



Department of Anesthesia,
Pain Management
and Perioperative Medicine

ANNUAL REPORT 2015-2016

Contents

Message from the Head and Chief	1	Appendices	
Excellence in Patient Care, Education & Research	3	A Research Projects and Funding	43
Health Centres and Hospitals	7	B Publications	49
Quality Improvement & Patient Safety	11	C Department Organization	51
Patient Care by the Numbers	14	D Faculty Roles, Academic Outreach and Scholarship	52
Clinical Academic Programs	15		
Research	25		
Excellence in Research	27		
Signposts to a Bright Future	31		
Education	35		
Education by the Numbers	37		



Message from the Head and Chief



The Department of Anesthesia, Pain Management & Perioperative Medicine includes some of Canada's highest skilled, most dedicated health professionals who are also teachers and researchers. Many, in fact, are leaders in their fields here and around the world. They, as individuals and as a team, are committed to

achieving excellence through continuous improvement, which requires careful and critical assessment of our practices. We believe this is how to best provide patient care, conduct ground breaking research, and teach in a way that encourages learners to strive for their professional and personal best.

This year, the Department participated in an intensive self study and a survey of its operations as per Dalhousie University's requirements for its clinical departments. Upon conclusion of the self study and survey, the survey committee, chaired by **Dr. Sam Campbell**, Dalhousie Department of Emergency Medicine, highlighted the outstanding work of department members in all areas with particular mention of our clinical quality program, research funding and productivity, and residency program. The survey committee also put forward ten short- and long-term recommendations in areas such as enhancing infrastructure related to human resources, succession planning and the AFP. We enthusiastically accepted all of the recommendations and began work to address them immediately. I fully expect the recommendations will bolster our already strong performance in all areas of our mandate.

You will see from this report that there is excellent work underway in all aspects of the Department. I would, however like to bring your attention to a few initiatives and milestones.

The department's quality improvement and patient safety portfolio continues to strengthen its efforts to monitor all anesthesia care via outcome and adverse event data collection, morbidity and mortality conferences, practice guideline development, quality office safety alerts and posted memos. They also track cases through the Critical Incident Review process. Recommended changes in policy and procedures are made to the department and to other disciplines as findings warrant.

On the research front, a commitment to fostering a culture of research excellence through investments in infrastructure and mentorship by senior researchers is paying dividends in the recruitment and retention of exceptional young research talent in the department. We have highlighted eight of these bright minds in this report.

The Department is contributing to the establishment of the gold standard for postgraduate anesthesia education in Canada. The Department is well into the implementation of a revamped postgraduate curriculum that set the stage for competency based medical education, which began July 1, 2016.

Thank you for your interest in the Department of Anesthesia, Pain Management & Perioperative Medicine. I invite you to review the following pages and visit the department's website (nsanesthesia.ca) to learn more about the department's excellent work to improve patient care; to educate the health leaders of today and tomorrow at home and abroad; and to advance knowledge and understanding of the science and the practice of anesthesia. Our department is well positioned to be among the top such academic departments in Canada. I am very grateful to be serving a second term as head and chief, and I hope you will continue to follow our work as we move forward.

A handwritten signature in blue ink, reading "R. Shukla".

Dr. Romesh C. Shukla, MBBS DABA FRCPC

Professor and Head, Dalhousie University Department of Anesthesia, Pain Management & Perioperative Medicine



Excellence in Patient Care, Education & Research



Anesthesia, Pain Management & Perioperative Medicine Awards of Excellence

The Awards of Excellence Program recognizes and celebrates the accomplishments of individuals and teams internal and external to the Department of Anesthesia, Pain Management & Perioperative Medicine.

The 2016 winners are:

Mr. Sheldon Bisson, anesthesia technician and biomedical technical assistant – Winner of the Individual Award of Excellence (internal)

Dr. Kristine Johnson, anesthesiologist and assistant professor, and the TEE cardiac anesthesia group – Winner of the Team Award of Excellence (internal)

Dr. Ruth Covert, anesthesiologist and associate professor – Winner of the Dr. Tom Marrie Leadership Award

The presentation of the Awards of Excellence was held April 4, 2016, with **Dr. Lynne Harrigan**, Vice-President of Medicine and Integrated Health Services, Nova Scotia Health Authority, as keynote speaker. The event represented the department's pursuit of excellence and desire

to recognize those who demonstrate professional excellence. Congratulations to the award winners and to the Applause Committee, chaired by **Dr. Dolores McKeen**, for leading the successful program.

Awards:

Individual (internal) – Presented to an individual in the Department who has demonstrated a commitment to the department's vision and mission through concrete actions that are innovative, collaborative, forward-thinking and designed to position the Department as a centre of anesthesia excellence.

Team (internal) – Presented to a team in the Department who best exemplifies achievements as a result of an inter-professional team effort producing an outcome, product or service that is widely regarded as innovative, unique and superior as well as of benefit to the Department.

Tom Marrie Leadership Award – The award honours **Dr. Marrie**, Dean, Dalhousie Faculty of Medicine, 2009 – 2015, and is awarded to the individual who best exemplifies Dr. Marrie's leadership qualities of integrity, patience, humility, compassion and vision.

A bit more about the Awards of Excellence winners....

Mr. Sheldon Bisson – Mr. Bisson is an anesthesia technician and biomedical technical assistant who has made immeasurable contributions to perioperative medicine in Halifax through his innovation, dedication, professionalism and innate ability to solve problems and overcome challenges. His skills are as remarkable as his positivity and collegiality. Mr. Bisson is described as a natural teacher who inspires learners while instilling skills and confidence. He patiently and expertly guides learners young and old on how to use all types of equipment and most recently developed a model on which cricothyrotomy can be practiced. The model enables anesthesiologists to develop their cricothyrotomy skills in the OR, fulfilling a need for

*Anesthesia, Pain Management
& Perioperative Medicine*

Awards of Excellence

April 4, 2016



convenient practice opportunities. This is the latest of many of Mr. Bisson's innovations including the Bisson Bandage Board for surgery of the foot, a clinical modification to the formerly used sagittal split osteotome and his protocol for managing claustrophobia during eye surgery. *"Sheldon is truly a legendary treasure of the perioperative system in Halifax."*

Dr. Kristine Johnson – Dr. Johnson is a cardiac anesthesiologist and assistant professor of anesthesia who was instrumental in the establishment of a Transesophageal Echocardiography (TEE) service at the QEII Health Sciences Centre. Dr. Johnson served as the service's first director, spearheading development of the service and appropriate training not only of anesthesiologists but also of cardiac surgeons. She is credited with having the leadership and foresight to recognize the contributions TEE would make to patient care. TEE continues to evolve and novel interventional techniques such as interventional transcatheter procedures could not be safely performed without TEE support. *"Dr. Johnson should be recognized for the pivotal role she has played in improving the health outcomes of patients in Nova Scotia."*

Dr. Ruth Covert – Dr. Covert is a highly respected clinical teacher with a long-standing interest in educational excellence. Most recently she played a leading role in revising the postgraduate anesthesia curriculum and was instrumental in a new foundations curriculum for junior residents. Together with **Dr. Patty Livingston**, Dr. Covert created the Teaching and Learning Course for anesthesia residents. The course recognizes the core function of teaching within anesthesia and covers essential teaching skills, learning theory, simulation and mentorship. *"Dr. Covert's dedication goes far beyond curriculum development. She is a kind, compassionate and quiet leader who serves as a role model and mentor to both learners and colleagues."*

Dr. Rick Hall Receives Canadian Anesthesiologists' Society Research Honours

Dr. Rick Hall has quietly and methodically improved anesthesia care and safety in Canada and beyond for more than 25 years. He was recently named the 2016 recipient of the Canadian Anesthesiologists' Society Research Recognition Award for his efforts. The award is the society's most prestigious research honour.

Before graduating with an MD, Dr. Hall conducted a prospective study of the influence of influenza vaccination on theophylline pharmacokinetics under the supervision of **Dr. Ken Renton** at Dalhousie. The results of the study, published in the *Canadian Medical Association Journal* in 1980, led to a



hypothesis that the systemic inflammatory response to infection alters drug metabolism – the crux of Dr. Hall's career-long program of related basic and clinical research. Dr. Hall later merged his interests in the influence of inflammation on drug response with cardiac anesthesia. He has since conducted studies examining almost every facet of the practice of cardiac anesthesia.

Dr. Hall is a professor of anesthesia, critical care, and pharmacology, a world-expert in cardiac anesthesia and cardiovascular intensive care, and a Canadian authority on research ethics, particularly as it relates to end-of-life care.

Dr. David Milne Named President, Doctors Nova Scotia

Dr. David Milne, assistant professor and staff anesthesiologist became president of DoctorsNS at its annual conference on June 6, 2015.

Dr. Milne has served as a member of the DoctorsNS Board of Directors for the past four years, and is a member of the Master Agreement Negotiations Steering Committee, co-chair of the Capital Health Academic Funding Plan Negotiations Committee, and a member of the Physicians' Manual Modernization Project Steering Committee.

Dr. Milne is just as active at the QEII having served as Director of the Same Day Admissions Clinic for five years (2008-2013), clinical lead for its H1N1 response, and a member of several emergency planning initiatives, including labour disruption

planning. Dr. Milne is recognized among colleagues and peers for being a leader with an innate ability to work effectively among many teams with varying mandates and interests, often negotiating and mediating change initiatives.

Dr. Orlando Hung Wins Professional of Distinction Award

Dr. Orlando Hung, medical director of research, picked up the *Professional of Distinction Award* at the Discovery Centre's Discovery Awards Competition ceremony on November 19th, 2015. The honour is awarded to a world class science and/or technology researcher or developer who demonstrates ingenious and innovative thinking in the creation of unique ideas, concepts, perspectives and processes within his/her field. Nominees are recognized nationally and internationally for excellence. Dr. Hung was among a contingent of Dalhousie faculty members who were recognized at the event.

Dr. John Clark Receives Distinguished Career Award

Dr. A. John Clark, medical director of pain services (former) and professor of anesthesia, was chosen to receive the Canadian Pain Society's 2016 *Distinguished Career Award*. The award is the Canadian Pain Society's highest honour and acknowledges important contributions in the field of pain.

The Distinguished Career Award was presented in Vancouver, BC on Thursday, May 26th, 2016, at the Canadian Pain Society Annual Conference.

Dr. André Bernard Receives CMA Young Leader Award

Congratulations to **Dr. André Bernard** who received the 2016 *CMA Award for Young Leaders*. The award celebrates young physician leaders for their dedication, commitment and leadership in the political, clinical, education, research or community service arenas, or in Dr. Bernard's case, all of the above. Recipients must exemplify creativity and initiative and be committed to "making a difference," be active and effective at the local, provincial/territorial and/or national level, and act as a positive and effective role model for their peers and colleagues. Dr. Bernard received the CMA Award for Young Leaders at the organization's annual meeting in August 2016.

Mr. Adam Gillis and Ms. Jean Morrison Recognized with the Dale Morrison Memorial Award

Mr. Adam Gillis, anesthesia assistant (AA), is one of the smart young rising stars in the AA ranks. Still early in his career, he has had many varied roles as an AA and respiratory therapist internal and external to the hospital. He is also an active member of the Nova Scotia College of Respiratory Therapists. Mr. Gillis is recognized as someone who makes a difference to the whole team. He has strong clinical abilities trusted and respected by the AT and AA teams, and by anesthesiologists. *"Adam is truly a 'star' as an anesthesia assistant – smart, pleasant and Dale would be proud of his work ethic."*

Ms. Jean Morrison, anesthesia technician (AT), exhibits all of the qualities that exemplify a *Morrison Award Winner*. She has been an AT team leader, demonstrating compassion and fairness with all team members, a teacher in the AT course, and supply chain supervisor. She also volunteered at The Hospital for Sick Kids in Toronto during a one-year leave of absence while her husband attended school. Most recently, Ms. Morrison earned a Bachelor of Commerce with a major in human resources. *"It is Jean's work discipline and collaborative nature that is most respected."*

Teaching awards

Faculty members are honoured with Department of Anesthesia, Pain Management & Perioperative Medicine teaching awards annually.

Clinical Teacher of the Year – Dr. Kwesi Kwofie, subspecialty chief, acute pain and regional anesthesia, assistant professor of anesthesia

Undergraduate Teacher of the Year – Dr. Andrei Khorovets, associate professor of anesthesia

New Brunswick Clinical Teacher of the Year – Dr. David Cohen, assistant professor of anesthesia

Mentor/Role Model of the Year – Dr. Volker Eichorn, assistant professor of critical care and anesthesia

Resident Teacher of the Year – Dr. David MacDonald, PGY5

Resident Advocate – Dr. Vishal Uppal, assistant professor of anesthesia

Health centres and hospitals

The Department of Anesthesia, Pain Management & Perioperative Medicine serves adults and children in Maritime Canada, mainly through five key treatment centres. Two of them are regional facilities: the Queen Elizabeth II Health Sciences Centre (also known as the QEII) and the IWK Health Centre, both in Halifax, N.S. A third, the Saint John Regional Hospital in Saint John, N.B., is New Brunswick's largest tertiary care hospital, which also serves part of Prince Edward Island. The other facilities, all in Nova Scotia, have significant but narrower patient population bases: the Dartmouth General Hospital, Dartmouth, and the Hants Community Hospital, Windsor. Together they provide modern, up-to-date training in anesthesia for medical students and residents. The QEII, IWK, and the Saint John Regional, in combination with the academic resources of Dalhousie University, form an excellent foundation for anesthesia research, which department members continue to energetically pursue.

Victoria General Site **QEII Health Sciences Centre**

Dr. Ian Morris, site chief

Anesthesiologists at this site support 15 operating rooms and a lithotripsy unit, Monday-Friday, along with a brachytherapy unit, which has a fully equipped operating room. Anesthesia interventional radiology and endoscopy services are provided on request. One or two anesthesiologists staff the pre-admission clinic, Monday to Friday, and two anesthesiologists provide around the clock availability for emergency surgery. The department also delivers thoracic, liver transplantation and acute pain subspecialty anesthesia services at the Victoria General site.

This year the operating room caseload rose by 248 cases (16,119 total cases) and anesthesiologists clocked 640 more work hours compared to 2014-2015. The increases occurred despite work delays and interruptions due to problems with equipment sterilization and water leaks in the Victoria General's Centennial Building. Infrastructure remains problematic and an ongoing concern for the reliability of a steady workflow.

This year's statistics reveal a seesaw of ups and downs. Weekend activity, for instance, increased markedly while after-hours cases, Monday to Friday, decreased by about

75 hours compared to 2014-2015. Inpatient consults went up by 164 patients this fiscal year over the 119 recorded last year. However this year's Same Day Admission Clinic produced 17 fewer cases than last fiscal year, and generated 3,590 preoperative assessments in 2016, down from 3,723 the previous fiscal year.

The caseload for brachytherapy remained about the same with 108 cases this year compared to 102 in 2014-2015. However, prostatic cases increased to 56 versus 36 the previous year. Anesthesia services outside operating rooms for interventional radiology/endoscopy also went up sharply.

Intensive care patients in the Post Anesthesia Care Unit (PACU) decreased but the hours of intensive care went up. The number of Immediate Care Patients and their hours in the Post Anesthesia Care Unit both rose.

This year patient safety initiatives included more end tidal carbon dioxide monitoring capability – that is monitoring the concentration or partial pressure of carbon dioxide in respiratory gases to observe the ventilatory state of patients under anesthesia or in intensive care. The airway cart in the PACU was improved and greater operating room video-laryngoscopy capability was added.

Around the clock skilled airway management provided outside the operating room by anesthesia assistants showed continuing benefits for patient care. In 2015-2016 anesthesia assistants responded to 43 code blue activations, including 19 cardiac arrests. They performed 13 emergency endotracheal intubations in resuscitations outside operating rooms and assisted in six other events requiring airway support. Anesthesia assistants also assisted in 134 difficult cases of peripheral vascular access.

Halifax Infirmary Site **QEII Health Sciences Centre**

Dr. J. Adam Law, site chief

At the QEII Health Sciences Centre (QEII), anesthesiologists support tertiary and quaternary surgical procedures for Nova Scotia and other Maritime patients. Fifteen operating rooms are supported for neurosurgery, orthopedic, plastic,



vascular, general and cardiac surgery. Off-site anesthesia support is also provided for electrophysiologic ablation procedures, transcatheter aortic valve implants, cardioversions, interventional neuro-radiologic procedures and occasional general anesthetic for MRIs.

Up to four attending anesthesiologists are deployed out of the operating rooms at the Halifax Infirmary on weekdays. One is assigned to trans-esophageal echocardiography; one or two staff are in the Same-Day Admission Clinic; and two others are in the regional/block room.

This fiscal year, a total of 11,588 cases consumed 28,129 hours, compared to last year's 11,501 cases that clocked up 27,248 hours.

At the Post Anesthesia Care Unit (PACU), the number and length of holds for those awaiting placement in the unit increased dramatically over last year. Holds this fiscal year shot up by 200 per cent while hours on hold jumped by 250 per cent. The cause is related to the unit's staffing levels, the number of patients coming out of operating rooms and difficulties in discharging patients to the wards. In 2015-2016 holds numbered 783 compared to 264 the previous year, while hours on hold jumped to 275 this year from 79, last fiscal year.

In subspecialty activity, the cardiac group provides expertise for tertiary and quaternary cardiac surgery, including cardiac transplantation. Some elective cases continue to be done in the hybrid operating room/catheterization lab and the electrophysiology (EP) suites, and a dedicated trans-esophageal echography (TEE) service is maintained. The neuroanesthesia group works in the neuroradiology suite for coil embolization of cerebral aneurysms, neuro-interventional management of acute thrombotic stroke patients and other procedures. The well-used regional block anesthesia service saw an addition of two new staff to the Peripheral Nerve Block Two (PNB2) group. In intensive care, a number of staff provided coverage to the medical-surgical-neuro and cardiac/vascular intensive care units at the Halifax Infirmary.

A vigilant Quality Assurance Office supports anesthesia clinical activities at the Halifax Infirmary and the Victoria General. The office organizes and hosts regular morbidity and mortality rounds.

In light of continuing infrastructure problems that have caused service disruptions at the Victoria General site, planning began this year for the relocation of some of its surgical services to the Halifax Infirmary. A perioperative group, one of four planning committees struck, is looking for space at the Halifax

Infirmary to locate two new operating rooms and determine what added capacities—for instance in pre-op and in the Post Anesthesia Care Unit—will be needed to support them.

Anesthesia continues to be involved in implementing all three phases of the World Health Organization's surgical safety checklist, now mandated by hospital policy. While buy-in has not been uniformly enthusiastic, support is growing.

The IWK Health Centre

The Department of Anesthesia, Pain Management & Peri-operative Medicine supports women's and obstetric and pediatric care and leads the pediatric pain service at the IWK Health Centre, in Halifax, N.S., a Maritime regional facility.

■ Women's & Obstetric Anesthesia

Dr. Rob Nunn, subspecialty chief

Eighteen specialty-trained anesthesiologists – up from 16 in the previous fiscal year - split their clinical duties between the IWK and the Nova Scotia Health Authority. Ten are based at the IWK and have further subspecialty training in obstetric anesthesia. Together, the 18 members provide comprehensive obstetric and adult surgery anesthetic services at the IWK for maternal, breast health and non-oncology gynecology patients. Periodically, obstetric anesthetic care is also provided to pregnant patients, either critically ill or with serious complications, admitted directly to the QEII Health Sciences Centre. Women's & Obstetric Anesthesia also serves other parts of Nova Scotia via the IWK's tertiary high risk Obstetric and Neonatal Referral Centre. Members are also active in the academic activities of the IWK and Dalhousie University.

In fiscal 2015-2016, analgesia/anesthesia provided service to the IWK Birth Unit that saw 4,584 live births. A total of 3,403 were vaginal deliveries, of which about 70 per cent required epidurals and 1,108 arrived by Cesarean birth (45 per cent elective and 55 per cent emergent). Ninety-six per cent of Cesareans were done under regional block – spinal or epidural. Only four per cent required general anesthesia. The rates have been stable for several years now.

Elective and emergency anesthesia was provided in 1,730 gynecology cases, up from 1,691 the previous year. This year, 63 per cent were day patients. The IWK has two dedicated and one shared operating room for gynecological cases. In the absence of an IWK emergency room for adult women, all unstable gynecology patients are assessed and sometimes sent for surgery at the QEII.

To support the IWK's Breast Health Program, two or three operating rooms run each week requiring routine and emergency anesthesia care. This year's caseload was 550, up from 513 last year. Eighty per cent of this year's cases were day patients.

Women's & Obstetric Anesthesia provides an Acute Pain Service for maternal and gynecological patients. Additionally an Anesthesia Consultation Service offers multi-disciplinary planning and help for high-risk obstetric, gynecologic and breast health patients who need pre-operative assessment as part of their planned ambulatory surgery. This fiscal year, assessments were done for 236 major and 1,030 minor consults. Women's & Obstetric Anesthesia also serve as key members of the IWK's Cardiac Arrest Team.

In the last four fiscal years, the volume of breast health cases has risen 11.7 per cent while the caseload in obstetrics has decreased nine per cent and gynecology cases have remained stable, registering only a .2 per cent increase. Procedure cancellations in 2015-2016 for gynecology and breast health was 66.5 hours out of 3,369 total hours booked.

■ Pediatric Anesthesia

Dr. Scott Drysdale, subspecialty chief

Pediatric Anesthesia serves neonates, infants, children and adolescents in Atlantic Canada, acting as a resource and referral centre for all pediatric specialty anesthesia in the region. The subspecialty is involved in a number of programs and services ranging from the cardiac program and the pediatric pain service to the trauma team and the malignant hyperthermia consultation service and database.

This year pediatric anesthesia made significant strides in reducing wait times, thanks to an additional .6 FTE in Anesthesia funding last fiscal year. The funding enabled a new block operating room schedule with additional time allocated to every service working there. The result has been reduction in some of our most unyielding surgical wait lists. An elective MRI exam, requiring anesthesia, now takes place in less than 30 days, down from 245 days in April 2015. In co-operation with the Division of Orthopedics, the department also provided anesthetic care for 19 more spinal surgeries than last year. Again, this was achieved with targeted government funding.

Elective surgery generated 7,261 hours of operating room time in 2015-2016, compared to 7,081 the year before, while emergencies resulted in 1,535 hours in operating rooms compared to 1,486 hours in 2015. A total of 4,514 cases came from Nova Scotia in 2015-2016, followed by 974 from

New Brunswick, 315 from Prince Edward Island, 57 from Newfoundland and 35 from outside Atlantic Canada. In 2016, 2,910 of the service's patients were aged 2-5 years, 1,680 were 6-12 years, 1,040 were 13-18 years, 129 were aged 0-1 year while 15 were over 19 years of age.

Hants Community Hospital

Dr. Alison Kelland, site chief

Anesthesia support at the Hants Community Hospital includes anesthesia care for day surgeries, and chronic pain treatment and management primarily. Dr. Alison Kelland, staff anesthesiologist, chronic pain specialist and assistant professor of anesthesia, leads anesthesia services, and provides the majority of anesthesia care at the hospital. Anesthesia coverage is also provided at least one day per week by anesthesiologists primarily based at the QEII Health Sciences Centre.

In 2015-2016, 619 OR cases required anesthesia care. All patients received warming Bair Hugger blankets in the operating room and Post Anesthesia Care Unit. There were low rates of post-operative admission (.47 per cent) and of day of surgery cancellation (.3 per cent).

The Pain Management Clinic saw a total of 1,004 patients in fiscal 2015-2016. Eighty-five of them were new patients.

Dartmouth General Hospital

Seven anesthesiologists support the operating room, acute and chronic pain services, and an around-the-clock general consultative service at the Dartmouth General and to The Nova Scotia Hospital. The team also provides preoperative assessment. Each anesthesiologist provides academic teaching for undergraduate and postgraduate learners in many disciplines.

Saint John Regional Hospital

Dr. John Chisholm, site chief

At the Saint John site, 18 anesthesiologists serve the Saint John Regional (SJRH) and St. Joseph's hospitals. Daily anesthesia coverage is provided for nine operating rooms at the SJRH, including two cardiac operating rooms, along with dedicated obstetrical coverage. Anesthesia services are also provided outside the operating room for cardiac electrophysiology procedures, interventional radiology, MRI and pediatric oncology. All site members provide coverage in all areas, including adult and pediatric anesthesia. Cardiac anesthesia is the only subspecialty area and recruitment is under way for another cardiac anesthesiologist.

Quality improvement and patient safety

Dr. Gregory Dobson, medical director



The Office of Quality Improvement & Patient Safety monitors all anesthesia care via outcome and adverse event data collection, morbidity and mortality conferences, practice guideline development, quality office safety alerts, and posted memos. It also tracks cases through the Critical Incident Review process. Recommended changes in policy and procedures are made to the department and to other disciplines as findings warrant.

Department members and staff are updated on developments in quality improvement and patient safety through the internal information system. Important patient safety and policy updates are sent by email and reports are presented at quarterly department meetings. The expanding Anesthesia Dashboard is used to display some outcome data and statistics and the Office also does an annual Grand Rounds to present the latest data summaries and highlight quality projects. Individual data requests are also answered.

Morbidity and mortality rounds were well attended and they are considered to be one of the most valuable rounds by department members. The office moderated nine sessions, including a multidisciplinary session, in 2015-2016 and plans are afoot to continue next year with the current format.

Major activities in 2015-2016 included:

- Research initiatives in quality improvement and patient safety undertaken by the office, department anesthesiologists and residents;
- Ongoing development of a learning module on quality improvement for the new competency based medical education curriculum;
- An introductory session on quality and patient safety for PGY1 and PGY2 residents targeted at those with a potential career interest in Quality and Patient Safety or a research interest in Quality Improvement;
- The use of physiologic data to evaluate care decisions and their impact on patient physiology for specific control groups. A model was also developed to use outcome data from post anesthesia care units to make global assessments of patients' postoperative experiences;
- Support of work within the Nova Scotia Health Authority to improve the understanding of blood tag documentation and management;
- Implementation of a structured intra-operative handover protocol in post-anesthesia care units, using a checklist. Anesthesiologists are asked to make an *Innovian* event entry and individuals leaving and taking over a case are required to sign in/out in a timely fashion to reflect the handover of care. Preliminary data over a five-month period indicated 120 handovers with 97 per cent of incoming staff signing in, but only 50 per cent of outgoing staff signing out with a time stamp. A review of the new handover protocol followed to encourage more diligent participation.



Research in Quality Improvement & Patient Safety

Hung OR (2015 - present). A comparative study of the McGrath MAC and Glidescope videolaryngoscopes for tracheal intubation in cadavers with simulated oropharyngeal bleeding [Grant] – Clinical Cadaver Program - \$5,000.

Poole O, Hung OR, Vargo M (2014 - 2015). A comparison of three techniques for cricothyroidotomy in a manikin [Grant] – Dalhousie Department of Anesthesia – \$1,500.

Gu Y, Robert J, Hung O, Milne A, Morris I, MacQuarrie K, Kovacs G, Law JA (2014 - 2015). A Deliberately Restricted Laryngeal View With the GlideScope® GVL Videolaryngoscope is Associated With Faster and Easier Tracheal Intubation: A Randomized Clinical Trial [Clinical]

Brousseau C, Brousseau P, Milne AD (2014 - 2015). A Retrospective Review of Ventilation Settings Used During Laparoscopic Cholecystectomy Surgical Procedures [Clinical]

Tan E, Milne A (2014 - 2015). Impact of anesthesia residents on operating room times in a Canadian teaching hospital [Clinical]

Law JA, Milne A, Morris I, Brousseau P (2013 - 2015). A retrospective database review of methods used to achieve tracheal intubation in operative patients [Database]

Lehmann C, Fisher N, Zhou J, Szczesniak A, Kelly M, Tugwell B (2014 - 2015). Cannabidiol for prevention of type 1 diabetes – an experimental study on pancreatic inflammation [Grant] – Department of Anesthesia, Pain Management & Perioperative Medicine – \$5,000.

Dumbarton T, Lehmann C (2014 - 2015). Tetrahydrobiopterin in the treatment of septic shock [Grant] – Department of Anesthesia, Pain Management & Perioperative Medicine – \$5,000.

Lehmann C, Zhou J, Kelly Melanie (2013 - 2016). Manipulation of the Endocannabinoid System in Experimental Sepsis [Grant] – Nova Scotia Health Research Foundation – \$147,960.

Lehmann C (2009 - 2015). Innovations in Microcirculatory Sepsis Research -Mechanisms of new anti-inflammatory strategies in the intestinal microcirculation [Grant] – CFI – \$416,351.

Schmidt M, Roach D (2015 - 2016). Technical and Physical Validation of a Membrane Assembly in an Anesthetic Environment [Industry Contract] – National Research Council – Industrial Research Assistance Program – \$49,993.

Schmidt M, Roach D (2015 - 2016). Optimal Module Designs for Membrane-based Medical Gas Separation Device [Grant] – Industrial Research Program – Business Innovation Access Program – \$46,869.

Schmidt M, Roach D (2015 - 2017). Membrane Optimization [Industry Contract] – Atlantic Canada Opportunities Agency – \$499,995.

Schmidt M, Roach D (2015 - 2017). memsorb: CO2 filter for safe, environmentally sound anesthesia [Grant] – Sustainable Development Technologies Canada – \$686,575.

Lehmann C (2015 - 2016). Cellular physiology of iron in inflammation and infection processes: novel Fe chelator responses in experimental model systems [Industry Contract] CRA – \$6,000.

Schmidt M, Roach D (2015 - 2016). Technical and Physical Validation of a Membrane Assembly in an Anesthetic Environment [Industry Contract] – National Research Council- Industrial Research Assistance Program – \$49,993.

Hung O, Mariotti C, Eichhorn V, Bernard A, Mullen T, Brousseau P, Wood L (2014 - present). A new and innovative method for CO2 removal in anesthesia circuits: Replacing chemical granulate absorbers [Industry Contract] – DMF Medical (Michael Schmidt)

Schmidt M, Roach D, Wilfart F (2014 - 2015). Neuro-protection using noble gases [Grant] – Brain Repair Centre – Knowledge Translation (BRC-KT) grant, Faculty of Medicine, Dalhousie University – \$30,000.

Schmidt M, Roach D (2014 - 2015). Toxicity of Anesthetic by-products and the Neuro-protective effects of noble gases [Industry Contract] – National Research Council – Industrial Research Assistance Program – \$285,843.

Hung OR (2014 - 2015). Intravenous fluid administration monitor [Industry Contract] – Innovacorp, Nova Scotia - Phase II Early Stage commercialization Fund – \$44,500.

Schmidt M (2012 - 2016). Refine and optimize ZEROSORB, a prototype CO2 removal device for anesthesia circuits [Grant] – Atlantic Canada Opportunities Agency – \$1,245,617.

Patient care by the numbers

2015-2016

In 2015-2016, anesthesiologists provided anesthesia care for more than 75,000 procedures, including more than 60,000 at the QEII Health Sciences Centre, and 5,700 women's & obstetric and 8,400 pediatric procedures at the IWK Health Centre. Department members also provide anesthesia care at the Saint John Regional Hospital, the Dartmouth General Hospital and the Hants Community Hospital. ***Includes Out of Province (all procedures, all principle procedures, eg. ART lines, and Out of OR procedures.)*

Within the anesthesia specialty, there exists a number of subspecialties for which anesthesiologists receive extended training to provide the necessary anesthesia care.

Department of Anesthesia, Pain Management & Perioperative Medicine subspecialty areas include:

- Anesthesia for liver transplantation
- Blood management
- Cardiac anesthesia
- Neuroanesthesia
- Pain management
 - Chronic
 - Acute, including regional block
- Pediatric anesthesia
- Thoracic anesthesia
- Women's & Obstetric anesthesia

A great majority of the anesthesia care provided for the 75,000 annual procedures was performed at the QEII Health Sciences Centre and IWK Health Centre. The following is a breakdown of OR procedures by anesthesia subspecialty area for the 2015-2016 fiscal year:

Anesthesia for liver transplantation	25
Cardiac anesthesia	1,955
Neuroanesthesia	1,128
Pediatric anesthesia	5,895
Thoracic anesthesia	1,005
Women's & Obstetric anesthesia	5,770



In addition to the surgical procedures represented above, tens of thousands of others performed during the 2015 - 2016 fiscal year required general anesthesia support. Those include orthopaedic surgeries (6,283), ENT (ear, nose, throat) surgeries (1,564), ophthalmological (eye) surgeries (7,365), urological surgeries (5,644), plastic surgeries (1,676) and others.

Outside of the OR, two of the Department of Anesthesia, Pain Management & Perioperative Medicine's largest services are Blood Management Services and Pain Management Services.

Blood Management Services

New patient consults, QEII Health Sciences Centre and IWK Health Centre (adults): **498**

Patient visits: **1,956**

Pain Management Services (adult services)

Acute inpatient consults at the QEII Health Sciences Centre **594 (HI site); 669 (VG site)**

Regional blocks performed at the HI Site, QEII Health Sciences Centre **2,139**

Chronic pain clinic visits (including block procedures for chronic pain) **7,391**

New patients seen **969**

Clinical Academic Programs

Acute Pain and Regional Anesthesia

Dr. Kwesi Kwofie, subspecialty chief

Work proceeds to partially centralize anesthesia services at the Halifax Infirmary. Acute pain services have been separately administered at two sites: Victoria General and Halifax Infirmary. The new situation has produced some uncertainty about future staffing requirements. In the shorter term, however, the current eight-member Acute Pain team will need to recruit one-to-three additions in the next couple of years to compensate for retirements and staff turnover.

In the regional anesthesia block room a total of 2,139 regional anesthesia procedures were performed this fiscal. The majority were subarachnoid blocks, brachial plexus blocks and femoral nerve blocks. An increase of three per cent in the caseload was noted over the previous year but the distribution of procedures remained about the same.

This year's caseload at the Victoria General site saw 669 new acute pain service consults with clinical productivity recorded similar to last year along with a similar case distribution. Highly opioid tolerant patients accounted for 14 per cent of the total. There were 142 peripheral nerve blocks and 126 epidurals recorded. Clinical productivity was similar to last year with a similar case distribution.

At the Halifax Infirmary site, there were 594 new consults, a 38 per cent increase over last year. Highly opioid tolerant patients represented 43 per cent of the total compared to 41 per cent last year. The caseload distribution was about the same. Consulted patients had 218 continuous peripheral nerve blocks, 258 patient-controlled anesthesia pumps or PCAs, 31 epidurals and seven subarachnoid opioid. Seven patients were treated with home continuous peripheral nerve blocks, compared to five the previous year.

On the education front, eleven residents went through regional anesthesia rotation – 10 from Dalhousie University and a visiting senior resident from University of British Columbia. The Peripheral Nerve Block Two (PNB2) group has expanded, giving many department members the opportunity to develop and maintain skills in ultrasound-guided peripheral nerve block.

Collaborative opportunities are being sought with palliative care to explore services that could benefit palliative care patients. Explorations have begun into opportunities for collaboration in multi-centred trials, and the continuing professional development program is expanding to include a one-day cadaver-based comprehensive regional anesthesia program.

Regional Anesthesia Research

Uppal V, Kwofie K, Szerb J, McKeen D (2015 - 2016). Ultrasound Guided Axillary Brachial Plexus Block: Influence of Obesity on Block Failure Rate, Performance Time and Incidence of Acute Complications – A prospective observational study [Grant] – Central Zone – \$5,000.

Kwofie MK, Uppal V, Szerb J, Baldrige W, Zhou J, Sandeski R (2015 - present). Incidence of Subepineurial Injection with Ultrasound-Guided Supraclavicular Brachial Plexus Block in Cadavers [Grant] – NSHA – \$14,244; Dalhousie Clinical Cadaver Research Program Grant – \$5,000; Dalhousie – \$5,000.

Kiberd M, Wright S, Chorney J (2014 - 2015). Aromatherapy in children for the treatment of PONV [In-Kind] – IWK.

Szerb J, Kwofie K (2013 - 2015). Histological Confirmation of Ultrasound-Guided Needle Placement in Regional Anesthesia Intraplexus Versus Periplexus Approach [Grant] – CDHA - \$15,000.

Kwofie K, Philip G, Watton D (2014 - 2017). A retrospective study of primary total knee arthroplasty and multimodal analgesic methods on postoperative opioid requirements and outcome. [Clinical]



Perioperative Blood Management Service

Dr. Blaine Kent, medical director

This fiscal year the Perioperative Blood Management Service saw 498 new patients at the QEII Health Sciences Centre's Halifax Infirmary and Victoria General sites and the IWK Health Centre's Women's & Gynecology site. Total patient visits numbered 1,956.

The service provides perioperative anemia screening and treatment for major surgeries at the QEII Health Sciences Centre and the IWK Health Centre. Team members also counsel patients who decline blood products and coordinate intra-operative surgical and anesthetic blood management techniques.

Discussions began on a plan to expand patient referral to the Dartmouth General for Perioperative Blood Management.

In the area of research, the service was approached to participate in an Open-label Phase I Safety Study that is awaiting Health Canada approval. The proposed study would look at SANGUINATE™ Infusion in Patients with Acute Severe Anemia. Meanwhile patient recruitment began for two randomized control trials; one using Haemocomplettan® P (Fibrinogen concentrate) in elective high risk cardiac surgery patients and another on Postop fatigue in coronary artery bypass surgery patients.

The department's Scientific Advisory Committee finalized a ROTEM®-guided algorithm and Tranexamic acid guideline for joint arthroplasty, now posted in operating rooms.

The medical director for Blood Services was the invited speaker at a medical students' ethics session at Dalhousie University.

Cardiac Anesthesia

Dr. Blaine Kent, subspecialty chief

Ten operating room anesthesiologists together with a colleague on the perioperative echo team provide anesthesia service for all cardiac surgery patients and assist heart disease patients undergoing non-cardiac surgery.

In fiscal 2015-2016 the cardiac anesthesia caseload included more than 1,050 cardiopulmonary bypass cases, 852 perioperative transesophageal echocardiography examinations, 46 transarterial valve implantations, and 433 pacemakers and 201 implantable defibrillator devices. Staff worked in the Anesthesia Pre-Op assessment clinics, saw patients in

Cardiology Pre-Assessment Clinic and served as a resource for the Connective Tissue Disease Clinic.

Biweekly cardiac teaching rounds /transesophageal echocardiography examination (TEE) rounds, open to staff and residents, were held throughout the academic year. The division was responsible for two Grand Rounds sessions and a departmental journal club. Staff led weekly seminars during the Cardiac Anesthesia Residents' Teaching Block, participated in the Semi-Annual Resident Oral Exam Workshops and the subspecialty chief gave a lecture to Med I students as part of their Professional Competencies block and spoke at Nursing Rounds on Patient Positioning during Surgery.

One or two anesthesia residents rotated through the service monthly and four cardiology and cardiac surgery residents did electives with the division. Three non-Dalhousie anesthesia residents also did electives and three staff worked with Med1 students also doing year-long electives.

More than half of the staff has at least one ongoing research project. Members offered lectures or presentations at the Canadian Anesthesiologists' Society Meeting, Blood and Beyond, Atlantic Regional Canadian Anesthesiologists' Society Meeting, the Society of Cardiovascular anesthesia, Annual Residents' Blood Management Workshop, Dalhousie Medical School and the Canadian Society of Transfusion Medicine Annual Meeting.

Services to cardiology expanded this fiscal year with regularly scheduled days for transcatheter aortic valve implantation and cardio electrophysiology cases and one day a month for cases of structural heart disease requiring anesthesia. The subspecialty chief completed a two-year term as president of the Cardiovascular and Thoracic Section of the Canadian Anesthesiologists' Society and two staff members won a \$50,000 grant for a competitive Dragons' Den-like pitch for a project to look into safer emergency drug preparation and handling in cardiac operating rooms.

Cardiac Anesthesia Research

Kwapisz M, Kent B, Mingo H, Poranek A (2013 - 2015). The use of Fibrinogen Concentrate in High-Risk Cardiac Surgery: A Prospective Double Blind Randomized Controlled Study [Grant] – CSL Behring - \$453,674.



Chronic Pain

Dr. Ian Beauprie, subspecialty chief

The chronic pain service, which now includes 13 physicians, up from 11 in 2014-2015, saw 969 new patients compared to 816 the previous fiscal year. There were 7,391 clinic visits made in 2015-2016 versus 7,494 last year, and the number of consults rose to 754 this year, against 681 in 2014-2015. The breakdown of total new patients seen showed 706 of them were at the QE II Health Sciences Centre, 189 at the Dartmouth General Hospital and 74 at the Hants Regional Community Hospital.

The service received 48 learners this year, including two fellows, 15 medical students and 31 residents. For continuing professional development, the service hosted Atlantic Pain Conference 2015, Dalhousie and Valley pain days, and an Atlantic Mentorship Annual Conference.

In research, there were nine funded studies under way, four non-funded studies pending and four members of the service pursuing research projects. Our clinician-scientists made 42 presentations this year and published 16 articles. Of their presentations, eight were national or international, another eight were regional or local, and 26 were abstracts.

Current challenges include a 1,450 patient waitlist with wait times exceeding two years and maintaining service levels while meeting new Centres for Disease Control guidelines and bracing for an anticipated shortage of family doctors in Nova Scotia. Improved clinical efficiency and productivity are key priorities next year. Others include revising collecting outcome data, working with the Nova Scotia Health Authority to coor-

dinate pain care in the province, and working with the College of Physicians and Surgeons in Nova Scotia to reconcile opioid guidelines for best practices set by the Centres for Disease Control with clinical reality.

Chronic Pain Research

McDougall JJ (2015 - 2018). Exploring A Neuroprotective Effect of Cannabinoids To Mitigate Osteoarthritis Pain [Grant] – The Arthritis Society – \$360,000.

Kelly M, Lynch ME (2015 - 2016). Novel formulations for ocular pain and inflammation [Grant] – Early Stage Commercialization Fund (ESCF) – \$50,000.

McDougall J (2015 - 2016). Investigation of anti-sodium channel monoclonal antibodies for osteoarthritis pain management [Grant] – NSHRF – \$15,000.

McDougall JJ, Marshall J, Bezuhly M, Legare JF, Lin TJ (2014 - 2019). Restitution Enhancement in Arthritis and Chronic Heart Disease [Grant] – CIHR – \$2,337,154.

Lavigne GJ, Lynch ME, Boulanger A, Cooper L, Laliberte J (2014 - 2015). Prevention of opioid analgesic misuse in Canada: pragmatic and innovative strategies? [Grant] – Universite de Montreal – \$50,000.

Lynch ME (2014 - 2016). Randomized, double blind, placebo controlled trial with open label extension of Delivra joint health cream in the treatment of pain caused by osteoarthritis of the knee [Industry Contract] – LivCorp, Inc. – \$300,000.

Clark AJ, Mumford K, George RB, Davis D, Milne D, Langille L, Hammond P, Yazbeck S, Sernyk S (2014 - 2015). The highly opioid tolerant patient – will a new paradigm of care improve outcomes? [Grant] – Translating Research into Care (TRIC) – \$3,000.

McDougall J (2012 - 2015). Effect of cannabinoids and opioids in the control of arthritis pain [Grant] – Nova Scotia Health Research Foundation (NSHRF) – \$149,790.

McDougall J (2011 - 2016). The relationship between proteases, protease activated receptors and cytokines in mediating osteoarthritis pain [Grant] – Canadian Institutes of Health Research (CIHR) – \$601,280.

Clark AJ, George RB, Chambers C, McDougall J (2014 - 2015). DalPAIN: A multidisciplinary approach to clinical care and research [Clinical]

Foss M, Lynch ME (2013 - 2017). Patient-Controlled Analgesia versus Continuous Opioid Infusion for the Treatment of Pain Caused by Oral Mucositis Following Myeloablative Chemotherapy for Hematopoietic Stem Cell Transplantation: A Retrospective Review [Clinical]

Pike M, Lynch ME (2013 - 2017). Observational Trial of Qigong as a Complementary Therapy in a Chronic Pain Clinic [Clinical]



Global Health

Dr. Patty Livingston, medical director

In June 2016, the Department of Anesthesia, Pain Management & Perioperative Medicine hosted the Bethune Round Table in collaboration with the Departments of Surgery and Obstetrics & Gynaecology. The Bethune Round Table is an annual interdisciplinary scientific meeting hosted at a Canadian academic centre to discuss challenges and solutions to improving surgical care to under-served and marginalized populations in low- and middle-income countries. The theme of the 2016 course was “building collaborative teams to strengthen global surgery.”

The Department of Anesthesia, Pain Management & Perioperative Medicine continued its long-standing collaborative partnership with the Department of Anesthesia, Critical Care and Emergency Medicine at the University of Rwanda. Four department members travelled to Rwanda over the course of the year for one-month volunteer teaching placements. **Drs. Patty Livingston, Orlando Hung, Jennifer Szerb and Janice Chisholm**, all returning staff volunteers, contribute important continuity and expertise to the postgraduate teaching program in Rwanda.

Senior residents, **Drs. Tristan Dumbarton and Mike Vargo** completed electives in global anesthesia and the department welcomed **Dr. Matthew Ho**, its first Global Health Fellow, who implemented a regional anesthesia service at CHUK,

Rwanda’s largest teaching hospital. In addition, two Airway Fellows, **Drs. Mathieu Asselin and Kathryn Sparrow** accompanied Dr. Hung to Rwanda where they delivered several training sessions and workshops on airway management.

Global Health Research

Lehmann C (2014 - 2015). The Microcirculation Screening (MicroScreen) Project: Innovative Non-Invasive Point-of-Care Monitoring of Nutritional Status and Critical Health Conditions in Low-Resource Environments [Grant] – Grand Challenges Canada – \$113,000

Neuroanesthesia

Dr. Carlo Mariotti, subspecialty chief

The division of Neuroanesthesia provides 24-hour care for all QEII Health Sciences Centre neurosurgery patients and patients needing MRI sedation/general anesthetic with six core and eight non-core members. Many of them are engaged in research, interdisciplinary clinics and teaching. Staffing is at full complement and current numbers are considered ideal.

Dr. Carlo Mariotti was appointed for a five-year term as neuroanesthesia subspecialty chief this year, succeeding **Dr. Ian Beauprie**. Also **Dr. Lutz Weisehead** of functional neurosurgery and spinal surgery at Goethe University in Frankfurt, was recruited as a neurosurgeon.

The caseload for the 2015 calendar year was 1,105 compared to 1,053 the year before. A total of 292.59 hours were logged on weekends in fiscal 2015-2016, down slightly from last year’s 336.45 hours. Weekday night resulted in 505.69 hours this fiscal year, up from 486.94 hours the previous year.

Five residents completed two full blocks and neuro journal clubs were hosted on spinal cord preservation and surgical timing and on the effects of superficial cervical plexus block after ACDF surgery.

Numbered among the service’s researchers are two of the world’s top airway management experts, **Drs. Orlando Hung and J. Adam Law** teach an airway course several times a year. In other areas of research, **Dr. Karim Mukhida** is studying the epidemiology of post-craniotomy pain and associated opioid use. He is also working on case reports of penetrating brain stem injury and pneumothorax following thoracic epidural placement. **Dr. Christian Lehmann** has several ongoing projects related to cellular physiology of iron in inflammation/infection, iron-related mechanisms in immune function and cannabinoid receptor modulation in post-stroke immunosuppression.

Neuroanesthesia Research

Schmidt M, Eskes G, George RB, Matwin, S, Bernard A, Drappeau, D, Milne A (2015 - 2017). Is it feasible to evaluate cognitive changes after surgery with computerized neuropsychological assessment in patients aged 55 or older undergoing major surgery? [Grant] – Nova Scotia Health Authority – \$14,744.

Burkovskiy I, Lehmann C (Supervisor) (2015 - 2016). Cannabinoid 2 Receptor Modulation in Post-Stroke Immunosuppression [Grant] – Heart and Stroke Foundation Canada – \$5,000.

Lehmann C, Zhou J (2013 - 2015). Modulation of cannabinoid receptor 2 signaling – a new therapeutic approach in CNS injury-induced immune deficiency syndrome (CIDS) [Grant] – CDHA Research Fund – \$14,881.

Lehmann C (2012 - 2015). Modulation of the immune response after stroke by manipulation of cannabinoid receptor 2 signaling [Grant] – Clinician Scientist Program (CS) – \$19,120.

Pediatric Anesthesia

Dr. Scott Drysdale, subspecialty chief

Pediatric Anesthesia attracts a wide range of learners from resident trainees and nurses to emergency physicians. The scope of anesthesia experience available, including concentrated exposure to pediatric airway management and vascular access techniques, is unmatched in the Maritimes as is an assortment of patients that cover the spectrum of premature infants to teenagers and young adults.

Dr. Sally Bird and **Dr. Stuart Wright** from our team helped develop all the objectives and assessment tools for a new rotation called Pediatric Foundations that combines pediatric anesthesia and pediatric medicine in the new competency based anesthesia curriculum. Dr. Bird has been named module lead for all Pediatric Anesthesia rotations and sits on the overall Competency Committee.

Nineteen simulation sessions were held in fiscal 2015-2016 for anesthesia and surgery residents along with an annual Airway Boot Camp for pediatric dentistry residents, all run by **Dr. Arnim Vlaten**.

Dr. Sutthirak Kuruhongsa concluded her fellowship training with pediatric anesthesia this fiscal year and returned to a staff position in Bangkok, Thailand.



Pediatric Pain Service

Members of the pediatric pain service work with children from birth to adolescence at the IWK Health Centre. As part of a larger interdisciplinary team, members provide acute and chronic pain consultation and treatment/management options to children and youth, and their families.

Drs. Allen Finley and **Margot Latimer** were among the 15 principal investigators on the approved application for the CIHR SPOR grant for Chronic Pain. The award worth \$25 million, based on matching funds from Canadian and international partners, is to develop a clinical and basic research network to help manage chronic pain in all age groups.

Dr. Jill Chorney has continued her research for improved patient-centred outcomes in perioperative care. She and **Dr. Paul Hong** received a department of surgery research grant to develop shared decision-making tools for ear, nose and throat surgery and Dr. Chorney continues to supervise medical and graduate students. One of her students, **Stephanie Allen**, won first place in the Department of Anesthesia's Research Day for a project on improving perioperative experiences for autistic children.

Dr. Margot Latimer, associate professor of nursing, based in the IWK Centre for pediatric Pain Research, was welcomed into the department of pediatric anesthesia. Cross-appointed to the Dalhousie Department of Anesthesia, Pain Management and Perioperative Medicine, she leads research on pain in aboriginal youth, in collaboration with indigenous Maritime communities. The program is extending across the country and into the north.

Pediatric Pain Research

Higgins K, Chambers C, Clark AJ, Rosen, Campbell-Yeo M, Sherry S, Lynch M (2015 - present). Risk and resilience in children of parents with chronic pain [Grant] – CDHA – \$4,936.

Finley Ga, Chambers C (2015). International Forum on Pediatric Pain [Grant] – DMRP – \$5,000.

Chorney J, Ellis P. (2015 - 2017). Don't Stumble, Tumble: A motion-detecting videogame to reduce general anesthetics for MRIs in young children [Grant] – IWK – \$85,000.

Vlatten A, Bird S, Law A, Hung O (2015 - 2016). A comparison of the STORZ CMAC DBLade versus direct laryngoscopy in a restricted access pediatric motor vehicle accident victim [Clinical]

Vlatten A, Bird S, Law A, Hung O (2015 - 2016). A randomized comparison of the AIRTRAQ versus direct laryngoscopy in a Pierre Robin manikin [Clinical]

Vlatten A, Bird S, Law A, Hung O (2015 - 2016). A randomized comparison of the STORZ Miller CMAC to direct laryngoscopy in a Pierre Robin manikin [Clinical]

Chorney J, Howlett M (2015 - 2016). The Influence of Pain Catastrophizing on Parent Responses to Adolescent Chronic Pain [Clinical]

Bailey K, Chorney J, Finley A, McGrath P, Gorodzinsky A (2015 - 2016). Identifying factors predictive of successful and unsuccessful parental presence at induction of anesthesia: A Delphi study [Clinical]

Chorney J, Gorodzinsky A, Finley A, Sangster M, Betsch T (2015). Healthcare providers' stigmatization of pediatric chronic pain patients based on diagnostic labels: A vignette study [Clinical]

Chambers C, Campbell-Yeo M, Barwick M, Chorney J, Finley A, Latimer M, McGrath P, Witteman H. (2014 - 2015). It Doesn't Have to Hurt": Extending our Reach to Help Parents of Children [Grant] - NSHRF - \$10,000.

Stinson J, Campbell F, Chorney J, Clark AJ, Dick B, Forgeron P et al (2014 - 2017). ICanCope with pain: A integrated smartphone and web self-managment program for adolescents and young adults with chronic pain [Grant] – CIHR – \$383,884.

Rosen N, George RB, Chorney J, Snelgrove-Clarke E, Pirece M, Andreou P, Binik Y (2014 - 2017). A Prospective Study of the Trajectory and Biopsychosocial Determinants of Postpartum Genito-pelvic Pain [Clinical]: CIHR-NSHRF RPP – \$227364; NSHRF – \$145,000.

Chorney J, Curran J, Hong P, McGrath P, Ritchie K (2013 - 2016). Understanding Shared Decisions in Pediatric Surgery [Grant] – NSHRF – \$147,246.

Chorney J (2012 - 2016). Establishment of the Child Health and Perioperative Care Laboratory [Grant] – Canadian Foundation for Innovation (CFI) – \$312,177.

Chorney J (2011 - 2016). Pain in Children at Home Following Major Surgery: New Investigator Award [Grant] – CIHR – \$300,000.

Kain ZN, Chorney J, Blount RL (2011 - 2016). Improving pain and anxiety in children undergoing surgery: Changing Healthcare Provider Behavior [Grant] – National Institutes of Health – \$2,730,034.

Chorney J, Andreou P, El-Hawary R, Finley GA, Howard J, LeMay S, McGrath P, Ouellet J, Parent S, Valois-Gomez T, Villeneuve, E. (2010 - 2015). Pain at Home in Children following Major Surgery: Physical, Psychological, and Economic Consequences [Grant] – Canadian Institutes of Health Research – \$724,991.

McGrath PJ, Craig KD, Finley GA, Grunau RE, Johnston C, Stevens BJ, von Baeyer CL, Chorney J (2009 - 2015). Pain in child health, an innovative, international, trans-disciplinary research training consortium – Phase II [Grant] – CIHR – \$1,950,000.

Chorney J., Allen S., Smith I. Identifying Ways to Improve the Perioperative Experience for Children with Autism Spectrum Disorder [Grant] – Department of Anesthesia, Pain Management & Perioperative Medicine – \$5,000.

Chorney J, Howlett M (2015 - 2016). The Influence of Pain Catastrophizing on Parent Responses to Adolescent Chronic Pain [Clinical]

Schep L, Chorney J (2013 - 2017). Child and parent involvement in decision-making for otolaryngology procedures [Clinical]

Maguire E, Chorney J (2013 - 2017). How does perceived parental involvement and actual involvement in decisions concerning ENT surgery for their child contribute to parental decisional conflict? [Clinical]



Scott J, George RB, Bird S (2013 - 2017). A systematic review in Pediatric Anesthesia (specific topic TBD) [Database]

Curran J, Grimshaw J, McGrath P, Chorney J. (2013 - 2016). Understanding Discharge Instructions for Children and Caregivers in the Transition from Pediatric Emergency Care [Grant] – CIHR-NSHRF Regional Partnership Program Operating Grant – \$435,804.

Chorney J, d'Entremont C, Allen S, Smith I, Bird S, Latimer M, Martin C, Wright S. (2014 - 2015). Identifying ways to improve the perioperative experience for children with Autism Spectrum Disorders [Grant] – IWK – \$3,000.

Chorney J, Hong P, Curran J, McGrath P, Ritchie K, (2014 - 2017). Supporting Shared decisions in paediatric otolaryngology: Needs assessment and decision aid development [Clinical]: NSHRF – \$159,816; CIHR – \$159,816

Preadmission Clinics

Dr. André Bernard, medical director

Same day pre-assessment clinics evaluate patients for same day admission prior to surgery and assess medically complex surgical patients who are ambulatory. The clinics are operated with a full complement of registered nurses, pharmacy technologists, clerical staff and anesthesiologists. About 16 patients are seen daily at each clinic. Peak patient volumes for both clinics occur January to April with the monthly patient average at the Victoria General being 326 patients while the figure for the Halifax Infirmary is 341.

A 2014-2015 initiative to improve the accuracy of patient medication histories with the addition of a pharmacy technologist in each clinic proved its worth this year in a project evaluation that showed enhanced patient care.

A patient instruction sheet to guide patients pre-operative dosing has been introduced to improve clinic efficiency. The sheet doubles as official documentation of clinical staff instructions to patients. The measure has reduced paper work, as the clinics await the debut of comprehensive pre-admission clinic electronic records.

Clinic staff have noted increased complexity in the patient caseload at both sites, especially in ambulatory cases. Despite resource constraints, opportunities to increase the department's role in comprehensive perioperative medical care are being explored with the Divisions of Internal Medicine and Cardiology.

A review of preoperative testing is planned to better integrate the *Choosing Wisely Canada* guidelines for anesthesia. They cover the top five commonly used tests and treatments that are not evidence supported and/or could cause patient harm. This fiscal year an internal audit indicated reasonable guideline compliance, but with room for improvement.

Thoracic anesthesia

Dr. George Kanellakos, subspecialty chief

The team provides care for all thoracic surgery patients at the QE II Health Sciences Centre, which acts as a referral site for the Maritimes and occasionally for patients from Newfoundland and Labrador. Case complexities range from straightforward procedures to complicated mediastinal mass resections, with the exception of lung transplantation.

Demand for thoracic anesthesia services continues to grow. In response, the anesthesia services team has expanded to 15 members, up from the previous 13, and is currently recruiting for a fellowship –trained thoracic anesthesiologist.

The group is involved in the thoracic teaching block, the residency program, the journal club, resident rotation evaluations, writing of a book chapter, the 2016 Thoracic Anesthesia Symposium, the 2016 Canadian Anesthesiologists' Society Annual Meeting workshop and resident teaching in operating rooms.

Transplantation anesthesia

Dr. Arnim Vlaten, subspecialty chief

The 13-member liver team completed 25 cases last year: 23 of them were patient-to-patient liver transplantations and two were revisions of previous transplantation surgeries. Overall the caseload went up 16 cases from last year. The number of team members stayed the same and is not expected to rise.

Forty-seven patients had pre-operative anesthesia consultations, down from 57 the year before.

The service assigns two staff anesthesiologist to each liver transplant case. The practice is consistent with most other North American academic centres. Only rarely has the practice resulted in an operating room or list cancellation.



Women's & Obstetric Anesthesia

Dr. Robert Nunn, subspecialty chief

Women's & Obstetric Anesthesia provides obstetric and non-obstetric anesthetic services at the IWK Health Centre primarily and the QEII Health Sciences Centre, including, maternal, breast health and non-oncology gynecology anesthesia care, an acute pain service and consultation service. The team also provides undergraduate, postgraduate and continuing medical education, offers a clinical fellowship, and has an active research program.

The service is seven years into a restructured postgraduate medical training curriculum covering all aspects of women's anesthetic care. The education coordinator is tasked next year with incorporating the new competency-based medical education curriculum into Women's & Obstetric Anesthesia routines.

Elective anesthesia experiences are provided for undergraduate and medical students from Dalhousie University and other universities across the country. The service also receives trainees from foreign countries, as part of the Global Health Initiative with three scheduled arrivals for fall 2016. Members are involved in the undergraduate Case Based Learning, or CBL, curriculum for Med 1 and Med 2 students as well as a five-week Obstetrics Anesthesia seminar series for residents.

Program objectives for the Women's & Obstetric Anesthesia Fellowship were formalized and the curriculum is part of the Department of Anesthesia, Pain Management and Perioperative Medicine's initiative to attract top-ranked candidates to its fellowships.

Women's & Obstetric Anesthesia's two principal researchers on staff, Drs. Ron George and Dolores McKeen, were joined by Drs. Allana Munro and Vishal Uppal in fiscal 2015-2016 and a new position for a research manager was filled by **Lorraine Chiasson**.

Women's & Obstetric Anesthesia Research

Munro A, George RB, Allen VA (2015 - 2016). A retrospective cohort assessment of the impact of an anesthetic intervention during the second stage of labour [Grant] – Anesthesia Research Fund, Dalhousie University – \$5,000.

West J, Snelgrove-Clarke E, Mann C, McKeen DM, Kinnear H, Wenning J, Allen V, Courtney E, (2015 - 2017). Second stage labour management: Translating evidence to enhance maternal newborn outcomes: The TEEM Study [Grant] – IWK – \$68,886.

Dryden T, McKeen D (2015 - 2016). Implementation of a Patient Centred Care Guideline in the PACU: An Exploration of Barriers and Facilitators [Clinical]

Uppal V, McKeen D (2015 - 2016). Intrathecal Hyperbaric Versus Isobaric Bupivacaine For Adult Non- Caesarean Section Surgery: Systematic Review [Clinical]

Higgins K, Bezuhly M, Chorney J, Morris S, Krauss E, Gillis J, LeBlanc M, Williams J. (2015 - 2016). Psychosocial Impact of Flap Failure Following Autologous Breast Reconstruction in Women with Breast Cancer [Clinical]

Pelland A, George RB (2014 - 2015). Sidestream dark field imaging of the sublingual microcirculation to assess microvascular dysfunction in the preeclamptic patient [Grant] – Department of Anesthesia, Pain Management & Perioperative Medicine – \$5,000.

Research

Message from the medical directors

Dr. Orlando Hung, medical director

Dr. Ronald George, associate medical director



The Office of Research saw growth in project funding, and in enthusiasm for research activities, this fiscal year, particularly among the department's newer recruits.

More than \$5.5 million was awarded to ongoing and new grant and industry-funded projects in 2015,

up from \$4.8 million in 2014. Over half the 2015 amount went to projects with principal investigators from the Department of Anesthesia, Pain Management and Perioperative Medicine. Roughly 33 per cent of the 2015 total came from national and international sources while the remainder was from regional, institution and departmental awards.

The ambition of newer recruits to include research in their activities is less easy to quantify but the upward trend noted by the office in inquiries, conversations and projects suggests our strategic directions and efforts to incorporate a culture of research in the department are working. Eight of our relative newcomers to the department are profiled in a separate research feature, *Signposts to a Bright Future*, in this year's annual report.

During the year, 111 publications were submitted and accepted with 42 peer-reviewed manuscripts published online; 67 abstracts were accepted and 22 per cent were presented by invitation as a podium. There were also 22 local, 18 national and 20 international presentations made by department researchers. Sixty per cent of them were invited to present their work as a keynote, plenary or symposium speaker.

Among this year's accomplishments were development of a researcher checklist; a start on work to set standard operating procedures for research to assist learners and researchers conducting non-Health Canada clinical trials;

production of a regulatory binder for all new clinical research projects along with training on using it for document management; and assembly of a map of relevant health databases together with contacts and processes for requesting personal health information for research purposes.

PACT, a Canada-wide network for perioperative research, chaired by **Dr. Richard Hall**, who holds a joint appointment with our department and the Department of Critical Care, is planning for growth and obtained a continued commitment from the Association of Canadian University Departments of Anesthesia (ACUDA).

Meanwhile, the Nova Scotia Health Authority has turned to the Perioperative Care Research Collaborative (PCRC), a transdisciplinary initiative in perioperative care patient safety and quality improvement, to explore possible cognitive changes in elderly surgical patients in relation to perioperative variables. Further, the department is working with Dalhousie University External Relations to raise more than \$5 million to support an endowed chair in pain.

Other notables include:

- Anesthesia Research Day drew 112 attendees and 19 abstracts were presented.
- **Karim Wafa** was the 2016 recipient of Dr. Thomas Coonan Summer Research Studentship in Anesthesia, Pain Management and Perioperative Medicine. Mr. Wafa, a medical student is working with *Dr. Christian Lehmann* investigating Iron Removal in Vivo Study.
- **Drs. Vishal Uppal** and **Tim Mullen** were also supported by the Office of Research. Their activities, along with six other up and coming department investigators, are documented in our researcher profile section.
- **Dr. Jill Chorney's** extensive work in improving patient-centred outcomes in perioperative care was recently recognized with a 2016 IWK Health Centre Research Leadership Award.

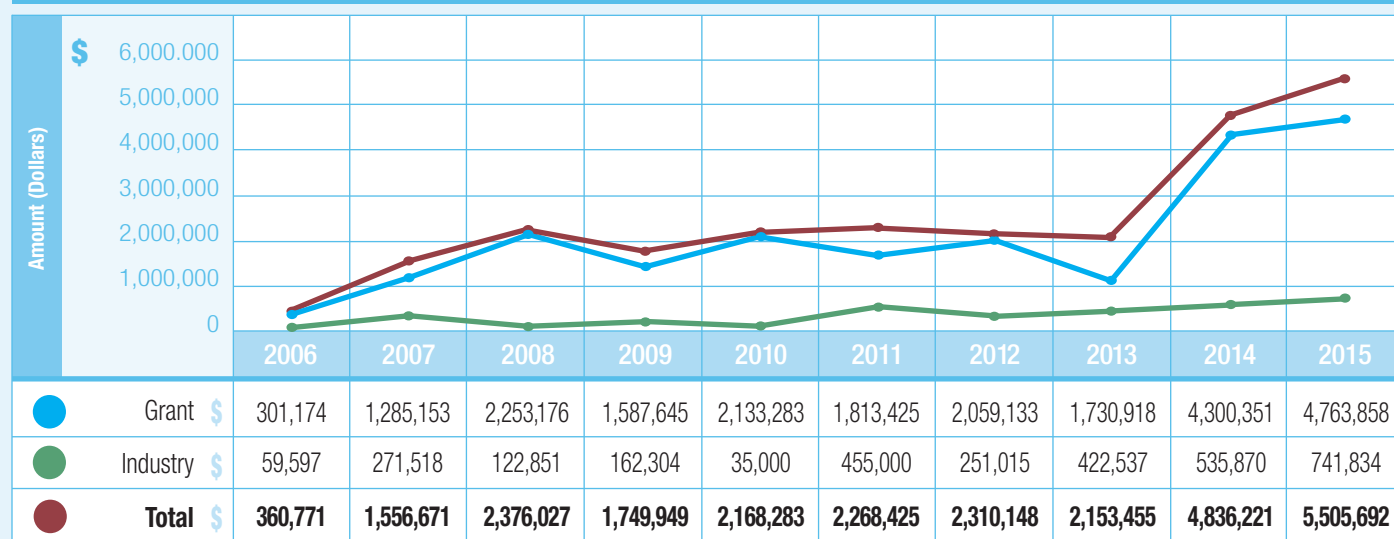
On a final note, our pain research program, recognized as among the strongest in the country, continued to perform well. **Dr. Javeria Hashmi** (predictive role of brain networks in pain modulations), **Dr. Mary Lynch** (PI on a multi-site clinical trial examining methadone to treat neuropathic pain), **Dr. Jill Chorney** (reducing children's postoperative pain) and **Dr. Jason McDougall** (the ability of cannabis compounds to manage arthritis pain and nerve damage) are involved in major areas of pain investigation with significant projects under way.



Excellence in Research

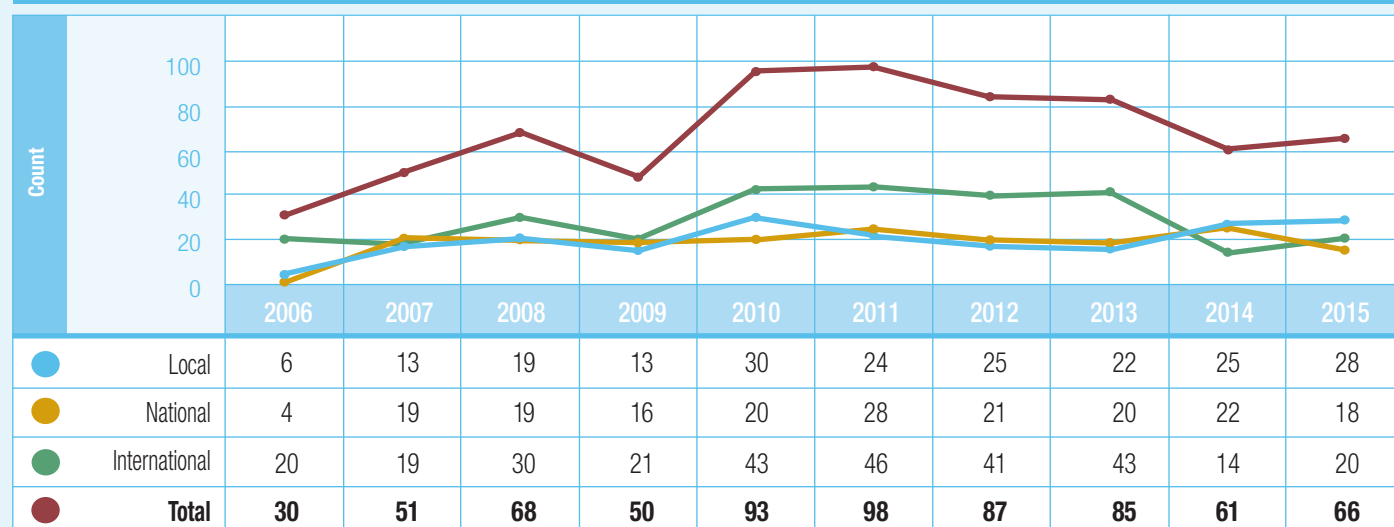
A Snapshot

10-YEAR PEER-REVIEWED EXTERNAL RESEARCH FUNDING (2006 - 2015)

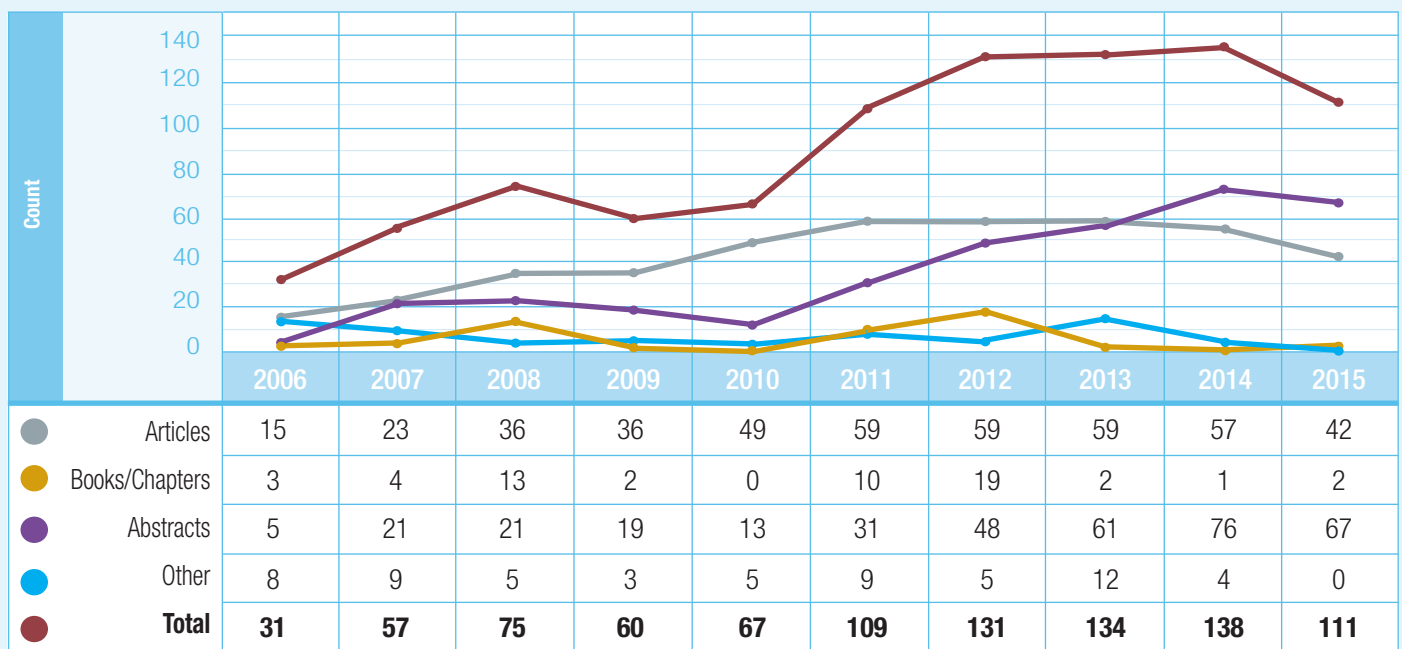


Note: The value of research funding each year includes revenue from all research awards generating funds in that year (for multi-year awards, the revenue is reported in the year it is budgeted). All research projects in which a department researcher is a team member are included. Also, the number of grants received reflects the number of grants and contracts generating funds that year (which may be continuing from earlier years).

PRESENTATIONS (10-YEAR WINDOW)



ACCEPTED PUBLICATIONS OVER A 10-YEAR PERIOD (peer reviewed & non-peer reviewed)





2015-2016 Strategic priorities

1

Support emerging research teams' alignment with Patient Oriented Research and translation to improved clinical practice.

2

Facilitate the changes to the infrastructure in accordance with the implementation of the combined AFP.

3

Encourage hiring practices of clinician scientists that are aligned with practice plan needs.

4

Support key strategic research initiatives: PACT, PCRC and the Dalhousie University Pain Institute and Endowed Chair for Pain.

Research Day Winners 2016

Resident/Fellow Prizes

A Double Blind Randomized Controlled Trial Of A Prophylactic Phenylephrine Infusion Versus Bolus Phenylephrine For The Treatment Of Spinal Induced Hypotension In Obese Parturients.

Patricia Doyle, R George, D McKeen, T Allen, J Dominguez & A Habib

Retrospective Analysis Of Airway Management In Patients Who Are Given Difficult Airway Letters In A Tertiary Care Centre.

Stewart Forbes, A Milne & G Dobson

Grad Student Prizes

Experimental Models Of CNS Injury And Therapy Options For Post Cns Injury Immunodeficiency.

Ian Burkovskiy, J Zhou, C Lehmann

Investigating Novel Selective Cannabinoid 2 Receptor Agonists For The Treatment Of Ocular Inflammation.

Richard (Ross) Porter, A Szczesniak, J Toguri, K Wafa, C Lehmann & M Kelly

Undergrad Student Prizes

A Balancing Act: Supporting Children With Autism Spectrum Disorder (Asd) On The Day Of Surgery.

Stephanie Snow, I Smith & J Chorney

A Comparison Of Three Techniques For Cricothyrotomy On A Manikin.

Oliver Poole, M Vargo & O Hung

Internal Fund Recipients 2015 - 2016

The purpose of this funding model is to present a transparent and equitable model for requesting support for research purposes in the Department of Anesthesia, Pain Management and Perioperative Medicine. The model is based on three categories of support; Activities, Projects, Programs/Research Time. For Project and Program categories the Anesthesia Peer-Review Committee (APRC) reviews the applications and provides recommendations to the Head/Chief of the Department for final approval.

Sjaus A., Munro A., Ta M., Ritchie K., George R. (2015 - 2016). Anesthesia residents' experiences with standardized feedback to assess clinical competencies [Grant] – Department of Anesthesia, Pain Management & Perioperative Medicine – \$5,000.

Chorney J., El-Hawary R., Campbell L., Taylor K., Amy S., Archibald K. (2016 - 2017). Understanding family psychosocial needs to prevent postsurgical pain in children [Grant] – Department of Anesthesia, Pain Management & Perioperative Medicine - \$5,000.



Ho M., Livingston P., Bonaventure Uwineza J., Szerb J., Semakuba Amani B., Nizeyimana F., Nyandwi D., Boet S., Bould D. (2016 - 2017). Establishing a Regional Anesthesia Service in a low-income country: barriers and facilitators to implementation [Grant] – Department of Anesthesia, Pain Management & Perioperative Medicine – \$5,000.

Chorney J., Allen S., Smith I (2016 - 2017). Identifying Ways to Improve the Perioperative Experience for Children with Autism Spectrum Disorder [Grant] – Department of Anesthesia, Pain Management & Perioperative Medicine – \$5,000.

Kwofie MK, Uppal V, Szerb J, Baldrige W, Zhou J, Sandeski R (2016 - 2017). Incidence of Subepineurial Injection with Ultrasound-Guided Supraclavicular Brachial Plexus Block in Cadavers [Grant] – Department of Anesthesia, Pain Management & Perioperative Medicine – \$5,000.

Uppal V, Kwofie K, Szerb J, McKeen D (2015 - 2016). Ultrasound Guided Axillary Brachial Plexus Block: Influence of Obesity on Block Failure Rate, Performance Time and Incidence of Acute Complications – A prospective observational study [Grant] – Department of Anesthesia, Pain Management & Perioperative Medicine – \$5,000.

Mullen T., Tan E., MacKinnon S., Ho L., Roda R., Forbes S. (2016 - 2017). Apneic Oxygenation via Nasal Cannulae: 15 L/min vs High-Flow [Grant] – Department of Anesthesia, Pain Management & Perioperative Medicine – \$5,000.

Casey M., Livingston P., Shearer C., Chisholm J., Zahavich A. (2016 - 2017). Faculty experience in the transition to Competency Based Medical Education (CBME) in Anesthesia

[Grant] – Department of Anesthesia, Pain Management & Perioperative Medicine – \$5,000.

Mukhida K., Kocum L. (2016 - 2017). Does work have to be so painful?: barriers to and facilitators of workplace accommodation for patients with complex regional pain syndrome [Grant] – Department of Anesthesia, Pain Management & Perioperative Medicine – \$5,000.



Signposts to a Bright Future



Pictured from l-r, Drs. Victor Neira, Tim Mullen, Vishal Uppal, Karim Mukhida and Alana Munro

The popularity of research in the department continues to expand each year. As inspiring as the substantial achievements of our seasoned investigators are, the demonstrated interest and enthusiasm for research from our newer members is cause for optimism and celebration.

What follows are short descriptions of the activities of eight of our newer recruits. Their projects are indicative of the department's wide pool of new talent and the considerable potential it presents for growth and development.

Dr. Javeria Ali Hashmi

Recently recruited after a three-year fellowship at Harvard Medical School/ Massachusetts General Hospital, **Dr. Javeria Ali Hashmi** arrived with a Canada Research Chair Tier II (Pain) nomination. Dr. Hashmi joined the Department of Anesthesia, Pain Management & Perioperative Medicine in August 2015 as Assistant Professor.

Already she has secured a five-year Discovery Grant from the Natural Sciences and Engineering Research Council of Canada and established the Brain Networks and Neurophysiology (NetPhys) lab within the Pain Management Unit and the Biomedical Translational Imaging Centre (BIOTIC).

This lab is developing biomarkers for chronic pain that, together with neuroimaging and predictive analytics, will help to streamline treatment and improve outcomes for Atlantic

Canada's growing number of chronic pain sufferers. Every fifth person in Canada suffers from chronic pain and wait lists are long and growing.

Dr. Hashmi and her students have begun work to establish a research program that will study neural, psychological and genetic factors associated with chronic pain. Their efforts aim to move chronic pain treatment into the realm of precision medicine – in which treatments are tailored to fit the patient. They use data mining methods and advanced techniques such as graph analysis and machine learning on neuroimaging and psycho-cognitive data.

In addition to pain and neuroimaging, Dr. Hashmi's research investigates how brain regions communicate to form networks during brain development and how brain networks are altered during different states of cognition and awareness, such as during anesthesia. She also runs a lively weekly journal club on the topics of pain and neuroimaging in the department.

Dr. Karim Mukhida

On staff since 2015, **Dr. Karim Mukhida** is a clinician scientist who has shunned the narrow focus research convention to take a wide-angle view of acute and chronic pain through filters as diverse as medical humanities, clinical trials, business management and neuroanesthesia.

An anesthesiologist with a PhD in Anatomy & Neurobiology, he has been a visiting research fellow at Harvard working on stem cell transplantation and done clinical fellowship training in chronic pain in Toronto and Halifax. Currently he splits his time between the operating rooms and the Pain Management Unit at the QE II Health Sciences Centre while pursuing an MBA at the Sobey School of Business.

In the medical humanities, he has been probing film and literature for notable portrayals of pain, in a project to help medical undergraduates and residents better understand and manage the condition. He is also working with a medical student to look at the neuro-scientific basis for using the visual arts in acute and chronic pain management – the therapeutic value of art creation by the sufferer; what art works can convey about a sufferer's pain, and how art can forge better doctor-patient communication when verbal descriptions of conditions are inadequate.

Meanwhile in the Pain Management Unit, Dr. Mukhida has been helping departmental colleagues **Drs. Mary Lynch** and **John Clark** run clinical trials on the pain relieving capability of substances such as cannabis and various topical treatments. In the operating room environment, he has been working with a surgical resident to categorize the type of postoperative pain that patients experience after neurosurgery. The area, Dr. Mukhida says, has received little study.

Even his MBA studies are grist for his research mill. He has enlisted collaborators at the Sobey School of Business and the Psychology Department at St. Mary's University to examine barriers faced by chronic pain sufferers in finding or keeping a job and to determine how greater workplace accommodation can be achieved. Employment is a frequent problem for the pain unit's patients and Dr. Mukhida wants to learn how clinicians, through advocacy or employer education, could improve the situation.

Dr. Tim Mullen

In the operating room, apneic oxygenation allows the anesthesiologist time to secure a patient's airway when breathing stops. The technique, which insufflates (blows) oxygen through nasal prongs, also called nasal canula, delays the onset of critical arterial oxygen desaturation.

For **Dr. Tim Mullen**, an airway specialist who spends much of his time in the Halifax Infirmary and the Victoria General operating rooms, best practices in this area can be nothing short of vital. He has been pondering the issue since his days as a resident in Winnipeg.

Now as a first-time principal investigator he has teamed up with **Dr. Edward Tan**, a departmental Fellow, to learn how conventional apneic oxygenation delivered through a regular nasal canula with oxygen flowing at 15 litres a minute stacks up against a high flow nasal canula processing oxygen at 60 litres a minute.

He has residents recruiting 45 patients for the study through the Same Day Admissions clinic. During their scheduled operations, one group of patient recruits will be given the regular nasal canula after anesthesia while the other group will be given the high flow version.

Drawn to clinically relevant and immediately applicable research, Dr. Mullen says this study fills the bill. He explains, an oxygen flow of 15 litres a minute in regular nasal canula equipment is not commonly used in anesthesia now. If the study shows it works well in the comparison study to prevent desaturation during airway management, then it could become an attractive cost-efficient intervention.

High flow canula equipment is new and pricier technology and not yet in use by the department. However, Dr. Mullen's project could change that. The high flow canula equipment being purchased for the study may become available afterward for department staff.

He expects to do more research after this project, but adds his educator role is as satisfying and complementary to his clinical work as his researcher hat. Dr. Mullen joined the staff in 2013, after completing a fellowship with the department and a one-year locum in Halifax.

Dr. Allana Munro

New on staff after completing a fellowship with the department in January 2016, **Dr. Allana Munro** is investigating novel techniques and technology to improve analgesic pain relief during childbirth.

Along with her clinical activity, primarily with Women's & Obstetric Anesthesia at the IWK Health Centre, she has begun a series of small projects, laying the groundwork for a full research program.

Her current focus is on delineating new guidelines and parameters for programmed intermittent infusion. In use at the IWK Health Centre, the new technique calls for periodic boluses rather than a constant infusion of analgesia during labour, but questions remain about when those boluses should be delivered and at what strength for greatest patient satisfaction and minimal side effects.

Other short-term studies on the go or in the planning stage attempt to pinpoint optimal timing for the first dose of maintenance labour analgesia and the optimal maintenance dosage. Yet another study will evaluate clinical outcomes after an analgesic top up during the second stage of labour.

As one of her research outcomes, Dr. Munro hopes to use her collected data to collaborate with biomedical engineering experts in the development of a patient-controlled analgesia pump. Essentially it would put customized pain control at the fingertips of women in labour.

Dr. Victor Neira

Better patient safety, less stressed cardiovascular anesthesiologists and savings for the health care system. Those are the goals of the department cardiovascular anesthesiologists engaged in an ongoing study, led by **Dr. Victor Neira**, a new recruit to the department.

The group hopes to chart a straight path to their objectives by examining the efficacy of switching the assembly of the drugs they now prepare in their operating rooms to the staff and better-equipped facilities of the hospital Pharmacy Department.

By every measure, Dr. Neira says the Pharmacy Department venue offers a better alternative in terms of ensuring patient safety, improving operating room efficiency, reducing the anesthesiologists' workload and stress and extending the drugs' shelf life.

The study includes a five-week pilot during which time cardiovascular anesthesiologists have access to four Pharmacy-prepared cardiovascular emergency medications: glycopyrrolate, ephedrine, phenylephrine and norepinephrine. Comparison data will be collected before, during and after the pilot on patient safety, drug usage, waste and the anesthesiologists' drug preparation time.

Dr. Neira and his colleagues will also examine what staff and infrastructure the Pharmacy Department would need to continue or expand the pilot. Beyond that, individual practices on preoperative drug preparation by cardiovascular anesthesiologists in the Department of Anesthesia, Pain Management & Perioperative Medicine have been canvassed and plans are afoot for a national survey.

The study's implications, said Dr. Neira, go beyond cardiovascular anesthesiology and could prove beneficial to all departmental staff involved in in situ drug preparation. Dr. Neira's collaborators in the study include departmental colleagues **Drs. Matthias Scheffler, Blaine Kent**, and anesthesia residents, **Drs. Vivian Wang**, and **Derek Wong**.

Dr. Ana Sjaus

What do anesthesiology residents really think about the format and delivery of their evaluations? **Dr. Ana Sjaus** is leading the first investigation of its type to find out.

The project, which combines her interests in medical education and qualitative research, could not be timelier or more relevant for the Department of Anesthesia, Pain Management & Perioperative Medicine, now introducing its new competency-based curriculum for anesthesiology residents. Frequent robust evaluations, as helpful to residents as their teachers, are important for the curriculum to succeed and the project is expected to break important ground by focusing on the residents' perspective, a neglected area of research. Dr. Sjaus anticipates the results will generate substantial interest in medical education circles and help her department improve its residents' training.



Mathew Ta, a fourth-year medical student in the Research in Medicine Program, agreed to take the project lead and help ferret out the residents' real opinions, and mitigate fears of offending superiors. Focus groups recorded baseline views on the prevailing form of assessment from about 17 residents in years two-through-four in the five-year anesthesia program. Meanwhile their instructors switched gears and adopted the evaluation format used in simulation education – factual performance appraisals made against specified outcomes and devoid of personal off-hand comments, which can sometimes seep into more customary evaluations with counterproductive results. New focus groups will find out how the changes in format and delivery fared with residents.

An eight-year department veteran attached to Women's & Obstetrics at the IWK Health Centre, Dr. Sjaus said the project is the result of the qualitative research bug she caught during a 2014 course on the subject offered by Continuing Medical Education at Dalhousie University. Currently in Ottawa, she is doing a fellowship in perioperative hemodynamic echocardiography. For Dr. Sjaus the experience is already sparking ideas for potential future investigations. Meanwhile in her absence, she says departmental colleagues **Drs. Allana Munro, Ron George** and **Krista Richie** along with IWK Health Centre Research Manager **Lorraine Chiasson** have pitched in to help to keep the evaluations study on track.

Dr. Vishal Uppal

After joining the department's staff in 2015, **Dr. Vishal Uppal** wasted little time mapping out an extensive five-year research agenda with the broad aim of establishing a dedicated departmental research unit for his regional anesthesia specialty.

A committed clinician-researcher, his jam-packed program follows three tracks within two general categories: explo-

rations to improve techniques for upper limb blocks, and investigations into analgesia and functional outcomes for breast surgery and cesarean section delivery, and for hip and knee replacements.

With its focus on making regional anesthesia blocks safer and more effective for patients, Dr. Uppal's work aims to reduce acute post-surgical pain and speed patient recovery. He has multiple on-going clinical trials and systematic reviews some of them in collaboration with other institutes.



Highlights of Dr. Uppal's recent research activities include:

- An ongoing multicentre study examining patient obesity and its effect on success and complication rates when perineural ultrasound-guided axillary brachial plexus block is used for hand and forearm surgery
- An evaluation of the safety and effectiveness of single versus multiple injections in ultrasound-guided paravertebral blocks during breast surgery
- Comparison of ultrasound-guided quadratus lumborum block with intrathecal morphine for post cesarean pain
- Assessment of strategies to reduce rebound pain after nerve blocks.
- Comparison of efficacy and safety of isobaric bupivacaine with hyperbaric bupivacaine in non-obstetric surgery
- Systematic review on effect of adding fentanyl to spinal anesthetic for cesarean section
- Serving as a primary investigator on an industry-partnered trial investigating safety of intravenous meloxicam following major surgeries
- Testing phrenic nerve sparing regional analgesic techniques for upper-limb surgery.

Dr. Uppal has fellowships in Regional Anesthesia and Obstetric Anesthesia. Before coming to Canada he completed a Research Fellowship and Anesthesia Residency at the University of Glasgow and National Health Service, Scotland, UK. He has a growing list of peer-reviewed published research to his credit.

Dr. A. Stuart Wright

A pediatric anesthesiologist at the IWK Health Centre with five years in the department, **Dr. A. Stuart Wright**, juggled three research projects this fiscal year – two clinically-related and another in medical education. Dr. Wright also maintains a presence as undergraduate coordinator for the communications skills program at Dalhousie medical school.

In a soon to be published pilot study on aromatherapy, Dr. Wright teamed up with **Dr. Mathew Kiberd**, an anesthesia resident at the time, and concluded aromatherapy was not effective enough in reducing postoperative nausea and vomiting in pediatric patients to warrant a larger study.

A second clinical study, now in its wrap-up phase, investigated IWK Health Centre's rate of emergent agitation – short-term post-surgical disorientation and emotional upset – among children receiving bilateral myringotomy tube placements. A medical student, **Brandon D'Eon**, recruited patients and scored their emergence using the Pediatric Anesthesia Emergence Delirium (PAED) scale and tracked their course through recovery to discharge. Besides establishing the prevalence of emergence agitation in this group of children, the study compared two anesthetic techniques used during the surgery to see if one of them, an extra procedure in general use by about a third of IWK anesthesiologists, had sufficient effect in reducing the incidence of emergence agitation to justify a larger study.

In a third study, Drs. Wright and **Sally Bird** are collaborators on the thesis of Stephanie Snow, a PhD candidate in psychology under the supervision of **Drs. Jill Chorney** and **Isabel Smith** (Pediatrics). This research program, now in its third year and more in the line with medical education, is currently looking at how an online skills building program called Building Alliances for Autism Needs in Clinical Encounters, or *BALANCE*, can help perioperative healthcare workers, including nurses, anesthesiologists, surgeons and dentists, improve their ability to handle children with Autism. The first phase of this research, documenting concerns of families who have children with Autism and the perioperative healthcare workers who care for them, is now complete.

Education

Postgraduate, Undergraduate, Continuing Professional Development, Fellowship, Global Health and Simulation

Message from the Medical Director

Dr. Narendra Vakharia



Much of our effort this year was channeled into preparations for the July 2016 launch of our new Competency-Based Medical Education Curriculum (CBME) for residents. It would be hard to underestimate the amount of time, care and attention our office – indeed the entire department – has given to this undertaking. The department as a whole has shown great commitment to making this change in our trainee education a success.

While innovation brings excitement it also comes with challenges. Two scholarly research projects in education are helping us meet the latter. Thanks to a project headed by **Dr. Patty Livingston** we hope to learn how our faculty is responding and adapting to the demands of the new curriculum. Faculty are being canvassed before and after the CBME rollout to gather information on the teaching side. To give us the trainees' perspective **Dr. Ana Sjaus** has developed a project led by fourth-year medical student, **Matthew Ta**, to find out from our residents how helpful their evaluations are, both in content and in style of delivery. We hope results from these studies will help us fine-tune our curriculum. This summer we will become the second department of anesthesia in Canada, after Ottawa's department, to make the switch to CBME.

Even our continuing professional development activities this year had a CBME focus. Sessions were provided on leading the modules in the new curriculum. In addition, we responded to increased demand for more sessions on crisis resource management, a popular offering.

This year's Bethune Round Table, held for the first time in Halifax, was a signature event for the department and for Global Health, which played a leading role. The department hosted the well-attended international interdisciplinary gathering in collaboration with the Departments of Surgery and Obstetrics & Gynaecology. The scientific meeting considers challenges and solutions for improving surgical care to under-served and marginalized populations in low- and middle-income countries.

In our Fellowship Program, a review on admission procedures was completed to provide greater clarity on the rules and regulations around fellowship recruitment and offering fellowship positions. Meanwhile our Fellowship on Chronic Pain was withdrawn to look at the possibilities for restructuring it into a Chronic Pain Residency.

At the undergraduate level, the electives offered to Med 4 students continued to be over subscribed in relation to our capacity to handle the numbers. While pleased that our electives are so popular with medical students, accommodating all those interested continues to be difficult.

We had a notable staff addition in the hiring of **Elise Sammons** as the new departmental co-ordinator. As part of her responsibilities she will oversee continuing professional development activities in the department.

In faculty highlights, the Dalhousie University Faculty of Medicine recognized **Dr. Janice Chisholm** with a Program Directors' Award for her innovations in postgraduate medical education. **Dr. Peter MacDougall** and his colleagues on the Canadian Anesthesiologists' Society Annual Meeting Working Group received one of three Royal College accredited Continuing Professional Development Provider Innovation Awards.



Education by the Numbers

2015 - 2016 Academic Year

UNDERGRADUATE • REMOTE SITES

Medical student rotations 32 (67 weeks)

Amherst	1	Miramichi	1
Charlottetown	3	Fredericton	6
Kentville	5	Truro	1
Moncton	3	Yarmouth	1
Saint John	7	Waterville	1
Sydney	3		

UNDERGRADUATE • HALIFAX SITES

Medical student rotations 55 (119 weeks)

** Although electives are not generally offered in Pediatric Anesthesia or Women's and Obstetrics Anesthesia, many students will complete a portion of their elective in one of these sub-specialties.*

QEII	54
Dartmouth General Hospital	1

OTHER LEARNERS

Respiratory Therapy	13
• QEII	16
• Saint John Regional Hospital	1
Oral and Maxillofacial Surgery	9
Emergency Health Service LifeFlight	22
Nursing Students/Nurses, QEII	12
Advanced Care Paramedics, QEII	12
Primary Care Paramedics, QEII	17
Primary Care Paramedics, Hants Community Hospital	3
Dentistry Residents, QEII	2
Dentistry Students, IWK, (Pediatrics)	5
Anesthesia Assistants, IWK(Pediatrics)	27
Observership	6
Med 1 Shadow Day	17
Med 1 and Med 2 Electives	2
Saint John Regional Hospital	24
Med Students – Year 3, Selective	

POSTGRADUATE OFF-SERVICE AND ELECTIVE RESIDENTS

QEII	42 residents at 162 weeks
Dartmouth General Hospital	2 residents at 8 weeks
IWK Peds	12 residents at 27 weeks
Saint John Regional Hospital	8 residents at 32 weeks
The Moncton Hospital	2 residents at 8 weeks

CONTINUING PROFESSIONAL DEVELOPMENT

Grand Rounds	29
• Faculty Speakers	6
• Resident Speakers	8
• Fellow Speakers	3
• Visiting Professors	12
Morbidity and Mortality (M&M) Rounds	8
Journal Club	7
CPD Sessions/Events	16

Number of Applicants to the Residency Program 120

FELLOWSHIPS

Enrolled	7
Program completion (June)	4

Number of Department Member Undergraduate Tutors at Dalhousie Medical School

14 physician staff participated in the Case Base Learning (CBL) tutorial sessions within the Med 1 and 2 curriculum, and 16 additional physician staff participated in PIER sessions, Communication Skills, and OSCEs within the Med 1 – 4 curriculum, covering a total of 610 tutorial hours.

2015-2016 Strategic Priorities

- 1 Create an infrastructure that supports the implementation of Competency Based Medical Education (CBME) curriculum and related innovative research.
- 2 Continue to enhance the delivery of Continuing Professional Development (CPD) and scholarly sessions with a focus on individual needs; best practices within the department.
- 3 Actively seek support for the development and delivery of a Faculty Education Day.
- 4 Continue supporting anesthesia education and the simulation curriculum in Rwanda.
- 5 Develop strategies for effective anesthesia undergrad teaching and mentorship to be a leading program within Canada.
- 6 Develop a plan to assist/mentor faculty to seek promotion of academic rank within the department.
- 7 Build capacity of simulation instructors (7-8), within department, ensure adequate funding and resources are allocated.
- 8 Raise the profile/identity of fellows among group and department.
- 9 Modify the Office of Education's infrastructure to reflect/support one Academic Funding Plan (AFP) model.



Undergraduate program

Dr. Ben Schelew, Medical Director

This year's Undergraduate Student Award went to **Stephen Middleton**, who will be one of the department's first-year residents in July 2016. The annual award goes to a student in the graduating class who demonstrates outstanding capabilities in anesthesia throughout their undergraduate training.

Twenty-four, third-year medical students completed a one-week anesthesia selective rotation this year. The department was also active in Shadow Day for first-year medical students, accommodating six students who wanted to shadow our clinicians' daily routine.

In addition, the department welcomed 21 students in the Med 1 and 2 elective program and another 56 students doing Med 4 electives. A total of 32 rotations over 67 weeks were completed within the department at 11 remote sites: Amherst, Sydney, Kentville, Truro, Yarmouth, Miramichi, Fredericton, Moncton, Saint John, Waterville and Charlottetown.

Nursing, paramedicine, respiratory therapy and dentistry sent 11 learners for rotations in the department at the QEII Health Sciences Centre, the Hants Community Hospital, the Dartmouth General Hospital and the IWK Health Centre. Twenty-seven observership rotations were also offered to learners in nursing, medicine and graduate studies.

Fourteen departmental physicians were involved with Case-Based Learning tutorials in the Med 1 and 2 curriculum and 16 additional physician staff participated in Position, Integration, Evaluation and Research/Review (PIER) sessions, Communications Skills and Objective Structured Clinical Examinations (OSCEs) within the undergraduate curriculum, covering a total of 610 tutorial hours.

Postgraduate programs

Dr. Janice Chisholm, program director

Dr. Robyn Doucet, associate program director

The focus this year was on transitioning to competency-based medical education (CBME) with its July 2016 start date. The program director gave workshops on the new curriculum, locally, nationally and internationally. A Tips and Updates newsletter on CBME was introduced to keep department members informed. Under the CBME banner there were also events concerning mentoring and coaching, academic advising, leading modules and a discussion during Grand Rounds. Related research projects under way include studies on Faculty perception of CBME and the Transition to CBME in Anesthesia.

In other activities, a regional anesthesia workshop was developed for all residents completing a rotation in regional anesthesia and acute pain.

There were 120 applications for the department's annual intake of six new anesthesia residents through the Canadian Resident Match Service or CaRMS. Sixty interviews were granted and the successful applicants were **Leo Fares**, and **Stephen Middleton**, Dalhousie University; **Emma Kehoe**, University of Toronto, **Stephanie Power-MacDonald**, Memorial University of Newfoundland, **Haotian Wang**, University of Calgary and **Chrison Wong**, University of British Columbia.

Two requests for transfers into the residency program were received and declined based on funding and capacity. Fifty-eight off-service/visiting elective residents completed a rotation in general anesthesia, airway, regional anesthesia, pediatric anesthesia, chronic pain or women's & obstetrics anesthesia this year. Another three residents completed a 12-week rotation in Saint John.

This was the third year for the residency mentorship program, which pairs senior residents with faculty. The mentors included **Drs. Josh Robert, Amélié Pelland, Tristan Dumbarton, Mike Vargo, Ainslie Gilchrist, Yuqi Gu, Mathew Kiberd, David MacDonald, Kwesi Kwofie, Blaine Kent, Orlando Hung, George Kanellakos, Tobias Witter, Dolores McKeen, Patty Livingston, Tim Mullen, Scott Drysdale, André Bernard, Cathy Delbridge, Kirk MacQuarrie, Ron George, Narendra Vakharia, Rick Hall, Gordon Launcelott and Adam Law.**

Graduating residents 2015-2016 academic year

Congratulations to the 2015-2016 PGY5s who successfully completed their anesthesia residency:

Dr. Yuqi Gu
Dr. Mathew Kiberd

Dr. David MacDonald



Residents by year

PGY 1

Dr. Benjamin Cairns
Dr. Janny Ke
Dr. Jason Meisner
Dr. Andrew Suen

Dr. Vivian Wang
Dr. Derek Wong
Dr. Mike Wong

PGY 2

Dr. Margaret Casey
Dr. Charlotte Edwards
Dr. Stewart Forbes

Dr. François Michaud
Dr. Richard Roda

PGY 3

Dr. Jon Bailey
Dr. Liem Ho
Dr. Mallory Garza
Dr. Kyle Jewer

Dr. Ravi Pullela
Dr. Kitt Turney
Dr. David Watton

PGY 4

Dr. Tristan Dumbarton
Dr. Michael Konviser
Dr. Amélié Pelland
Dr. Joshua Robert

Dr. Michael Vargo
Dr. Ainslie Gilchrist

PGY 5

Dr. Yuqi Gu
Dr. Mathew Kiberd

Dr. David MacDonald



Fellowships

Dr. Jane Henderson, Medical Director

Fellowships are currently offered by the department in six areas: airway, cardiac, global health, regional anesthesia & acute pain, women's & obstetric anesthesia, and pediatric anesthesia.

A Fellowship in Chronic Pain was also on the list but it is not being offered while a potential residency in chronic pain is being explored. The procedures for fellowship applications have been reviewed and guidelines have been developed outlining such details as application deadlines, the number of fellows per academic year and per program.

Each fellowship generally lasts one year and stresses clinical and academic skills and competencies. Faculty emphasize individualized fellowship experiences that take into account each fellow's clinical, research and overall professional goals, while ensuring that upon completion of the fellowship the candidate has gained exceptional clinical, education and research skills.

In 2015-2016, there were seven fellows enrolled.



Graduating Fellows 2015-2016

Airway

Dr. Mathieu Asselin

Dr. Kathryn Sparrow

Global Health/Regional Anesthesia and Acute Pain

Dr. Matthew Ho

Women's and Obstetric Anesthesia

Dr. Allana Munro

Continuing Professional Development

Dr. Bruce Macaulay, Medical Director

Two teams led by members of the Department of Anesthesia, Pain Management & Perioperative Medicine were selected for funding at an inaugural *Dragon's Den* competition for Interprofessional Development.

A project submission called Preparation and Storage of Cardiovascular Emergency Medicals in Cardiac Anesthesia was a winner advanced by departmental members **Drs. Victor Neira** and **Matthias Scheffler**, as was Penicillin Allergy Testing pitched by colleague, **Dr. Brian Norman**.

Departmental participation was rounded out by **Dr. Peter MacDougall** with his Online Clinical Community presentation and by **Dr. Karim Mukhida** who introduced his concept, Hear my Story, See my Pain.

Departmental members with presentations accounted for four of the six project submissions made at the event. Among other criteria, they had to address quality improvement, patient safety, patient flow or efficiency and be operational within 18 months. Funding up to \$15,000 was awarded to Drs. Neira and Scheffler, and Dr. Norman.

There were 29 weekly sessions of Grand Rounds, which included 10 visiting presenters, and eight Morbidity and Mortality Rounds. Seven Journal Clubs were convened this year. Subspecialty areas covered included regional anesthesia, women's & obstetric anesthesia, airway, critical care, pediatric anesthesia, neuro anesthesia, chronic pain, thoracic anesthesia, cardiac anesthesia, transplant and general anesthesia. Twitter was used to help engage participants. For the final session of 2015-2016, **Dr. Ankeet Udani** (Duke University) and **Dr. Edward Mariano** (Stanford University) co-authors of the paper under discussion, *Comparative-Effectiveness of Simulation-Based Deliberation Practice Versus Self-Guided Practice on Resident Anesthesiologists' Acquisition of Ultrasound-Guided Regional Anesthesia Skills*, participated in the event.

Various events supported by the office included the Atlantic Pain Conference, the Resident Blood Workshop, the Blood and Beyond Conference, the Canadian Anesthesiologists' Society Atlantic Regional Meeting, the Airway Management with Cricothyrotomy, Ultrasound Guided Vascular Access Workshop, Advanced Circulatory Life Support (ACLS), Mentorship and Coaching, and a Module Lead Workshop.



2015-2016 Continuing Professional Development Events

- 11th Annual Blood and Beyond Resident Workshop
- 2016 Thomas Fear and Alice Morgans Fear Memorial Conference - Changing Power Dynamics in the Clinical Learning Environment ... Check Yourself!
- 9th Annual Blood and Beyond Conference
- Atlantic Canadian Anesthesiologists' Society, Moncton, NB
- Atlantic Pain Conference
- Airway Management with a Cricothyrotomy
- Crisis Resource Management – Ultrasound Guided Vascular Workshop
- Advanced Circulatory Life Support (ACLS) (*offered twice*)
- FOCUS Ultrasound
- Resident Academic Advisor Workshop
- How to be a Module Lead Workshop
- Mentorship and Coaching Workshop
- Teaching and Learning course
- How to Writing Meaningful Feedback
- Preparing and Maintaining a Teaching Dossier Workshop
- Breast Health Anesthesia

Education Research

Sjaus A, Munro A, Ta M, Ritchie K, George RB (2015 - 2016). Anesthesia residents' experiences with standardized feedback to assess clinical competencies [Grant] – Dalhousie – \$5,000.

Ritchie K, Snelgrove-Clarke E, Murphy A, George RB, MacPhee S, Versnel J, Matte M (2015 - 2018). Evidence informed practice-related knowledge, attitudes and practices (KAP): Describing nursing, pharmacy, occupational therapy, and medicine [Grant] – NSHRF – \$148,260.

Ho L, Drysdale S, McKeen D (2015 - 2016). An observational trial of staff anesthesiologists key performance indicators in a simulated clinical environment [Medical Education or Training]

Morris I, Law JA, MacQuarrie K, Launcelott G, Butler H (2008 - present). Fiberoptic Learning Curve [Medical Education or Training]

Appendix A

2015 Research Projects & Funding

FUNDED PROJECTS

Note that the bracketed dollar amount is the total value of the award.

NEW FUNDED PROJECTS IN 2015

1. Uppal V, Kwofie K, Szerb J, McKeen D (2015 - 2016). Ultrasound Guided Axillary Brachial Plexus Block: Influence of Obesity on Block Failure Rate, Performance Time and Incidence of Acute Complications – A prospective observational study [Grant] – Central Zone – \$5000.
2. Kwofie MK, Uppal V, Szerb J, Baldrige W, Zhou J, Sandeski R (2015 - present). Incidence of Subepineurial Injection with Ultrasound-Guided Supraclavicular Brachial Plexus Block in Cadavers [Grant] – NSHRF – \$14244.
3. Kwofie MK, Uppal V, Szerb J, Baldrige W, Zhou J, Sandeski R (2015 - 2016). Incidence of Subepineurial Injection with Ultrasound-Guided Supraclavicular Brachial Plexus Block in Cadavers [Grant] – Dalhousie Clinical Cadaver Research Program Grant – \$5000.
4. Kwofie MK, Uppal V, Szerb J, Baldrige W, Zhou J, Sandeski R (2015 - 2016). Incidence of Subepineurial Injection with Ultrasound-Guided Supraclavicular Brachial Plexus Block in Cadavers [Grant] – Dalhousie – \$5000.
5. Schmidt M, Roach D (2015 - 2016). Technical and Physical Validation of a Membrane Assembly in an Anesthetic Environment [Industry Contract] – National Research Council – Industrial Research Assistance Program – \$49993.
6. McDougall JJ (2015 - 2018). Exploring A Neuroprotective Effect of Cannabinoids To Mitigate Osteoarthritis Pain [Grant] – The Arthritis Society – \$360000.
7. Ritchie K, Snelgrove-Clarke E, Murphy A, George RB, MacPhee S, Versnel J, Matte M (2015 - 2018). Evidence informed practice-related knowledge, attitudes and practices (KAP): Describing nursing, pharmacy, occupational therapy, and medicine [Grant] – NSHRF – \$148260.21.
8. Schmidt M, Roach D (2015 - 2016). Optimal Module Designs for Membrane-based Medical Gas Separation Device [Grant] – Industrial Research Program – Business Innovation Access Program - \$46869.
9. Sjaus A, Munro A, Ta M, Ritchie K, George RB (2015 - 2016). Anesthesia residents' experiences with standardized feedback to assess clinical competencies [Grant] - Dalhousie - \$5000.
10. Lehmann C (2015). Cellular physiology of iron in inflammation and infection processes: novel Fe chelator responses in experimental model systems [Grant] – MITACS – \$5000.
11. Schmidt M, Roach D (2015 - 2017). Membrane Optimization [Industry Contract] – Atlantic Canada Opportunities Agency – \$499995.
12. Schmidt M, Roach D (2015 - 2017). memsorb: CO2 filter for safe, environmentally sound anesthesia [Grant] – Sustainable Development Technologies Canada – \$686575.
13. Higgins K, Chambers C, Clark AJ, Rosen , Sherry S, Campbell-Yeo M, Lynch M (2015 - present). Risk and resilience in children of parents with chronic pain [Grant] – CDHA – \$4936.
14. Schmidt M, Eskes G, George RB, Matwin, S, Bernard A, Drappeau, D, Milne A (2015 - 2017). Is it feasible to evaluate cognitive changes after surgery with computerized neuropsychological assessment in patients aged 55 or older undergoing major surgery?" [Grant] – Nova Scotia Health Authority – \$14744.
15. Finley Ga, Chambers C (2015). International Forum on Pediatric Pain [Grant] – DMRF – \$5000.
16. Munro A, George RB, Allen VA (2015 - 2016). A retrospective cohort assessment of the impact of an anesthetic intervention during the second stage of labour [Grant] – Anesthesia Research Fund, Dalhousie University – \$5000.
17. Lehmann C (2015 - 2016). Cellular physiology of iron in inflammation and infection processes: novel Fe chelator responses in experimental model systems [Industry Contract] – CRA – \$6000.
18. Kelly M, Lynch ME (2015 - 2016). Novel formulations for ocular pain and inflammation [Grant] – Early Stage Commercialization Fund (ESCF) – \$50000.
19. West J, Snelgrove-Clarke E, Mann C, McKeen DM, Kinnear H, Wenning J, Allen V, Courtney E, (2015 - 2017). Second stage labour management: Translating evidence to enhance maternal newborn outcomes: The TEEM Study [Grant] – IWK – \$68886.
20. Chorney J, Ellis P. (2015 - 2017). Don't Stumble, Tumble: A motion-detecting videogame to reduce general anesthetics for MRIs in young children [Grant] – IWK – \$85000.
21. McDougall J (2015 - 2016). Investigation of anti-sodium channel monoclonal antibodies for osteoarthritis pain management [Grant] – NSHRF – \$15000.
22. Hung OR (2015 - present). A comparative study of the McGrath MAC and Glidescope videolaryngoscopes for tracheal intubation in cadavers with simulated oropharyngeal bleeding [Grant] – Clinical Cadaver Program – \$5000.



23. Hung OR (2015 - present). Management of the difficult and failed airway. 3rd edition [Grant] – McGraw-Hill Book Grant (Editor Grant) – \$5000.

NEW SCHOLARLY PROJECTS (UNFUNDED)

1. Vlaten A, Bird S, Law A, Hung O (2015 - 2016). A comparison of the STORZ CMAC DBlade versus direct laryngoscopy in a restricted access pediatric motor vehicle accident victim [Clinical]
2. Vlaten A, Bird S, Law A, Hung O (2015 - 2016). A randomized comparison of the AIRTRAQ versus direct laryngoscopy in a Pierre Robin manikin [Clinical]
3. Vlaten A, Bird S, Law A, Hung O (2015 - 2016). A randomized comparison of the STORZ Miller CMAC to direct laryngoscopy in a Pierre Robin manikin [Clinical]
4. Chorney J, Howlett M (2015 - 2016). The Influence of Pain Catastrophizing on Parent Responses to Adolescent Chronic Pain [Clinical]
5. Bailey K, Chorney J, Finley A, McGrath P, Gorodzinsky A (2015 - 2016). Identifying factors predictive of successful and unsuccessful parental presence at induction of anesthesia: A Delphi study [Clinical]
6. Chorney J, Gorodzinsky A, Finley A, Sangster M, Betsch T (2015). Healthcare providers' stigmatization of pediatric chronic pain patients based on diagnostic labels: A vignette study [Clinical]
7. Dryden T, McKeen D (2015 - 2016). Implementation of a Patient Centred Care Guideline in the PACU: An Exploration of Barriers and Facilitators [Clinical]
8. Ho L, Drysdale S, McKeen D (2015-2016). An observational trial of staff anesthesiologists key performance indicators in a simulated clinical environment [Medical Education or Training]
9. Bailey J, McKeen D (2015 - 2016). A Systematic Review of Regional Anesthesia for Abdominal Surgery [Clinical]
10. Uppal V, McKeen D (2015 - 2016). Intrathecal Hyperbaric Versus Isobaric Bupivacaine For Adult Non-Caesarean Section Surgery: Systematic Review [Clinical]
11. Higgins K, Bezuhly M, Chorney J, Morris S, Krauss E, Gillis J, LeBlanc M, Williams J. (2015 - 2016). Psychosocial Impact of Flap Failure Following Autologous Breast Reconstruction in Women with Breast Cancer [Clinical]

CONTINUING ONGOING FUNDED PROJECTS

1. Uppal V, Kwofie K, Szerb J, McKeen D (2015 - 2016). Ultrasound Guided Axillary Brachial Plexus Block: Influence of Obesity on Block Failure Rate, Performance Time and Incidence of Acute Complications – A prospective observational study [Grant] - Central Zone - \$5000.
2. Schmidt M, Roach D (2015 - 2016). Technical and Physical Validation of a Membrane Assembly in an Anesthetic Environment [Industry Contract] – National Research Council – Industrial Research Assistance Program – \$49993.

3. Szerb J, Kwofie MK, Uppal, V (2015 - 2016). Incidence of Subepineurial Injection with Ultrasound-Guided Supra-clavicular Brachial Plexus Block in Cadavers [Pre-Clinical]
 - a. Dalhousie – \$5000
 - b. Dalhousie Clinical Cadaver Research Program Grant – \$5000
 - c. NSHRF – \$14244
4. McDougall JJ (2015 - 2018). Exploring A Neuroprotective Effect of Cannabinoids To Mitigate Osteoarthritis Pain [Grant] – The Arthritis Society – \$360000.
5. Burkovskiy I, Lehmann C (Supervisor) (2015 - 2016). Cannabinoid 2 Receptor Modulation in Post-Stroke Immunosuppression [Grant] – Heart and Stroke Foundation Canada – \$5000.
6. Wafa K, Porter R, Kelly M, Lehmann C (Supervisor) (2015 - 2016). Cellular physiology of iron in inflammation and infection processes: Novel Fe chelator responses in experimental model systems [Grant] – Dalhousie – \$2000.
7. Ritchie K, Snelgrove-Clarke E, Murphy A, George RB, MacPhee S, Versnel J, Matte M (2015 - 2018). Evidence informed practice-related knowledge, attitudes and practices (KAP): Describing nursing, pharmacy, occupational therapy, and medicine [Grant] – NSHRF – \$148260.
8. Schmidt M, Roach D (2015 - 2016). Optimal Module Designs for Membrane-based Medical Gas Separation Device [Grant] – Industrial Research Program – Business Innovation Access Program – \$46869.
9. Sjaus A, Munro A, Ta M, Ritchie K, George RB (2015-2016). Anesthesia residents' experiences with standardized feedback to assess clinical competencies [Grant] – Dalhousie – \$5000.
10. Lehmann C (2015). Cellular physiology of iron in inflammation and infection processes: novel Fe chelator responses in experimental model systems [Grant] – MITACS – \$5000.
11. Schmidt M, Roach D (2015-2017). Membrane Optimization [Industry Contract] – Atlantic Canada Opportunities Agency – \$499995.
12. Schmidt M, Roach D (2015 - 2017). memsorb: CO2 filter for safe, environmentally sound anesthesia [Grant] – Sustainable Development Technologies Canada – \$686575.
13. Higgins K, Chambers C, Clark AJ, Rosen, Sherry S, Campbell-Yeo M, Lynch M (2015 - present). Risk and resilience in children of parents with chronic pain [Grant] – CDHA – \$4936.
14. Schmidt M, Eskes G, George RB, Matwin, S, Bernard A, Drappeau, D, Milne A (2015 - 2017). Is it feasible to evaluate cognitive changes after surgery with computerized neuropsychological assessment in patients aged 55 or older undergoing major surgery? [Grant] – Nova Scotia Health Authority – \$14744.
15. Finley Ga, Chambers C (2015). International Forum on Pediatric Pain [Grant] – DMRF – \$5000.
16. Munro A, George RB, Allen VA (2015-2016). A retrospective cohort assessment of the impact of an anesthetic intervention during the second stage of labour [Grant] – Anesthesia Research Fund, Dalhousie University – \$5000.
17. Lehmann C (2015 - 2016). Cellular physiology of iron in inflammation and infection processes: novel Fe chelator responses in experimental model systems [Industry Contract] - CRA - \$6000.

18. Kelly M, Lynch ME (2015 - 2016). Novel formulations for ocular pain and inflammation [Grant] – Early Stage Commercialization Fund (ESCF) - \$50000.
19. West J, Snelgrove-Clarke E, Mann C, McKeen DM, Kinnear H, Wenning J, Allen V, Courtney E, (2015 - 2017). Second stage labour management: Translating evidence to enhance maternal newborn outcomes: The TEEM Study [Grant] – IWK – \$68886.
20. Chorney J, Ellis P. (2015 - 2017). Don't Stumble, Tumble: A motion-detecting videogame to reduce general anesthetics for MRIs in young children [Grant] – IWK – \$85000.
21. McDougall J (2015 - 2016). Investigation of anti-sodium channel monoclonal antibodies for osteoarthritis pain management [Grant] – NSHRF – \$15000.
22. Hung OR (2015 - present). A comparative study of the McGrath MAC and Glidescope videolaryngoscopes for tracheal intubation in cadavers with simulated oropharyngeal bleeding [Grant] – Clinical Cadaver Program – \$5000.
23. Hung OR (2015 - present). Management of the difficult and failed airway. 3rd edition [Grant] – McGraw-Hill Book Grant (Editor Grant) – \$5000.
24. Lehmann C, Fisher N, Zhou J, Szczesniak A, Kelly M, Tugwell B (2014 - 2015). Cannabidiol for prevention of type 1 diabetes – an experimental study on pancreatic inflammation [Grant] – Department of Anesthesia, Pain Management & Perioperative Medicine – \$5000.
25. Chambers C, Campbell-Yeo M, Barwick M, Chorney J, Finley A, Latimer M, McGrath P, Witterman H. (2014 - 2015). It Doesn't Have to Hurt": Extending our Reach to Help Parents of Children [Grant] – NSHRF – \$10000.
26. Stinson J, Campbell F, Chorney J, Clark AJ, Dick B, Forgeron P et al (2014 - 2017). ICanCope with pain: A integrated smartphone and web self-management program for adolescents and young adults with chronic pain [Grant] – CIHR – \$383884.
27. Hung O, Mariotti C, Eichhorn V, Bernard A, Mullen T, Brousseau P, Wood L (2014 - present). A new and innovative method for CO2 removal in anesthesia circuits: Replacing chemical granulate absorbers [Industry Contract] – DMF Medical (Michael Schmidt) – \$1.00.
28. Curran J, Klassen T, Chorney J, Colwell J, Fitzpatrick E, Jabbour M, MacPhee S, Murphy A, Petrie D (2014 - 2017). Understanding discharge communication in the context of paediatric emergency care in regional and community emergency departments in Nova Scotia [Grant] – NSHRF – \$146000.
29. Rosen N, George RB, Chorney J, Snelgrove-Clarke E, Pirece M, Andreou P, Binik Y (2014 - 2017). A Prospective Study of the Trajectory and Biopsychosocial Determinants of Postpartum Genito-pelvic Pain [Clinical]
 - a. CIHR-NSHRF RPP - \$227364
 - b. NSHRF - \$145000
30. Hebert PI, Turgeon A, Burns K, Cook D, Gilfoyle E, Lamontagne F, Hutchison J, McIntyre L, Herridge M, Tucci M, Marshall J, Meade MA, Fowler R, Zarychanski R, Hall R, Sinuff T (2014 - 2019). The Canadian Critical Care Trials Group [Grant] – ICRH Community Development Program Grants – Critical Care Clinical Trials and Stroke Clinical Trials – \$1542601.
31. McDougall JJ, Marshall J, Bezuhly M, Legare JF, Lin TJ (2014 - 2019). Restitution Enhancement in Arthritis and Chronic Heart Disease [Grant] – CIHR – \$2337154.
32. Hall R, Cook D, Al Hazzani W (2014 - 2015). Proton pump inhibitors for stress ulcer prophylaxis in critically ill patients: Pilot randomized trial (REVISE) [Grant] – Capital Health – \$15000.
33. Poole O, Hung OR, Vargo M (2014 - 2015). A comparison of three techniques for cricothyroidotomy in a manikin [Grant] – Dalhousie Department of Anesthesia – \$1500.
34. Lavigne GJ, Lynch ME, Boulanger A, Cooper L, Laliberte J (2014 - 2015). Prevention of opioid analgesic misuse in Canada: pragmatic and innovative strategies? [Grant] – Université de Montreal – \$50000.
35. Lynch ME (2014 - 2016). Randomized, double blind, placebo-controlled trial with open label extension of Delivra joint health cream in the treatment of pain caused by osteoarthritis of the knee [Industry Contract] – LivCorp, Inc – \$300000.
36. Hebert PC, Bagshaw S, Dodek P, Lamontagne F, Martin C, Muscedere J, Scales D, Steffox H, Turgeon A, Hall R (2014 - 2015). Structuring patient-oriented research: Developing a National Agenda in patient care research and evaluation [Grant] – CIHR – \$25000.
37. Kim RB, Carleton B, Tirona R, Ross C, Amstutz U, Dionne F, Dube M-P, Goralski K, Hall RI, et al. (2014 - 2017). Drug Safety and Effectiveness Network (DSEN) – Pharmacogenomics of Adverse Reaction Events National Team (DSEN-PREVENT) [Grant] – CIHR – \$750000.
38. Hall R (2014 - 2015). A two part study to investigate the safety, tolerability, pharmacokinetics and pharmacodynamics of GSK2586881 in patients with acute lung injury (ACE114622) [Industry Contract] – GlaxoSmithKline – \$36626.
39. Pelland A, George RB (2014 - 2015). Sidestream dark field imaging of the sublingual microcirculation to assess microvascular dysfunction in the preeclamptic patient [Grant] – Department of Anesthesia, Pain Management & Perioperative Medicine – \$5000.
40. Dumbarton T, Lehmann C (2014 - 2015). Tetrahydro biopterin in the treatment of septic shock [Grant] – Department of Anesthesia, Pain Management & Perioperative Medicine – \$5000.
41. Chorney J, d'Entremont C, Allen S, Smith I, Bird S, Latimer M, Martin C, Wright S. (2014 - 2015). Identifying ways to improve the perioperative experience for children with Autism Spectrum Disorders [Grant] – IWK – \$3000.
42. Muscedere J, Hall R (2014 - present). Prevention of nosocomial infections in critically ill patients with Lactoferrin: PREVAIL study [Grant] – Queen's University AFP Innovation Fund and Lotte & John Hecht Memorial Foundation – \$3030.
43. Schmidt M, Roach D, Wilfart F (2014 - 2015). Neuro-protection using noble gases [Grant] – Brain Repair Centre-Knowledge Translation (BRC-KT) grant, Faculty of Medicine, Dalhousie University - \$30000.
44. Chelation Partners Incorporated, Lehmann C, Parquet M, Hoskin D, Ritenour R (2014 - 2016). Novel Iron Chelating Excipients (NICE) [Grant] – AIF – \$2781915.

45. Schmidt M, Roach D (2014 - 2015). Toxicity of Anesthetic by-products and the Neuro-protective effects of noble gases [Industry Contract] – National Research Council – Industrial Research Assistance Program – \$285843.
46. Hung OR (2014 - 2015). Intravenous fluid administration monitor [Industry Contract] – Innovacorp, Nova Scotia – Phase II Early Stage commercialization Fund – \$44500.
47. Daneman N, Fowler R, Marshall J, Martin C, Hall R, Reynolds S, Stelfox T, Lamontagne F, Bagshaw S, Muscedere J, Dodek P (2014 - 2016). Bacteremia antibiotic length actually needed for clinical effectiveness (BALANCE): A pilot randomized controlled clinical trial [Grant] – Ministry of Health and Long-Term Care Academic Health Sciences Alternative Funding Plan Innovation Fund Award – \$20000.
48. Chorney J, Hong P, Curran J, McGrath P, Ritchie K, (2014 - 2017). Supporting Shared decisions in paediatric otolaryngology: Needs assessment and decision aid development [Clinical]
 - a. NSHRF - \$159816
 - b. CIHR - \$159816
49. Stinson J, Cafazzo J, Campbell F, Chorney J, Clark J, Dick B, Forgeron P, Gordon A, Jibb L, Laloo C, McGillion M, Montgomery L, Palermo T, Rashid S, Ruskin D, Simmonds M, Tupper S, Victor C, Ware M. (2014 - 2017). iCanCope: an Integrated Smartphone and Web Self-Management Program for Adolescents and Young Adults with Chronic Pain [Grant] – CIHR – \$383884.
50. Hall R (2014 - 2015). OSCILLATE Knowledge Translation: An Audit of ARDS Management [Grant] – CIHR – \$3500.
51. Kiberd M, Wright S, Chorney J (2014 - 2015). Aromatherapy in children for the treatment of PONV [In-Kind] – IWK.
52. West J, Snelgrove-Clarke E, Mann C, McKeen DM, Harold J, Courtney L, Allen V (2014 - 2015). Second stage management: A collaborative strategy for change [Grant] – IWK – \$3000.
53. Clark AJ, Mumford K, George RB, Davis D, Milne D, Langille L, Hammond P, Yazbeck S, Sernyk S (2014 - 2015). The highly opioid tolerant patient – will a new paradigm of care improve outcomes? [Grant] – Translating Research into Care (TRIC) – \$3000.
54. Lehmann C (2014 - 2015). The Microcirculation Screening (MicroScreen) Project: Innovative Non-Invasive Point-of-Care Monitoring of Nutritional Status and Critical Health Conditions in Low-Resource Environments [Grant] – Grand Challenges Canada - \$113000.
55. Hall R (2014 - 2015). Multicenter, randomized, active-controlled efficacy and safety study comparing extended duration Betrixaban with standard of care EnoxaparinR for the prevention of venous thromboembolism in acute medically ill patients (the APEX study) [Industry Contract] – Portola – \$11383.
56. Mazer D, Fergusson DA, Shehata N, Thorpe K, Whitlock R and PACT group, Hall R (2014 - 2018). Transfusion requirement in cardiac surgery III (TRICS III) [Grant] – CIHR – \$3323110.
57. Lehmann C (2014 - 2015). Innovations in Microcirculatory Sepsis Research – Mechanisms of new anti-inflammatory strategies in the intestinal microcirculation [Grant] – MOF – \$5000.
58. Chorney J, Curran J, Hong P, McGrath P, Ritchie K (2013 - 2016). Understanding Shared Decisions in Pediatric Surgery [Grant] - NSHRF - \$147246.
59. Szerb J, Kwofie K (2013 - 2015). Histological Confirmation of Ultrasound-Guided Needle Placement in Regional Anesthesia Intraplexus Versus Periplexus Approach [Grant] – CDHA – \$15000.
60. Lehmann C, Zhou J (2013 - 2015). Modulation of cannabinoid receptor 2 signaling – a new therapeutic approach in CNS injury-induced immune deficiency syndrome (CIDS) [Grant] – CDHA Research Fund – \$14881.
61. Kwapisz M, Kent B, Mingo H, Poranek A (2013 - 2015). The use of Fibrinogen Concentrate in High-Risk Cardiac Surgery: A Prospective Double Blind Randomized Controlled Study [Grant] – CSL Behring – \$453674.
62. Curran J, Grimshaw J, McGrath P, Chorney J. (2013 - 2016). Understanding Discharge Instructions for Children and Caregivers in the Transition from Pediatric Emergency Care [Grant] - CIHR-NSHRF Regional Partnership Program Operating Grant - \$435804.
63. Lehmann C, Zhou J, Kelly Melanie (2013 - 2016). Manipulation of the Endocannabinoid System in Experimental Sepsis [Grant] – Nova Scotia Health Research Foundation – \$147960.
64. Shehata N, Mazer D and PACT group, Hall R (2013 - 2016). Transfusion Requirements In Cardiac Surgery II (TRICS II) [Grant] – CIHR – \$293728.
65. Hall R (2012 - 2015). A randomized, double blind, placebo controlled, Phase 3 study to assess the safety and efficacy of ART-123 in subjects with severe sepsis and coagulopathy (#3-001) [Industry Contract] – Asahi Kasei Pharma America Corporation – \$65320.
66. McDougall J (2012 - 2015). Effect of cannabinoids and opioids in the control of arthritis pain [Grant] – Nova Scotia Health Research Foundation (NSHRF) – \$149790.
67. Schmidt M (2012 - 2016). Refine and optimize ZEROSORB, a prototype CO2 removal device for anesthesia circuits [Grant] – Atlantic Canada Opportunities Agency – \$1245617.
68. Lehmann C (2012 - 2015). Modulation of the immune response after stroke by manipulation of cannabinoid receptor 2 signaling [Grant] – Clinician Scientist Program (CS) – \$19120.
69. Chorney J (2012 - 2016). Establishment of the Child Health and Perioperative Care Laboratory [Grant] – Canadian Foundation for Innovation (CFI) – \$312177.
70. Hall R (2012 - 2015). A Phase III international, randomized, double-blind, double-dummy study to evaluate the efficacy and safety of 300mg or 600mg of iv zanamivir twice daily compared to 75mg of oral oseltamivir twice daily in the treatment of hospitalized adults and adolescence [Industry Contract] – GlaxoSmithKline – \$14420.
71. Chorney J (2011 - 2016). Pain in Children at Home Following Major Surgery: New Investigator Award [Grant] – CIHR – \$300000.
72. McDougall J (2011 - 2016). The relationship between proteases, protease activated receptors and cytokines in mediating osteoarthritis pain [Grant] – Canadian Institutes of Health Research (CIHR) – \$601280.

73. Kain ZN, Chorney J, Blount RL (2011 - 2016). Improving pain and anxiety in children undergoing surgery: Changing Healthcare Provider Behavior [Grant] – National Institutes of Health – \$2730034.
74. Chorney J, Andreou P, El-Hawary R, Finley GA, Howard J, LeMay S, McGrath P, Ouellet J, Parent S, Valois-Gomez T, Villeneuve, E. (2010 - 2015). Pain at Home in Children following Major Surgery: Physical, Psychological, and Economic Consequences [Grant] – Canadian Institutes of Health Research - \$724991.
75. Lehmann C (2009 - 2015). Innovations in Microcirculatory Sepsis Research – Mechanisms of new anti-inflammatory strategies in the intestinal microcirculation [Grant] – IOF – \$25000.
76. McGrath PJ, Craig KD, Finley GA, Grunau RE, Johnston C, Stevens BJ, von Baeyer CL, Chorney J (2009 - 2015). Pain in child health, an innovative, international, trans-disciplinary research training consortium – Phase II [Grant] – CIHR - \$1950000.
77. Lehmann C (2009 - 2015). Innovations in Microcirculatory Sepsis Research -Mechanisms of new antiinflammatory strategies in the intestinal microcirculation [Grant] – CFI – \$416351.
78. Chorney J., Allen S., Smith I. Identifying Ways to Improve the Perioperative Experience for Children with Autism Spectrum Disorder [Grant] – Department of Anesthesia, Pain Management & Perioperative Medicine – \$5000.
9. Bailey J, McKeen D (2015 - 2016). A Systematic Review of Regional Anesthesia for Abdominal Surgery [Clinical]
10. Uppal V, McKeen D (2015 - 2016). Intrathecal Hyperbaric Versus Isobaric Bupivacaine For Adult Non-Caesarean Section Surgery: Systematic Review [Clinical]
11. Higgins K, Bezuhly M, Chorney J, Morris S, Krauss E, Gillis J, LeBlanc M, Williams J. (2015 - 2016). Psychosocial Impact of Flap Failure Following Autologous Breast Reconstruction in Women with Breast Cancer [Clinical]
12. Clark AJ, George RB, Chambers C, McDougall J (2014 - 2015). DalPAIN: A multidisciplinary approach to clinical care and research [Clinical]
13. Gu Y, Robert J, Hung O, Milne A, Morris I, MacQuarrie K, Kovacs G, Law JA (2014 - 2015). A Deliberately Restricted Laryngeal View With the GlideScope® GVL Videolaryngoscope is Associated With Faster and Easier Tracheal Intubation: A Randomized Clinical Trial [Clinical]
14. Brousseau C, Brousseau P, Milne AD (2014 - 2015). A Retrospective Review of Ventilation Settings Used During Laparoscopic Cholecystectomy Surgical Procedures [Clinical]
15. Dumbarton TC, Maxan A, Sharawi N, Farah N, Zhou J, Lehmann C (2014 - 2015). Tetrahydrobiopterin in experimental sepsis [Pre-Clinical]
16. Tan E, Milne A (2014 - 2015). Impact of anesthesia residents on operating room times in a Canadian teaching hospital [Clinical]
17. Kwofie K, Philip G, Watton D (2014 - 2017). A retrospective study of primary total knee arthroplasty and multimodal analgesic methods on postoperative opioid requirements and outcome [Clinical]
18. Law JA, Milne A, Morris I, Brousseau P (2013 - 2015). A retrospective database review of methods used to achieve tracheal intubation in operative patients [Database]
19. Foss M, Lynch ME (2013 - 2017). Patient-Controlled Analgesia versus Continuous Opioid Infusion for the Treatment of Pain Caused by Oral Mucositis Following Myeloablative Chemotherapy for Hematopoietic Stem Cell Transplantation: A Retrospective Review [Clinical]
20. Pike M, Lynch ME (2013 - 2017). Observational Trial of Qigong as a Complementary Therapy in a Chronic Pain Clinic [Clinical]
21. Schep L, Chorney J (2013 - 2017). Child and parent involvement in decision-making for otolaryngology procedures [Clinical]
22. Maguire E, Chorney J (2013 - 2017). How does perceived parental involvement and actual involvement in decisions concerning ENT surgery for their child contribute to parental decisional conflict? [Clinical]
23. Scott J, George RB, Bird S (2013 - 2017). A systematic review in Pediatric Anesthesia (specific topic TBD) [Database]
24. Morris I, Law JA, MacQuarrie K, Launcelott G, Butler H (2008 - present). Fiberoptic Learning Curve [Medical Education or Training].

CONTINUING SCHOLARLY PROJECTS (UNFUNDED)

1. Vlaten A, Bird S, Law A, Hung O (2015 - 2016). A comparison of the STORZ CMAC DBlade versus direct laryngoscopy in a restricted access pediatric motor vehicle accident victim [Clinical]
2. Vlaten A, Bird S, Law A, Hung O (2015 - 2016). A randomized comparison of the AIRTRAQ versus direct laryngoscopy in a Pierre Robin manikin [Clinical]
3. Vlaten A, Bird S, Law A, Hung O (2015 - 2016). A randomized comparison of the STORZ Miller CMAC to direct laryngoscopy in a Pierre Robin manikin [Clinical]
4. Chorney J, Howlett M (2015 - 2016). The Influence of Pain Catastrophizing on Parent Responses to Adolescent Chronic Pain [Clinical]
5. Bailey K, Chorney J, Finley A, McGrath P, Gorodzinsky A (2015 - 2016). Identifying factors predictive of successful and unsuccessful parental presence at induction of anesthesia: A Delphi study [Clinical]
6. Chorney J, Gorodzinsky A, Finley A, Sangster M, Betsch T (2015). Healthcare providers' stigmatization of pediatric chronic pain patients based on diagnostic labels: A vignette study [Clinical]
7. Dryden T, McKeen D (2015 - 2016). Implementation of a Patient Centred Care Guideline in the PACU: An Exploration of Barriers and Facilitators [Clinical]
8. Ho L, Drysdale S, McKeen D (2015 - 2016). An observational trial of staff anesthesiologists key performance indicators in a simulated clinical environment [Medical Education or Training]

Appendix B

2015 Publications

Note that this list of publications only includes those peer-reviewed articles that are published and accessible online in 2015 (42).

1. Yang H, Zhou J, Lehmann C. (2015). GPR55 – a putative "type 3" cannabinoid receptor in inflammation. *J Basic Clin Physiol Pharmacol*. [Published] PubMed ID: [26669245](#).
2. Lynch ME, Ware MA (2015). A systematic review of randomized controlled trials in chronic pain. *JNIP*. [Review – Published] DOI: [10.1007/s11481-015-9600-6](#).
3. Hong P, Haworth R, Sobey S, Chorney J, Bezuhly M. (2015). Measuring Attentional bias in children with prominent ears: A prospective eye-tracking study. *Journal of Plastic, Reconstructive & Aesthetic Surgery*, 68(12), 1662-1666. [Published] DOI: [10.1016/j.bjps.2015.08.009](#).
4. Graham ME, Haworth R, Chorney J, Bance M, Hong P. (2015). Decisional conflict in parents considering bone-anchored hearing devices in children with unilateral aural atresia. *Annals of Otolaryngology & Laryngology*, 124(12), 925-930. [Published] PubMed ID: [26082472](#).
5. McKeen DM, DesRoches J, George RB, Kells C, Warren A, Shukla R (2015). Stable Idioventricular Tachycardia During Cesarean Delivery Complicating Hypertrophic Cardiomyopathy. *Anesthesia and Analgesia*. [Case Report – Published] PubMed ID: [26720049](#).
6. Cape D, Fox-Robichaud A, Turgeon AF, Seely A, Hall R, Burns K, Singal RK, Dodek P, Bagshaw S, Sibbald R, Downar J (2015). The impact of the Rasouli decision: a survey of Canadian intensivists. *BMJ (J Med Ethics online)*. [Published] PubMed ID: [26621856](#).
7. Szerb J, Greenberg JL, Kwofie MK, Baldrige W, Sandeski R, Zhou J, Wong K (2015). Histological Confirmation Of Needle Tip Position During Ultrasound-Guided Interscalene Block: A Comparison Of Intraplexus And Periplexus Approach. *Canadian Journal of Anesthesia*. [Published].
8. Zaphiratos V, George RB, Boyd JC, Habib AS (2015). Uterine exteriorization compared with in situ repair for Cesarean delivery: a systematic review and meta-analysis. *Canadian Journal of Anesthesia*, 62(11), 1209-1220. [Review] PubMed ID: [26296298](#).
9. Vincent Jean-Louis, Marshall JC, Dellinger RP, Simonson SG, Guntupalli K, Levy MM, Singer M, Malik R and Hall R, for the Oral tAlactoferrin in Severe sepsIS study investigators (2015). Talactoferrin in Severe Sepsis: Results from the Phase II/III Oral tAlactoferrin in Severe sepsIS Trial. *Critical Care Medicine*, 43, 1832-1838. [Published] PubMed ID: [26010687](#).
10. Daneman N, Rishu A, Xiong W, Palmay L, Fowler RA on behalf of the BALANCE research program, Hall R (2015). Antimicrobial cost savings associated with shorter duration treatment for bloodstream infections. *Journal of Antimicrobial Chemotherapy (JAC)*. [Letter to the Editor – Published].
11. Higgins KS, Birnie KA, Chambers CT, Wilson AC, Caes L, Clark AJ, Lynch M, Stinson J, Campbell-Yeo M. (2015). Offspring of Parents with Chronic Pain: A Systematic Review and Meta-Analysis of Pain, Health, Psychological, and Family Outcomes. *Pain*, 156(11), 2256-66. PubMed ID: [26172553](#).
12. Cerny V, Abdo I, George RB, Maddison L, Sharawi N, Lehmann C (2015). Analysis of microcirculation measurements by novice users trained by a standardized interactive tutorial: An inter-observer variability study. *Clinical Hemorheology and Microcirculation*, 1-7. PubMed ID: [26444590](#).
13. Tarride J-E, Moulin DE, Lynch M, Clark AJ, Stitt L, Gordon A, Morley-Forster PK, Nathan H, Smyth C, Toth C, Ware MA. (2015). Impact on health-related quality of life and costs of managing chronic neuropathic pain in academic pain centres: Results from a one year prospective observational Canadian study. *Pain Res Manag*. PubMed ID: [26474381](#).
14. Ware MA, Wang T, Shapiro S, Collet JP, Boulanger A, Esdaile JM, Gordon A, Lynch ME, Moulin DE, O'Connell C. (2015). Cannabis for the management of pain assessment of safety study (COMPASS). *Journal of Pain*. DOI: [10.1016/j.jpain.2015.07.014](#).
15. Law JA, Milne AD, Morris IR. (2015). In reply: No reduction in fibreoptic intubation rates with universal video laryngoscopy. *Can J Anaesth.*, 63(1), 114. [Letter to the Editor – Published] PubMed ID: [26424715](#).
16. Munro A, George RB (2015). Chestnut's Obstetric Anesthesia Principles and Practice, Fifth Edition: David H. Chestnut, Cynthia A. Wong, Lawrence C. Tsen, Warwick D. Ngan Kee, Yaakov Beilin, Jill M. Mhyre. Philadelphia: Elsevier Saunders, 2014, 1328 pages, \$324.00. ISBN: 978-1-4557-4866-2. *Canadian Journal of Anesthesia*, 62(9), 1027-8. [Review] PubMed ID: [26429576](#).
17. Moulin DE, Clark AJ, Gordon A, Lynch M, Morley-Forster PK, Nathan H, Smyth C, Toth C, VanDenKerkhof E, Gilani A, Ware M. (2015). Long term outcome of the management of chronic neuropathic pain – a prospective observational study. *J Pain*, 16(9), 852-61. PubMed ID: [26080044](#).
18. Hall R, Turgeon AF (2015). Palliative care in the neurologic ICU – Are we there yet? *Critical Care Medicine*, 43(9), 2033-2034. [Published] PubMed ID: [26274714](#).
19. Rancourt KM, Chorney J, Kain Z (2015). Children's Immediate Postoperative Distress and Mothers' and Fathers' Touch Behaviors. *Journal of Pediatric Psychology*, 40(10), 1115-1123. PubMed ID: [26251440](#).
20. Bailey K, Bird SJ, McGrath PJ, Chorney J (2015). Preparing Parents to be present for the child's anesthesia

- induction: A randomized controlled trial. *Journal of Anesthesia & Analgesia*, 121(4), 1001-1010. PubMed ID: [26237623](#).
21. McKen D., Turner K., Fortier L.P., DeMedicis E., Warriner B., Jones P.M., Chaput A., Pouliot J.F., Galarneau A. (2015). The RECITE study: A Prospective, Multicenter Study of the Incidence and Severity of Residual Neuromuscular Blockade in Canada. *Anesthesia and Analgesia*, 121(2), 366-372. PubMed ID: [25902322](#).
 22. Kiberd MB, Hall RI (2015). Aspirin in the perioperative period: a review of the recent literature. *Curr Opin Anaesthesiol*, 28, 349-355. [Review] PubMed ID: [25887192](#).
 23. Kiberd M, Hall R (2015). Does haloperidol cause delirium? *Crit Care Med*, 43, 1143-1144. [Editorial] PubMed ID: [25876117](#).
 24. Gorodzinsky A, Hong P, Chorney J (2015). Parental Knowledge in Pediatric Otolaryngology Surgical Consultations: A Qualitative Content Analysis. *International Journal of Pediatric Otorhinolaryngology*, 79(7), 1135-1139. PubMed ID: [26027724](#).
 25. Lamb A, Zhang J, Hung O, Flemming B, Mullen T, Bissell M, Arseneau I (2015). Accuracy of identifying the cricothyroid membrane by anesthesia trainees and staff in a Canadian institution. *Canadian Journal of Anesthesia*, 62(5), 495-503. [Published] PubMed ID: [25637060](#).
 26. Krag M, Adams J, Timmins A, Oldner A, Hall R, et al. (2015). Prevalence and outcome of gastrointestinal bleeding and use of acid suppressants in acutely ill adult intensive care patients. *Intensive Care Medicine*, 41, 833-845. DOI: [10.1007/s00134-015-3725-1](#).
 27. Krag M, Perner A, Wettersley J, Wise MP, Borthwick M, Bendel S, McArthur C, Cook D, Nielsen N, Pelosi P, Keus F, Guttormsen AB, Moller AD, Moller MH and the SUP-ICU collaborators, Hall RI (2015). Stress ulcer prophylaxis in the intensive care unit: an international survey of 97 units in 11 countries. *Acta Anaesthesiologica Scandinavica*, 59, 576-585. DOI: [10.1111/aas.12508](#).
 28. Tansley G, Hall R (2015). Pharmacokinetic considerations for drugs administered in the critically ill. Review. *British Journal of Hospital Medicine*, 76(2), 89-94. [Case Report].
 29. Forgeron P, Dick B, Chorney J, Carleson T, Plante E. (2015). To Befriend or Not: Naturally Developing Friendships Amongst a Clinical Group of Adolescents with Chronic Pain. *Pain Management Nursing*, 16(5), 721-732. DOI: [10.1016/j.pmn.2015.04.003](#).
 30. Lehmann C, Islam S, Jarosch S, Zhou J, Hoskin D, Greenshields A, Al-Banna N, Sharawy N, Szczesniak A, Kelly M, Wafa K, Cheliak W, Holbein B (2015). The Utility of Iron Chelators in the Management of Inflammatory Disorders. *Mediators of Inflammation*, 2015. [Review] DOI: [10.1155/2015/516740](#).
 31. Lynch ME (2015). What is the latest in the field of Pain Mechanisms and Management? *Can J Psychiatry*, 60(4), 158-159. [Editorial - Published].
 32. Brooks EA, Unruh A, Lynch ME (2015). Exploring the lived experience of adults using prescription opioids to manage chronic noncancer pain. *J Pain Res Manage*, 20(1), 15-22.
 33. Lynch ME, Ware MA (2015). Cannabinoids for the Treatment of Chronic Non-Cancer Pain: An Updated Systematic Review of Randomized Controlled Trials. *J Neuroimmune Pharmacol*. [Review] PubMed ID: [25796592](#).
 34. Karkouti K, Grocott HP, Hall R, Jessen ME, Kruger C, Lerner AB, MacAdams C, Mazer CD, de Medicis E, Myles P, Ralley F, Rheault MR, Rochon A, Slaughter MS, Sternlicht A, Syed S, Waters T (2015). Interrelationship of preoperative anemia, intraoperative anemia, and red blood cell transfusion as potentially modifiable risk factors for acute kidney injury in cardiac surgery: a historical multicentre cohort study. *Canadian Journal of Anesthesia*, 62(4), 377-384. PubMed ID: [25537735](#).
 35. Munro A, George RB (2015). The Peripartum Anesthesiologist. *Canadian Journal of Anesthesia*, 62(3), 237-240. [Editorial] PubMed ID: [25501492](#).
 36. Lim W, Meade M, Lauzier F, Zarychanski R, Mehta S, Lamontagne F, Dodek P, McIntyre L, Hall R, Heels-Ansdell D, Fowler R, MD7; Pai M, Guyatt G, Crowther MA, Warkentin TE, Devereaux PJ, Walter SD, Muscedere J, Herridge M, Turgeon AF, Geerts W, Finfer S, Jacka M, Berwanger O, Ostermann M, Qushmaq I, Friedrich JO, Cook DJ, for the PROphylaxis for ThromboEmbolism in Critical Care Trial Investigators, the Canadian Critical Care Trials Group, and the Australian and New Zealand Intensive Care Society Clinical Trials Group (2015). Failure of anticoagulant thromboprophylaxis: Risk factors in medical-surgical critically ill patients. *Critical Care Medicine*, 43(2), 401-410. PubMed ID: [25474533](#).
 37. Chorney J, Haworth R, Graham E, Ritchie K, Curran J, Hong P. (2015). Understanding Shared Decision Making in Pediatric Otolaryngology. *Otolaryngology – Head and Neck Surgery*, 152(5), 941-947. PubMed ID: [25795649](#).
 38. Bostick GP, Toth C, Carr EC, Stitt LW, Morley-Forster P, Clark AJ, Lynch M, Gordon A, Nathan H, Smyth C, Ware MA, Moulin DE (2015). Physical functioning and opioid use in patients with neuropathic pain. *Pain Med*. PubMed ID: [25645728](#).
 39. Krustev E, Rioux D, McDougall JJ (2015). Mechanisms and mediators that drive arthritis pain. *Current Osteoporosis Reports*, 13, 216-224. [Published].
 40. Kain ZN, Fortier MA, Chorney J, Mayes L. (2015). Web-based tailored intervention for preparation of parents and children for outpatient surgery (WebTIPS): Development. *Anesth Analg*, 120(4), 905-914. PubMed ID: [25790212](#).
 41. Astapenko D, Jor O, Lehmann C, Cerny V (2015). In situ assessment of the renal microcirculation in mechanically ventilated rats using sidestream dark-field imaging. *Journal of Microscopy*. PubMed ID: [25545609](#).
 42. Thienthong S, Sriraj W, Siripul P, Finley GA, Boonyawat-tanangkool K, Kasetwetin S. A survey of postoperative pediatric pain management among seven hospitals in northeastern Thailand. *Anaesth Pain & Intensive Care* 2014;18:59-71.

Appendix C

Department Organization 2015-2016

Executive Advisory Team

Dr. Romesh Shukla, head/chief (chair)
 Dr. David Milne, managing director, Anesthesia Nova Scotia Inc.
 Dr. Janice Chisholm, program director, residency
 Dr. Narendra Vakharia, medical director, Office of Education
 Dr. Jane Henderson, chair, human resource advisory committee
 Dr. Colin Audain, scheduler
 Dr. Ian Morris, site chief, VG Site
 Dr. J Adam Law, site chief, HI Site
 Marilyn Girouard, executive director, ex-officio
 Dr. Blaine Kent, chief, cardiac anesthesia, member-at-large
 Carl Stevens, administrator, ex-officio
 Dr. Orlando Hung, medical director, Office of Research
 Dr. André Bernard, medical director, preadmission clinics

Clinical Advisory Committee (Central Zone, Nova Scotia Health Authority)

Dr. Gregory Dobson, medical director, quality assurance/patient safety (chair)
 Dr. Andrew Milne, associate medical director, quality assurance/patient safety
 Dr. Adam Law, site chief, HI site
 Dr. Ian Morris, site chief, VG site
 Dr. Andre Bernard, medical director, preadmission clinics
 Dr. Romesh Shukla, head/chief (ex officio)
 Dr. Scott Drysdale, subspecialty chief, pediatric anesthesia
 Dr. Robert Paterson, site chief, Dartmouth General Hospital
 Dr. Rob Nunn, subspecialty chief, women's & obstetric anesthesia

Dalhousie Department Site Chiefs Committee

Dr. Romesh Shukla, head/chief (chair)
 Dr. Ian Morris, site chief, VG site
 Marilyn Girouard, executive director
 Carl Stevens, administrator
 Dr. J Adam Law, site chief, HI site
 Dr. Orlando Hung, medical director, Office of Research
 Dr. Robert Nunn, IWK, women's & obstetric anesthesia
 Dr. Robert Paterson, Dartmouth General Hospital
 Dr. Scott Drysdale, IWK, pediatric anesthesia
 Dr. Alison Kelland, Hants Community Hospital
 Dr. Janice Chisholm, medical director, postgraduate education
 Dr. John Chisholm, Saint John Regional Hospital

Subspecialty and Generalists Chiefs Committee

Dr. George Kanellakos (thoracic)
 Marilyn Girouard (admin)
 Dr. Scott Drysdale (pediatric)
 Carl Stevens (admin)
 Dr. Blaine Kent (cardiac)
 Dr. Carlo Mariotti (neuro)
 Dr. Robert Nunn (women's & obstetrics)
 Dr. Ian Beauprie (chronic pain)
 Dr. Kwesi Kwofie (peripheral nerve block/acute pain)
 Dr. Kirk MacQuarrie (liver transplant)

Anesthesia Research Advisory Committee

Dr. Orlando Hung, medical director, Office of Research (co-chair)
 Dr. Ronald George, associate medical director, Office of Research (co-chair)
 Heather Butler, PhD, managing director, Office of Research
 Jill Chorney, PhD
 Jason McDougall, PhD
 Marilyn Girouard, executive director
 Polly Moores, administrative assistant

Education Operational Committee

Laura Harris Buffett, managing director, Office of Education (chair)
 Dr. Janice Chisholm, program director, residency
 Dr. Bruce Macaulay, medical director, continuing professional development
 Dr. Patricia Livingston, medical director, global health
 Dr. Jane Henderson, medical director, fellowships
 Dr. David MacDonald, chief resident
 Dr. Ben Schelew, medical director, undergraduate education
 Dr. Narendra Vakharia, medical director, education and simulation
 Cyndi Lushman, academic coordinator
 Marilyn Girouard, executive director
 Dr. Robyn Doucet, associate program director, residency
 Dr. Dolores McKeen, member at large
 Dr. Tristan Dumbarton, associate chief resident
 Jessie Dowell-Gullison, education coordinator
 Megan Chipp, global health coordinator
 Elise Sammons, department coordinator

Appendix D

Faculty roles, academic outreach and scholarship

Colin Audain

Assistant Professor

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine

- Member, Executive Advisory Council
- Member, Fellowship Committee
- Co-Chair, Vacation Policy Subcommittee

Ian Beauprie

Associate Professor

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine

- Member, Education Advisory Committee
- Member, Education Operations Committee
- Member, Residency Selection Committee
- Anesthesiology

Presentations, Seminars, Workshops, Lectures:

- Challenges in procedural sedation, Ottawa, ON*
- implantable therapies: spinal cord stimulation, Vancouver BC*
- Non-operative Interventional Treatment for the Spine: complications, Halifax, NS*

Stephen Beed

Professor

Program Director Critical Care Medicine - Adult

Committee Memberships:

- Member, AFP Performance Management Committee
- Co-Chair, Bioethics In The ICU
- Co-Chair, Canadian Council For Donation And Transplantation; Medical Management To Optimize Donor Organ Potential
- Chair, Critical Care Finance Committee
- Chair, Deceased Donation Advisory Committee (CBS)
- Chair, Donation After Cardiocirculatory Death (DCD)
- Member, ICU Management Committee
- Member, Lifelight Medical Advisory Committee
- Co-Chair, Medical Director For The Legacy Of Life: Nova Scotia Organ And Tissue Program
- Member, Multi Organ Transplant Program
- Member, Organ Donation Collaborative (ODC)
- Sponsored By CCDT
- Member, Perioperative Blood Management Program
- Member, Provincial Advisory Committee Nova Scotia Blood Coordinating Program
- Member, Transfusion Medicine Advisory Group, Canadian Blood Services
- Co-Chair, Organ Donation And Transplantation Expert Advisory Committee
- Member, Postgraduate Medical Education Committee, Dalhousie University
- Member, Promotions Committee, Critical Care

Chair, ICU/Trauma Block, Dalhousie University

Co-Chair, Canadian Council Donation Transplantation

Christopher Berger

Assistant Professor

André Bernard

Assistant Professor

Pre Anesthetic Clinic Medical Director

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine

- Member, ANSI Board Of Directors
- Member, Applause Recognition Committee
- Member, Executive Advisory Team Cdha
- Nova Scotia Health Authority
- Member, Drugs And Therapeutics Committee
- Member, Preadmission Clinic Pharmacy Tech Interdisciplinary Task Group

Sally Bird

Assistant Professor

Associate Chief of Pediatric Anesthesia

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine

- Member, Residency Curriculum Renewal Committee
- Member, Residency Program Committee
- IWK Health Centre*
- Chair, Procedural Sedation Committee
- Member, Children's Health Program Perioperative Committee
- Member, Operating Room Executive Committee

John Blake

Associate Professor

Prasad Bolleddula

Associate Professor

David Bond

Assistant Professor

Shannon Bradley

Assistant Professor

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine

- Member, Global Health Advisory Committee
- Member, Residency Curriculum Renewal Committee
- Member, Residency Program Committee

Vladimir Cerny

Professor

Christine Chambers

Professor

Janice Chisholm

Associate Professor

Program Director, Postgraduate Medical Education

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine

- Co-Chair, Curriculum Planning Committee
- Member, Site Chiefs Committee
- Member, ANSI Board of Directors
- Member, Fellowship Committee
- Chair, Residency Program Committee
- Member, Executive Advisory Council
- Member, Continuing Professional Development Committee
- Member, Education Advisory Committee
- Member, Education Operational Committee

Nova Scotia Health Authority/Dalhousie University

- Member, District Resuscitation Committee
- Member, Rapid Response Escalation Protocol Working Group
- Member, Simulation Operational Advisory Committee (previously Simulation Clinical Leads Committee)
- Member, Simulation Reno Advisory Group

Dalhousie Department of Critical Care

- Member, Education Committee
- Member, Residency Program Committee
- Member, Practice Plan Committee
- Chair, Critical Care Simulation Committee

Dalhousie Department of Pathology – Transfusion Medicine

- Member, Residency Program Committee

Dalhousie Faculty of Health Sciences

- Member, Respiratory Therapy Education Committee

Dalhousie University Faculty of Medicine

- Member, PGME Internal Review Committee
- Member, Competency Based Education Working Group

Royal College of Physicians and Surgeons of Canada

- Member, ACES Curriculum Review Steering Committee
- Corresponding Member, Anesthesia Specialty Committee
- Member, National ACES(Acute Critical Events Simulation) Planning Committee
- Member, Program Director's National Advisory Committee

Association Of Canadian University Departments Of Anesthesia

- Chair, Postgraduate Education Committee

Presentations, Seminars, Workshops, Lectures:

- Competency Based Medical Education – Coming Soon to a University Near You!, UBC Department of Anesthesiology, Vancouver, BC*
- Competency Based Medical Education – Making It Work For You!, UBC Department of Anesthesiology, Vancouver, BC*

National Acute Critical Events Simulation(ACES),
Royal College of Physicians and Surgeons of
Canada, Edmonton, Alberta
Tri Nation Alliance Entrustable Professional
Activities Workshop, Tri Nation Alliance RCPSC,
Sydney, Australia

Kenneth Chisholm

Associate Professor

Committee Memberships:

Department of Anesthesia, Pain Management &
Perioperative Medicine
Member, Credentials Committee
Member, Promotions Committee
Member, National Chronic Non Cancer Pain
Education Committee

Jill Chorney

Associate Professor

Committee Memberships:

Member, Behavior Change Institute
Member, International Forum On Pediatric Pain
Organizing Committee
Member, IWK Research Ethics Board
Member, Perioperative Care Steering Committee

Presentations, Seminars, Workshops, Lectures:

Postoperative Recovery following Spinal
Correction: Home Experiences (PORSCHÉ),
Halifax
Psychosocial Factors and Postoperative Pain over
Time., Seattle, WA
Worry, Fear, and Phobia: A cross-contextual
approach to child fear and anticipatory Distress to
Painful Medical Procedures, Charlottetown, PE

A. John Clark

Professor

Committee Memberships:

Department of Anesthesia, Pain Management &
Perioperative Medicine
Member, Research Operational Committee
Dalhousie University
Co-Chair, Dalhousie Pain Group Working Group
Co-Chair, Dalhousie University Pain Chair Planning
Group
Canadian Consortium For The Investigation Of
Cannabinoids
Past President
Member, Canadian Consortium For The
Investigation Of Cannabinoids In Human
Therapeutics
Member, Cannabinoid Research Network Atlantic
Canadian Pain Society
Co-Chair, National Task Force On Service Delivery
Member, SIG On Neuropathic Pain
College of physicians and Surgeons of Nova Scotia
Member, Investigation Committee D
Member, Investigations Committee A
Nova Scotia Department of Health and Wellness
Member, Clinical Advisory Group, Drug Information
System Program
Member, Canadian Pain Trials Network
Other
Member, Organizing Committee, Annual Atlantic
Provinces Interdisciplinary Pain Conference
Member, Student Travel Award/Student Research
Grant

Presentations, Seminars, Workshops, Lectures:

Central triage and improving the consultation
process for patients with chronic pain,
Charlottetown, PEI

Thomas Coonan

Professor

Global Outreach Course Director

Committee Memberships:

Member, Ethics Committee Canadian
Anesthesiologists Society

Ruth (Caroline) Covert

Associate Professor

Committee Memberships:

Department of Anesthesia, Pain Management &
Perioperative Medicine
Member, Curriculum Renewal Committee

Catherine Delbridge

Assistant Professor

Committee Memberships:

Department of Anesthesia, Pain Management &
Perioperative Medicine
Member, Curriculum Committee
Member, Dalhousie Competence By Design
Residency Curriculum Development Program.

Hugh (James) Devitt

Professor

Claudio Diquinzio

Assistant Professor

Committee Memberships:

Department of Anesthesia, Pain Management &
Perioperative Medicine
Member, Board Of Directors

Gregory Dobson

Assistant Professor

Director, Quality & Patient Safety

Robyn Doucet

Assistant Professor

Committee Memberships:

Department of Anesthesia, Pain Management &
Perioperative Medicine
Member, Curriculum Renewal Committee
Member, Education Operation Committee
Member, Residency Program Committee

Presentations, Seminars, Workshops, Lectures:

Panel on Common Oral Exam Problems, Toronto,
ON
Panel on Common Oral Exam Problems, Making a
Mark Resident Review Course, Toronto, ON

Pavlovic Dragan

Professor

Dennis Drapeau

Assistant Professor

Committee Memberships:

Department of Anesthesia, Pain Management &
Perioperative Medicine
Member, Canadian Anesthesiology Society
Website Committee
Member, Perioperative Anesthesia Clinical Trials
Group
Member, IM Steering Committee

Member, IT/IM Project Evaluation Committee

Scott Drysdale

Assistant Professor

Chief of Pediatric Anesthesia

Committee Memberships:

Member, Dalhousie University Department Site
Chiefs Committee
Co-Chair, IWK Cardiac Arrest Committee
Member, Peer Support Group Member

Volker Eichhorn

Assistant Professor

Committee Memberships:

Member, Faculty Promotion Committee,
Department of Anesthesia, Pain Management &
Perioperative Medicine
Chair, Critical Care Quality And Patient Safety
Committee

George Ferrier

Assistant Professor

Allen Finley

Professor

Medical Director, Pediatric Pain Service

Committee Memberships:

Member, Canadian Pain Society Media Advisory
Member, IASP Special Interest Group On Pain In
Childhood
Member, Society For Pediatric Anesthesia:
Committee For International Education & Service
Member, World Health Organization Expanded
Review Panel Guidelines For The Pharmacological
Treatment Of Acute Pain
Chair, Developing Countries Working Group,
International Association for the Study of Pain
Member, Global Initiative For Emergency And
Essential Surgical Care, World Health Organization

Presentations, Seminars, Workshops, Lectures:

'All my joints hurt and people think I'm crazy!' —
Pain and hypermobility in young people,
Charlottetown, PEI
'All my joints hurt and people think I'm crazy!' Pain
and hypermobility in children and adolescents,
Toronto, ON
'But Doctor, it still hurts!' Recognition and belief in
pediatric chronic pain, Geneva, Geneva
Capacity Building in Healthcare: Cross-Cultural
Perspectives of Pain Assessment and Management,
Charlottetown, PEI
Chronic pain in children, Montreux, Switzerland
Chronic pain in children – Going beyond
medications, Kuala Lumpur, Malaysia
Implementing institutional change, 8th Annual
Pediatric Pain Master Class, Children's Hospital of
Minneapolis, Minneapolis, MN, USA
Reducing unnecessary pain in pediatrics, Kuala
Lumpur, Malaysia
The ChildKind International Initiative – An
Organizational Accreditation Process for Pain
Prevention and Management, Charlottetown, PEI
Visceral pain in children, 8th Annual Pediatric Pain
Master Class, Children's Hospital of Minneapolis,
Minneapolis, MN, USA

Paula Forgeron

Associate Professor



John Fraser
Assistant Professor

Susan Galgay
Assistant Professor

William Gallacher
Professor

Committee Memberships:

Member, Critical Care Simulation Committee
Member, Discipline Committee Department of Medicine

Ronald George

Associate Professor
Associate Medical Director of Research

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine

Member, Research Fund Committee
Member, Pain Scientific Advisory Committee
Co-Chair, Research Advisory Committee
Member, Continuing Professional Development Committee
Member, Fellowship Advisory Committee
Co-Chair, Global Outreach Steering Committee
Member, Research Operations Committee
Member, Residency Program Committee
Chair, Research Performance Target Committee
Member, Resident Evaluation Sub Committee
Member, Resident Selection Committee
Member, Phase I Endowed Pain Chair Steering Committee

Dalhousie Faculty of Medicine

Co-Chair, Research Advisory Committee
Member, Fellowship Educational Advisory Committee (FEAC)
Member, Dalhousie Institute For The Study Of Pain Steering Committee
Member, RIM Unit Curriculum and Administration Working Group
Chair, RIM Unit Governance Committee
Member, RIM Unit Research Working Group

Canadian Anesthesiologists' Society

Member, Annual Meeting Organizing Committee
Member, Annual Meeting Scientific Affairs Sub Committee
Chair, Obstetric Section
Co-Chair, OB Section Steering Committee on National Obstetric Anesthesia Guidelines

IWK Health Centre

Member, Drugs & Therapeutics Committee
Member, Maternal Fetal Medicine Search Committee
Member, Research Ethics Board

Perioperative Anesthesia Clinical Trials

Member, Steering Committee

Society for Obstetric Anesthesia and Perinatology

Member, SOAP/Kybele International Outreach Grant Review Committee
Member, International Outreach Committee

World Federation of Societies of Anaesthesiologists

Member, Obstetric Anaesthesia Committee,

Presentations, Seminars, Workshops, Lectures:

Modern epidural delivery techniques in obstetrics, Pilsen, Czech Republic
Neuraxial Anesthesia, Making a Mark, Toronto, ON
Prevalence and Predictors of Chronic Pain in Childbirth, Colorado Springs, Colorado

Quality in Anesthesia, Pilsen, Czech Republic

Timothy Godkin

Assistant Professor

Allison Gray

Assistant Professor

Committee Memberships:

Member, Canadian Pediatric Anaesthesia Society

Robert Green

Professor

Committee Memberships:

Nova Scotia Health Authority

Member, Credentials Committee
Member, Research Ethics Board
Member, QEII Intensive Care Unit/Infectious Disease Joint Initiative

Department of Critical Care

Member, Pharmacy Liaison Committee
Member, Pharmacy Recruitment Committee
Member, Physiotherapy Liaison Committee
Chair, Recruitment Committee
Member, Research Committee

Other

Member, Emergency Medicine Royal College Training Committee
Member, Research Operational Committee
Member, Royal College Of Physicians And Surgeons Of Canada Critical Care Medicine Examination Committee
Member, Accreditation Canada Trauma Service Advisory Committee
Co-Chair, Canadian Association Of Emergency Physicians

Marie-Claude Gregoire

Assistant Professor

Thomas Hackmann

Assistant Professor

Richard Hall

Professor

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine

Member, Research Operational Committee

Department of Critical Care

Chair, Research Committee
Member, Residency Training Committee
Member, Research Policy And Planning Committee Critical Care Medicine

Nova Scotia Health Authority

Past chair, Research Ethics Board
Member, ICU Management Committee
Member, ICU Recruitment Committee

Canadian Critical Care Trials Group

Member, Nucleus Committee for Clinical Pharmacology
Executive Member

Royal College of Physicians and Surgeons of Canada (RCPSC)

Member, Examination Board For Clinical Pharmacology
Member, Specialty Training Committee For Clinical Pharmacology And Toxicology

TechValue Net Scientific Review Committee, CIHR Centre for Clinical Excellence

Member, Board of Directors
Chair, Scientific Review Committee
Member, Research Management Committee
Member, Nova Scotia Drugs And Therapeutics Committee

Other

Member, Canadian Drug Expert Committee
Chair, Canadian Perioperative Anesthesia Clinical Trials (PACT)
Member, Board of Directors, Society of Cardiovascular Anesthesiologists Foundation
Member, Human Drug Advisory Panel (HDAP), The Patented Medicine Prices Review Board (PMPRB)

Javeria Hashmi

Assistant Professor

Presentations, Seminars, Workshops, Lectures:

Brain network properties predict individual variability in analgesia related to psychological aspects of treatment in chronic pain patients., Nice, France

Jane Henderson

Associate Professor

Medical Director – Fellowship Program

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine

Member, Executive Advisory Council
Chair, Human Resources Subcommittee Chair
Ex-Officio, ANSI Board Of Directors

Nova Scotia Health Authority

Member, Formulary Subcommittee
Member, Central Zone District Drugs And Therapeutics Committee

Ayman Hendy

Assistant Professor

Orlando Hung

Professor

Medical Director of Research

Presentations, Seminars, Workshops, Lectures:

Airway management in the IV sedated patient., Washington, DC
Basic and Advance Adult Fiberoptic Intubation Workshops, San Diego, CA
Invasive airway techniques., Toronto, Ontario
IV sedation of the special needs patient., Washington, DC
The challenges of video-laryngoscopes., San Diego, CA

David Imrie

Professor

Andrew Jarvie

Assistant Professor

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine

Member, Fellowship Committee

Nova Scotia Health Authority

Chair, Central Zone District Resuscitation Committee
Co-Chair, Research Ethics Board
Member, Regional Block Program Steering Committee

Kristine Johnson

Assistant Professor

Committee Memberships:

Member, Perioperative Echocardiography Group,
Nova Scotia Health Authority

Liane Johnson

Associate Professor

George Kanellakos

Assistant Professor

Presentations, Seminars, Workshops, Lectures:

Paravertebral Blocks, Society of Cardiovascular
Anesthesiologists, Washington, DC, USA

Alison Kelland

Assistant Professor

Committee Memberships:

*Department of Anesthesia, Pain Management &
Perioperative Medicine*

Member, Clinical Advisory Committee
Member, Site Chiefs Committee

Other

Member, Chronic Pain Services Leadership
Committee, Nova Scotia Health Authority
Member, Hants Community Hospital Operating
Room Committee

Melanie Kelly

Professor

Blaine Kent

Associate Professor

Committee Memberships:

Nova Scotia Health Authority

Member, Blood Transfusion Committee
Chair, Governance Committee
Co-Chair, Perioperative Blood Conservation
Committee
Member, Provincial Blood Contingency Working
Group
Member, Provincial Massive Transfusion Working
Group

Other

Chair, PBMP American Association Of Blood
Banks Accreditation Working Group
Member, Residency Training Committee, Division
of Hematology and Laboratory Medicine

Hartmut Kern

Professor Research

Andrei Khorovets

Associate Professor

Tracy Kok

Assistant Professor

Committee Memberships:

*Department of Anesthesia, Pain Management &
Perioperative Medicine*

Member, ANSI Board Of Directors
Member, Residency Curriculum Renewal
Committee
Member, Residency Program Committee

Other

Member, Dalhousie Medicine Admissions
Committee, Dalhousie University Faculty of
Medicine

Paula Kolysher

Assistant Professor

George Kovacs

Professor

Sutthirak Kuruhongsa

Lecturer

Myron Kwapisz

Associate Professor

Committee Memberships:

Nova Scotia Health Authority

Member, Cardiac Surgery Quality Committee
Member, Perioperative Blood Management
Program Scientific Advisory Committee

Presentations, Seminars, Workshops, Lectures:

*Debate: FFP versus Factor Concentrates in initial
trauma resuscitation*, Halifax, NS
Fibrinogen and Friends: The Halifax Experience,
Halifax, Nova Scotia, Canada

M. Kwesi Kwofie

Assistant Professor

Committee Memberships:

Member, Research Ethics Board, Nova Scotia
Health Authority

Presentations, Seminars, Workshops, Lectures:

"Optimizing Analgesia for Knee Arthroplasty"
(Lecture), Vancouver, BC
Adductor Canal Block for Knee Surgery (Lecture),
Cartagena, Columbia
*Advanced Ultrasound-guided Upper Limb Nerve
Blocks*, Ottawa, Ontario
Distal Peripheral Nerve Blocks for the Upper Limb
(Lecture), Cartagena, Columbia
Neuraxial US Guided Regional Anesthesia WS
(Live Group Demonstration and Workshop),
Vancouver, BC
*Novel Educational Strategies - Teaching Regional
Anesthesia in 2015* (Lecture), Vancouver, BC
*Techniques for Ultrasound Guided Paravertebral
and Intercostal Nerve Blocks* (Live Group
Demonstration and Workshop), Vancouver, BC
*Techniques for Ultrasound Guided Peripheral
Nerve Blocks* (Live Group Demonstration and
Workshop), Cartagena, Columbia
Ultrasound Guided Regional Anesthesia Workshop
(Course Co-director/Speaker), Vancouver, BC
Ultrasound Guided Vascular Access Workshop
(Coordinator and Instructor), Blood and Beyond
Conference, Halifax, Nova Scotia
Update in Regional Anesthesia Adjuvants
(Lecture), Cartagena, Columbia

Gordon Launcelott

Associate Professor

J Adam Law

Professor

Site Chief, Halifax Infirmary

Presentations, Seminars, Workshops, Lectures:

Advanced Fiberoptic Techniques, Auckland, New
Zealand
ANZCA Annual Scientific Meeting 2016, Auckland,
New Zealand
Awake tracheal intubation, New York City, NY,
USA
Difficult Airway Management: Best Evidence,
Niagara Falls, ON
*Flexible endoscopy with and without SGDs as a
conduit*, New York City, NY, USA

*How I approach tricky airways using an evidence-
based approach*, Auckland, New Zealand
*When difficulty is predicted: deciding how to
proceed*, Washington, DC, USA

Christian Lehmann

Professor

Committee Memberships:

Dalhousie University Faculty of Medicine

Member, Psychiatry Review And Search Committee
Member, Research Operational Committee

Other

Member, Clinical Advisory Committee, Nova Scotia
Health Authority
Member, Anesthesia Research Advisory
Committee, Canadian Anesthesiologists' Society
Member, Anesthesia Research Advisory Committee,
European Society of Clinical Hemorheology and
Microcirculation
Member, Research Advisory Committee, German
Sepsis Society
Member, Anesthesia Research Advisory
Committee, German Society for Microcirculation
and Vascular Biology

Presentations, Seminars, Workshops, Lectures:

*Microcirculation in the Lab – What You Sees What
You Get*, Pisa, Italy

Sharon Litz

Assistant Professor

Committee Memberships:

IWK Health Centre

Member, ICU Operations Committee
Member, Medical Staff Executive
Member, Perioperative Care Committee
Member, Perioperative Care Morbidity Committee

Patricia Livingston

Associate Professor

Medical Director – Global Health

Committee Memberships:

*Department of Anesthesia, Pain Management &
Perioperative Medicine*

Co-Chair, Curriculum Renewal Committee
Co-Chair, Fellowship Committee

Other

Vice-Chair, Board Of Directors, Canadian
Anesthesiologists' Society International Education
Foundation (CASIEF)

Konstantin Lorenz

Assistant Professor

Committee Memberships:

*Department of Anesthesia, Pain Management &
Perioperative Medicine*

Member, Peer Support Program
Member, Promotion Committee

Mary Lynch

Professor

Committee Memberships:

*Department of Anesthesia, Pain Management &
Perioperative Medicine*

Member, Scientific Program Committee

Nova Scotia Health Authority

Member, Pain Services Leadership Committee
Co-Chair, Committee To Develop Youth Pain
Management Service
Member, Medical Marihuana Policy Committee

Canadian Pain Society

Chair, Communications Committee
Co-Chair, National Pain Strategy Initiative

Other

Chair, Organizing Committee, Annual Atlantic Provinces Inter-professional Pain Conference
Member, Medical Cannabis Advisory Committee, Canadian Arthritis Society
President, Board Of Management, St. Paul's Home

Presentations, Seminars, Workshops, Lectures:

Cannabinooids in Clinical Pain Management – the Canadian experience, Brisbane, Australia
The efficacy of cannabinoids for the treatment of chronic pain., Charlottetown, PEI
The Opioid Wars – addressing the collateral damage, Brisbane, Australia
The role of cannabinoids in chronic pain: An update., Wolfville, Nova Scotia

Bruce Macaulay

Assistant Professor
Medical Director – Continuing Professional Development

Committee Memberships:

Member, Canadian Anaesthetists' Society Council
Member, Nova Scotia Medical Society

Peter MacDougall

Professor

Committee Memberships:

Member, NATIONAL FACULTY WORKING GROUP #6 Guideline Impact Evaluation
Member, National Pain Centre Working Group #6 Guideline Impact Evaluation
Member, NATIONAL WORKING GROUP #3 Knowledge Translation To Physicians And Pharmacists
Member, Prescriber Review Committee
Canadian Anesthesiologists' Society
Chair, CAS Annual Meeting Working Group
Chair, CAS CEPD Committee
Chair, Continuing Professional Development Committee

CPSNS

Member, Methadone Maintenance Support Program CPSNS

Dalhousie University

Member, Department Of Anesthesia Education Operation Committee

Federal Department of Health

Member, First Do No Harm

Rochelle MacLellan

Assistant Professor

Committee Memberships:

Member, Curriculum Renewal Committee

Brian MacManus

Assistant Professor

Kirk MacQuarrie

Associate Professor

Committee Memberships:

Member, ANSI Board Of Directors
Member, Practice Plan Review Committee

Carlo Mariotti

Assistant Professor

Jason McDougall

Professor

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine

Member, Research Advisory Committee
Member, Research Operations Committee
Chair, Anesthesia Research Fund Project Evaluation Committee

Department of Pharmacology

Member, Departmental Health And Safety Committee
Member, Awards Committee
Member, Departmental Appointments Committee

Canadian Institutes of Health Research

Member, CIHR Operating Grant Committee Clinical Investigation B
Chair, CIHR Foundation Scheme (Virtual Chair)

Other

Member, Canadian Pain Society Trainee Awards (Panelist) Grant Reviewing Committee
Member, Dalhousie Pain Institute Steering Committee
Member, Scientific Committee, Arthritis Alliance of Canada
Member, Committee On Use Of Marihuana For Medical Purposes By Healthcare Professionals, Health Canada
President, Inflammation Research Network Of Canada
Chair, Scientific Advisory Committee, The Arthritis Society

Presentations, Seminars, Workshops, Lectures:

Early intervention using URB597 to reduce joint inflammation can alleviate end stage osteoarthritis pain in mice., Bukovina, Poland
Identification of a biomarker for neuropathic osteoarthritis pain., Taormina, Sicily
Ion channels in inflammation., 12th World Congress of Inflammation, Boston, Massachusetts
Mechanisms that drive joint pain., 45th International Sun Valley Workshop: Musculoskeletal Biology, Sun Valley, Idaho
Neurophysiological Evidence Of A Neuropathic Component Of Osteoarthritis Pain, Charlottetown, PEI, Canada
Overview of current targets and future pharmacotherapies for the treatment of osteoarthritis pain, International Workshop: Bridging the Gaps between Pain Research and Osteoarthritis Research, Stockholm, Sweden
Pain and the nervous joint., Rosemont, Illinois
Pain Signalling by Proteolytic Enzymes, Charlottetown, PEI, Canada
Towards better animal models of OA with higher translational value., World Congress on Osteoarthritis, Seattle, Washington

Dolores McKeen

Professor

Associate Program Director – Postgraduate

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine

Member, ANSI Board Of Directors
Chair, Academic Promotions Committee
Member, Resident Selection Committee
Member, Research Fund Committee
Chair, Applause Recognition Committee

Member, Education Operational Committee
Member, CAS Scientific Affairs Sub Committee
Vice Chair, Research Advisory Committee
Member, Fear Memorial Conference Planning Committee
Member, Research Operational Committee
Member, Residency Curriculum Renewal Committee
Co-Chair, Residency Program Committee
Co-Chair, Resident Research Evaluation Committee (RREC)
Member, Resident Research Evaluation Committee (RREC)
Member, Postgraduate Education Committee

Other

Member, Canadian Anesthesia Research Foundation Board Of Trustees
Member, Canadian Anesthesiologists' Society Obstetric Section
Member, Generalist Physician Search Committee, Department of Obstetrics and Gynaecology, Dalhousie University
Member, Women's And Newborn Morbidity And Mortality Peer Review Committee, IWK Health Centre
Chair, TRAIN Anesthesiology Education Program Scientific Committee, LiV Medical Communications and Training Agency

Presentations, Seminars, Workshops, Lectures:

Improving Patient Outcomes: Spinal Induced Hypotension during Cesarean Delivery Translating Research and Implementation, Montreal, QC
TRAIN: Transforming the prevention or Residual neuromuscular blockade in Anesthesia and Interdisciplinary practice using New strategies., Train the Trainer Presentation – LiV Medical Communication & Training Agency, Vancouver, BC
TRAIN: Transforming the prevention or Residual neuromuscular blockade in Anesthesia and Interdisciplinary practice using New strategies., Train the Trainer Presentation – LiV Medical Communication & Training Agency, Toronto, ON
Update on Residual Neuromuscular Blockade, Perioperative Patient Management: Novel Strategies for Enhanced Recovery Meeting, Merck Canada Inc., Toronto, ON

Genevieve McKinnon

Assistant Professor

Andrew Milne

Associate Professor

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine
Chair, Department Equipment Committee
Member, Clinical Advisory Committee

Other

Member, District Perioperative Quality And Patient Safety Team, Nova Scotia Health Authority
Member, Canadian Anesthesia Society Research Advisory Committee

David Milne

Assistant Professor

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine
Member, Anesthesia Nova Scotia Inc.

Chair, Governance Committee
Doctors Nova Scotia
 Member, Board Of Directors
 Chair, Governance Committee
 Chair, Nomination Committee
 Member, Policy And Health Issues Committee

Other

Member, MSI Physician's Manual Review
 Member, CMA Health Care Transformation Working Group
 Member, Health Services Delivery, Nova Scotia
 Department of Health & Wellness

Josef Mir

Assistant Professor

Ian Morris

Professor
 Site Chief VGH

Committee Memberships:

Nova Scotia Health Authority

Member, Acute Pain Management Committee
 Member, OR Utilization Committee
 Member, Specialty Training Committee
 Chair, OR Committee
 Member, CAFPDH Committee
 Member, OR Finance Committee
 Chair, OR Executive Meeting

Presentations, Seminars, Workshops, Lectures:

The Difficult Airway Course: Anesthesia, Las Vegas, NV, Las Vegas, NV, USA
The Difficult Airway Course: Anesthesia, St. Louis, MO, St. Louis, MO, USA
The Difficult Airway Course: Anesthesia, San Diego, CA, San Diego, CA, USA
The Difficult Airway Course: Anesthesia, Washington, DC, Washington, DC, USA
The Difficult Airway Course: Anesthesia, Orlando, FL, Orlando, FL, USA
The Difficult Airway Course: Anesthesia, Boston, MA, Boston, MA, USA
The Difficult Airway Course: FOB and VL Management of Failed Airway, Anesthesia SIGMA Group, Las Angeles, CA, USA
The Difficult Airway Course: Lung Separation Workshop, Anesthesia SIGMA Group, Las Angeles, CA

Dagmar Moulton

Assistant Professor

Committee Memberships:

Member, Cardiac Sciences Program Steering Committee, IWK Health Centre

John Muir

Professor

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine

Member, Selection Committee, Anesthesia
 Residency Program

IWK Health Centre

Member, Children's Acute And Emergency Care Operations Committee
 Member, OR Committee
 Member, OR Master Sub Committee
 Member, Capital Equipment Requests Admin/Support Committee
 Member, Capital Equipment Requests Computer Equipment Committee

Karim Mukhida

Assistant Professor

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine

Member, Anesthesia Research Fund Project Evaluation Committee

Member, Atlantic Pain Conference Organizing Committee

Member, CaRMs Selection Committee

Member, Dalhousie Pain Group Steering Committee

Co-Chair, Module Co Leader (with Dr. P.

Livingston) Pain Management Block (chronic Pain), Anesthesia Residency Program Competency Based Curriculum

Member, Research Operational Committee

Other

Member, Senate Faculty Of Medicine Representative, Dalhousie University

Member, Faculty Council, Dalhousie University

Faculty of Medicine

Physician Examiner, Qualifying Examination Part II, National Assessment Collaboration, Medical Council of Canada

Member, Board of Trustees, Professional

Association of Residents of the Maritime Provinces

Presentations, Seminars, Workshops, Lectures:

Improving anesthesia safety: the role of simulation, Rwanda Medical and Dental Council / Rwanda

Allied Health Professions Council / Rwanda

National Pharmacy Council, Kigali, Rwanda

Neurosurgery and Pain, Department of Neuro-

surgery, King Faisal Hospital, Kigali, Rwanda

Tim Mullen

Assistant Professor

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine

Member, Fellowship Advisory Committee

Victor Neira

Assistant Professor

Johnson Ngan

Associate Professor

Committee Memberships:

Member, ASPENS Action Group

Robert Nunn

Associate Professor

Chief, Women's and Obstetric Anesthesia

Committee Memberships:

IWK Health Centre

Member, Adult Surgery O.R. Committee

Member, Childbirth Care Team Committee

Member, Medical Advisory Committee

Member, Women's and Newborn Health Program

Ops Committee

Member, Women's and Newborn Mortality Review

Committee

Other

Member, Dalhousie University Medical AFP

Secretariat

Robert Paterson

Site Chief – Dartmouth General

David Petrie

Professor

Fiona Roper

Assistant Professor

Committee Memberships:

Chair, ASPENS Action Group

Jana Sawynok

Professor

Matthias Scheffler

Assistant Professor

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine

Member, Continuing Professional Development Committee

Ben Schelew

Assistant Professor

Medical Director – Undergraduate

Michael Schmidt

Professor

Presentations, Seminars, Workshops, Lectures:

Argon post-surgical treatment delays axotomy-induced apoptosis in mouse retinal ganglion cells.

Romesh Shukla

Professor

Head & Chief

Committee Memberships:

Member, Academic Funding Plan Board

Chair, AFP Department Heads Committee

Member, Canadian Anaesthetists' Society Council

Member, Dalhousie University Senate

Member, QEII Foundation Board of Trustees

Member, Quality Council Of DMAC

Member, Association of Canadian University

Departments of Anesthesia

Member, Nominating Committee, Doctors Nova

Scotia

Member, Provincial Peri Operative Committee,

Nova Scotia Health Authority

Co-Chair, Thomas Fear And Alice Morgans Fear

Family Memorial Education Conference, Dalhousie

Faculty of Medicine

Matthew Simms

Assistant Professor

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine

Member, Continuing Professional Development

Committee

Co-Chair, CPD Professional Day

Member, Residency Admissions Committee

Member, Promotions and Reappointment

Committee

Other

Treasurer, Nova Scotia Anesthesia Society

Ana Sjaus

Assistant Professor

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine

Member, Continuing Professional Development Committee
 Member, Residency Program Committee
 Member, Tenure And Promotion Committee

Christian Soder

Associate Professor

Committee Memberships:

IWK Health Centre

Member, Bylaws Revision Committee
 Member, Medical Advisory Committee
 Member, Intensive Care Committee
 Member, STARS Air Medical Executive

Other

Member, VG School Of Respiratory Therapy Advisory Committee

Parvinder Sodhi

Assistant Professor (FRCPC or FRCPC or equiv)

Sarah Stevens

Assistant Professor

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine

Member, Faculty Promotion Committee
 Member, Fellowship Advisory Committee

IWK Health Centre

Co-Chair, Perioperative Patient Safety Committee
 Co-Chair, Cardiac Arrest Committee
 Member, Centre Wide Morbidity
 Member, Critical Infrastructure
 Chair, Laser Committee
 Member, Transfusion Committee
 Member, Administrative Staff Committee
 Member, Medical Staff Executive
 Member, Neonatal Care Quality Review Committee

Jennifer Szerb

Professor

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine

Member, ANSI Board Of Directors
 Member, Research Operational Committee
 Member, Bethune Round Table Organizing Committee

Other

Member, Dalhousie Faculty of Medicine Admissions Committee
 Trustee and Board Member, Canadian Anesthesia International Education Foundation, Canadian Anesthesiologists' Society

John Tallon

Professor

Vishal Uppal

Assistant Professor

Presentations, Seminars, Workshops, Lectures:

Ultrasound Guided Regional Anesthesia – Crash Course (Lecture)., Indraprastha Apollo Hospital, Delhi, India, New Delhi, India
Ultrasound physics, Knobology & Sonoanatomy, Cleveland Clinic, Cleveland, OH, USA

Narendra Vakharia

Associate Professor

Medical Director – Simulation

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine Member, Simulation Clinical Leads Committee

Member, Continuing Professional Development
 Member, Curriculum Renewal Committee
 Member, Education Advisory Committee
 Member, Education Operational Committee
 Member, Residency Program Committee
 Member, Education Committee
 Member, Fellowship Advisory Committee
 Member, Executive Advisory Team

Dalhousie University

Member, School Of Health Sciences Advisory Council

Member, Simulation Leadership Group
 Member, Small Working Group On Simulation

Royal College of Physicians and Surgeons of Canada

Member, Canadian National Anesthesia Simulation Committee
 Member, Nucleus Member, Specialty Committee in Anesthesiology
 Member, IWK Simulation Stakeholders Committee

Arnim Vlaten

Associate Professor

Committee Memberships:

Department of Anesthesia, Pain Management & Perioperative Medicine

Member, Residency Program Committee
 Member, ANSI Board Of Directors

Gordon Whatley

Associate Professor

Julie Williams

Assistant Professor

Tobias Witter

Associate Professor

Stuart Wright

Assistant Professor

Juan Zhou

Associate Professor

Research Associate

Committee Memberships:

Member, Canadian Society For Immunology
 Member, Master's Student Committee,
 Department of Microbiology & Immunology



**DALHOUSIE
UNIVERSITY**

FACULTY OF MEDICINE
Department of Anesthesia,
Pain Management and
Perioperative Medicine