywood Films and Medical Education

Do Hollywood films have the potential to improve medical education? **Dr. Karim Mukhida** and his team think so. They reviewed how patients with cancer or chronic pain were portrayed in Hollywood films, along with how they were treated, and what their implications might be regarding pain management education for medical students and residents. The team observed that patients with cancer pain were depicted in a compassionate manner in motion pictures. The use of opioids was frequently emphasized in pain management as opposed to holistic multidisciplinary care. Portrayal of film characters with chronic pain was done in a manner that reinforces certain stereotypes of patients with chronic pain. There were negative portrayals of the communication and relationships between characters with chronic pain and their physicians, as well as of pharmacological pain management strategies such as the use of opioids. Additionally, none of the characters in the films reviewed were seen as receiving multidisciplinary care for their pain.

“Films are particularly amenable to incorporation in medical school and residency curricula. Rather than reading or hearing about a case, trainees

can see how illness unfolds over the course of a film, providing a more longitudinal case study experience,” says Dr. Mukhida. *“The findings will act as the cornerstone for the development of cancer and chronic pain education modules to promote a patient-centred approach to pain management training, and hopefully also increase trainees’ awareness of patients’ perspectives of their pain experiences.”*

Enhancing Patient Recovery After Cesarean Delivery

Drs. Allana Munro and **Kwesi Kwofie** received an IWK Health Project Grant for a randomized controlled trial examining the impact of intravenous dexamethasone on spinal anesthesia duration, as part of a multimodal antiemetic strategy for improved recovery after cesarean delivery, aiming to enhance OR efficiency, decision-making and patient care.

“By adopting Early Recovery After Surgery strategies for Cesarean deliveries, dexamethasone will be a routine adjunct to prevent spinal associated nausea and vomiting,” says Dr. Kwofie. Dexamethasone is also a useful intravenous adjunct for extending local anesthetic duration for peripheral nerve blocks and reducing postoperative pain. There is limited information available on the use of intravenous dexamethasone as an adjunct to spinal anesthesia for Cesarean deliveries.

“Quantifying the effect intravenous dexamethasone has on spinal anesthesia duration will help clinical decision making. Extended spinal anesthesia can lead to longer recovery times, impaired mother-baby bonding,





Together with the research team, Dr. Hashmi published nine impactful publications in *Neuroimage*, *Frontiers in Neuroscience*, and *Pain* journals.

and increased healthcare resource utilization,” says Dr. Munro. “Alternatively, intravenous dexamethasone may extend the length of the spinal blockade when appropriate, such as prolonged surgical duration.”

International Connections in Brain Research

Writing papers, international presentations, and developing new insights and skills with recognized leaders in the field of pain research was the focus for **Dr. Javeria Hashmi** during the past year’s sabbatical. Dr. Javeria Hashmi, who holds a Canada Research Chair Tier II (Pain), also spent much of her sabbatical time fostering international research partnerships and collaborations.

Dr. Hashmi was invited to speak at the 2022 Montreal AI & Neuroscience conference about her research exploring the connection of classical neuroscience and machine learning/artificial intelligence. She also was invited as a panelist at the prestigious Harvard Radcliffe Institute’s seminar ‘Reframing Psychosocial Leadership Maturity from a Cognitive Neuroscience Perspective’ to reinvigorate rigorous scientific investigation into this important topic. At the University of Turin in Italy, Dr. Hashmi completed a visiting professorship where she presented topics related to utilization of neuroimaging in studying brain maturation. During this time, she gained novel insights in brain network analysis and experience applying thermodynamic principles (from physics) to investigate how different brain regions coordinate activity from moment to moment to generate perceptions. Together with the research team, Dr. Hashmi published nine impactful publications in *Neuroimage*, *Frontiers in Neuro* and

and *Pain* journals. Dr. Hashmi comments on the future of her research: “Over the next few years, we’ll be focused on analyzing data and implementing the new ideas and analytical models developed during the sabbatical year into research papers. Specifically, the lab will investigate what goes awry in people living with chronic pain by focusing on factors such as expectations, fear processing and past trauma”.

Anesthesia Research Day 2023: A Great Success



We had a great time celebrating scientific curiosity and research excellence on **Research Day 2023**.

Over 120 department members, learners, and guests attended the event in April 2023 at the Halifax Convention Centre. The event was co-hosted by the Department and The Dalhousie Pain Network. It also combined with the Departments of Surgery, Ophthalmology, and Visual Science’s Research Days. Our program included two highly accomplished Stanford University anesthesia-focused keynote speakers, **Drs. Beth Darnall** and **Sean Mackey**, and presentations including clinical and pre-clinical topics.



Valuing People



Prioritizing Wellness

The Wellness Committee has been very successful in organizing several initiatives to promote staff health and wellbeing. A healthy eating led by **Dr. Suzanne Retter** resulted in department members being able to access food after hours at the VG and HI sites of the QEII Health Sciences Centre. Staff are now able to pre-order food via the *GET* app. To improve rest and relaxation spaces, new furniture was purchased for tech lounges at the HI and VG. **Dr. Mike Smyth** organized a successful bike ride fundraiser with donation over \$3000 to the Mental Health Foundation of NS. A big success again this year was the fun fitness challenge using an on-line app that records physical activity. This year, over 90 participants working in teams used their avatars to 'step' their way to beating an alien invasion, with over 23 million collective steps taken. "Recognizing that our Department consists of a number of different groups, we have focused on improving our teamwork and collegiality," says **Dr. Tracy Kok**, Medical Director. "We continue to advocate for our members on various ways to improve their wellness and overall work life balance."

Equity, Diversity, Inclusion and Accessibility (EDIA)

The Department incorporated EDIA as a priority in its strategic plan and worked to embed EDIA in its recruitment process, as well as its education and research activities. In April 2022, the Department named **Drs. Karim Mukhida** and **Parvinder Sodhi** as the first co-Directors of EDIA. "We began working on this project this year and have since communicated with a number of important experts to discuss how to include EDIA into our educational

and research pursuits. We also became members of the Dalhousie Faculty of Medicine's EDIA leads committee, where we have the chance to learn from staff from various clinical and non-clinical departments and to provide our thoughts on various EDIA programs. We participated in White fragility clinics provided by Faculty of Medicine and conferences on 'Racism and Moral Injury' in order to advance our own learning," says Dr. Sodhi. "When we reflect on the past year, we are most proud of the fact that we made the bold first step to start discussing EDIA and include it as a priority in the Department's strategic planning."

According to Dr. Mukhida, understanding what is actually meant by equity, diversity and inclusion is the first step to gaining insight into this complex issue. "It is each individual's responsibility to learn and educate themselves about matters like microaggressions and racism in health care. Diversity is a fact and Inclusion is a choice, and we all collectively need to be the agents of change," says Dr. Mukhida.

One faculty member, **Dr. Hilary MacCormick**, has been particularly focused on EDIA and has made research into sexual and gender minorities in medicine as one of her main areas of research. Three of her articles were accepted for publication in the *Canadian Journal of Anesthesia*. "Having the support of our Department and colleagues has been invaluable in encouraging me to continue building research connections to work towards improving anesthetic care for LGBTQ+ people," says Dr. MacCormick. "I am so proud to work with so many national and international research collaborators who share my values and ambitions in this field. Being accepted for the Richard Knill competition at the Canadian Anesthesia Society in June 2023 was an honour and I could never have achieved it on my own."



Celebrating Achievements

Queen Elizabeth II Platinum Jubilee Medal

The Medal recognizes those who have devoted themselves to the service of others, especially throughout the pandemic, whether through employment, volunteer work, or service to their local community.

Dr. André Bernard

Dr. Janice Chisholm

Dr. Patricia Livingston

Dr. Sally Bird

Dr. Scott Drysdale

Alyssa Stallard

Faculty of Medicine Program Director Award

Dr. Robyn Doucet

Faculty of Medicine Program Administrator of the Year Award

Jessie Purvis

Faculty of Medicine Dr. John Savage Memorial Award for Global Health Leadership

Dr. Jon Bailey



Department Awards of Excellence

Dr. Arnim Vlatten
Internal Individual Award

Charles Hsuen
External Individual Award

Christine Carroll
Dale Morrison Memorial Award for an Anesthesia Technician

Michael Cashen
Dale Morrison Memorial Award for an Anesthesia Assistant

IWK Pediatric Perioperative Anesthesia Assistant Team
Internal Team Award

NSH Transplant Recipient Coordinators
External Team Award

Dr. David MacDonald
Dr. Tom Marrie Leadership Award



Department Teaching Awards of Excellence

Dr. Chris Berger
Undergraduate Teacher of the Year

Dr. Stephen Middleton
Clinical Teacher of the Year Award

Dr. John Wright
Clinical Teacher of the Year – Community Award

Dr. Mallory Garza
Mentor/Role Model

Dr. Matthias Scheffler
Resident Advocate of the Year

Dr. David Jones
Resident Teacher of the Year

Dr. Stephen Middleton
Certificate of Appreciation – Daily Encounter Card

Dr. David MacDonald
Certificate of Appreciation – In Training Assessment Report

Academic Promotion

Dr. Patricia Livingston
Professor



Appendix A

2022-23 Research Projects

NEW Funded Projects, Grants and Contracts

1. Bailey J, Nyirigira G, Mossenson A, Whynot S, Livingston P (2022-2024). The VAST Wellbeing Course for reducing burnout, anxiety and depression amongst healthcare providers working in resource-limited settings: a mixed methods study [Grant] – Anesthesia Research Fund, APMPM – \$16,844.
2. Chappe V, Lehmann C, Zhou, J (2022-2023). Structure-function study of the CFTR(ABCC7) chloride channel [Grant] – The Lung Association of Nova Scotia (LANS) Legacy Research Grant – \$50,000.
3. Christian Lehmann (2022-2023). Bridge funding [Grant] – Anesthesia Research Fund, APMPM – \$20,000.
4. Forgeron PA, Birnie K, Dick BD, Finley GA, Jordan A, Qualter P, Stinson J (2022-2024). Lonelier Than Ever: Examining the experiences of Loneliness amongst adolescents with chronic pain in the context of COVID-19: A mixed methods study [Grant] – CIHR – \$239,226.
5. Gower S, Mossenson A, Upadhye V, Elaibaid M, Mrutu S, Whynot S, Livingston P (2023). The Vital Anaesthesia Simulation Training (VAST) Foundation Year for anaesthesia trainees: case study research exploring the influence of context on curriculum delivery [Grant] – Curtin School of Nursing Strategic Funds Grant – \$9,300.
6. Hashmi JA (2016 - 2026). Canada Research Chair Tier II (Pain) [Grant] – CIHR – \$500,000.
7. MacDonald D, Banfield J, Panek I, Maguire M, Heggie C, Williams K, Bottomley T (2022-2024). Validation of a patient-centered questionnaire for assessing satisfaction with shared decision making in healthcare consultations [Grant] – Anesthesia Research Fund, APMPM – \$24,402.
8. McDougall J, Mukhida K (2022-2024). Management of Osteoarthritis Pain with Green Light Therapy [Grant] – Arthritis Society – \$99,652.
9. McIsaac D, Jerath A, Kidd G, Roberts D, Saha T, Taljaard M, Wijeyesundera D, Boet S, Bragg S, Bryson G, Carrier F, de Mestral C, Dubois D, Fergusson D, Flexman A, Grudzinski A, Kayssi A, Lalu M, Lee S, MacDonald D, McCartney C, McCluskey S, McKeen D, Nagpal S, Parotto M, Spence J, Thavorn K, Uppal V, van Walraven C (2022-2024). The Anesthesia for Lower limb revascularization to Optimize Functional Outcomes (ALOFT) Trial: a pilot multicenter randomized trial [Grant] – CIHR – \$202,725.
10. Mossenson A, Livingston P, Brown J (2023-2024). Developing competency-based facilitation evaluation tool supporting health care simulation in resource-limited settings [Grant] – Australia and New Zealand College of Anaesthetists – \$115,715.
11. Mossenson A, Upadhye V, Livingston P, (2023). Implementation of VAST in Pune, India, including curriculum integration of the VAST [Grant] – ANZCA Health Equity Projects Fund – \$17,800.
12. Munro A, Kwofie MK (2022-2024). A randomized controlled trial evaluating the effect intravenous dexamethasone use has on the duration of spinal anesthesia as part of a multimodal antiemetic strategy for enhanced recovery after cesarean delivery [Grant] – IWK – \$25,000.
13. Neira V, Chedrawy E, Leslie R, Horne D, Elkhateeb O, Vician M (2022-2023). Crisis Management in Advanced Cardiac Care (C-MAC2): Cardiac Surgery and Interventional Cardiology. The use of in-situ high fidelity simulation for inter-professional curriculum development and evaluation [Grant] – Maritime Heart Centre (MHC) – \$38,782.
14. Parlow J, Gregory K, Johnson A, Bould D, Nyirigira G, Banguti P, Nizeyimana F, Bailey J, Jaeger M (2022-2025). Developing a Fellowship and Residency Modules in Knowledge Translation in Anesthesiology and Pain Management in Low and Middle Income Countries [Grant] – International Development, Aid and Collaboration Grant – Royal College International - \$90,000.
15. Ritchie CK, Sjaus A (2023-2024). Preparation for specialty examination is consolidation of routine and adaptive expertise acquired over the course of anesthesia residency: Or is it? [Grant] – Anesthesia Research Fund, APMPM – \$945.
16. Solutions for Kids in Pain-SKIP: Birnie K, Chambers C, Ali S, Campbell F, Doré-Bergeron M-J, Finley GA, Gruenewoldt E, Stinson J, Trottier E, (2022-2023). Opioids and Our Youth: Solutions for safe, effective, and equitable opioid use for pain in youth in Canada [Grant] – Health Canada: Substance Use and Addictions Program – \$613,062.
17. Spence J, Connolly S, Lee S, Belley-Côté E, Cameron M, D'Aragnon F, Deschamps A, Dulong B, Jacobsohn E, Mazer D, Pryor K, Rajamohan R, Whitlock R (2022-2023). Benzodiazepine-free cardiac anesthesia for reduction of post-operative delirium in the intensive care unit (B-Free): A multi-centre, randomized, cluster crossover trial [Grant] – CIHR – \$267,750.
18. Stinson J, Noel M, Birnie K, Laloo C, Nishat F, Ahola Kohut S, Baerg K, Barwick M, Battaglia M, Campbell F, Cornish P, Dick B, Dore-Bergeron M, Findlay S, Finley A, Gill J, Ingelmo P, Killackey T, Lamontagne C, Oberlander T, Palermo P, Poolacherla R, Poulin P, Rash J, Rasic N, Soltani S, Chupick-Hall K, Harbour K, Kemp H, Oprea A, Rehmanji Y, Surrey L (2022 - 2026). Evaluating a virtual stepped care portal in youth awaiting tertiary chronic pain care: An Implementation – Effectiveness Hybrid Type III study [Grant] – CIHR - \$546,209.

NEW Scholarly Projects (unfunded)

1. Gower S, Mossenson A, Upadhye V, Livingston P (2022-2023). Exploration of participants' experience following a global SIMposium focused on peri-operative simulation in low-resource settings [Medical Education or Training]
2. Mossenson A, Livingston P, Kemp S, Kelly M, Brown J (2023-2024). Delphi study exploring criteria for effective healthcare simulation facilitation in low-resource settings [Medical Education or Training]
3. Mossenson A, Livingston P, Kemp S, Kelly M, Brown J (2023-2024). Tools for evaluation of healthcare simulation facilitation or debriefing, with focus on utility in low-resource settings: A scoping review protocol [Medical Education or Training]
4. Oprea A, Mukhida K (2022-2023). Medical students' attitudes about supports for chronic pain management [Clinical]
5. Sjaus A, Ash S (2023-2024). Consenting for publication of medical information in social media: Patients' attitudes and opinions [Pre-Clinical]
6. Smith S, Tallentire V, Doverty J, Carney E, Livingston P (2022-2023). The social integration needs of refugee doctors: An integrative review [Medical Education or Training]

CONTINUING Ongoing Funded Projects

1. Bailey JG, Uppal V, Dib K (2020-2022). Continuous Serratus Anterior Blockade for Sternotomy Analgesia following Cardiac Surgery: A pilot feasibility study [Grant] – NSHARF – \$23,561.
2. Calkin C, Friedman A, Hashmi J (2019-2023). Neuroanatomical and neurofunctional assessment in acquired brain injury [Grant] – Global Affairs Canada – \$3,600,000.
3. Chambers, CT & Maynard DJ (co-Directors), & Ali S, Barwick M, Campbell F, Campbell-Yeo M, Carter N, Finley GA, Jordan I, Larocque L, Mogil J, Noel M, Oberlander T, Stevens B, Stinson J, Taddio A (2019-2023).

Solutions for Kids in Pain (SKIP) [Grant] – Networks of Centres of Excellence: Knowledge Mobilization initiative (NCE-KM) – \$1,600,000.

4. Cheng Zhenyu, Lehmann Christian (2019-2023). Pseudomonas aeruginosa protease promotes chronic inflammation and immune evasion [Grant] – CIHR – \$963,900.
5. Fok P, Dahn T, Campbell S, Kwofie MK, MacDonald K, Avery H, Coles C (2021-2023). A quality improvement (QI) initiative to increase the performance of femoral nerve blocks for acute hip fracture patients in the emergency department [Grant] – NSHA – \$3,000
6. Fox-Robichaud A, Mark Ansermino, Catherine Cook, Kirsten Fiest, Patricia Fontela, Allan Garland, Michelle Kho, Paul Kubes, Manoj Lal, Francois Lamontagne (Co-Director), Osama Loubani, Claudio Martin, Bradeon McDonald, Lauralyn McIntyre, Melissa Parker, Jeanna Parsons-Leigh, Jeff Perry, Bram Rochweg, Lisa Schwartz, Diana Sherifali, Orla Smith, Elizabeth Wilcox, Bryan Yipp, Lehmann C, Zhou J et al and the Canadian Sepsis Research Network (2020-2025). Canadian Sepsis Research Network: Improving care before, during and after sepsis [Grant] – CIHR – \$6,789,630.
7. Hashmi J, Cane D, Matwin S, Beauprie I, Fisk J, Kelland A, Lynch M, Mukhida K, Beyea S, Bowen C, Matharoo G (2020-2023). Strategy for understanding how expectations interfere with chronic pain management: a multi-modal neuroimaging study [Grant] – CIHR – \$466,651.
8. Kelly L, Chambers CT, Finley GA, Lacaze T, Oberlander T, Huntsman R, Alcorn J (2020-2023). Cannabis for chronic daily headaches in adolescents [Grant] – SickKids Foundation – \$293,335.
9. Kelly L, tJong, Moore, Hepburn, Alcorn, Finkelstein, Lacaze, Oberlander T, Rassekh, Tsang, Balneaves, Balshaw, Burns, Crooks B, Drogemoller, Dupuis, Dyson, Finley GA, et al (2020-2024). Cannabis for symptom management in children with cancer: a demonstration project by the Canadian Childhood Cannabinoid Clinical Trials (C4T) platform [Grant] – CIHR – \$1,499,000.
10. Kwofie MK, Uppal V, Szerb J, Coles C, Colish J (2017-2022). A Randomized Controlled Trial of Regional Anesthesia Versus General Anesthesia for Promoting Independence After Hip Fracture (REGAIN Trial) [Grant] – Patient-Centered Outcomes Research Institute (PCORI) – \$56,566.
11. Lehmann C (2019-2023). Interstitial Cystitis and IBD research [Grant] – CRA with Tetra Bio-Pharma – \$489,195.
12. Lehmann C (2020-2022). Novel treatments for inflammatory bowel disease [Grant] – MITACS – \$100,000.
13. Lehmann C (2020-2023). ARDS [Industry Contract] – Dalhousie – \$500,000.
14. Livingston P, Mossenson A, Bailey J (2020-2023). VAST faculty development: building capacity for sustainable delivery of simulation-based medical education in low-resource and remote settings [Grant] – Royal College International – \$90,000.
15. McDougall J (2017-2022). Contribution of proteases and protease activated receptors to joint neuropathy and arthritis pain [Grant] – CIHR – \$761,175.
16. McDougall J (2019-2023). Regulation of microglial pannexin –1 channels in arthritis pain [Grant] – CIHR - \$875,925.
17. McDougall J (2021-2022). Control of osteoarthritis pain in rats using green light therapy [Grant] – Department of Anesthesia, Pain Management and Perioperative Medicine – \$2,960.
18. McIsaac DI, Boland LS, Gill M, Hutton BE, Aucoin S, Carli F, et al, and the Umbrella Review Group including McKeen D (2021-2022). An umbrella review of prehabilitation interventions in surgery to inform policy and practice [Grant] – CIHR – \$103,275.
19. Milne AD, Uppal V, Gillis A, Brousseau P (2021-2022). A comparative cost analysis of Memsorb and Dragorsorb for routine anesthesia use at NSHA: A pragmatic observational study [Grant] – NSHARF – \$25,104.
20. Morgan B, Munro A, George B, Carvalho B (2020-2022). A Retrospective Cohort Review Comparing Catheter Failure Rates with Programmed Intermittent Epidural Bolus and Continuous Epidural Infusion [Grant] – Department of Anesthesia, Pain Management and Perioperative Medicine – \$4,840.
21. Munro A, George RB, Andreaou P (2019-2022). A novel approach to optimize Programmed Intermittent

- Epidural Bolus (PIEB) for labour analgesia [Grant] – Dalhousie – \$3,044.
22. Ricciotti S, French D, Crocker C, Bailey JG, Simon P, Tibbo P (2021-2022). Investigation of outcomes after thoracic surgery for malignancy in patients with severe and persistent mental illness [Grant] – NSHRF – \$6,885.
 23. Schmidt M, Dunnington J, Eskes G (2021-2023). Computerized Assessment for Post-Operative Cognitive Decline (POCD) in Elderly Populations [Grant] – NSHA – \$59,771.
 24. Sjaus A, Munro A, D'Entremont M, Hung O, McKeen D (2020-2022). Preliminary evaluation of a novel COVID-19 containment device design: safety and acceptability during aerosol generating medical procedures [Grant] – Department of Anesthesia, Pain Management and Perioperative Medicine – \$24,961.
 25. Sjaus A, Munro A, d'Entremont M, Hung O, McKeen D (2020-2022). Preliminary evaluation of a novel COVID-19 containment device design: safety and acceptability during aerosol generating medical procedures [Grant] – IWK – \$20,000.
 26. Sjaus A, Munro A, Hung O, d'Entremont M, McKeen D (2020-2022). Preliminary evaluation of a novel airborne pathogen containment device; reduction of ambient contamination during aerosol generating medical procedures [Grant] – Canadian Anesthesiologists's Society – \$20,000.
 3. Bailey J, Mossenson A, Skelton T, Nyirigira G, Livingston P (2021-2022). Competencies of Vital Anesthesia Simulation Training (VAST) facilitators for simulation-based education in resource-limited settings: course participants' perspectives [Medical Education or Training]
 4. Bailey JG, Banfield J, Bailey K, Wong M, Barry G, Munro A, Kirkland S, & Lieter M (2020-2022). COVID Pandemic short interval National Survey gauging psychological distress among physicians (COPING survey): A longitudinal survey [Clinical]
 5. Fakuade A, Mukhida K (2022-2023). The depiction of pain and addiction in contemporary Canadian hip hop and implications for medical education [Medical Education or Training]
 6. George RB, Munro A, Nash CM, Carvalho B (2018-2022). A pragmatic single centre randomized controlled trial of programmed intermittent epidural bolus (PIEB) compared to continuous epidural infusion (CEI) for labour analgesia [Clinical]
 7. Ho L, Uppal V, Bailey J, Gyambib A (2021-2022). Patient Perspectives of Informed Consent for Regional Anesthesia for Ambulatory Surgery [Clinical]
 8. Kovacs GK, Goldstein J, Campbell S, Baro B, Sowers N, Law JA, Walker M, DeMone C, Hebert S (2021-2022). The Use of Tracheal Clicks During Direct Laryngoscopy: A Cadaveric Simulated Study [Clinical]
 9. Kwofie MK (2020-2022). COVID Airway Provider PPE Use and Outcomes Registry (IntubateCOVID.org) [Database]
 10. Law JA, Thana A, Milne A (2021-2022). Use of awake tracheal intubation in anesthetic practice is [decreasing?]: a database review of years 2011-2020 at a single tertiary-care institution [Database]
 11. Mukhida K (2014-2022). The influence of Wilder Penfield's experiments in Europe on the development of his surgical techniques [Clinical]
 12. Mukhida K (2019-2022). iCanCope with Pain: an integrated smartphone and web-self-management program for adolescents and young adults with chronic pain [Clinical]
 13. Sedighi S, Mukhida K (2020-2022). Cinemeducation and chronic pain [Medical Education or Training]
 14. Smyth M, Mukhida K (2021-2022). Evaluating the effect of preoperative cannabis use on pain management following orthopaedic surgery [Clinical]
 15. Verge A, Kocum L, Mukhida K (2018-2022). Barriers to and facilitators of workplace accommodation for patients with complex regional pain syndrome [Clinical]
 16. Vlatten A (2021-2024). Comparison of pediatric airway training and available airway equipment in EMS [Clinical]

CONTINUING Scholarly Projects (unfunded)

1. Atkins N, Mukhida K (2020-2022). The effect of socioeconomic status and COVID-19 on chronic pain management in Nova Scotia [Clinical]
2. Bailey J, Mossenson A, Nyirigira G, Whynt S, Livingston P (2021-2022). The VAST Wellbeing Course for reducing burnout and improving wellbeing amongst healthcare providers working in resource-limited settings: a mixed methods study [Medical Education or Training]



Appendix B

2022 Publications

Peer Reviewed Journal Publications

- Abadesso C, Pacheco S, Céu Machado M, Finley GA (2022). Health-related Quality of Life assessments by children and adolescents with sickle cell disease and their parents in Portugal. *Children*, 9, 283. [Published] DOI: 10.3390/children9020283.
- Aristi G, Kamintsky L, Ross M, Bowen C, Calkin C, Friedman A, Hashmi JA (2022). Symptoms reported by Canadians posted in Havana are linked with reduced white matter fibre density. *Brain Communications*, 4(2), fcac053. [Published] PubMed ID: 35505689.
- Aristi G, O'Grady C, Bowen C, Beyea S, Lazar SW, Hashmi JA (2022). Top-down threat bias in pain perception is predicted by intrinsic structural and functional connections of the brain. *NeuroImage*, 258, 119349. [Published] PubMed ID: 35690258.
- Astapenko D, Tomasova A, Ticha A, Hyspler R, Chua HS, Manzoor M, Skulec R, Lehmann C, Hahn R, Malbrain ML, Cerny V (2022). Endothelial glycocalyx damage in patients with severe COVID-19 on mechanical ventilation – a prospective observational pilot study. *Clinical Hemorheology and Microcirculation*. [Published] PubMed ID: 35342082.
- Atkins N, Mukhida K (2022). The effects of income and education on patients' access to pharmacological chronic pain management: a scoping review. *Canadian Journal of Pain*, 6, 142-170. [Scoping Review – Published] PubMed ID: 36092247.
- Bailey JG, Miller A, Richardson G, Hogg T, Uppal V (2022). Cost comparison between spinal versus general anesthesia for hip and knee arthroplasty: an incremental cost study. *Canadian Journal of Anaesthesia = Journal canadien d'anesthésie*. [Published] PubMed ID: 35982355.
- Bailey JG, Uppal V (2022). Fascial plane blocks: moving from the expansionist to the reductionist era. *Canadian Journal of anaesthesia = Journal canadien d'anesthésie*. [Editorial – Published] PubMed ID: 35999333.
- Barry G, Uppal V (2022). Sedation during regional anesthesia: less is more. *Canadian Journal of anaesthesia = Journal canadien d'anesthésie*, 69(12), 1453-1458. [Editorial – Published] PubMed ID: 36289152.
- Bartlett EM, Emsley JG, Kiberd MB (2022). Pediatric vascular access in major bleeding: how much is enough? *CJEM*, 24(7), 793-794. [Editorial – Published] PubMed ID: 36074300.
- Bednarek OL, Morgan BE, Khorovets A, Plourde MM, French DG (2022). Congenital adult tracheoesophageal fistula repair with transthoracic ventilation: a case report. *Canadian Journal of anaesthesia = Journal canadien d'anesthésie*, 69(9), 1174-1177. [Case Report – Published] PubMed ID: 35469041.
- Brandts-Longtin O, Lalu MM, Adie EA, Albert MA, Almoli E, Almoli F, Bryson GL, Dony C, Dunleavy D, Grudniewicz A, Lehmann C, Lhoest R, Moher D, Montroy J, Pitts M, Ricketts A, Thirion P, Cobey KD (2022). Assessing the impact of predatory journals on policy and guidance documents: a cross-sectional study protocol. *BMJ Open*, 12(4), e059445. [Published] PubMed ID: 35379645.
- Chrimes N, Higgs A, Hagberg CA, Baker PA, Cooper RM, Greif R, Kovacs G, Law JA, Marshall SD, Myatra SN, O'Sullivan EP, Rosenblatt WH, Ross CH, Sakles JC, Sorbello M, Cook TM (2022). Preventing unrecognised oesophageal intubation: a consensus guideline from the Project for Universal Management of Airways and International Airway Societies. *Anaesthesia*. [Narrative Review – Published] PubMed ID: 35977431.
- Dassieu L, Choinière M, Saint-Jean L, Webster F, Peng P, Buckley N, Gilron I, Williamson OD, Finley GA, Baerg K, Janelle-Montcalm A, Hudspith M, Boulanger A, Di Renna T, Intrater H, Lau B, Pereira J (2022). Frequency and characteristics of patient exclusion criteria in Canadian Multidisciplinary Pain Treatment Facilities: A cross-sectional study. *Can J Anaesthesia*. [Published] DOI: 10.1007/s12630-022-02241-0.
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- Hall S, Faridi S, Euodia I, Tanner S, Chojnacki AK, Patel KD, Zhou J, Lehmann C (2022). Intravital Widefield Fluorescence Microscopy of Pulmonary Microcirculation in Experimental

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 27. Law JA, Thana A, Milne AD (2022). The incidence of awake tracheal intubation in anesthetic practice is decreasing: an historical cohort study of the years 2014-2020 at a single tertiary care institution. *Canadian Journal of anaesthesia*. [Published] PubMed ID: 36289151.
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Department of Anesthesia,
Pain Management and
Perioperative Medicine

