

# Department of Anesthesia

Annual Report

April 2015 – March 2016



Submitted by

Dr. G. Dobson

Zone Clinical Department Head

Department of Anesthesia

Alberta Health Services

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# EXECUTIVE REPORT

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If the first year was one of change, perhaps consolidation could best be used to describe the past twelve months. As the organizational charts depict, the Department's move to align itself with the administrative structure more typical within the Calgary Zone is well underway. This transition has been, for the most part, quite smooth and I thank the Departmental administrators, the staff, and the attending physicians for their patience and support. There have been some changes in staff, including Ms. Holland-Richardson's move to Medical Affairs in Southport. We wish Ms. Holland-Richardson success in her new role and welcome Ms. Soline Isliarik as the new Administrative Assistant.

A number of Departmental policies, including a Physician Recruitment Policy and the Senior Anesthesiologist Policy, were developed and accepted by ZAEC. These represent a formalization of processes that existed to varying degrees within our department and demonstrate the willingness and ability of the Sections to work together and come to consensus. Ms. M. Morrison, Legal Counsel within Medical Affairs, was instrumental in guiding the Department in the development of these policies and we are very appreciative of the time and expertise she has provided.

As described in the following pages, there was substantial progress in Clinical Services, Education, and Research within the Department. While they are all noteworthy in their own right, the Vi Riddell Children's Pain and Rehabilitation Centre's success in obtaining CIHR funding through a SPOR (Strategy for Patient Oriented Research) grant represents a breakthrough for the Department and presents a sizable opportunity to fund anesthesia and pain related research. Considerable effort is required to prepare these grant applications and I congratulate all involved.

There has been a substantial change in the membership of various Departmental Committees over the last year. While I believe these changes represent normal renewal, they are indicative of the limits of volunteerism as resource for the Department. Regardless, I thank all who volunteer their time and energies to making the Department successful and wish those pursuing new opportunities all the best.

The Department's initial application for an Alternate Academic Reimbursement Plan was unsuccessful. We are preparing for the next iteration, taking into account the feedback provided by the review process. One of the many positives arising from the application process was the closer integration of the Adult Chronic Pain Program with the Department. It has been a pleasure working with Dr. Spanswick and Dr. Montgomery on this rapprochement, which is essential if we are to become the **Department of Anesthesiology, Perioperative and Pain Medicine.**

Finally, with the current fiscal constraints there will be hard times ahead. I believe that with collegiality, transparency and rational discussion, the Department will meet the challenges and still find a way of moving forward.

Sincerely,

A handwritten signature in blue ink, appearing to read 'GD', with a stylized flourish extending to the right.

Gary Dobson, MD  
Head, Department of Anesthesia

# DEPARTMENTAL

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## STRUCTURE AND ORGANIZATION

The Department of Anesthesia has five sections; approximately 184 physicians, and 9 city wide locums, 12 administrative support staff, about 100 Anesthesia Respiratory Therapists, 6 site-specific Anesthesia Respiratory Therapist site leads, and Service Workers. In addition, 14 RNs work in the Acute Pain Service and Peri-Operative Blood Conservation Program. The total annual operating budget is approximately \$16 million.

Department medical staff are faculty members of the University of Calgary Cumming School of Medicine. Academic appointments include five geographic full time and ten major clinical positions, including Post Graduate Medical Education, Family Practice Anesthesia, and Undergraduate Medical Education program directors. Staff anesthesiologists work a range from 0.4 to 1.0 clinical FTE, with many working in a variety of part-time or job sharing arrangements.

Anesthetic services are also provided at several AHS contracted non-hospital surgical facilities for ophthalmology, podiatry, oral maxillofacial surgery and pediatric dental surgery. Anesthesia service continues to be provided in Yellowknife, NWT by some members of our department as well as throughout Alberta as needed. Annually anesthesia provides manpower, preceptorship, and organizational support to the Banff Family Practice Anesthesia conference.

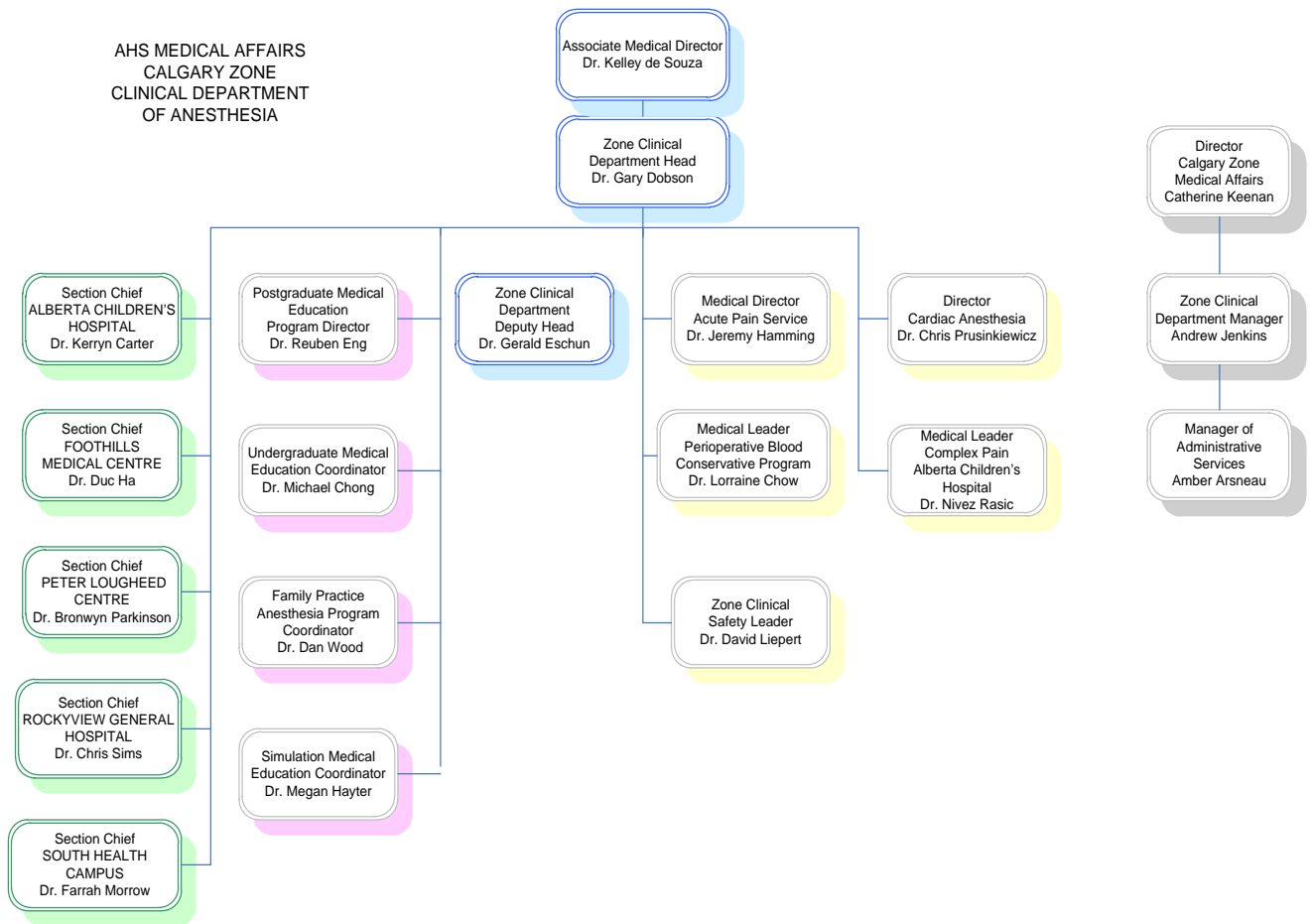
Subspecialty clinical services and programs are provided for Pediatric Anesthesia, Cardiac Anesthesia, Obstetrical Anesthesia, Acute Pain, Chronic Pain, Cancer Pain, Neuroanesthesia, Regional Anesthesia, Thoracic Anesthesia, Vascular Anesthesia, Preadmission Clinics, Trauma Anesthesia, Palliative Care, and the Perioperative Blood Conservation Program.

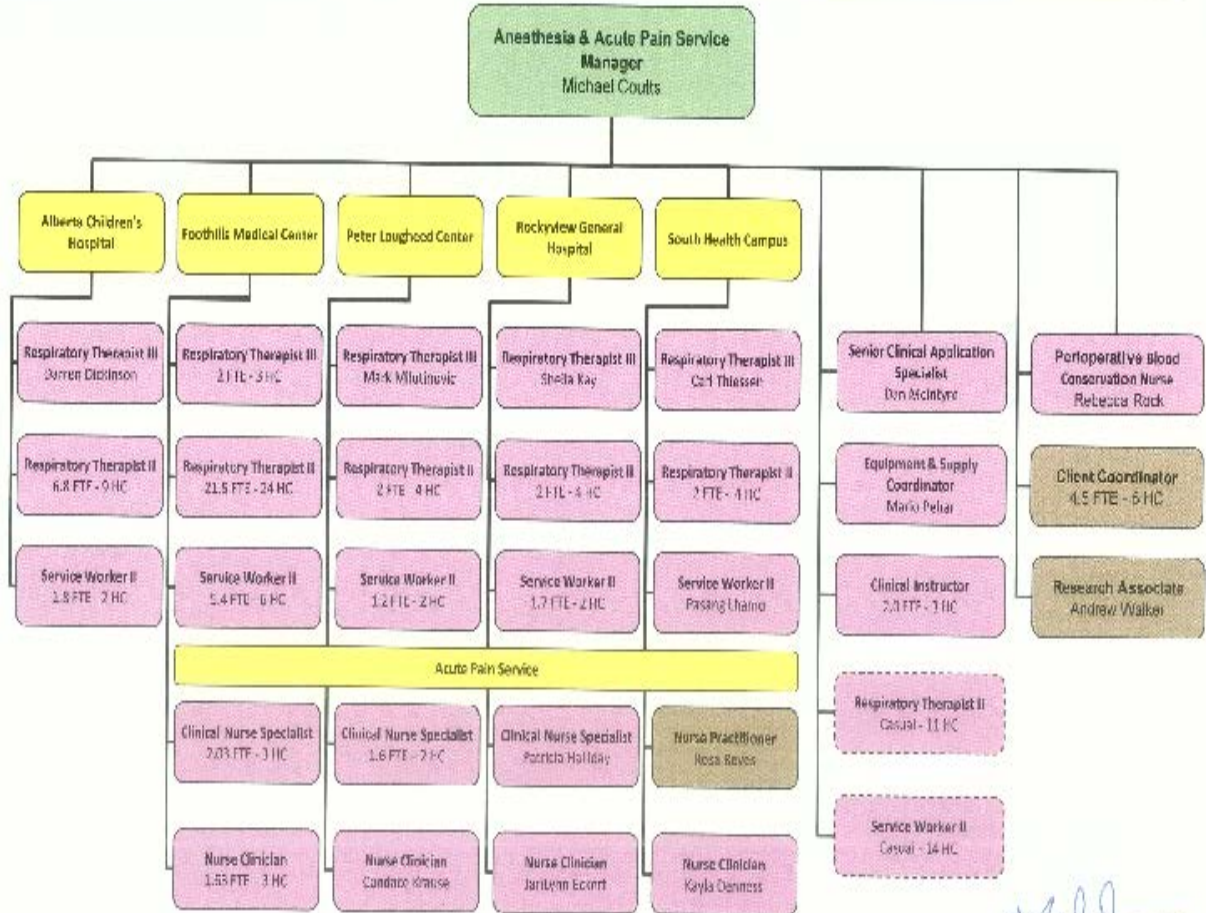
In 2015 – 2016, the Department provided anesthetic care for over 80,000 in-patient and outpatient surgical procedures, more than 10,000 deliveries, and treated many patients through the Acute and Chronic Pain Services.

# ZONE ORGANIZATION CHARTS



AHS MEDICAL AFFAIRS  
CALGARY ZONE  
CLINICAL DEPARTMENT  
OF ANESTHESIA





HRM000001-44 August 2016

Approved by:   
Holly Madon, Executive Director  
Date: 2016-August-04

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## **Zone Anesthesia Executive Committee**

ZCDH & Academic Head, U of C	Dr. G. Dobson
Deputy ZCDH	Dr. G. Eschun
FMC Section Chief	Dr. D. Ha
FMC Deputy Section Chief	Dr. D. Seal
PLC Section Chief	Dr. B. Parkinson
PLC Deputy Section Chief	Dr. N. Maher
RGH Section Chief	Dr. C. Sims
RGH Deputy Section Chief	Dr. R. Schultz
ACH Section Chief	Dr. K. Carter
ACH Deputy Section Chief	Dr. M. Letal
SHC Section Chief	Dr. F. Morrow
SHC Deputy Section Chief	Dr. L. Olivieri
Director, Residency Training Program	Dr. R. Eng
Clinical Safety Lead	Dr. D. Liepert
Acute Pain Service Medical Director	Dr. J. Hamming
Zone Clinical Department Manager	Mr. A. Jenkins
ZCDH and Head, Department of Surgery	Dr. J. Kortbeek
Director of CV anesthesia	Dr. C. Prusinkiewicz
Medical Lead, Calgary Chronic Pain Program	Dr. C. Spanswick
Executive Director Surgery, Anesthesia, Trauma Services & Southern Alberta Organ & Tissue Donation Program (SAOTDP)	Ms. H. Mackin
Associate Zone Medical Director (Acting) and Facility Medical Director, RGH	Dr. K. De Souza
Simulation Medical Education Coordinator	Dr. M. Hayter

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**Anesthesia Residency Training Committee**

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Program Director (Chair)	Dr. R. Eng
Associate Program Director	Dr. D. Archer
ZCDH/ Head, University Department	Dr. G. Dobson
FMC Site Coordinator	Dr. D. Fermor
FMC Associate Site Coordinator	Dr. A. Todd
PLC Site Coordinator	Dr. G. Bishop
PLC Associate Site Coordinator	Dr. K. Darcus
ACH Site Coordinator	Dr. A. Ewen
ACH Associate Site Coordinator	Dr. D. McAllister
RGH Site Coordinator	Dr. P. Samuels
RGH Associate Site Coordinator	Dr. K. Torsher
SHC Site Coordinator	Dr. A. Chu
SHC Associate Site Coordinator	Dr. N. Brown
Education Coordinator – PGY 2-4	Dr. J. Haber
Education Coordinator – PGY 1	Dr. K. Santosham
Scholarly Project Coordinators	Drs. L. Chow & A. Spencer
Simulation Coordinator	Dr. M. Hayter
Quality & Safety Coordinators	Drs. J. Davies & D. Finegan
Chief Residents	Drs. D. Krahn & K. Rogan
Senior Resident Representatives	Dr. N. Lange
Junior Resident Representative	Dr. E. Choi
Clerkship Director	Dr. M. Chong
Canadian Anesthesiologist's Society (CAS) Resident Representative	Dr. P. Dawson
Fellowship Director	Dr. A. Gregory
Family Practice Anesthesia Program Director	Dr. D. Wood

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**Anesthesia Academic Council**

Zone Clinical Department Head (Chair)	Dr. G. Dobson
Assistant Residency Program Director, FMC	Dr. D. Archer
ACH and GFT Representative	Dr. R. Cox
Residency Training Program Director, RGH	Dr. R. Eng
Resident Representative	Dr. J. Moser
RGH and CI/SIM Representative	Dr. M. Hayter
FMC Representative	Dr. K. Duttchen
PLC Representative	Dr. C. Pearce
SHC Representative	Dr. L. Baghirzada
ACH Representative	Dr. D. Lardner
Senior Research Associate	Mr. A. Walker
ACUDA Representative	Dr. R. Chun
Co-Resident Scholarly Project Coordinator	Dr. A. Spencer
Medical Leader, Calgary Chronic Pain Program	Dr. C. Spanswick
Zone Director	Ms. H. Mackin
Zone Clinical Department Manager	Mr. A. Jenkins

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## University of Calgary Faculty

Dr. G. Dobson	Zone Clinical Department Head, Department Of Anesthesia	Associate Professor	GFT
Dr. R. Cox	Pediatric Anesthesia And Pediatric ICU	Professor	GFT
Dr. J. Davies	Anesthesia And System Safety	Professor	GFT
Dr. D. Archer	Neuro-Anesthesia	Professor	GFT
Dr. J.N. Armstrong	Anesthesia, Stars	Associate Professor	GFT
Dr. R. Eng	Residency Program Director	Clinical Assistant Professor	MPT
Dr. J. Hamming	Medical Director, Acute Pain Service	Clinical Assistant Professor	MPT
Dr. M. Chong	Clerkship Director	Clinical Assistant Professor	MPT
Dr. D. Wood	Gpa Residency Program Director	Clinical Assistant Professor	MPT
Dr. C. Prusinkiewicz	Chief, Cardiac Anesthesia	Clinical Assistant Professor	MPT
Dr. M. Kostash	Anesthesia Clinical Educator	Clinical Assistant Professor	MPT
Dr. D. Lardner	Clinical Pediatric Anesthesia Researcher	Clinical Assistant Professor	MPT
Dr. M. Shah	Pain Medicine Residency Program Director	Clinical Assistant Professor	MPT
Dr. N. Donnelly-Warner	Clerkship Evaluation Coordinator	Clinical Assistant Professor	MPT
Dr. M. Hayter	Simulation Medical Education Coordinator	Clinical Assistant Professor	MPT

# SECTION REPORTS

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FMC  
Section Chief  
**Dr. D. Ha**

## Section Function and Structure

The Foothills Medical Centre Section of Anesthesia provides quaternary anesthesia care encompassing trauma, critical care, surgery, cardiac surgery, obstetrics, interventional radiology, and both acute and chronic pain for Southern Alberta and adjacent geographical areas. At present there are 52 anesthesiologists in the Section. Subspecialty interests in all aspects of adult anesthesia practice are fully represented within the Section.

## Prominent clinical and administrative roles for the Section are:

Dr. Chris Prusinkiewicz	Chief, Cardiac Anesthesia
Dr. Richard Falkenstein	Clinical Lead, Neuroanesthesia
Dr. Jeremy Hamming	Clinical Lead Acute Pain Service & Medical Director, Acute Pain Services, Calgary Zone
Dr. Jennifer Froelich	Clinical Lead, Trauma Anesthesia
Dr. Lorraine Chow	Clinical Lead, Thoracic Anesthesia
Dr. Rob Thompson	Clinical Lead, Obstetrical Anesthesia
Dr. David Fermor	Site Coordinator, Residency Training Program
Dr. Desiree Teoh	Site Coordinator, Clerkship Program
Dr. Melinda Davis	Clinical Lead, Pre Admission Clinic
Dr. Lorraine Chow	Medical Director, Perioperative Blood Conservation, Calgary Zone
Dr. Michael Chong	University of Calgary Anesthesia Clerkship Director

## Anesthesia Services

The FMC performed just over 20,000 surgeries for the 2015 – 2016 year. FMC delivered 5,778 total births, of which 1,142 were via C-section. FMC Anesthesia provides services to operating theatres on the third floor of the McCaig building and on the first and seventh floor in the FMC main building. In addition, there are separate cardiac operating theatres, an MRI neurosurgical operating theatre, obstetrical

operating theatres, and a radiation oncology theatre. There are three PACU areas and two satellite recovery rooms for obstetrics and radiation oncology postoperative patients, respectively.

### **Accomplishments and Highlights**

This year FMC saw the full utilization of the recently built hybrid operating theatre - McCaig OR #5. As a result, many complex cardiac aortic surgeries (both open and endovascular) were performed. Furthermore, structural cardiac interventional procedures were performed, such as TAVI (Transcatheter Aortic Valve Implantation) and Mitral Clip. Lastly, utilization of this OR allowed a safe setting for complex cardiac lead extraction and insertion of cardiac implantable devices.

FMC successfully performed the first DCD (Donation after Cardiac Death) organ procurement in Calgary. This new program presented challenges with the increase intensity and workload. However, FMC section members are proud to participate in this program and are dedicated to ensure that patients awaiting transplant surgeries are able to have their surgeries in a timely manner.

Dr. Lorraine Chow stepped down from her position of Clinical Lead of Obstetrical Anesthesia. Dr. M. Beriault stepped down from his position of Clinical Lead of Thoracic Anesthesia. Dr. D. Seal stepped down from his position of Director of Cardiac Anesthesia. All FMC section members thank Drs. Chow, Beriault and Seal for all their hard work and contribution to the section. All of these individual areas were excellently managed. The clinical foundation they all have made has allowed each section member to carry out our anesthesia practice in a safe and productive manner.

Cardiac Anesthesia continues to attract high quality candidates into its fellowship program. Dr. Mark Schindel arrived from London, Ontario and started his fellowship July 2015. To add to his already heavy workload, Mark and his wife had a lovely addition to their family with the birth of their first daughter in spring 2016. After successfully passing the NBE Perioperative Transesophageal board exams, Dr. Schindel and his family will consider their future plans. We wish Mark all the best in his future endeavors.

The highlight of the year was the return of FMC section of Anesthesia Retreat in March 2016. The theme of our retreat was Physician Wellness. As such, interesting speakers from the AMA, CMPA, and MD Management were on hand to give much perspective for FMC anesthesiologists in these areas. The retreat allowed us the ability to relax and recharge with our colleagues, friends, and family. It reminded us that to be successful and contributing physician members in our communities, we need to take care of our health and appreciate the support of our friends and family.

This year, FMC section of anesthesia was successful in attracting an additional anesthesiologist. Dr. Heather Hurdle has completed her Anesthesiology training from

the University of Calgary. Thereafter, she completed a Perioperative Ultrasound Fellowship at the University of Ottawa in Ottawa, Ontario. Dr. Hurdle is a welcome member who can aid in the development and teaching of the new Perioperative Ultrasound Fellowship program at the University of Calgary.

After years of successful practice, Dr. Heather Smith has decided to retire from the practice of Anesthesia at FMC. Dr. Smith has a passion for perioperative medicine and can often be found in the Preadmission Clinic. In fact, Dr. Smith was FMC clinical lead for FMC Preadmission Clinic for much of her career. Dr. Smith also contributed greatly to the FMC Quality Assurance and Quality Improvement committee (formerly Mortality and Morbidity committee). We are fortunate that Dr. Smith has agreed to be available to work at FMC on an occasional basis in the future.

### **Looking Forward**

FMC section of anesthesia continues to find ways to improve our delivery of anesthesia services. Future endeavors include providing anesthesia for Cardiac Implantable Electronic Devices and Electrophysiology Procedures outside the operating room theatre. Also, advances in Complex Radiotherapy for management of malignancies will require unique neuraxial anesthesia care in the Tom Baker Cancer Centre. FMC looks forward to these anesthesia challenges.

### **In Memory**

The most difficult challenge this year for FMC was to deal with the personal loss of our dear friend and colleague Dr. Charles MacAdams. Dr. MacAdams was an anesthesiologist without peer. Not only was he an excellent clinician, Dr. MacAdams was a passionate teacher with multiple awards and recognition from students and residents. In addition, Dr. MacAdams was successful and world renown in research and academia. He also had a passion for perioperative blood conservation. Upon his passing, many members learned of Dr. MacAdams' generosity to the less fortunate – donating to an orphanage in Nepal and financially sponsoring a Nepalese Cardiac Anesthesia fellow to learn intraoperative transesophageal echocardiogram in Calgary. Lastly, many members were able to meet Dr. MacAdams' son, Jeff. Jeff allowed us a little insight to the caring father Charlie was and their joy of learning to sail together. A heartfelt rendition of Teach Your Children Well by Jeff and his friends at Dr. MacAdams' memorial allowed us all to remember the wisdom and kindness that was Dr. MacAdams' life. It gives us some solace that Dr. MacAdams passed away peacefully on one of his great adventures in Nepal.



## PLC Section Chief **Dr. B. Parkinson**

### **Renovation projects**

The last year has seen some significant changes in our hospital due to many construction projects. The PLC anesthesiologists have accommodated these changes in stride with the same professionalism and collegial atmosphere that makes the Peter Lougheed Centre such a pleasant workplace.

The opening of the new vascular hybrid ORs was smooth and is now accommodating emergency arterial surgical procedures after running only elective cases for a short time to allow for all operating room staff to adjust to the new location.

The Women's renovation project has seen a temporary relocation of all obstetrical services including NICU, antepartum, triage, labour and delivery and postpartum operating rooms for the duration of the estimated eighteen month construction time period. This move and new practice of obstetrical surgical patients being transferred to a different floor for surgery has seen the same safe and effective transition as the vascular surgical project. This has required an immense multidisciplinary collaboration and a long planning stage but with a very successful result.

### **Manpower**

We welcome Dr. Nadeem Jadavji as a new staff member with an interest to complete a fellowship in cardiac anesthesia and hopes to contribute to the existing group of transesophageal echocardiography trained anesthesiologists at PLC.

We congratulate Dr. Ray Kozody on his retirement after 35 years and commend his great contribution to the practice of anesthesia with many publications and interest in pain management. Although we regret to see her leave, we also congratulate Dr. Diane Wassil on her retirement. She is praised by all for her incredible commitment and successful career as an anesthesiologist which included roles such as section chief for the PLC. There is a common sentiment amongst surgeons, nurses and anesthesiologists that her years as section chief were memorable for patience, calmness, and collaboration and dubbed "The Diane Years."

## Collaborative Roles and Scholarly Activity

I would like to thank the following staff for the roles they perform which all help in making the Chief's role more manageable in this busy department. We also have many members active in executive roles such as the following:

- Dr. J.N. Armstrong still serves as the Chief Medical Officer (CMO) and Executive Vice President of STARS - the Shock Trauma Air Rescue Society and is the Past President of the Alberta Medical Association (AMA) and Canadian Anesthesia Society (CAS) Sections of Anesthesia. Dr. Armstrong has also co-authored two papers: Rat Cortical Neurons exposed to Sevoflurane and Desflurane exhibit decreased synaptic development and Sevoflurane and desflurane inhibit synaptic strength of newly developed synapses between lymnaea neurons, as well as one abstract: Acute exposure to volatile anesthetics impairs synaptic, but not cytoskeletal, architecture.
- Dr. Dan Wood serves as the new President of the Alberta Medical Association (AMA) and Canadian Anesthesia Society (CAS) Section of Anesthesia.
- Dr. Michael Cassidy is Alberta Medical Association (AMA) Anesthesia Section delegate to the Representative Forum and Alberta member of the Canadian Anesthesia Society (CAS) Board of Directors.
- Dr. Marelise Kruger is a member of the oral and written board exams for the Royal College of Physicians and Surgeons of Canada, Section of Anesthesia.
- Dr. Steven Patterson serves as Past President of Calgary and Area Medical Staff Society, Member of PLC Health Trust Committee and President of PLC Medical Staff.
- Dr. Graeme Bishop, Dr. Kristi Santosham, Dr. Karl Darcus and Dr. Vanessa Wong are busy preparing everyone for the upcoming Competency By Design residency training program change and ongoing clinical clerk education.
- Dr. Sandy Shysh has demonstrated his commendable ability for leadership and collaboration as Interim Acute Pain Service (APS) Medical Site Lead for the PLC. We are proud to report that APS nurse clinician Roberta DeJong has submitted an article regarding the VAMPT protocol initiated at the PLC for publication in the Pain Management Nursing Journal. Dr. Shysh also supervised residents Dr. Linda Hung and Dr. Afra Moezeni in a PLC initiated review of *Epimorph or no Epimorph for Total Hip and Knee Arthroplasties* that won the resident research competition and have since presented their results at CAS and the recent Pain Awareness Conference in Calgary.

- Dr. Neal Maher, Assistant PLC Site Chief, continues to organize and teach as Course Director Chief Instructor for Point of Care ultrasound Workshops (POCUS) and presenting a CME lecture at the AMA Summit this November.
- Dr. Dean Jordan, Anesthesia PLC Site Lead for ERAS (Enhanced Recovery After Surgery) reports the 2013 implementation of ERAS protocol with colorectal surgical patients has resulted in shorter hospital stays and patients feeling better sooner. This past year, two separate papers were published based on the Alberta ERAS experience. These papers were able to demonstrate both improved patient outcomes and cost saving to the health care system. These results are encouraging and we continue to look for areas to improve patient outcome and cost savings. PLC has been looking closely at PONV outcomes and agents used. In the future we hope to standardize PONV regimens based on the consensus guidelines for PONV published by A&A in 2014 Future Plans.

Our service requirements are relatively the same as last year save for one newer area of GI Endoscopy. The provision of service for GI endoscopy patients arranged ad hoc over the last year has been so well received that there are now plans for a regularly scheduled list of patients who require the services of an anesthesiologist.

There will be another major renovation of the operating room theatre ventilation plans next summer with a significant impact of patient flow as it includes more theatres and Post Anesthetic Care Unit that will require more planning in the upcoming months.

We had a successful retreat in the spring addressing such issues as the current state of locum hiring and privileging, manpower needs, reviewing the search and selection process and limitations of the current scheduling software. We hope to proceed with the recently formalized search and selection process in future hiring plans and are currently undergoing negotiations for new scheduling software.





## ACH Section Chief **Dr. K. Carter**

The April 2015 to March 2016 year in the Section of Anesthesia at Alberta Children's Hospital has been challenging and exciting. As a Section, our priorities are leading pediatric anesthesia care, excellence of clinical care, and our relationships with each other and the wider hospital community. Our education, research, and patient safety initiatives are highlights of the year.

We provided anesthesia services for 10,752 cases from April 2015 to March 2016. The services provided by the section now include:

- seven daily operating room lists
- three Non-Hospital Surgical Facility dental lists per week
- a comprehensive ARP funded Acute Pain Service at all times
- a two day a week physician led Complex Pain Service supported by five day a week nursing support
- a Pre-operative Assessment Clinic one day per week, and
- an Out of OR ARP covering: MRI, DI, IR, POAC, off-site procedures up to 3.2 FTE

We currently have a task force anesthesiologist (TFA) on call each weekday. Our call day begins with a briefing between the TFA, the Task Force Nurse, and Task Force Surgeon at 07:15 with each team outlining known concerns. This triad supports operational decisions in the OR. We have three anesthesiologists on call per night in the format of first, second and Pain call. During the summer of 2015, we trialed having an urgent room open during the day for urgent and emergent cases to reduce the impact of summer closures to the evening and overnight hours.

There are a total of 22 anesthesiologists on permanent staff at ACH. During this past year we had no new staff join our section. After a manpower review, a search and selection committee was formed with interviews held in February 2016

In January 2016 an Out of OR ARP was implemented. This service is an alternate payment plan to provide anesthesiology services for POAC, MRI/DI/IR, off site procedures and induction room procedures. Its primary aim is to improve patient

access to a highly trained practitioner for sedation and pain management, for patient safety, and is consistent with the ACH procedural and anaesthesia care guidelines. While it is being used for existing programs the current fiscal climate has not allowed for AHS to fully support its implementation as envisioned. We have supported AHS/ACH to develop a new protocol for mild and moderate sedation of pediatric patients within the hospital by non-anesthesiologist. This culture change is an ongoing process.

There remain some procedures that, due to medical equipment or patient factors, need to be supported at FMC and RGH and we have occasional, and more than occasional, work at these sites depending on the week. A recent review regarding offsite post anesthesia care has led to the introduction of a PACU nurse or nursing team to offsite procedure personnel. We are developing booking procedures to facilitate these cases.

Our team continues to diversify their skill set with an increasing number of our staff working at the adult sites, on the Pediatric Palliative Care team and the Transport team. Dr. Mulvey has been the first ACH anesthesiologist appointed to STARS as a flight physician.

During the year, our section hosted a retreat: The focus of the November 2015 Retreat was Anesthesia in the Third World, and our guest speaker was Dr. Adrian (Bosie) Bosenberg from Seattle.

Simulation at ACH is a busy team championed by Dr. Mark Gale. He is currently running many successful programs including POCM, TPAC and Simulation Outreach and have a number of new initiatives starting.

- Perioperative Crisis Management Course (POCM) is an all-day simulation course designed and developed at the ACH to improve crisis management in our operating rooms. POCM is a multidisciplinary, inter-professional course involving OR RNs, PACU RNs, Pediatric Anesthesiologists, Pediatric Surgeons, and RTs. The course involves four simulated crises scenarios based on our last one year experience in the perioperative environment. Cases which have been reviewed at our Quality Improvement / Quality Assurance rounds are used as a foundation for scenario development. Lead: Mark Gale, Support: Elisabeth Dobereiner.
- The Pediatric Airway Course (TPAC) is an all-day simulation based airway course hosted at KIDSIM at ACH and facilitated by a multidisciplinary group from PICU, Peds Emerg, Ped Anesthesia and RTs. The target audience is practicing physicians, outside of anesthesia, that may be required to manage pediatric airways. TPAC has a focus on maintaining oxygenation using simple techniques. Lead: David Lardner.

- Simulation Outreach both out of the operating room at Alberta Children's Hospital and in community hospitals in Central and Southern Alberta. Lead: Jerry Luntley Support: Mark Gale.
- Just-in-time simulation (JITS) is an educational strategy where simulation occurs in close temporal proximity to a clinical encounter. This will take place in the operating room at a scheduled time on a scheduled list. Lead: Ruth Connors.
- Managing Emergencies in Pediatric Anesthesia (MEPA) for residents. This full day simulation course aims to give all anesthesia trainees the opportunity to develop management strategies for emergencies in pediatric anesthesia through the use of high fidelity simulation. Lead: Mark Gale

The section continues to fund some research programs via personal donations from anesthesiologists.

Within our section, there is strong commitment to integrating the science and practice of pediatric pain and making Alberta an international leader in pediatric pain research and management. We have made great strides toward that goal. At Alberta Children's Hospital, we have recently implemented the Vi Riddell Pediatric Pain Program. Clinically, we have substantially increased capacity in our multidisciplinary pediatric complex pain clinic to better serve our catchment area (serving three provinces) and have launched the first state-of-the-art intensive pain rehabilitation program for children in Canada. Our clinic has also moved into a new, expanded physical space at the Alberta Children's Hospital.

In addition, we have launched an innovative research program to include integrated multi-wave outcome assessment throughout the pediatric clinical pain programs as well as novel clinical and lab-based investigations from a diverse range of disciplines / perspectives. The Alberta Children's Hospital Research Institute (ACHRI) believes that a multidisciplinary team of clinicians, child psychologists and basic scientists – collaborating within an interdisciplinary environment – is essential to reducing the pain burden on our children and their families.

We presented Pediatric Chronic Pain at the Calgary Pain Symposium series and five posters in Seattle at the ISPP in June. Dr. Melanie Noel has an appointment as a pain researcher within the department. In her collaborations with Drs. Rasic, Spencer, and Rice, she has been instrumental in setting up a number of new projects. Dr. Jillian Vinall, Postdoctoral Scholar and Neuroscientist, joined the Department of Anesthesia at the University of Calgary, October 2015. She holds a Fellowship in Pediatric Pain Research from the Louise and Alan Edwards Foundation and is presently examining effects of pediatric pain and anesthesia on the brain and outcomes through infancy to early adulthood.

One of our anesthesia pain colleagues at McMaster, Dr. Norm Buckley, assembled the foremost chronic pain researchers in Canada (pediatric and adult), and submitted an application for a CIHR SPOR (Strategy for Patient Oriented Research) Grant. Out of 20 full applications, this was one of the 5 accepted. The University of Calgary through ACHRI committed \$2.5 million dollars for the SPOR in cash and in kind, and as such the CIHR has matched a portion of these funds for the University of Calgary, for pain research. This large initiative will be spearheaded by our local PIs: Dr. Melanie Noel, Dr. Tiffany Rice, and Dr. Nivez Rasic. They will be working very closely with a larger group of researchers in pediatric pain both here at the U of C and across Canada, both on the basic and clinical science side to ensure that cutting edge research is being done through the Vi Riddell Pain Program, within ACHRI and the Department of Anesthesia.

The ACH Acute Pain Service has noticed a number of themes over the past year, including a reduction in the number of Epidurals insertions, most likely secondary to increased number of regional anesthetics and multimodal analgesia. There has been an increase in the number of continuous peripheral nerve block catheters. We have developed perioperative guidelines to improve overall management of idiopathic scoliosis and NUSS bar patients. These guidelines based around ERAS principals have required work and collaboration with surgeons and appear to reduce length of stay. Our future goal is to create an ambulatory nerve catheter program. We are fortunate to have three trained APS NPs: Leah Foster (on maternity leave), Rachel Slomp and most recently trained Sarah Shantz. An on-site Pain Committee has been established under the umbrella of the Child Health Quality Council. Terms of reference were created, and we are working towards our Commitment to Comfort strategy.

Our QA/QI activity is strengthening with lots of section leadership, enthusiasm, and hard work. We are also appreciative of ongoing AHS and Departmental support. We have had very positive feedback regarding our multidisciplinary rounds and continue to create safety learnings.

The health and work life balance of our team remains a priority to our Section members. Our schedulers, and the entire team, are to be congratulated for their hard work, balancing, and flexibility that goes into accommodating all these activities into a busy work year. We continue to have staff volunteering their time to underserved regions of the world.

## 2015 – 2016 Staff Administrative Roles

Dr. Carter	Section Chief, Manpower Committee, Research Committee
Dr. Connors	Trauma Committee, Research Committee, Anesthesia Economic Committee
Dr. Cox	Equipment Liaison, Friday Rounds Co-ordinator, PICU Liaison, Manpower Committee, Academic Council
Dr. Dobereiner	Friday Rounds Co-ordinator
Dr. Ewen	RTC Committee, Retreat Organizer
Dr. Farran	Complex Pain Clinic, Pre-op Clinic Director, OR Recycling Committee
Dr. Gale	Fellowship Director, Simulation, Core Program
Dr. Ghazar	Trauma Safety Committee, SCM Lead, NICU Liaison
Dr. Hardcastle	Scheduler
Dr. Kuwahara	Trauma Committee
Dr. Lardner	PACU Liaison, Academic Council
Dr. Letal	Treasurer, Deputy Chief, Audit/QA, Simulation
Dr. Luntley	DI Liaison
Dr. McAllister	RTC Back up, CARMs
Dr. McIntyre	
Dr. McMann	Fellowship Committee, Fellow Rounds and Core Program Co-ordinator, OR Recycling Committee
Dr. Rasic	Complex Pain Clinic Lead
Dr. Spencer	APS Lead, Academic Council, Scholarly Project Co-ordinator, CARMs, Ultrasound Lead
Dr. Stewart	Deputy Treasurer



## **RGH Section Chief Dr. C. Sims**

The RGH Anesthesia section currently includes 34 practicing anesthesiologists, 21 of whom work full time, and 13 of who work various degrees of part time, from FTE 0.2 to 0.8. In addition to providing service to the Rockyview General Hospital, this section provides two or three anesthesiologists per day to serve six non-hospital surgical facilities in Calgary, in a shared arrangement with the other Calgary anesthesia sections. Also, the surgical lists of two privately-funded facilities: Canadian Surgical Solutions and South Calgary Oral and Maxillofacial Surgery are included in the anesthesia schedule of RGH. These facilities' anesthesia services are covered by sub-groups of Rockyview anesthesiologists. Workload fluctuations of these facilities are the responsibility of these sub-groups.

The RGH anesthesia section provides service to 14 surgical lists per day; as well as, the labour and delivery ward where one anaesthesiologist covers both the epidural analgesia service and surgical obstetrical cases. In addition, one anesthetist covers the pre-assessment clinic as well as the acute pain service Monday to Friday.

All RGH anesthesiologists have University of Calgary appointments and all function as clinical and/or academic teachers to residents, medical students, and non-physician learners.

In terms of after-hours coverage, two anesthetists cover the operating room each night and on weekends. On most days this is reduced to one operating room after 11:30 PM during the week, and after 5:30 PM on weekends.

In order to accommodate this model, the third evening room will be placed on the anesthesia pick list as a trial. Also as a trial, the first call anesthesiologist will be scheduled to work a daytime list pre-call. It is hoped and anticipated this MD will not have to work after midnight very often once the nurses are on-call-only for this time period. These changes are not expected to change overall anesthesia manpower requirements. This perspective may change; however, depending upon the tolerance of section members of this new scheduling model.

Individual academic accomplishments:

- Dr. Megan Hayter, co-author of the third ranked paper in the Anaesthesia Article of the Year 2015: Power and conflict: the effect of a superior's interpersonal behaviour on trainees' ability to challenge authority during a simulated airway emergency. Z.Friedman, M.A.Hayter, T.C.Everett, C.T. Matara, L.M.K.Noble, M.D. Bould. Anaesthesia (AAGBI) October 2015 issue.
- Dr. Saul Pytka: Contributor to textbook "The Difficult and Failed Airway" third edition.
  - Chapter 5: Aspiration: Risks and Prevention. (Pytka, Crosby)
  - Chapter 20: Airway management of a morbidly obese patient suffering from a cardiac arrest. (Pytka)
  - Chapter 62: Difficult Airway Carts (Pytka, Murphy)
- The medical staff association of the Rockyview Hospital hosts an annual awards ceremony at its AGM every June. Physician recognition awards are included in this meeting. This year we were pleased to honour Dr. Reuben Eng with the 2016 Physician Recognition Award for the Rockyview General Hospital Anesthesia section.
- Rockyview anesthesiologists who travelled to developing countries to provide care included:
  - Dr. Karrie Yont – Health 4 Humanity – Guatemala – Nov 2016
  - Dr. Reuben Eng – EMAS Canada – China – May 2016 (2 weeks), Nov 2016 (1 week)

The Rockyview section of anesthesia is undergoing some changes in membership. The year 2016 will have seen the retirement of Dr. Sean Thomas, Dr. Jill Yemen, Dr. Myrna Dusevic, and Dr. Colin Dodd. We have undergone a new, formal recruitment process from which we were fortunate to have attracted several excellent candidates. Hiring decisions are being finalized, and we will be welcoming at least two new anesthesiologists to our group in 2017. RGH is looking great as a place for quality clinical care; as well as, learning.



## SHC Section Chief **Dr. F. Morrow**

2015 – 2016 encompassed the third fully operational year for surgical services at South Health Campus, including our fourth birthday in February 2015. The year saw the site continue to expand surgical services and participate as a clinical and academic arm of the Calgary zone anesthesia department.

South Health Campus continues to act as a Zone leader in regional anesthesia, obstetrics, simulation and quality assurance. General surgery maintains an expanded bariatric and upper GI service and the departments of general surgery, plastic surgery, orthopaedics and ENT have successfully recruited in the last year. We continue to work alongside a strong orthopaedic department, and have innovated to optimize peri-operative patient care and pain management including the development of a transitional pain service to facilitate outpatient narcotic management, which is expected to be operational within the next year. The site is also home to several forward thinking Quality Assurance Initiatives, and has successfully integrated a postoperative pain pathway to expedite recovery for total joint arthroplasty.

The department held a very successful retreat on May 2, 2015, which included a round table discussion to support CBE and medical student modules for intraoperative teaching. The retreat included a lecture on Disclosure of Harm by Deborah Prouse, and was followed by a chef's dinner at Raw Bar.

We are pleased to support several SHC staff in continuing to improve care in the Zone and at our site through various initiatives:

- Dr. Leyla Baghirzada has led the quality and safety initiatives on site and recently completed a certificate in investigating and management patient safety events through the University of Calgary. We value her role as our QI coordinator for SHC, and congratulate her on several publications this year.
- Dr. Lori Olivieri continues to develop forward-thinking PAC protocols, and has successfully introduced a preoperative management order set for OSA patients, as well as collaborating with Bone and Joint and family physicians to screen and treat patients for OSA prior to their assessment in preoperative clinic. She also acts as our Physician Learning Program leads and has successfully completed two projects this year.



- Dr. Ryan Endersby taught at several conferences this year including the ASA, and was honoured with an award for his work in teaching residents regional anesthesia. He and Dr. Baghirzada are also responsible for publishing and presenting their work in standardizing postoperative analgesic orders for arthroplasty patients.
- Dr. Mark Kostash is involved in the SHC involvement of the Zone Preoperative Ultrasound Fellowship.
- Dr. Jarad Stephan and Dr. Jenni Joo have initiated the development of a transitional pain service, to assist with outpatient pain management in patients who require extra support.
- Dr. Esther Ho and Dr. Lori Olivieri are key players in continuing simulation education onsite and within the Zone, and are leaders in OR team training.
- Drs. Nathan Brown, Melissa Jack, Mark Kostash, and Shaylyn Montgomery have successfully initiated a randomized controlled trial to examine dexamethasone in upper extremity blocks, and have begun recruiting patients to this study
- Dr. Lou Fraser has been actively organizing social events for site physicians from all specialties in his capacity as Medical Staff President.
- Dr. Farrah Morrow has successfully obtained funding for a study examining mindfulness meditation as a means to reduce anxiety and pain in postoperative arthroplasty patients, in conjunction with the University of Calgary department of psychology; recruitment will begin in late 2016.

### **Site Leadership**

Dr. Farrah Morrow	Section Chief, SHARP Committee
Dr. Lori Olivieri	Deputy Section Chief/PAC Liason
Dr. Fayaz Bharwani	Obstetrics Lead, SMART Committee, SHARP Committee (Chair)
Dr. Ryan Endersby	Acute Pain/Regional Lead, SHARP Committee
Dr. Jarad Stephan	Chronic Pain Liaison
Dr. Tony Trinh	PACU & Day Surgery Liaison
Dr. Alan Chu	Residency Training Committee Site Coordinator, SHARP Committee
Dr. Nathan Brown	Residency Training Committee Regional Anesthesia Coordinator
Dr. Mark Cheesman	Section Scheduler, SHARP Committee
Dr. Leyla Baghirzada	Quality/Safety Liaison

Dr. Esther Ho	Treasurer/Secretary/Academic and CME Rounds Coordinator, SMART Committee
Dr. L Baghirzada	South Health Campus Quality Council
Dr. Lou Fraser	South Health Campus Medical Staff President
Dr. Nathan Brown	SMART Committee
Dr. Melissa Jack	SMART Committee

\*SHARP (Strategic Human and Resource Planning Committee, formerly Manpower Committee)

### **Surgical Services**

The site runs eight elective rooms daily, and provides two on-call anesthesiologists daily for both operating room and obstetrical care. We also provide staff for a NHSF room four days a week.

In addition, Dr Nathan Brown has been active in piloting a program to place peripheral nerve blocks for patients booked for minor surgery procedures, expanding the scope of what they are able to do in minor surgery. We also provide anesthetic services for outpatient gyne clinic (recently expanded), DI (imaging and kyphoplasty), and endoscopy. South Health Campus remains dedicated to providing excellent and innovate ambulatory anesthesia for our community.

The department staffs an on-site pre-operative assessment clinic that continues to face increasing demands for patient assessment as our surgical programs develop in complexity and volume. The clinic has successfully integrated Obstructive Sleep Apnea postoperative protocols in an effort to mindfully manage the disease in the peri-operative setting.

### **Family Maternity Place (FMP)**

South Health Campus continues to see approximately 250 deliveries a month, with an epidural rate of approximately 75%. A second operating room was completed last year and provides a second back-up obstetrical OR.

# CLINICAL SERVICE

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## ANESTHESIA ASSISTANTS

### Michael Coutts, RRT

There are 70 Anesthesia Assistants (Respiratory Therapist IIs) and seven Anesthesia Respiratory Therapist site leads. There are 24 Anesthesia Aides and relief staff distributed among the five sites. Many Anesthesia Respiratory Therapists and Anesthesia Aides work at more than one site.

Anesthesia Respiratory Therapists continue to provide high level service delivery to all areas that require an Anesthesiologist. This service delivery involves clinical and technical support of anesthesia equipment. Respiratory Therapists are located at the five acute care centers within the Calgary Zone and provide consulting support for the rural sites (Canmore, High River, Banff) as well.

Many experienced staff have been returning this year from leave of absences which has thereby displaced other temporary staff back to casual status. The extra casual staff provides the zone department with lots of relief when there are time off requests and potential increases in activity.

An advanced practice pilot project is ongoing at South Health Campus that enables the Anesthesia respiratory therapist to provide room relief for the Anesthesiologists continues to be working well. This advanced competency learning has a didactic, clinical and simulation component.

Continuing education and policy/procedure development and updating continues. Continuing competency audits for advanced skill sets occur annually.

Within Anesthesia, several staff provide zone wide support to clinical applications including Anesthesia Electronic Record (AER) and anesthesia scheduling software and other clinical applications. There are two senior analysts, three clinical educators and one Zone equipment and Supply Coordinator.

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# ACUTE PAIN SERVICE

## Dr. J. Hamming

The APS service provides specialized consultative care to select patient cohorts. The primary patient cohort for the service is post-operative patients undergoing analgesic treatment with regional anesthesia, but also includes acute on chronic pain in post-operative patients, select trauma patients, and cancer pain patients. Unfortunately, it does not include consultative service to all hospital in patients with acute pain, therefore, over the last year some sites have formally changed the meaning of the acronym APS from Acute Pain Service to Anesthesia Pain Service, to more accurately reflect our role.

Despite the name change at some of the sites in the Calgary Zone, the APS service continues to provide the same services as in previous years. Overall, our clinical volume and spectrum has not changed appreciably, although we have added additional modalities for analgesic treatment. The principal addition this past year has been the rollout of the post-operative lidocaine infusion protocol for select surgical patients. Other notable new initiatives include an improved post-op analgesic pathway for arthroplasty patients (under Dr. Endersby and the SHC APS team), a streamlined pathway for amputation in vascular patients (developed by the Dr. Shysh and the APS team at PLC), and the addition of intermittent bolus delivery function for patients with nerve catheter infusions. There are a number of other clinical endeavors and initiatives still under development that will be incorporated in the near future.

The APS service involvement in medical education continues to expand. Education occurs at multiple levels, for physicians, residents, medical students, and nurses. The contributions are too numerous to list, but I would like to take to this opportunity to sincerely thank all the medical staff and APS nurses for their exemplary dedication and delivery of pain-specific education over the past year.

Research by APS physicians and nurses, historically has been somewhat neglected in deference to clinical service and education. I am glad to say that the APS physicians and APS nurses have made some progress in this regard, with the crew at the South Health Campus leading the way.

Going forward this year, there are a few immediate goals for the APS service. First, we will continue to expand the number of research initiatives by this service. Second, we are collaborating with the other major sites in the province to make certain protocols, like ketamine infusions, standardized across Alberta. Finally, we are expanding initiatives, like lidocaine infusions, across the hospital wards and hospital sites within the Calgary Zone.

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# CARDIAC ANESTHESIA

## Dr. C. Prusinkiewicz

### **Administrative Structure**

All Cardiac Anesthesiologists are appointed with the University of Calgary and hold primary appointments in the Department of Anesthesiology (Foothills Medical Centre Division) with joint appointments in the Department of Cardiac Sciences. All Cardiac Anesthesiologists are members of the Libin Institute. Dr. Chris Prusinkiewicz is the Director of Cardiac Anesthesia, and sits on the Department of Cardiac Sciences Executive Committee, Cardiac Sciences Clinical Services Council, and on the Calgary Zone Anesthesia Executive Committee. Dr. Duc Ha, the FMC Section Chief, is a member of the Cardiac Anesthesia Group. Dr. Doug Seal, also a member of the Cardiac Anesthesia Group, has recently completed his appointment as FMC Deputy Section Chief.

All Cardiac Anesthesiologists are trained in echocardiography and have successfully completed the National Board of Echocardiography Perioperative Examination. All members have received certification in perioperative TEE as level II echocardiographers from the College of Physicians and Surgeons of Alberta. There are eight active Cardiac Anesthesiologists, and the group is currently recruiting an additional member. In the past year, the Cardiac Anesthesia Group has lost a close colleague and friend, Dr. Charlie MacAdams, who passed away on a mountaineering expedition in the Himalayas.

### **Clinical Practice**

The Cardiac Anesthesia Group continues to have a dynamic clinical practice covering an increasingly complex variety of cases in an increasingly elderly population of patients. Anesthesia services are provided for: open heart surgery, off-pump coronary artery bypass grafting, deep hypothermic circulatory arrest for aortic reconstruction surgery, mechanical assist device support (including ventricular assist devices and extra-corporeal membrane oxygenation), TEVAR (Total Endovascular Aortic Repair) procedures, TAVI (Transcatheter Aortic Valve Implantation) procedures, MIVS (Minimally Invasive Valve Surgery), complex lead extractions, percutaneous cardiac lab procedures (including ASD/VSD closures and valvuloplasties) and electrophysiology cases. In the most recent academic year, the group has provided support for two new cardiac devices: the MitraClip Transcatheter Mitral Valve Repair System for mitral regurgitation and the Watchman Left Atrial Appendage Closure Device for atrial fibrillation. The group has also provided anesthetic and echocardiographic support for a

new vascular device operated by interventional radiology: the AngioVac Cannula and Circuit for the removal of large thrombi from the central venous circulation.

### **Anesthesiology Workload**

The Cardiac Anesthesia Group provides services for over 1,300 open heart cases per year and provides additional support of cardiac device insertion. Three cardiac operating rooms run Monday to Thursday and two cardiac ORs run on Fridays. Cardiac Anesthesia covers the Preadmission Clinic on Tuesdays and is available for inpatient consultations every day. Anesthetic support for complex lead extractions is provided on Wednesdays and Fridays. TAVI cases are done two days per month, and the number of TAVI cases per day has increased to three. Cardiac Anesthesiologists provide services for complex patients in the electrophysiology suites and for patients with cardiovascular disease undergoing non-cardiac cases on an as-needed basis.

### **Education / CV Anesthesia Fellowship**

The Cardiac Anesthesia group continues to provide a high standard of clinical education. The Anesthesia residents rotate through the CV OR in their PYG 4 year for two blocks. Additionally, we have residents and fellows from Critical Care Medicine and Cardiology. In the recent academic year, six of our members received the Department of Anesthesiology Excellence in Postgraduate Medical Education Award, including: Drs. Bands, Gregory, MacAdams, Prusinkiewicz, Seal, and Waechter. Dr. Waechter is the architect of the TeachingMedicine.com website, which includes modules on transthoracic and transesophageal echocardiography. Dr. Alex Gregory has recently assumed the position of Director of the Cardiovascular Anesthesia and Perioperative Ultrasound Fellowship Programs. Dr. Mark Schindel has completed his Cardiac Anesthesia Fellowship in June of 2015.

The TEE Simulator by HEARTWORKS is located at the PLC and is being used to teach the Anesthesia residents basic TEE prior to their CV Anesthesia and Vascular Anesthesia rotations. A Cardiac Anesthesiology Journal Club is held three times per year, and the Anesthesia Echocardiography Journal Club is held once per year, in conjunction with the PLC Vascular Anesthesia group.

### **Research**

- Dr. Alex Gregory is the Director of Cardiac Anesthesia Research. He receives grants from the Calgary Anesthesia Academic Council and from the Foothills Medical Centre Anesthesia Staff Research Fund. He also receives Institutional Support for Research funding from the University of Calgary.
- Dr. Doug Seal is the project holder of the Foothills Medical Centre Staff Anesthesia Research Fund. The fund was established through the generosity of Dr. Tim Tang, a former Cardiac Anesthesia Group member. It was developed to

promote research in the areas of Cardiac Anesthesia, Patient Outcomes and Quality Improvement. In addition to Dr. Gregory, Drs. Kaylene Duttchen and Julia Haber have been award recipients.

**Recent publications include:**

- Campbell E, Miller RJ, Gregory A, Weeks SG. Cardiogenic shock as a complication of Takotsubo Cardiomyopathy in a patient with incarcerated bowel. *J Cardiothorac Vasc Anesth* 2016; epub ahead of print.
- Smith HN, Boodhwani M, Saczkowski R, Ouzounian M, Gregory AJ, Herget EJ, Appoo JJ. Classification and outcomes of extended arch repair for acute Type-A aortic dissection: A systematic review and meta-analysis. *Can J Cardiol* 2016; 32(10) Supp 1: S189.
- Guo M, Smith H, Ouzounian M, Boodhwani M, Gregory AJ, Herget EJ, Saczkowski R, Appoo JJ. How robust are the natural history data of ascending aortic aneurysm? A systematic review and failed meta-analysis. *Can J Cardiol* 2016; 32(10) Supp 1: S270.
- Gregory AJ. Dr. Charles Leslie MacAdams. *Can J Anaesth* 2016; 63(9):1112-3.
- Gregory AJ, Hatem MA, Yee K and Grocott HP. Optimal placement of cerebral oximeter monitors to avoid the frontal sinus as determined by computed tomography. *J Cardiothorac Vasc Anesth* 2016; 30(1):127-33.
- Martufi G, Ismaguilova A, Appoo JJ, Herget EJ, Gregory AJ, Merchant N, Di Martino ES. Multidimensional Aneurysmal Growth – A Novel Technique Derived from Biomedical Engineering Principles to Help Refine Assessment of Aortic Growth. *Can J Cardiol* 2015; 31(10):S78.
- Appoo JJ, Herget EJ, Pozeg ZI, Ferris MC, Wong JK, Gregory AJ, Gupta AK, Merchant N, Kent WDT. Midterm results of Endovascular Stent Grafts in the Proximal Aortic Arch (Zone 0): an Imaging Perspective. *Can J Cardiol* 2015; 31(6): 731-7.

**Recent abstract presentations include:**

- Ramazanov R, Stephen O, Prusinkiewicz C, Conly J. Potential Blood/Body Fluid Exposure (BBFE) during Transesophageal Echocardiography (TEE) Leading to a Probe Leak Testing Protocol as a Quality Improvement. Quality Summit 2016.

### **Ongoing or recently completed research includes:**

- Transfusion Requirements in Cardiac Surgery (TRICS III): A Randomized Controlled Trial: Site Investigators: Dr. Alex Gregory, Co-Investigator: Dr. Douglas Seal.
- Aortic strain analysis using speckle tracking imaging, magnetic resonance imaging and biomechanical testing in a porcine model. Investigators: Dr. Alexander Gregory, Dr. Elena Di Martino, Dr. John Tyberg, Dr. Gary Dobson.
- Stroke in Aortic Dissection: Systematic Review and Meta-analysis, Investigators: Dr. Carol Tham, Dr. Jenny Thompson, Dr. Alexander Gregory, Dr. Jehangir Appoo and Dr. Bijoy Menon.
- Neurologic outcomes in aortic dissection: A single-centre retrospective analysis. Investigators: Dr. Alexander Gregory & Dr. Jehangir Appoo.
- Neurologic outcomes in elective aortic aneurysm repair requiring circulatory arrest: A singlecentre retrospective analysis. Investigators: Dr. Alexander Gregory & Dr. Jehangir Appoo
- Aorta at Risk: Multimodal assessment of proximal aortic aneurysms. Investigators: Dr. Elena Di Martino, Dr, Alexander Gregory, Dr. Eric Herget, Dr. Naeem Merchant, Dr. Amy Bromley, Dr. Jehangir Appoo.
- Comparison of pressures measured at various locations while on cardiopulmonary bypass and selective antegrade cerebral perfusion via axillary artery cannulation. Investigators: Dr. Alexander Gregory, Dr. Jehangir Appoo, Dr. William Kent, Dr. Scott McClure.



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# PATIENT BLOOD MANAGEMENT PROGRAM

## Dr. L. Chow

It has been one and a half years since I took over as Medical Director of the Patient Blood Management Program from Dr. Charlie MacAdams. This has been a year of change, most notably being the unexpected passing of Dr. MacAdams in May of this year. Despite his stepping down from the program in 2015, it was expected that Charlie's expertise, mentorship and support would exist for years to come, so this is both a personal and professional loss. I have been extremely fortunate to have the help of Becky Rock who has guided me through this transition process.

Charlie was instrumental in advocating for the development of the previous Perioperative Blood Conservation Program (PBCP), overseeing its inception in 2002 with funding provided by Ortho-Biotec. Through Charlie's advocacy and tenacity, support for the program was assumed by the Calgary Health Region and continues with full support of AHS today.

Charlie was a tireless advocate, teacher, researcher, leader, and friend. He was a constant champion of nurses, Anesthesia Respiratory Therapists, and other healthcare staff supporting their efforts to participate, to lead, and to contribute in healthcare.

### **Program Redevelopment & Rebranding**

The program is being redeveloped and re-named to reflect recommendations from the literature and leading blood organizations (i.e.: American Association of Blood Banks [AABB], Society for Advanced Blood Management [SABM]) with regards to management of blood and transfusion.

Patient Blood Management (PBM) is a multi-modal and multi-disciplinary approach to managing patient blood with the overarching goal of *improving patient outcomes*; medical & surgical techniques are applied throughout the perioperative experience to support the following three 'Pillars': 1) improve hematopoiesis; 2) optimize coagulation and minimize blood loss; and, 3) harness patient ability to tolerate anemia and support patient-centered, evidence-based transfusion decisions.

The Calgary Zone PBM Program will function in active and/or advisory roles in the various components of a comprehensive program:

**See Addendum:** Perioperative PBM Strategies

## 1. Preoperative Anemia Management - Active:

The PBMP continues to receive referrals for management of preoperative anemia from various sources, including Pre-Admission Clinic (PAC), Alberta Hip & Knee Clinic (AHKC), Cardiac Surgery Referral Office, and other surgical intake sources. The PBMP & AHKC have partnered to develop a consistent approach to identify, refer, and treat patients for anemia at time of intake. Similar strategies are being developed with Cardiac Surgery and other departments.

**Target Preoperative Hgb** for most elective surgeries: **>130g/L (male or female)**

Limited in Scope—PBM Nurse refers patients to Gastroenterology, Hematology, Nephrology and/or Primary Care for investigations and treatments not under the purview of the PBMP.

**Advisory:** The PBMP continues work to raise awareness about anemia management among physicians (e.g.: bone & joint, gynecology, Primary Care); helps develop assessment and treatment algorithms to be applied for early intervention, prior to PAC visit, etc.

## 2. Coagulation Management & Minimization of Blood Loss - Active:

- Development/Promotion of treatment protocols [i.e.: Protocol for Tranexamic Acid (TXA) in Arthroplasty Surgery v3; Minimization of Phlebotomy Blood Loss]
- Maintenance of Cardiac Surgery Direct Oral Anti-Coagulant (DOAC) database
- Support development/amendment of CZ Cell-Salvage Policy & Procedure

## 3. Anemia Tolerance & Patient-Centered Transfusion Decisions - Active:

- In-Development: 'Anemia Tolerance' guidelines for Patient Care Units
- Re-development: 'CZ Transfusion Guidelines' including relocating guide from Calgary Lab Services (CLS) website to more-accessible AHS website
- Promotion of Choosing Wisely Canada guidelines for evidence-based transfusion decisions
- In-Development: comprehensive 'Treatment Guideline for 'NO-BLOOD' Patients'

**Surgical Blood Utilization Reporting – Statit piMD Database** - Created in collaboration with Data Integration Management & Reporting (DIMR):

### Orthopedic

Total Hip Arthroplasty (THA), Total Knee Arthroplasty (TKA), Laminectomy Spine, Pediatric Spine (Scoliosis repair)

- THA & TKA: overall rates continue to trend down—5% and 3% respectively, from 20% and 18% in 2005

- Pediatric Spine: overall rates have decreased to 11%, from 41% in 2012
- THA/TKA improvements attributed primarily to TXA Protocol: higher rate of usage is associated with lower overall transfusion rates at CZ hospitals
  - THA: FMC reports lowest use of TXA (62%) and highest overall rate of transfusion (9%); PLC reports highest use of TXA (85%) and lowest overall rate of transfusion (3%)

## **Cardiac**

### **CABG, Cardiac Valve & CABG-Valve**

- CABG: overall rate decreased to 28% from 37% (2014/15)
- Cardiac Valve: overall rate decreased to 33% from 42% (2013/14)
- CABG-Valve: overall rates remain stable at 63%

## **Vascular**

- Overall rates for Vascular surgery remain stable at 26%

### **Addendum: Surgical Blood Utilization Reports 2015 – 2016**

#### **Individual Surgeon Reports**

Blinded, Individual Surgeon data is provided to surgeons performing THA, TKA, Hysterectomy, TRAM-Flap Breast Reconstruction, and Cardiac Surgery. Surgeons are provided their unblinded result in confidence.

- Overall rate of transfusion has trended down for most surgeons since introduction of Individual Surgeon Reporting

## **Clinical Services**

### **Calgary Zone Transfusion Committee (CZTC)**

PBMP participates in and contributes to CZTC activities/projects

### **Hematology Fellows & Anesthesia Residents Teaching Sessions**

Two hour seminars are provided for residents and fellows during their rotations in Transfusion Medicine; approx. two to three times per year. These include provision of reference material and teaching sessions on massive transfusion and blood conservation.

### **Thromboelastometry (ROTEM) for Clinical Care**

Tremendous amount of work has been done in conjunction with the Department of Surgery (orthopedic and general surgery divisions) for the Health Technology Assessment (HTA) process in order to obtain ROTEM for clinical use.

## Projects

- **PBM in Vascular Surgery**

In collaboration with Dr. Paul Petrasek, the PBMP applied for and received a Surgical SCN 'SEED Grant' in the amount of \$10,000 to study impact of PBM strategies in major Vascular surgery patients. In addition to Dr. Petrasek and myself as Principal Investigators, the project will be supported by Dr. Dean Jordan, Dr. Kyle Rogan, Dr. Andrew Walker, Christy Findlay and Becky Rock.

- **Choosing Wisely RBC Transfusion Project**

Choosing Wisely Canada: "10 Things Physicians and Patients Should Question" (Transfusion)

Becky Rock will partner with CLS in a project to address RBC transfusion orders that are made outside of Choosing Wisely Canada's recommendations for evidence-based transfusion ordering. Education will rolled out in December 2016 with the project initiated in January 2017.

- RBC transfusion orders which do not meet guidelines will be reported to TM physician (i.e.: RBC order with no Hgb result recorded within 24 hrs; routine RBC order for more than 1 unit at a time)
- Ordering physician will be contacted by TM physician to address recommendations, notify of need for Hgb result and/or other evidence for RBC transfusion
- 2<sup>nd</sup> RBC unit will not be released until updated Hgb result received or clinical signs/symptoms justify further transfusion

- **Point-of-Care Coagulation Testing in Pregnancy**

The results of the pilot study investigating the use of thromboelastography (TEG) in detecting the presence of dalteparin in pregnancy have been published (Chow L, Carr A, MacKenzie L, Walker A, Archer D, Lee A. Int J Obstet Anesth. 2016 Sep 1.[Epub ahead of print]). The next step of the project will be to determine if an alternative coagulation monitor, thromboelastometry (ROTEM), has the sensitivity to detect the presence of dalteparin in pregnancy.

- **Point-of-Care Hemostatic Testing in Cardiac Surgery: A stepped-wedge clustered Randomized Controlled Trial**

Under the direction of Dr. Charlie MacAdams, with the help of Karen Maier, Calgary was one of 12 hospitals that participated in this multi-centered trial. Recruitment of patients were completed May 1, 2015, with over 7,000 patients enrolled in the trial. The results of this trial were recently published in September, (Karkouti K et al. Circulation 2016; 134:1152-1162). Secondary analyses of the data set obtained from this study was also performed by Dr. Wing Lam as part of her Masters of Public Health degree at Harvard University.

- **Transfusion Requirements in Cardiac Surgery III (TRICS-III) Trial**

TRICS-III is an international, multi-centre, open-label randomized controlled trial of two commonly used transfusion strategies in high risk patients having cardiac surgery using a non-inferiority trial design. The goal of the study is to recruit 4,500 patients at 65 international sites and the study currently has approximately 4,200 patients recruited. Calgary is one of the most active patient recruitment sites with Karen Maier as the project coordinator.

### **Other Business**

Becky Rock has been involved with the Society for the Advancement of Blood Management (SABM) an international association of healthcare professionals dedicated to advancing Patient Blood Management as a worldwide standard of care.

Becky has been acted as faculty at past SABM Annual Meetings and has worked with the Nursing Education Work Group to develop a PBM Certificate Course for physicians, nurses and other allied health, practicing in the field; the PBM Certificate Course comprises Fundamental and Advanced lessons addressing Anemia Physiology, Assessment & Treatment; Perioperative PBM; Advanced Obstetrics; Advanced Anesthesia; Transfusion Safety; and other facets of PBM. Becky has also recently been elected to the SABM Board of Directors, where she'll serve a two year term as Director, working alongside an international team of physicians, nurses, and perfusionists.

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# HUMAN FACTORS in ANESTHESIA

## Dr. J.M. Davies & Mario Pehar

**An update about the 2014 Canadian Standards Association (CSA) standard, Z314.8-14, “Decontamination of reusable medical devices.”**

**Recap:** The part of this CSA standard of importance to Department members relates to the cleaning and storage of flexible bronchoscopes, which anesthesiologists use to secure the airways of their patients with compromised airway anatomy and function. Review of this standard led Department members to become concerned about the content of the standard with respect to the lack of evidence on which this standard appeared to be based, with respect to flexible bronchoscopes. The content of the standard was such that a strong argument could be made for resultant Human Factors (HF) usability problems with respect to the availability and assembly of the bronchoscopes. Last year, AHS supported our decision not to follow that CSA standard.

**New:** However, Infection Prevention & Control (IP&C) recently invoked its ‘standards’, which we are required to follow, i.e., IP&C are now following the CSA standard. This means that we must make changes in the way we store the bronchoscopes kept with our Emergency Airway Carts (Difficult Airway Carts) within the OR.

Currently, carts have all of the essential tools for access to an airway, including flexible bronchoscopes.

- These scopes are ready to use and are assembled with all of the connectors, adapters, camera, and light piece on the scope.
- The scopes are then hung within a clean protective tube at the side of a Difficult Airway cart.

However, IP&C standards dictate that this arrangement of hanging the bronchoscope in a clean but not sterile tub is unacceptable. IP&C has indicated that these bronchoscopes must remain and be kept sterile in the containers in which they come from the Medical Device Repressing Department (MDRD).

This has forced us to make changes in the way we store these scopes. We need to have these carts and scopes available for immediate use in the OR for use by an anesthesiologist so that the clinician can simply turn on the system and have the scope ready to use.

This poses several problems.

1. There is no additional room on the Difficult Airway Carts for the sterile bronchoscope containers.
2. Once the scope has been removed from its sterile container, the anesthesiologist (or delegate) would need to connect the various components which; is time-consuming in an emergency.
3. Furthermore, if the anesthesiologist does not have a clinical assistant or an Anesthesia RRT in house there is an added risk due to the time required to assemble the scope to have it ready for use by the anesthesiologist, who is already consumed by maintaining a difficult/challenging airway.
  - For the ACH, PLC, RCH and SHC: The Anesthesia RRTs are on-call only after hours and could potentially be far as 20 minutes away if called in.
  - For the FMC: The Anesthesia RRT provides 24 hour in-house coverage.

The proposal is that our Department will add disposable bronchoscopes to our inventory. These disposable bronchoscopes will be for use ONLY for cases at the ACH, PLC, RGH and SHC when the Anesthesia RRT is on call and not on site and only for emergency airway access cases, not routine cases.

The disposable bronchoscopes that the Department has chosen is the aScope, which is manufactured by AMBU aScope. They come in two sizes, the aScope 3 Regular (5.8mm O.D.) and the aScope Slim (3.8mm O.D.). There is also a separate monitor.

Each of the ACH, PLC, RGH and SHC sites will be stocked with a monitor and at least five bronchoscopes.

The estimated initial/start-up costs are:

- Monitor \$ 1,200
- Bronchoscope \$ 350 (sold in packs of five)
- Total (four sites) \$ 11,800

However, simply purchasing the new disposable bronchoscopes and the associated monitor is not all that is required. The Difficult Airway cart is already 'full' and adding the new monitor and space to hang the sterile scopes will require careful planning and testing. For example, the monitor weighs 1.5 kg and measures 24.1cm x 17.5 cm x 3.35 cm. The actual monitor screen measures 21 cm (8.5") with a resolution of 800 x 480. (See AMBU aScope View) Although the monitor can be easily mounted (using a VESA interface template on the back) onto a pole or arm, the challenge will be to find the best location on the already cramped carts that will provide the anesthesiologist and Anesthesia RRT with the best viewing angle. Stay tuned!

## **An update on standardization of a single platform for physiologic monitoring**

**Recap:** Starting in 2008, the Department of Anesthesia standardized its anesthetic drug drawer contents and layout, based on a Human Factors evaluation. (For further details, please see Shultz J et al, Standardizing anesthesia medication drawers using human factors and quality assurance methods. *Canadian Journal of Anesthesia* 2010; 57: 490-9.) Following along from that initiative, last year the Department of Anesthesia started to institute another standardization project – that of a single platform for physiologic monitoring. This project is designed to help maintain and improve the safety of anesthetic care through standardization, incorporating certain Human Factors heuristics such as improved consistency and standards, increased recognition of visibility system status, and greater flexibility and efficiency of use. These concepts are very important from a safety point of view because of the Department of Anesthesia’s Zone-wide staffing models for staff anesthesiologists, resident anesthesiologists and Anesthesia Respiratory Therapists. This staffing model, which also provides flexibility in the face of specific site shortages, means that any individual anesthetic care-provider could work at any of the four adult acute care sites. While it is possible to use any monitoring system, case study lessons and best practices from aviation have taught us that reversion to old actions and behaviours related to interacting with specific equipment can occur at times of high workload.

**New:** The Department of Pediatric Anesthesia at ACH recently purchased 13 new physiological monitors, thus outfitting each Operating Room at ACH with the same platform. This is the Philips IntelliVue MX800 which is already in the PACU; as well as, in ACH PICU and NICU units.

From a clinical care point of view, this standardization allows for seamless transfer of patient data when patients are being transported from the OR to the ICU or vice versa. Use of standardized and therefore readily available accessories, such as ECG lead sets, SpO2 monitors and Invasive Blood Pressure monitor cabling, will make care easier and there should be less waste as non-standardized devices will no longer need to be ‘swapped out’. Furthermore, standardization will facilitate future networking, whereby anesthesiologists will have the ability to view their patients remotely. For example, an anesthesiologist in the OR will be able to view the physiological monitoring parameters of his or her previous patient who is in the PACU.

From a support perspective, the Clinical Engineers looking after this equipment will be readily available to deal more easily with ongoing issues, repairs and troubleshooting as there is a larger pool of trained personnel versed in the platform, which is in use in various areas of ACH. This greater accessibility of trained personnel should lead to less down time and improved efficiency of engineering services, leading to greater patient safety and clinician satisfaction.



# EDUCATION

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## ANESTHESIA RESIDENCY PROGRAM

Dr. R. Eng

### **Competence By Design (CBD)**

Our program has been working hard towards the implementation of CBD for anesthesiology residency training at the University of Calgary. While we expect that there will be challenges with an initiative as extensive and significant as CBD, we have no regrets in regards to our preparation thus far and we are confident that our implementation plan will be successful. At this time, all anesthesiology programs across the country are preparing for an implementation date of July 1, 2017; however, we still await the final decision from the Royal College of Physicians and Surgeons of Canada (RCPSC) instructing us to proceed with CBD. In our preparation for CBD, we have focussed on three primary domains:

#### **1. Clinical Training**

Over the past couple of years, we have modified the training schedule for residents such that we have already overcome many of the logistical challenges associated with rotation schedule changes (e.g. a double cohort of residents rotating through sub-specialty rotations). We anticipated what the requirements of CBD would be, and our predictions were sufficiently accurate such that we anticipate minimal differences in training experience between our CBD and non-CBD resident cohorts. The only exception to this is that the Specialty Committee for Anesthesiology has provided new specialty training requirements for the postgraduate year (PGY)-1; essentially, the PGY-1 year will include two more anesthesia rotations at the expense of two off-service rotations. We have also run a 'Transition to Discipline' rotation for our new residents over these past two years, and we are well-positioned to easily conduct the first stage of the new CBD program. The changes to the PGY-2 to PGY-5 years include the creation of junior and senior sub-specialty rotations to facilitate longitudinal learning and earlier career path decisions, the creation of new rotations to better prepare our residents for the future of the specialty (e.g. our new Perioperative Ultrasound rotation), and a focus on having our residents rotate through each site in Calgary at least once per year when possible. Our residents have also been reminded that they are the ones primarily responsible for their education; CBD residents will approach each day with a goal to achieve requirements for promotion, and our current residents have also been encouraged to adopt this paradigm to their own education.

Dr. Lorraine Chow is the Curriculum Programming Lead for CBD, and she has piloted changes to the Thoracic Anesthesia rotations in anticipation of CBD. The lessons learned from this pilot project will be valuable to our implementation efforts. Over the next few years, our Rotation Coordinators will be redesigning the rotation experiences for CBD. Our focus is to train excellent perioperative physicians. We believe that the entrustable professional activities (EPA's) that CBD residents will be required to complete are simply the minimum standard of competence and our residents will always be encouraged to realize their full potential over the course of their residency training. Our Rotation Coordinators have been encouraged to view time as a resource that should be optimally used to enable residents to become the best anesthesiologists that they can be.

CBD will also require that each resident have an academic advisor assigned to them; this faculty member will assist them in developing and conducting learning plans based upon the feedback that the resident receives. Dr. Alan Chu is the Academic Advisor Lead for CBD and he is working hard in creating this new cadre of important faculty members.

## **2. Evaluation and Feedback**

One of the primary changes with CBD is that the primary responsibility for resident evaluation and promotion is shifted to the resident. CBD residents must demonstrate to the Competence Committee that they have achieved the EPA's required for promotion to the next stage of training. Therefore, we have asked both our residents and Rotation Coordinators to work together towards the goal of providing residents feedback in a timely manner. We have reminded residents that they are responsible for sending faculty members a daily evaluation for each shift worked. We have also asked our Rotation Coordinators to schedule meetings with residents at the end of each rotation to discuss rotation ITER's (in-training evaluation reports).

Dr. Heather Hurdle is the Assessment Lead for CBD and she is working on redesigning the evaluation tools used in CBD (e.g. new daily evaluation forms). She will also be leading faculty development initiatives that will equip our faculty members with the skills necessary for effective feedback and teach them how to use the new CBD assessment tools.

## **3. Out-of-Operating Room Training**

The primary focus of anesthesiology training at the University of Calgary will always emphasize clinical training. However, CBD will be introducing changes that have driven changes to the out-of-OR training that our residents engage in.

The timing of the written exam for CBD will be moved to the fall of the PGY-5 year, while the oral exam for CBD will remain in the spring of the PGY-5 year. As such, Drs. Julia Haber and Kristi Santosham (Education Co-Coordinators) have redesigned

our academic half-day Core Program into a three - year curriculum. Each unit of Core Program will now only run once during the course of a resident's PGY-1 to PGY-3 years, and CBD residents will use the PGY-4 year as a study year.

CBD residents will be required to pass the CanNASC (Canadian National Anesthesia Simulation Curriculum) simulation scenarios and evaluations in order to sit the RCPSC anesthesiology examinations. Starting in 2017, the RCPSC anesthesiology oral examinations will also include an OSCE (organized structured clinical examination) station. Dr. Megan Hayter (Simulation Co-Coordinator) has worked hard to prepare our residents for these assessments, and they have also worked with the department's Simulation Committee to enhance and refine the simulation training that our residents engage in. Our program successfully applied for a Simulation Funding Request of \$12,000 from the Office of Postgraduate Medical Education in order to train more faculty members to become simulation instructors; these funds were used to send several faculty members to the Royal College Simulation Education Training (SET) course.

CBD has also provided our specialty an opportunity to redefine the competencies of generalist anesthesiologists, and our program has introduced training programs for our residents that prepare them for these changes. Dr. Neal Maher has been instrumental in providing residents training in FATE (Focus Assessed Transthoracic Echocardiography), FAST (Focused Assessment with Sonography in Trauma), and emergency lung ultrasound, while Dr. Jason Waechter has invited our residents to join the echocardiography course with Critical Care Medicine Fellows. Dr. Jan Davies has done outstanding work in augmenting teaching in patient safety and quality improvement; such as the Disclosure of Untoward Medical Outcome (DUMO) course. She has also worked to incorporate more sessions in these domains in our Core Program.

We do not anticipate any changes to the scholarly project requirements in CBD. Drs. Lorraine Chow and Adam Spencer (Scholarly Project Co-Coordination) have done excellent work this year helping our residents complete high quality projects. They have created a database of projects to help connect residents with investigators in the city and they have also created milestones and defined expectations to help residents complete their projects in a timely manner. Drs. Chow and Spencer also organized the Scholarly Project Evening in March 2016 that was well received by all who attended. Dr. Nathan Brown, our Journal Club Coordinator, has been instrumental in securing unrestricted educational grants for our program to host journal club events.

The following faculty members and residents have served on the CBD Committee this past year:

David Archer	Arash Fard	Curt Pitter
Graeme Bishop	David Fermor	Chris Prusinkiewicz
Nathan Brown	Donal Finegan	Saul Pytka
Edward Choi	Mark Gale	Kyle Rogan
Michael Chong	Julia Haber	Peter Samuels
Lorraine Chow	Jeremy Hamming	Kristi Santosham
Alan Chu	Megan Hayter	Rod Schultz
Karl Darcus	Heather Hurdle	Kelly Shinkaruk
Paul Dawson	Melissa Jack	Adam Spencer
Jan Davies	Dean Jordan	Shean Stacey
Melinda Davis	Danae Krahn	Zahid Sunderani
Gary Dobson	Nadine Lam	Rob Thompson
Niamh Donnelly	Nicky Lange	Andrea Todd
Katrina Drohomirecki	Jeremy Luntley	Kevin Torsher
Reuben Eng	Debbie McAllister	Jason Waechter
Alastair Ewen	Duncan McLuckie	Theresa Yang
Richard Falkenstein	Lori Olivieri	Christopher Young

We were successful in our application for CBD Development Funding from the Office of Postgraduate Medical Education. We received \$32,000 and these monies are to be used as stipends for the CBD Leadership Team members.

### **Royal College of Physicians and Surgeons of Canada Program Accreditation**

Our program submitted a progress report to the RCPSC in response to comments made during the previous accreditation review. The report was received well and the program's accreditation status is now "accredited program with follow-up by regular survey".

### **Residency Training Committee**

We are grateful for the support of the following individuals in helping to lead the residency training program. It is a significant amount of work and our program would not be as successful as it is without the efforts of these members:

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## **Anesthesia Residency Training Committee**

Program Director (Chair)	Dr. R. Eng
Associate Program Director	Dr. D. Archer
ZCDH/ Head, University Department	Dr. G. Dobson
FMC Site Coordinator	Dr. D. Fermor
FMC Associate Site Coordinator	Dr. A. Todd
PLC Site Coordinator	Dr. G. Bishop
PLC Associate Site Coordinator	Dr. K. Darcus
ACH Site Coordinator	Dr. A. Ewen
ACH Associate Site Coordinator	Dr. D. McAllister
RGH Site Coordinator	Dr. P. Samuels
RGH Associate Site Coordinator	Dr. K. Torsher
SHC Site Coordinator	Dr. A. Chu
SHC Associate Site Coordinator	Dr. N. Brown
Education Coordinator – PGY 2-4	Dr. J. Haber
Education Coordinator – PGY 1	Dr. K. Santosham
Scholarly Project Coordinators	Drs. L. Chow & A. Spencer
Simulation Coordinator	Dr. M. Hayter
Quality & Safety Coordinators	Drs. J. Davies & D. Finegan
Chief Residents	Drs. D. Krahn & K. Rogan
Senior Resident Representatives	Dr. N. Lange
Junior Resident Representative	Dr. E. Choi
Clerkship Director	Dr. M. Chong
Canadian Anesthesiologist's Society (CAS) Resident Representative (non-voting)	Dr. P. Dawson
Fellowship Director (non-voting)	Dr. A. Gregory
Family Practice Anesthesia Program Director (non-voting)	Dr. D. Wood

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In addition to the usual affairs of the RTC, the RTC supported three residents through Remediation Programs in the past year.

The RTC is grateful for all the administrative support that has been provided by the Department's administrative leaders Mr. Andrew Jenkins and Ms. Amber Arsneau; as well as program administrators Carla Camac and Leslie Vester. There is no doubt that the endeavours of the RTC would not be successful without the continuing outstanding support from our Department Head, Dr. Gary Dobson.

The following members either resigned from the RTC or completed their term of service on the RTC: Drs. Erin Bruce, Jordan Caveno, Linda Hung, Kim Illing, Craig Pearce, Kelly Shinkaruk, Zahid Sunderani, and Desiree Teoh.

## **Rotation Coordinators**

Our program is also tremendously grateful for the efforts of our Rotation Coordinators. These faculty members enable us to provide the best clinical training possible with the resources that we have:

Graeme Bishop	Adult Anesthesia (PLC)
Nathan Brown	Regional Anesthesia
Lorraine Chow	Thoracic Anesthesia
Alan Chu	Adult Anesthesia (SHC)
Alastair Ewen	Pediatric Anesthesia
Richard Falkenstein	Neuroanesthesia
Arash Fard	Perioperative Ultrasound
David Fermor	Adult Anesthesia (FMC), Complex Anesthesia
Jeremy Hamming	Acute Pain Service
Curt Pitter	Obstetric Anesthesia (PLC)
Chris Prusinkiewicz	Cardiac Anesthesia
Saul Pytka	Airway Anesthesia
Peter Samuels	Adult Anesthesia (RGH), Urologic Anesthesia
Rod Schultz	Obstetric Anesthesia (RGH)
Melissa Setiawan	Community Anesthesia
Kelly Shinkaruk	Chronic Pain
Rob Thompson	Obstetric Anesthesia (FMC)
Theresa Yang	Vascular Anesthesia

## **Calgary Anesthesia Resident Retreat (CARR)**

The CARR Planning Committee consisted of Drs. Zahid Sunderani (Chair), Meredith Hutton, and David Nguyen. They did an excellent job planning a retreat that was well received by all who attended, and on budget. The residents were particularly grateful for the presence of the faculty members who joined the resident-staff social cooking class.

## **Mentorship Program**

Dr. Alan Chu is leading the initiative to formalize the mentorship that occurs between residents and faculty members. We are fortunate that the majority of our faculty members have, over the years, served as informal mentors to many of our residents. With this new program, we aim to provide mentors with the resources necessary to be the best mentor that they can be, and to help residents engage in meaningful mentorship relationships.

Our Chief Residents annually organize a buddy program for the incoming residents. Candidates who successfully match to our program are assigned a senior resident and

junior resident ‘buddy’ in order to help the candidates transition to residency and living in Calgary. This was organized by Drs. Erin Bruce and Linda Hung last year.

### **Graduating Residents**

The following residents successfully passed their RCPSC examinations in anesthesiology and graduated from our residency program this past year:

1. Dr. Scott Else – now completing a fellowship in Pediatric Anesthesiology at Boston Children’s Hospital in Boston, MA, USA;
2. Dr. Kevin Gregg – now employed as a Staff Anesthesiologist in Edmonton, AB;
3. Dr. Lindsay MacKenzie – will soon pursue a fellowship in Obstetric Anaesthesia at John Radcliffe Hospital in Oxford, England;
4. Dr. Lindsay McMillan – now completing a fellowship in Pediatric Anesthesiology at the University of Colorado School of Medicine in Aurora, CO, USA; and
5. Dr. Christopher Noss – will soon start a fellowship in Cardiac Anesthesia at the University of Calgary.

### **New Residents and CaRMS (Canadian Resident Matching Service)**

Our program had a very strong and successful CaRMS match, and we are delighted to welcome the following residents to our program:

1. Dr. Claire Allen (University of Alberta);
2. Dr. Elena Cavazzi (University of British Columbia);
3. Dr. Katrina Drohomirecki (University of Calgary);
4. Dr. Cam Shillington (University of Alberta); and
5. Dr. Carlos Yu (University of Calgary).

The CaRMS Selection Committee is instrumental in helping us select the best candidates, and the following individuals served on the committee this past year:

David Archer	Donal Finegan	Nicky Lange	Sabrina Sandhu
Graeme Bishop	Julia Haber	Debbie	Rod Schultz
Nathan Brown	Nina Hardcastle	McAllister	Karl Simon
Erin Bruce	MooKhon Hiew	Lindsay	Adam Spencer
Alan Chu	Linda Hung	McMillan	Zahid Sunderani
Melinda Davis	Dean Jordan	Lori Olivieri	Kevin Torsher
Alastair Ewen	Danae Krahn	Peter Samuels	

Our residents and faculty members continue to work hard representing the specialty in undergraduate medical education and helping us recruit the best medical students into our specialty and our program. Examples of such endeavours include supporting the Anesthesia Interest Group, providing Career Day presentations, and serving as preceptors in courses such as Procedural Skills, Simulation, small group sessions, and physical exam.

Our program strives to provide medical students the opportunity to learn about our city and training program by approving as many elective requests as possible. We are grateful to all the sites for accommodating these extra medical students. In order to minimize faculty fatigue, our program has been more stringent in our requirements for off-service residents; the minimum length of a rotation for off-service residents is now 4 weeks, and they must provide us a list of goals and objectives that have been approved by their respective Program Director.

### **Faculty Volunteers**

Our program is supported by the efforts of numerous faculty members who take time out of their busy schedules to contribute to the development of the next generation of anesthesiologists.

Faculty members who taught in Core Program in the 2015 – 2016 academic year include:

Keith Anderson	Arash Fard	Debbie McAllister
David Archer	Peter Farran	Brian McIntyre
Leyla Baghirzada	Jennifer Froelich	Jon McMann
Colin Bands	Mark Gale	Jamin Mulvey
Mike Beriault	Alex Gregory	Lori Olivieri
Graeme Bishop	Julia Haber	Chris Prusinkiewicz
Nathan Brown	Jeremy Hamming	Nivez Rasic
Kerryn Carter	Nina Hardcastle	Kristi Santosham
Michael Chong	Megan Hayter	Doug Seal
Lorraine Chow	Esther Ho	Kelly Shinkaruk
Alan Chu	Kim Illing	Adam Spencer
Ruth Connors	Dean Jordan	Dean Swedlow
Melinda Davis	Mark Kostash	Desiree Teoh
Elisabeth Dobereiner	Marelise Kruger	Jason Waechter
Niamh Donnelly	Michael Letal	Steven Wheeler
Ryan Endersby	Jeremy Luntley	

Faculty members who taught simulation sessions in the 2015 – 2016 academic year included:

Niamh Donnelly	Dean Jordan
Julia Haber	Marelise Kruger
Megan Hayter	Kristi Santosham



Throughout the week, faculty members around the city provide morning teaching sessions to our residents, including the following staff anesthesiologists in the 2015 – 2016 academic year:

Keith Anderson	Alex Gregory	Craig Pearce
Leyla Baghrizada	Dean Jordan	Curt Pitter
John Balaton	Julia Haber	Chris Prusinkiewicz
Graeme Bishop	Wendy Hall	Saul Pytka
Nathan Brown	Megan Hayter	Sharon Rabuka
Tommy Chan	David Halpenny	Marius Saayman
Michael Chong	Mookhon Hiew	Kristi Santosham
Lorraine Chow	Kim Illing	Kelly Shinkaruk
Karl Darcus	Leigh Illing	Karl Simon
Melinda Davis	Bruno Ligier	Shean Stacey
Niamh Donnelly	David Kent	Desiree Teoh
Kaylene Duttchen	Mark Kostash	Rob Thompson
Ryan Endersby	Udell Larsen	Andrea Todd
Reuben Eng	David Liepert	Josh Wilson
Arash Fard	Neal Maher	Dan Wood
Donal Finegan	Lori Olivieri	Theresa Yang

The following faculty members were recognized by last year's PGY-5 residents for their dedicated assistance in helping this cohort of residents prepare for the RCPSC Anesthesiology Oral Examinations:

Graeme Bishop	Donal Finegan	Marius Saayman
Nathan Brown	Lou Fraser	Rod Schultz
Michael Chong	Julia Haber	Kelly Shinkaruk
Lorraine Chow	David Halpenny	Andrea Todd
Alan Chu	Megan Hayter	Jason Waechter
Karl Darcus	Mookhon Hiew	Josh Wilson
Melinda Davis	Dean Jordan	Theresa Yang
Niamh Donnelly	Udell Larsen	

Finally, the following faculty members conducted the annual oral examination practice sessions with the residents in the 2015 – 2016 academic year:

Udell Larsen  
Marius Saayman  
Rod Schultz

## Miscellaneous Funding Matters

In addition to the aforementioned successful funding requests, our program received \$27,300 from the Distributed Learning and Rural Initiatives in support of our Community Anesthesia rotation in Lethbridge. These funds were used to purchase a LifePak Defibrillator, Femoral Line Trainer, and textbooks.

The residency training was also successful in applying for a \$60,000 Infrastructure Funding Request from the Office of Postgraduate Medical Education. These funds were used to purchase an ultrasound machine in order to help our residents further develop and refine their skills in ultrasonography.

The Department of Anesthesiology, Perioperative and Pain Medicine has also graciously paid for the custom embroidery for the white lab coats that all of our residents receive. By doing so, our residents are contributing to our specialty's recognition as perioperative physicians in the city of Calgary. The Department has also paid for the residency program's subscription to Basecamp 3; this project management software is now vital to the operation of the residency training program.

The overall budget allocated to the RTC from the Office of Postgraduate Medical Education in the 2015 – 2016 academic year was \$36,438. The budget for the 2016-17 academic year is anticipated to be \$27,083 - \$33,854 pending approval from the Government of Alberta.

## 2016 Award Winners

The Awards & Graduation Dinner held on June 22, 2016, was a rousing success and well attended by almost 100 faculty members and residents. We hope that attendance is even higher next year! Dr. Mike Beriault was our first commencement speaker, and he shared many words of wisdom – especially for our resident physicians.

The following residents were recipients of an Outstanding Clinical Performance Award, as determined by the respective Rotation Coordinator:

Edward Choi	Adult Anesthesia at PLC
Chris Dyte	Cardiac Anesthesia, Thoracic Anesthesia
Scott Else	Vascular Anesthesia
Kevin Gregg	Thoracic Anesthesia, Vascular Anesthesia
Michael Gysel	Adult Anesthesia at PLC
Linda Hung	Cardiac Anesthesia
Nadine Lam	Adult Anesthesia at PLC
Lindsay MacKenzie	Adult Anesthesia at FMC, Obstetric Anesthesia at PLC, Vascular Anesthesia
Lindsay McMillan	Vascular Anesthesia

Chris Noss	Adult Anesthesia at FMC, Adult Anesthesia at RGH, Chronic Pain, Regional Anesthesia at SHC, Vascular Anesthesia
Kyle Rogan	Adult Anesthesia at RGH, Regional Anesthesia at PLC
Zahid Sunderani	Adult Anesthesia at FMC, Thoracic Anesthesia
Christopher Young	Adult Anesthesia at PLC

The following PGY-1 residents were recipients of the following awards for outstanding performance on their clinical rotations at RGH:

Edward Choi	E.R. Oscar Award (for Emergency Medicine)
Michael Gysel	Dr. D. Cadger Award in Internal Medicine

The following residents received the Outstanding Academic Achievement Award in recognition of their achievement of a score greater than one standard deviation above the mean for their cohort:

Paul Dawson  
Linda Hung  
Nadine Lam

Dr. Afra Moazeni was awarded the Extra Mile Award from her fellow residents in recognition of her selfless dedication to the wellbeing of other residents and the residency program at large.

Drs. Linda Hung and Afra Moazeni received the Scholarly Project Evening Presentation Award for their project "Evaluating local infiltration of anesthesia versus intrathecal opioid for pain control in total joint replacement surgery."

Dr. Erin Bruce was the winner of the Best Paper in Critical Care Medicine at the Canadian Anesthesiologist's Society (CAS) Annual Meeting, and she was also a finalist in the CAS Resident Research Competition for her project "Does elevated perioperative lactate translate into poor clinical outcomes?"

Dr. Lorraine Chow was the recipient of the Leo Strunin Award. The recipient of this award is selected by the residents, and it is given in recognition of outstanding contributions to residency training in the Department of Anesthesiology, Perioperative and Pain Medicine.

The following faculty members were selected by the residents to receive the Outstanding Educator Award at their respective sites:

Graeme Bishop (PLC)  
Nathan Brown (SHC)  
Mark Gale (ACH)  
Julia Haber (FMC)  
Jill Yemen (RGH)

The following faculty members were nominated by their respective RTC Site Coordinator for Outstanding Daily Evaluation Awards at their respective sites:

Leyla Baghirzada	Kristi Santosham	Theresa Yang
Karl Darcus	Misbah Shah	Jill Yemen
Lori Olivieri	Sandy Shysh	

Based upon the results of the resident faculty evaluation forms, the following faculty members received an Excellence in Postgraduate Medical Education Award because they scored above-average in every domain of the evaluation form:

Leyla Baghirzada	David Halpenny	Curt Pitter
Colin Bands	Nina Hardcastle	Chris Prusinkiewicz
Bevin Bart	Geoffrey Hawboldt	Nivez Rasic
Graeme Bishop	Kim Illing	Marius Saayman
Nathan Brown	Mark Kostash	Kristi Santosham
Tom Chan	David Lardner	Doug Seal
Michael Chong	Udell Larsen	Misbah Shah
Ruth Connors	Michael Letal	Adam Spencer
Robin Cox	Jeremy Luntley	Terry Stewart
Gary Dobson	Jamin Mulvey	Robert Thompson
Arash Fard	Lori Olivieri	Jason Waechter
Donal Finegan	Bronwyn Parkinson	Josh Wilson
Mark Gale	Craig Pearce	Jill Yemen

### **Teaching Scholars in Medicine Program (TSIMP) Participants**

Congratulations to Drs. Linda Hung and Meredith Hutton for having been selected to participate in the prestigious TSIMP program at the Cumming School of Medicine during this past year.

### **Future Directions**

The challenges that lie ahead for the residency training program are daunting but surmountable. They will require all faculty members in the department to engage in the education of our resident physicians and they will also require that all our resident physicians engage in endeavours to improve all facets of the residency program. Our program will continue to seek and obtain all the necessary resources to achieve our goals and we eagerly strive towards the goal of training the best anesthesiologists possible for Canadian society with the resources that we have.

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# FAMILY PRACTICE

## Dr. D. Wood

The Family Practice Anesthesia (FPA) residency program serves rural communities with its core goal to train family physicians to provide competent anesthesia care in remote and underserved rural locations. The FPA program benefits from its co-ordination and affiliation with the excellent Royal College training program and the residents are generally integrated with the specialty anesthesia residents for clinical and much didactic training.

Targeted training is also arranged to allow FPA residents to focus on expected practice profile upon completion of training. The training is a one year program with rotations in anesthesia covering general adult, pediatric, and obstetric training, with a month spent in Yellowknife doing anesthesia with both local FPA practitioners and Royal College certified specialists. The FPA program is accredited by the College of Family Physicians of Canada via the Department of Family Medicine, and is represented on the Department of Family Medicine's Enhanced Skills Program committee.

### **Manpower, recruitment and staffing**

Current residents are Drs. Kylan McAskile and Tan Lin. Dr. McAskile came directly from Family Medicine Residency training in Northern Alberta and Dr. Lin comes to us from a Family Medicine Residency in Ontario. Almost all of our graduates have practiced in rural Western Canada after graduation.

### **Section/Program educational and academic activities**

Staff anesthesiologists in Calgary contribute greatly to the success of the FP-Anesthesia program. Resident teaching rounds and grand rounds are hospital site co-ordinated as is daily education in the Operating Room. FPA residents also participate in academic half day as well as various departmental educational opportunities, with events from both the Departments of Anesthesia and Family Medicine. FPA residents also have protected time for the Rural Anesthesia conference in Banff each year which is heavily supported with teaching by Department of Anesthesia staff.

### **Section/Program accomplishments and highlights**

Last year the FPA Program underwent its second successful external accreditation by the College of Family Physicians of Canada. The association with the Department of Family Medicine has seen plans for optimizing application processes with an online system for new applicants. Our two residents from last year both graduated successfully and are engaged in rural locum practices in British Columbia, Alberta, and Ontario to date. The FPA Program has successfully trained residents for a number of

years and has been formally accredited since 2009 by the College of Family Physicians (CFPC), in association and collaboration with the Department of Family Medicine.

The FPA program benefits from strong faculty support and has been fortunate to recruit high quality resident trainees. The success of the FPA program is thanks to the efforts of so many staff in our department. At a time when multiple other Canadian university departments have been unable to maintain accreditation for their FPA training programs, we should be very proud of the contributions we make to rural health care in Alberta and beyond.

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# ANESTHESIA CLERKSHIP PROGRAM

## Dr. M. Chong

The University of Calgary's Anesthesia Clerkship Program had another great year. The clerkship program continues to be well received by the medical students and highly ranked by the majority of students that come through our program. We again had a busy year, but was allowed a bit of room to breathe after completing the medical school accreditation last year.

As many of you know, the University of Calgary Clerkship program organizes many different courses for the students. The mandatory clerkship rotation is a two week rotation and this year we had approximately 160 students come through this rotation. This rotation consists of an orientation day and didactic teaching by one of our anesthesia residents and the acute pain nurses from the Foothills Hospital. After the orientation day the remaining nine days consist of clinical assignments in the pre-operative clinic, chronic pain, and main operating rooms. They are required to see and/or read about some essential clinical presentations and tasks and finish their rotation by writing a multiple choice examination.

The majority of the teaching of medical students is done at the four adult sites in the region. Each site will have between one to five students per week. The Alberta Children's Hospital also teaches a number of elective medical students throughout the year. In addition to the mandatory rotation, there are many Med 440, Med 402, shadowing and elective students that come through our program. This translates to over 200 students that come through our operating rooms each year. The program runs smoothly thanks to the help of all our administration staff and all of you great teachers. Thank you very much for all your time and effort.

I want to specifically acknowledge the time, commitment, and hard work of all the people who volunteer their time on the Anesthesia Clerkship Committee:

Lynda Pedersen	Anesthesia Clerkship Secretary (who this program could not run without)
Dr. Melinda Davis	Anesthesia Clerkship Evaluations Coordinator and Foothills Hospital representative
Dr. Sabrina Sandhu	Representative for the Peter Lougheed Hospital
Dr. Alan Chu	Representative for the South Health Campus
Dr. Niamh Donnely-Warner	Representative for the Rockyview General Hospital

A special thanks to Dr. Sabrina Sandhu as she has now decided to move on from the clerkship committee to bigger and better endeavors. Thank you for all of your time and commitment over the past several years. Dr. Vanessa Wong has agreed to be the new representative for the Peter Lougheed hospital.

Another special thanks to the Acute Pain Service nurses at the Foothills Hospital and the Residents for their assistance and commitment to helping us educate the students on their orientation day. The APS nurses teach on acute and chronic pain and the residents present on the pre-operative assessment, pharmacology, intravenous insertion, and airway management. Thank you for making our program great!

I wanted to update the region on an initiative that the clerkship program started about two years ago. We currently give six to eight presentations to the medical school class each year. These presentations are directed to the first and second year students and are meant to provide them with an introduction to anesthesia concepts and exposure to anesthesia as a specialty. These lectures are given by our residents to 20-50 students from the medical school class. I have received extremely positive feedback from this initiative and hope that these lectures increase our exposure to the medical student body and help us attract the best candidates to our specialty. Dr. Nicola Lange has been integral in the organization of this initiative and I wanted to send a special thanks to her and all the residents involved.

Year after year we receive excellent feedback regarding our rotation and this is all due to the great teaching from all the staff and residents. We have dedicated and enthusiastic teachers in Anesthesia, and the medical school class has repeatedly acknowledged their appreciation to our outstanding teachers. This year's resident educators of the year were Dr. Linda Hung and Dr. Scott Else. The winners of the outstanding clerkship educators went to Dr. Saul Pytka from RGH, Dr. Alan Chu from SHC, Dr. Graeme Bishop, and Dr. Arash Fard from the PLC and Dr. Geoff Hawboldt from the FMC.

I want to personally thank each and every staff member and members of the administrative team involved in the program. The feedback we receive as a program is one of the highest of all the clerkship programs at the University of Calgary, and this is all thanks to your dedication and commitment to teaching. All of this effort ensures that the students succeed in their goal of becoming well rounded physicians and helps build our specialty by attracting the best candidates to our program.

Thank you all for your hard work, time and commitment and I look forward to another successful year.



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# CONTINUING MEDICAL EDUCATION

## Dr. R. Cox

2015 – 2016 saw the continuation of significant departmental activity in the area of Continuing Medical Education and Professional Development (CME/PD). All five clinical sites continue to conduct anesthesia rounds at a Section 1 level of MOC, on a weekly basis throughout the academic year. A proportion of these rounds are for journal article review and case discussions. Rounds are given by guest speakers, staff anesthesiologists, fellows, or residents under supervision. On occasion, joint rounds are held with other clinical departments and programs, e.g. surgery, critical care, trauma. Other teaching rounds, for example at the Alberta Children's Hospital, are aimed more towards residents and fellows. These may have staff anesthesiologists attending or presenting so provide CME as a Section 2 MOC event if a Personal Learning Project ensues.

At the Departmental level, we continue to run Citywide Anesthesiology Journal Club (JC) chaired by Dr. Nathan Brown. These are conducted several times per academic year. Each journal club session takes the form of critical review of two to three key journal articles following a specific theme. These events are held in one of the staff anesthesiologists' homes or in a hospital venue.

Other CME/PD initiatives have included regular participation in the Rural Anesthesia for GP-Anesthetists Course in Banff, occasional refresher updates for rural physicians, and participation in Canada-wide Pediatric Anesthesia Rounds. Several faculty members and residents presented at the Annual Meeting of the Canadian Anesthesiologists' Society Meeting in Vancouver, BC, in June 2016. The Calgary Section of Pediatric Anesthesia will be the host site and meeting coordinator for the 2016 Annual Meeting of the Canadian Pediatric Anesthesia Society to be held in Banff in September 2016. Preparation for this event started two years ago. In addition, Calgary faculty presented at the Anesthesia Alberta Summits held in Red Deer in 2015 and 2016.

Other specific CME courses have been developed by our faculty and have been undertaken or are in progress. Dr. Neal Maher at the PLC site continues to hold regular point of care ultrasound workshops, specifically Basic FATE (Focus Assessed Transthoracic Echocardiography) and Basic Lung/FAST (Focused Assessment with Sonography for Trauma). These are accredited courses. Dr. Mark Gale and colleagues at ACH has organized and run two courses: TPAC "The Pediatric Airway Course" and POCM "Perioperative Management Course". POCM is fully accredited for Section 3 MOC credits.

At an administrative level, each site continues to have an identified leader for CME/PD. These are Dr. Elisabeth Dobereiner (ACH), Dr. Steve Jacyna (RGH), Dr. Tad Cherry (PLC), Dr. Colin Bands (FMC), and Dr. Esther Ho (SHC). Dr. Robin Cox is the Departmental representative on the Faculty of Medicine's CME and PD Committee. He also sits nationally as Chair of the Continuing Education and Professional Development (CEPD) Committee of the Association of Canadian University Departments of Anesthesia (ACUDA) and as Chair of the Professional Learning and Development Committee of the Royal College of Physicians and Surgeons of Canada; as well as, being a council member of the Royal College. There is no specific city-wide Anesthesia CME/PD Committee as the Zone Anesthesia Executive Committee, the Academic Council of the Department, and the Journal Club planners serve this function.

The future of CME in the Department will include a further emphasis on developing assessment tools, such as simulation, for faculty. Individual patient outcome studies, such as those supported by the Physician Learning Program, should also allow us to tailor our learning needs to providing the best care for our patients.

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# SIMULATION

## Dr. M. Hayter

The Alberta Health Services Calgary Zone Department of Anesthesia have now established a formal Simulation Committee, chaired by Dr. Megan Hayter, who is the Anesthesia Simulation Coordinator. All existing department programs have been maintained and improved in most respects. All simulation activities are organized and run by members of the simulation committee (Drs. McLuckie, Haber, Gale, Donnelly-Warner, Jordan, Santosham, E. Ho, Olivieri).

### **Resident simulation**

- A. Crisis Resource Management - The Anesthesia Crisis Resource Management (ACRM) course continues to be an integral part of the simulation curriculum at the University of Calgary. This is a high fidelity simulation session for four of our residents (PGY 1-4) focusing on crisis resource management skills. Each simulation scenario is followed by an individualized debrief by one of our simulation staff. In the 2017 – 2018 academic year we plan to double the number of these sessions.
- B. Core Program Simulation Integration - Several simulation sessions have been added to each core block. These simulation sessions are developed with a content expert and focus on the medical expert role.
- C. Managing Emergencies in Pediatric Anesthesia - Our residents participate in several high fidelity simulation sessions at KidSIM focusing on managing common peri-operative pediatric emergencies. These sessions are developed by the pediatric simulation team (Drs. Gale and McLuckie).
- D. CanNASC Simulation Milestones - Our PGY 5 residents continue to complete their CanNASC simulation milestone scenarios. These milestones are a National undertaking. This year the PGY 5 residents completed two of these standardized scenarios
- E. Simulation Bootcamp - During the first week of PGY 1, our first residents participate in a simulation bootcamp where they focus on common intraoperative emergencies and review some technical skills.
- F. Part-task trainers - Our residents have access to and participate in various sessions with different part-task trainers. These sessions include: cardiac ultrasound, respiratory bronchoscopy, and airway trainers.
- G. Inter-disciplinary simulations - Our residents participate in simulations with other health care teams such as obstetrics, trauma, and intensive care.

## Hospital based simulation

- A. Foothills Medical Centre - Various insitu simulation activities in both the recovery and operating rooms. These sessions are inter-disciplinary and include anesthesiologists, nurses, respiratory therapists, and positioning aides.
- B. Peter Lougheed Centre - Recently, the PLC has started doing interdisciplinary simulations including staff anesthesiologists, nursing and respiratory therapy. Hopefully, surgery will be included in the future. These sessions run every one to two months. Our department will also be involved with the L&D "blitz week" in mid November. Blitz week is an educational week for the L&D nurses. We will be providing interdisciplinary simulation.
- C. Rockyview General Hospital - Staff anesthesiologists are participating in in-situ simulations in the operating room and recovery room. These sessions include anesthesia, nurses, and respiratory therapy. High fidelity insitu obstetrical team training exercises occur with obstetrics throughout the year.
- D. Alberta Children's Hospital - Perioperative Crisis Management Course (POCM) is an all-day simulation course designed to improve crisis management in our operating rooms. POCM is a multidisciplinary, inter-professional course involving operating room RNs, post-operative recovery room RNs, Pediatric Anesthesiologists, Pediatric Surgeons, and Respiratory Therapists. Those cases which have been reviewed at our Quality Improvement/Quality Assurance rounds are used as a foundation for scenario development. The Pediatric Airway Course (TPAC) is an all day simulation based airway course hosted at KIDSIM at ACH and facilitated by a multidisciplinary group from PICU, Peds Emerg, Ped Anesthesia, and RTs. The target audience is practicing physicians, outside of anesthesia, that may be required to manage pediatric airways. Just-in-time simulation (JITS) is an educational strategy where simulation occurs in close temporal proximity to a clinical encounter. This will take place in the operating room at a scheduled time on a scheduled list.
- E. South Health Campus - Currently, the SHC does high-fidelity insitu team training exercises which focus on allied health team learning needs (OR and PACU nurses, desk clerks, respiratory therapists, health care aides, and surgical processors). They hope to include anesthesiologists and surgeons in the future. Anesthesiologists are intermittently involved in high fidelity obstetrical simulations which are led by the OB nurse educators.

### **Simulation Fellowship**

A simulation fellowship has been developed over the past year. The focus for the fellow will be on reviewing the literature on simulation techniques and practical hands on simulation experience. The fellow will be expected to participate in a research project around medical education and gain a sound understanding of the literature in clinical education.

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# QUALITY ASSURANCE

## Dr. D. Liepert

Once again it has been my profound pleasure to serve as Chair of the AHS Calgary Zone Department of Anesthesia's Quality Assurance and Quality Improvement committees. It has been another year of great progress, but none of our work could proceed without the incredible and ongoing support of Patient Safety provided through Anne Chang and Mei Lan Liem-Beckett and our brilliant Site Leads including Dr. Leyla Bhagirzada, Dr. Michelle Hokanson, Dr. Michelle Theam, Dr. Jamin Mulvey, and Dr. Donal Finegan; as well as, our Simulations Lead, Dr. Megan Hayter.

NHSF incident reviews are now completed within an expanded framework of evaluators specific to the concerns involved in conjunction with the College of Physicians and Surgeons. In addition, having completed all appropriate training in the Systematic Review Methodology, all our Site Leads are coordinating an ongoing, prospective, and cumulative review of all "code" events in both the operating and recovery rooms of all AHS sites too. To that purpose, we have completed our first quarter of our first year of this process and I am pleased to report that our standard of care exceeds all expectations and precedents. As well, our Department is now able to lead in the learning opportunities presented by the AHS QAR process to ensure maximum improvement and optimal roll-out of new care standards and initiatives.

Finally, our Zone-wide Department has taken the lead in a number of ground-breaking Quality Improvement initiatives, including the introduction of the National Surgical Quality Improvement Program at the Rockyview Site, the Enhanced Recovery After Surgery Program at the Foothills, Peter Lougheed and Rockyview Sites, and the preliminary steps towards launching the Pediatric components of both programs at our Children's Site as well. Meanwhile, the South Health Campus has undertaken a number of innovative QI programs that are gaining international attention, and the Foothills Site will soon be following up with reports of their own internal initiatives as well. Through our committee, their hard work will be able to benefit all our sites together.

I would like to thank Dr. Dobson and the rest of you for the confidence you have placed in me. This is an incredibly dynamic department thanks to all your professionalism and expertise and thanks to Dr. Dobson's leadership. You all deserve the credit for all the good work we have done for our clients and colleagues alike, as well as our students, our health system, our province, our people, and our practice of Anesthesia this year, and I look forward to another exciting year of exemplary care and teaching coupled with ongoing improvement and innovation for the next. Thank you once again for all of your

support, the opportunity to serve you all in such a meaningful fashion, and for this opportunity to make such a positive difference for the people of Alberta.

# APPENDICES

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- A. Department Membership
- B. Administrative Committees
- C. Publications
  - Published
  - Submitted
  - Ongoing
  - Abstracts/Conference Proceedings
- D. Research Funding
- E. Presentations
  - Presentations & Invited Addresses
  - Education (CME/UME/PGME)



# Appendices A – DEPARTMENT MEMBERSHIP

## FMC

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Anderson, Keith	Froelich, Jennifer	Norrie, Bill
Arraf, John	Gregory Alex	Organowski, Slawomir
Balaton, John	Guglielmin, Darryl	Pash, Michael
Bands, Colin	Ha, Duc	Prusinkiewicz, Chris
Berault, Michael	Haber, Julia	Seal, Douglas D.
Caveno, Jordan	Hamming, Jeremy	Shing, Molly
Cheung, Kenneth	Hawboldt, Geoffrey S.	Shinkaruk, Kelly
Chong, Michael	Hiew, Moo-Khon	Smith, M Heather
Chow, Lorraine	Hurdle, Heather	Stacey, Sean
Chun, Rosaleen	Illing, Kim	Teoh, Desiree
Davis, Melinda	Illing, Leigh H.G.	Thompson, Robert
Diserens, Monique	Jungen, David	Todd, Andrea
Duttchen, Kaylene	Korzeniewski, Peter	Waechter, Jason
Eschun, Gerald	Kowalewski, RJ	Wahba, Raouf S
Falkenstein, Richard	Lee, Alan	Wang, Bing
Fermor, David	Ligier, Bruno	Watson, Neil C
Finegan, Donal	McTaggart-Cowan,	Wilson, Joshua
Fox, Joel	Robert	

## ACH

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Carter, Kerry	Ghazar, Nancy	McIntyre, Brian
Connors, M. Ruth	Hardcastle, Nina	McMann, Jon
Cox, Robin	Kuwahara, Brian	Mulvey, Jamin
Dobereiner, Elisabeth	Lardner, David	Rasic, Nivez
Ewen, Alastair	Letal, Mike	Spencer, Adam
Farran, R. Peter	Luntley, Jeremy	Stewart, Terry
Gale, Mark	McAllister, Debbie L	

## SCH

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Baghirzada, Leyla	Endersby, Ryan	Olivieri, Lori
Bharwani, Fayaz	Fraser, Louis	Stephan, Jarad
Brown, Nathan	Ho, Esther	Swedlo, Dean
Cheesman, Mark	Jack, Melissa	Trinh, Tony
Chu, Alan	Kostash, Mark	Wollach, Barry
Demarty, Jennifer	Morrow, Farrah	

## PLC

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Armstrong, JN	Cuk, Aleksander	Halpenny, David
Azmaysh-Fard, Arash	Darcus, Karl	Hokanson, Michelle
Bishop, Graeme	Dobson, Gary	Jordan, Dean
Cassidy, Michael	Donais, Philip	Kozody, Raymon
Cherry, Tadd	Downie, Joseph	Kruger, Marelise

Lim, Beatriz  
Maher, Neal  
Mensink, Fred  
Parkinson, Bronwyn  
Patterson, Steven  
Pearce, Craig  
Pitter, Curt A

Priddy, Richard  
Rabuka, Shannon  
Sandhu, Manjot  
Sandhu, Sabrina  
Santosham, Kristi  
Shysh, Alexander  
Stilling, Lee

Tiessen, Alan  
Wassill, Diane  
Wheeler, Steven  
Wong, Vanessa  
Wood, Daniel  
Yang, Theresa

## **RGH**

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Bart, Bevan  
Berchuk, Miriam  
Chan, Tommy  
Dobberthein, Marion  
Dodd, Colin  
Donnelly-Warner, N  
Dusevic, Myrna  
Eng, Reuben  
Hall, Wendy  
Hardy, C. David  
Hayter, Megan  
Hopper, Gordon  
Jacyna, Stephen  
Janzen, James

Kent, David  
Larsen, Udell  
Lee, Brenda  
Liepert, David  
Olson, Brian  
Partridge, Jill  
Patel, Kiran  
Phillips, Steven  
Pytka, Saul  
Rubin, Yair  
Saayman, Marius  
Samuels, Peter  
Scanlon, M  
Schultz, Rod

Shah, Misbah  
Simon, Karl  
Sims, Christopher  
Soska, Mark  
Sweet, Blythe  
Thomas, Sean  
Torsher, Kevin  
Tsai, Lin  
Wasserman, Paula  
Willsie, Robert  
Yemen, D. Jill  
Yont, Karrie

## **Additional Members – Community**

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Eagle, Chris  
Jivraj, Kabir  
Nanji, G. Mohammed  
Reddy, Neville  
Young, Dale – Canadian Blood Services

## **City Wide Locums**

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Bychkivska, Yaryna  
French, Susan  
Joo, Jennifer

MacKenzie, Lindsay  
Merah, Ann  
Montgomery, Shaylyn

Nemish, Ulyana  
Reins, Jeffrey  
Sully-Letal, Jillian

## **Calgary Chronic Pain Centre**

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Braithwaite, Philip  
Montgomery, Lori  
Spanswick, Chris  
Shah, Misbah

# Appendices B – ADMINISTRATIVE

## Committees

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David Archer	Residency Training Committee. 2015 – 2018 Associate Program Director. 2015 – 2017 Calgary Academic Medicine Framework Advisory Working Group. 2015 – 2016 Academic Council Anesthesia. 2015 – 2016 Remediation Committee (Two Residents). 2015 – 2016
Leyla Baghirzada	SHC Quality Assurance Council. 2013 – Ongoing Anesthesia QA/QI Committee. 2015 – Ongoing Search and Selection Committee for SHC Department of Anesthesia. April 2016 – December 2016 Anesthesia Academic Council. 2014 – Ongoing SHC Hip and Knee Working Group. 2015 – Ongoing Medical School Admission Committee. 2014 – 2016 SHC ERAS Working Group. 2016 – Ongoing
Lorraine Chow	CAS Standards Committee. June 2014 – Ongoing Curriculum Programming Lead, CBD Committee. Jan 2016 – Ongoing Scholarly Project Co-director, Residency Training Committee (RTC). Jan 2015 – Ongoing CaRMS Committee. Jan 2016 – Ongoing Anesthesia Academic Council. Jan 2015 – Ongoing Calgary Zone Transfusion Committee. April 2015 – Ongoing Maternal Cardiac Disease Interest Group. 2013 – Ongoing Thrombosis Interest Group. Oct 2015 – Ongoing CAS Obstetric Section Meeting. 2013 – Ongoing Praxabind Implementation Group. 2015 – Ongoing CAS Obstetric Anesthesia Guidelines Committee. 2013 – Ongoing Making a Mark Co-Chair. 2013 – Ongoing Clinical Lead, Thoracic Anesthesia. Feb 2014 – Ongoing Medical Director, Patient Blood Management Program. June 2015 – Ongoing ACHRI. March 2014 – Ongoing

Jan Davies	<p>Residency Training Committee (Safety &amp; Quality Co-representative, with Dr. Donal Finegan). 2015 – Ongoing</p> <p>Operating Room – Intensive Care Unit Hand Over Working Group. 2011 – Ongoing</p> <p>Planning Group, Safety Quality in Anesthetic Practice, PGY 1-5 Residents. Ongoing</p> <p>Alberta Anesthesia Safety Task Force. 2015 – Ongoing</p> <p>Provincial Resource Group of the Alberta Laboratory Services Transformation Project. 2016 – Ongoing</p> <p>Sub Group on Brace Position, ICAO Cabin Safety Working Group, International Civil Aviation Organization. Ongoing</p>
Kaylene Duttchen	<p>Drugs and Therapeutics Committee. 2014 – Present</p> <p>Calgary Anesthesia Academic Council. 2007 – Present</p>
Julia Haber	<p>Residency Training Committee. Oct 2013 – Present</p> <p>CaRMS Committee. 2015 – 2016</p> <p>Competency by Design Committee. 2016</p>
Geoffery Hawboldt	<p>FMSA Executive Committee. 2010 – 2016</p> <p>CAMSS Executive Committee. 2010 – 2016</p> <p>Zone Advisory Forum. 2010 – 2016</p> <p>Foothills Site Planning Committee. 2015 – Ongoing</p> <p>AHS Chronic Pain Centre ARP Exec. 2013 – Ongoing</p>
David Lardner	<p>Faculty Council: (Faculty of Medicine) Anesthesia Department Representative. 2013 – Ongoing</p> <p>Academic Council Department of Anesthesia. 2011 – Ongoing</p> <p>Research Funding Committee Section of Pediatric Anesthesia. 2014 – Ongoing</p> <p>Manpower and Service Delivery Committee. 2014 – 2016</p> <p>The Pediatric Airway Course Steering Committee. 2014 – Ongoing</p> <p>Simulation Committee. 2016 - Ongoing</p>
Jeremy Luntley	<p>Vice President Canadian Society of Pediatric Anesthesiology. Sept 2016 to Sept 2020</p> <p>Trauma Committee ACH. Aug 2016</p> <p>Trauma Safety Committee. Aug 2016</p>

Neal Maher	<p>Zone Anesthesia Executive Committee. Nov 2013 – Present          PLC Site Leadership Committee. Nov 2013 – Present          PLC Anesthesia Section QA Subcommittee. 2015 – Present          PLC Section Anesthesia Man power Committee. 2015 – Present          PLC Surgical Suite Advisory Committee. Nov 2013 – Present          Clinical Lead Perioperative Echocardiography PLC Section of Anesthesia. 2014 – Present</p>
Farrah Morrow	<p>Zone Executive Committee. Nov 2014 – Ongoing          SHC Surgical Executive Committee. Nov 2014 – Ongoing          SHARP Committee (Formerly Manpower). 2013 – Ongoing          Search &amp; Selection Committee. Jan 2016 – Ongoing          Zone Promotions Committee. 2016          ICU Liason for SHC. Jan 2016 – Ongoing          Retreat Committee. 2015 – 2016          Emergency Medicine – Anesthesia Social Committee Co-Chair. 2015 – Ongoing</p>
Steve Patterson	<p>President PLC Medical Staff          Editorial Board Vital Signs Magazine for Medical Staff Associations Across Province          Calgary Health Trust Committee Member</p>
Chris Prusinkiewicz	<p>Director, Cardiac Anesthesia. July 2015 – Present          Resident Rotation Coordinator, Cardiac Anesthesia. July 2015 – Present          Zone Anesthesia Executive Committee. July 2015 – Present          Cardiac Sciences Executive Committee. July 2015 – Present          Cardiac Sciences Clinical Services Council. July 2015 – Present          Cardiac Surgeon Recruitment Committee. Autumn 2015</p>
Alesander Shysh	<p>APS City-Wide. Jan 2014 – Ongoing</p>
Desiree Teoh	<p>University of Calgary Faculty Council. Ongoing          FMC Man Power Committee. Ongoing          FMC Clinical Executive Committee. Ongoing          FMC Member at Large RTC. Jul 2008 - May 2015</p>

# Appendices C – PUBLICATIONS

## Published

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David Archer

**Archer D**, Walker A, McCann S, Moser J, Appireddy R. Neuroprotection in Preclinical Models of Focal Cerebral Ischemia: A Systematic Review and Meta-Analysis. *Anesthesiology* 2017, 126 in press

Chow L, Carr A, MacKenzie L, Walker A, **Archer D**, Lee A. The effect of dalteparin on thromboelastography in pregnancy: an in vitro study. *Int J Obstetric Anesthesia* 2016;

Foglia J, **Archer D**, Pytka S, Baghirzada L, Duttchen K. Does laryngoscopic view after intubation predict laryngoscopic view before intubation? *J Clinical Anesthesia* 2016;33:469-75

Leyla Baghirzada

Foglia J, Archer D, Pytka S, **Baghirzada L**, Duttchen K. Does laryngoscopic view after intubation predict laryngoscopic view before intubation? *Journal of Clinical Anesthesia* 2016, 33: 469-75

Ohashi Y, **Baghirzada L**, Sumikura H, Balki M. Remifentanil for labor analgesia: a comprehensive review. *J Anesth.* 2016 Sep 12. [Epub ahead of print]

Yu H, Al-Shehri M, Johnston K, Endersby R, **Baghirzada L**. Anesthesia for hip arthroscopy: a narrative review. *Can J Anaesth.* 2016 Nov;63(11):1277-90

Lorraine Chow

Farber MK, **Chow L**, Kodali B. Airway Management of pregnant women at delivery. *UpToDate*, Dec 2011 to ongoing

**Chow L**, De Perrot M, Van Rensberg A. Platypnea-orthodeoxia syndrome after extrapleural pneumonectomy. *CAS Annual meeting* June 2015

Jan Davies

Hallihan G, **Davies J**, Baers J, Wiley K, Kaufman J, Conly J, Caird JK. Potential health care worker contamination from Ebola Virus Disease during Personal Protective Equipment removal and disposal. *Proceedings of the Human Factors and Ergonomics Society 52nd Annual Meeting* 2015; 59(12): 543-7

**Davies JM**, Steinke C. Concepts of safety reporting. *Canadian Journal of Anesthesia* 2015;62: 1233-8. DOI 10.1007/s12630-015-0491-z

Kaylene Duttchen

Foglia J, Archer D, Pytka S, Baghirzada L, **Duttchen K**, Does laryngoscopic view after intubation predict laryngoscopic view before intubation?, J Clin Anesth. 2016 Sep 03;33:469-75. PubMed PMID: 27555212

**Duttchen, K**, Dobson, G, Baghirzada, L. International surgical outcome study. Accepted for publication in BJA

Richard Falkenstein

**Falkenstein, R.** In Defense of Succinylcholine, Can J Anesth 2017; 64 Jan

Julia Haber

**Haber J.** Casesarian Section for Hereditary Neuropathy with Liability to Pressure Palsy. Poster presentation CAS meeting June 2015

**Haber J**, Coburn S. The Manager Leader on Twitter: a textual thematic analysis. Oral presentation, International Conference on residency education Vancouver October 2016

**Haber J.** Understanding how practicing anesthesiologists conceptualize the learning and teaching of situation awareness – creating a research protocol. OHMES conference oral presentation Uof C Feb 2016

**Haber J**, Barnes S, Gale M, Kaba A. In situ simulation for the Ex Utero Intrapartum Treatment (EXIT) procedure. Poster presentation, U of C sim symposium Oct 2016 (3rd prize in poster competition)

David Lardner

Urban D, Dehaeck R, Lorenzetti D, Guilfoyle J, Poon MC, Steele M, **Lardner D**, Ma IW, Brindle ME Safety and efficacy of tranexamic acid in bleeding paediatric trauma patients: a systematic review protocol. BMJ Open. 2016 Sep 22;6(9):e012947

Spencer AO, Walker AM, **Lardner DR**, Perlas A. Reply to Schmitz et al. regarding 'Ultrasound assessment of gastric volume in the fasted pediatric patient undergoing upper gastrointestinal endoscopy: development of a predictive model using endoscopically suctioned volumes'. Paediatr Anaesth. 2016 Jun;26(6):672-3

**Lardner DR**, Spencer AO. Making needles less prickly. CMAJ. 2015 Sep 22;187(13):996-7.

Spencer AO, **Lardner DR**, Perlas A. Reply to Bouvet et al comment 'How may a mathematical model using ultrasound measurement of antral area. Paediatr Anaesth. 2015 Oct;25(10):1067-8.

Neal Maher

Nutley M, **Maher N**, Moore R, Petrasek P, Wond J, Samis G, Guimond M, Clark J, Macdonald M, Peti N, Bakshi D. Short Stay Endovascular and Percutaneous Endovascular Aneurysm Repair (EVAR and PEVAR) Pathway.

Nivez Filipa Rasic

Armstrong R, Xu F, Arora A, **Rasic N**, Syed NI. General anesthetics and cytotoxicity: possible implications for brain health. *Drug Chem Toxicol.* 2016 Jun 2:1-9. [Epub ahead of print]

Peng Z1, Xu WW, Sham Y, Lam H, Sun D, Cheng L, **Rasic NF**, Guan Q, James AA, Simons FE1. Mosquito salivary allergen Aed a 3: cloning, comprehensive molecular analysis, and clinical evaluation. *Allergy.* 2016 May;71(5):621-8. doi: 10.1111/all.12812. Epub 2016 Mar 6.



## Submitted

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Leyla Baghirzada

Balki M, Liu S, Leon A, **Baghirzada L**. Epidemiology of maternal cardiac arrest during the hospitalization for delivery in Canada. A Nationwide study.

Yu H, **Baghirzada L**, Endersby R. Transversalis Fascia block for postoperative analgesia after Caesarean delivery

Kaylene Duttchen

Bruce, E, Rose, S, **Duttchen, K**. Does Elevated Perioperative Lactate Translate into Poor Outcomes?, \$ 1500, local principal investigator

Lo, A, McLuckie, D, Davis, M, DeGuzman, C, **Duttchen, K**. Intraoperative Ketorolac Dose of 15 mg versus the Standard 30 mg on Early Postoperative Pain after Spine surgery: A Randomised, Blinded, Non-inferiority Trial, \$ 19000, local principal investigator. Presented at CAS, to be submitted for publication

Nivez Filipa Rasic

Armstrong R Xu F Arora A **Rasic NF** Syed NI. General Anesthetics and cytotoxicity: From harm to healing of young and adult brains. Anesthesia & Analgesia.

(Vinall, J, Pavlova M, Asmundson G, **Rasic N**, Noel M). Mental health comorbidities in pediatric chronic pain. 2016

## Ongoing

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Kaylene Duttchen

**Duttchen, K**, Finegan, D. Perioperative Mortality Rate Reporting System for Alberta - Quality Assurance Project

David Lardner

Urban D, Dehaeck R, Lorenzetti D, Guilfoyle J, Poon MC, Steele M, **Lardner D**, Ma IW, Brindle ME Safety and efficacy of tranexamic acid in bleeding paediatric trauma patients: a systematic review protocol. BMJ Open. 2016 Sep 22;6(9):e012947

**Lardner D**, Lebel C, Dick B, Crawford S, Lafay-Cousin L, Wei X, Nordal R, Hader W, Carsolio L, Sherriff M. Utility of repeated visits to a mock scanner in decreasing the age at which neuro-oncology patients are able to complete MRI without the use of Anesthesia (AIM 3). ACH foundation Grant funded- CREB 15-368

Harrop R, Brauer C, **Lardner D**, Macrobie A, Brindle ME. Improving access for urgent surgical cases at the Alberta Children's Hospital: a rapid realist review. Surgery Clinical Network Seed Grant

Jeremy Luntley

Holmes E, Singh K, Kirk V, Brindle M, **Luntley J**, Weber B, Yunker W,. Incidence of children at risk for obstructive sleep apnoea undergoing common day surgery procedures Research

Nivez Filipa Rasic

(Vinall, J, Pavlova M, Asmundson G, **Rasic N**, Noel M). Mental health comorbidities in pediatric chronic pain. 2016

Desiree Teoh

**Teoh D**. Evaluation of Perioperative Coagulation in Patients Undergoing Heated Intraperitoneal Chemotherapy

## Abstracts/Conference Proceedings

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David Archer

Walker A, Appireddy R, McCann SK, **Archer DP**. Pre-clinical Meta-analysis of Anesthetic Neuroprotection in Stroke. Abstract 148713 CAS Annual Meeting June 2016

Appireddy R, Walker A, McCann SK, **Archer DP**. 147165 – Quality And Bias Of Pre-Clinical Anesthetic Neuroprotection Studies Abstract 147165 CAS Annual Meeting June 2016

Appelthwaite C, Mikhayel J, Walker A, McCann S, **Archer D**. Anesthetic Neuroprotection In Permanent Pre-Clinical Stroke Models Abstract 149356 CAS Annual Meeting June 2016

Foglia J, Duttchen K, **Archer D**, Pytka S, Baghirzdas L. Post-Intubation Laryngoscopy Not A Predictive Tool Abstract 148412 CAS Annual Meeting June 2016

Kaylene Duttchen

Bruce, E, Rose, S, **Duttchen, K**. Does Elevated Perioperative Lactate Translate into Poor Outcomes?, \$ 1500, local principal investigator. Presented at CAS, Awarded Best Critical Care Project, to be submitted for publication

Lo, A, McLuckie, D, Davis, M, DeGuzman, C, **Duttchen, K**. Intraoperative Ketorolac Dose of 15 mg versus the Standard 30 mg on Early Postoperative Pain after Spine surgery: A Randomised, Blinded, Non-inferiority Trial, \$ 19000, local principal investigator. Presented at CAS, to be submitted for publication

Chris Prusinkiewicz

Ramazanov R, Stephen O, **Prusinkiewicz C**, Conly J. Potential Blood/Body Fluid Exposure (BBFE) during Transesophageal Echocardiography (TEE) Leading to a Probe Leak Testing Protocol as a Quality Improvement. Quality Summit 2016.

# Appendices D – RESEARCH FUNDING

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## Leyla Baghirzada

Standardization of Postoperative Analgesic Orders Following Joint Arthroplasty.  
June 2014 - Oct 2015.  
\$20,000

Standardization of Discharge Analgesic Orders Following Joint Arthroplasty.  
December 2015 - December 2016.  
\$20,000

## Kaylene Duttchen

Perioperative Mortality Rate Reporting System for Alberta - Quality Assurance Project.  
Founding Source: Anesthesia Research Fund plus SCN Support to Complete  
2016  
\$9,000

## Alexander Gregory

NIRS and the Frontal Sinus: Does Location Matter?  
Funding: Calgary Anesthesia Academic Council Grant – Grant #AAC2015-02  
\$2,000

Speckle Tracking Echocardiography and Measurement of Aortic Strain: Validation in  
Porcine Model Calgary Health Trust Project #10010739  
Funding: Foothills Medical Centre Anesthesia Staff Research Fund  
\$21,178

## Julia Haber

SA Understanding in Practicing Anesthesiologists - A Qualitative Study  
Founding: Tim Tang FMC Fund  
\$1,700  
April 2016 - Ongoing

## David Lardner

Utility of Repeated Visits to a Mock Scanner in Decreasing the Age at Which Neuro-  
oncology Patients are Able to Complete MRI Without the Use of Anesthesia (AIM 3)  
Founding Source: ACH Foundation Grant  
2015 – 2018  
\$28,500 (of \$150,000)

Improving Access for Urgent Surgical Cases at the Alberta Children's Hospital: A Rapid  
Realist Review  
Founding Source: Surgery Clinical Network Seed Grant  
2016  
\$10,000

Farrah Morrow

Can Mindfulness Meditation Reduce Peri-operative Pain and Anxiety Following Total Joint Arthroplasty?

\$8,840

January 2016

Nivez Filipa Rasic

The Co-Occurrence and Impact of PTSD and Chronic Pain in Youth: Neural Activation Patterns as a Mutually Maintaining Mechanism.

Founding Source: Alberta Children's Hospital Research Institute

Co-Investigator

March, 2016

\$5,000

Neurobiological Changes Associated with Improvements in Function Following Intensive Pain Rehabilitation in Youth.

Funding Sources: Section of Pediatric Anesthesia Research Fund, Alberta Children's Hospital

Co-investigator, Co-Applicant: Vinall Jillian

April 2016

\$5,000

The Sociolinguistic Context of Pain Memory Development in Young Children.

Funding Sources: Natural Sciences & Engineering Research Council, University of Calgary

Co-investigator, Co-applicant : Noel, Melanie

April 2016

\$15,000

The Role of Parent Mental Health in Pediatric Chronic Pain.

Funding Sources: Canadian Institutes of Health Research (CIHR) Chronic Pain SPOR

Co-investigator, Co-applicant : Noel, Melanie

July, 2016 - July, 2018

\$222,000

Chronic Pain Network. CIHR Strategy for Patient Oriented Research (SPOR).

Funding Sources: Canadian Institutes of Health Research (CIHR) Chronic Pain SPOR -

Co-investigator

October, 2015 - October, 2021

\$12,440,060

# Appendices E – PRESENTATIONS

## Presentations & Invited Addresses

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David Lardner

Moser JJ, Walker A, **Lardner D**, Spencer. Point of Care Pediatric Gastric Ultrasonography: Establishment of empty antral cross sectional areas in pediatric patients to predict aspiration risk. CPAS Meeting Banff Oct 2016. Poster Presentation

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## Education (CME/UME/PGME)

David Archer

- Anesthesia and the kidney. February 2016 (PGME)
- Senior Resident Study, Weekly, July-February, 4 hrs. July 2015 - February 2016 (PGME)
- Introductory Pharmacology Core Program. September 2015 (PGME)

Leyla Baghirzada

- Epidemiology of maternal cardiac arrest in Canada. One of the selected papers for the best paper competition Society of obstetric anesthesia and Perinatology meeting, Boston, MA. 20/05/2016 (CME)
- NAC OSCE examiner. 2013-ongoing (PGME)
- ATLS instructor. 2013-ongoing (PGME)
- Standardization of analgesic orders following joint arthroplasty. The results of initiative. 20/10/2016 (CME)

Lorraine Chow

- Obstetric anesthesia orientation and individual simulator sessions. July 2015 – January 2016 (PGME)
- Advanced Difficult Airway Course, small group leader. 20-Oct-15 (PGME)
- Thoracic half-day. 20-Oct-15 (PGME)
- Thoracic half-day. 24-Sep-15 (PGME)
- Complications in Obstetric Anesthesia - Alberta Anesthesia Summit. 05-Nov-15 (CME)
- Pulmonary Hypertension in Pregnancy, NASOM. 06-Nov-15 (CME)
- Trauma and Obstetric Anesthesia, Making a Mark. 15-Nov-15 (PGME)

- Anesthesia for Total Joint replacement Surgery, Afternoon in Arthroplasty. Feb 25-27, 2016 (CME)
- Management of Massive Transfusion. 28-Sep-15 (PGME)
- Techniques of Lung separation. Oct-15 (CME)
- Obstetric Anesthesia emergencies. Apr-15 (PGME)

#### Robin Cox

- “Best Papers in Pediatric Anesthesia”. American Society of Anesthesiologists Annual Meeting, San Diego, CA. Oct 2015. (Panel Speaker)
- “A team based approach to managing pediatric sleep disorders” Canadian Pediatric Anesthesia Society Meeting, Toronto, ON. Nov 2015 (Panel Moderator)

#### Jan Davies

- Human Factors in Patient Safety and Quality, Calgary. 2016 (PGME, CME)
- Safety and Quality in Resident Education. With Ms. M. Harvie, HQCA PGME Retreat, Calgary. Oct 2015 (PGME)
- The Passenger Brace Position. What’s the Evidence. With Dr. K.I. Yoo. International Aviation Organization, Montreal. April 2016 (Other)
- Foundation Lectures. Transition to Discipline. Program Year 1 Residents, Co-presenter with Ms. M Harvie, Ms. D Macfarlane, Ms. L Strosher, Ms. C Steinke and Dr. WF Flemons, Department of Anesthesia, University of Calgary, Alberta. 2015 – 2016 (PGME)
- Part 1: Investigating & Managing Patient Safety Events. University of Calgary Certificate Course. Co-presenter with Dr. WF Flemons, Ms. C Duchscherer, Ms. M Harvie, Dr. N Sharma & Ms. D Macfarlane: Lister Hall, University of Alberta, Alberta. 2015 (PGME)
- Part 2: Investigating & Managing Patient Safety Events. University of Calgary Certificate Course, W21C, Co-presenter with Dr. WF Flemons, Ms. C Steinke, Ms. M Harvie, Ms. D Macfarlane, Ms. L Strosher: University of Calgary, Alberta. 2016
- Who dunnit? Who Cares? Introduction to a systematic method to investigate patient safety events. Co-presenter with Dr. WF Flemons, Ms. C Steinke, Ms. M Harvie, and Dr N Sharma. The CARNA Centennial Conference. College & Association of Registered Nurses of Alberta. Edmonton, Alberta. 2016
- Canadian anesthesiologists and enhanced recovery programs. Davies JM, Merchant R, O’Neill T, Carli F. Australian Society of Anaesthetists / New Zealand Society of Anaesthetists Combined Scientific Congress, Darwin, Northern Territory. Sept 2015

### Kaylene Duttchen

- Morbidity and Mortality Rounds for Anesthesia Faculty. March 2016 (CME)
- Peri-operative Mortality - What Does It Tell Us? Presented to FMC Department of Anesthesia. Feb 2016 (CME)
- Perioperative Mortality - What Does it Tell Us? Presented to Surgical Strategic Clinical Network. Jan 2016 (CME)

### Richard Falkenstein

- Preparation, Protection, Positioning, Repositioning-Politics and Practicalities. Nov 2016 (CME - FHH Dept Anesthesia Grand Rounds)
- Neuro core Program sessions

### Julia Haber

- Qualitative research methods course completed (MDCH 622)- graduate level course. May 2016 (Master's degree)
- Co-coordinator Difficult Airway Course (for residents), with Jonathan Gaudet and Jason Lord ICU. Spring 2015 – Ongoing (PGME)
- Making a mark for R5s- oral examiner; oral presentation on pacemakers/ICDs. Feb 2016 (PGME)
- Simulation for residents (ACRM program; core program simulation). 2015 – Ongoing (PGME)
- In situ simulation in PACU and OR at FMC (with PACU and OR RN educators). Jan 2016 – May 2016 (CME)
- Teacher at RT airway course (national RT conference pre course). May 2015 (CME)
- Simulation/Teaching anesthesia boot camp (for R1s) x 2 days. July 2015 (PGME)
- Simulation educator course (attendee). Nov 2015 (CME)
- Course co-chair advanced difficult airway course for anesthesiologists and ICU attending's (with Jonathan Gaudet ICU). Oct 2015 (CME)

### Geoffery Hawboldt

- Persistent Pain After Thoracic Surgery: A Current Perspective. Sept 2016 (CME)
- Treatment of Chronic Pain after Ilioinguinal Hernia Surgery. May 2015 (CME)

### David Lardner

- The Difficult Pediatric Airway April 2016 CME: University of Calgary Rural Videoconference
- The Pediatric Airway Course. Jan – Feb 2016. CME: (PEACH: Pediatric Emergencies at ACH)



## Jeremy Luntley

- Lessons from hospital trauma simulation. Trauma Rounds Presenter. Sept 2016 (CME)
- Simulation teaching. 2015 – 2016 (UME)
- Simulation outreach Taber. Sept 2015 (PGME)
- Asset course. Jan 2016 (CME)
- CPAS Meeting. Sept – Oct 2015

## Neal Maher

- Basic FATE, Basic Lung and FAST Point of Care Ultrasound Workshop (Course Director and Chief Instructor). May 2016 (CME/PGME)
- Basic FATE, Basic Lung and FAST Point of Care Ultrasound Workshop (Course Director and Chief Instructor). Oct 2016 (CME/PGME)
- Point of Care Ultrasound from Snowstorm to Clarity - Anesthesia Alberta Meeting. Nov 2016 (CME)

## Farrah Morrow

- Mentor - BSc Hons Mentorship Program. 2015 – 2016 (UME)
- Resident and medical student teaching intraoperatively. Ongoing (UME/PGME)

## Chris Prusinkiewicz

- Cognitive Deficits after Anesthesia. Keynote Lecture, 18th Annual Rural Anesthesia for GP Anesthesiologists. Jan 2016 (CME)
- Postoperative neurologic dysfunction. FMC Anesthesia Grand Rounds. Jan 2016 (CME)

## Nivez Filipa Rasic

- My patient has developed post-op chronic pain: How did this happen & what do I do? Pediatric Surgery Grand Rounds at Alberta Children's Hospital, Calgary, Canada. 2016
- Chronic Pain After Surgery: What do I need to know? Canadian Pediatric Anesthesia Society Conference, Banff, Canada. 2016
- The invisible disease: How can I best help this complex pain patient?. ACH Pediatric Update Conference, Calgary, Canada. 2016
- Staying ahead of the wave: The emerging epidemic of pediatric chronic pain. Department of Paediatrics Grand Rounds, Alberta Children's Hospital, University of Calgary, Calgary, Canada. 2015
- The emerging epidemic of pediatric chronic pain: What do I need to know?. Pediatric Pain Symposium, Calgary, Canada. 2015

Shannon Rebuka

- Why do a medical mission? April 2016 (rounds presentation)

Alesander Shysh

- Supervisor for Dr. L. Hung and Dr. A. Moazemi for their Resident Research Project: Epimorph for THA and TKA Arthroplasties. Jan-June 2016 (PGME)

Neal Watson

- Neonatal Resuscitation Airway Skills. 2015 – 2016 (Family practice residents)