



UNIVERSITY OF BRITISH COLUMBIA Faculty of Medicine

DEPARTMENT OF ANESTHESIOLOGY, PHARMACOLOGY & THERAPEUTICS ANNUAL REPORT 2016



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Message from the Department Head



Thank you for taking a few minutes to go through this report. This year the report highlights a few areas in our department, with the usual detailed information placed as appendices. Please share with colleagues in your department, so they too can celebrate the successes of our colleagues as well as hopefully understand this diverse department a little better.

We are up for re-looking at our strategic priorities, having done the first strategic engagement retreat in November 2013. I look forward to tackling this again, so we can perhaps leap forward rather than walk!

New Associate Head Pharmacology and Therapeutic Sections

I am pleased to announce that Dr. David Fedida is the new Associate Head of the Pharmacology and Therapeutic Sections as of June 1, 2017. 2016 was a year in which time was spent working on the role description and sorting through issues. I think we are all glad to have taken the time to do this, and we look forward to Dr. Fedida's ideas about education renewal and faculty renewal.

Competency-by-Design (CBD)

With a go-live date of July 1, 2017 confirmed by the Royal College, Anesthesiology will be the first of 2 residency programs in Canada to undertake the change to a CBD program, along with ENT. We have a plan for leadership that will start on January 1, 2017 – Dr. Matt Klas will become the inaugural CBC Director, and Dr. Laine Bosma will become the new Anesthesiology Residency Program Director.

The Department has continued to build on faculty development with the third annual Faculty Development Day on November 19, 2016. Dr. James Brown, our new Faculty Development Director, pulled together a well-received program that tackled Competency-by-Design: what it will mean for our residency program.

Ongoing success with the Vancouver Summer Program course in Pharmacology led by Dr. Andrew Horne. In 2016 he put together a full program of two courses including a course on Critical Analysis in Medicine and Science.

Once again the Whistler Anesthesia Summit held in March 2016 was an enormous success, with a star-studded list of anesthesia experts and some excellent workshops. The co-chairs, Dr. Cynthia Yarnold and Dr. Juliet Atherstone continue to be truly formidable organizers!

The Pain Medicine Residency Program started in July 2016 with its first resident. The Program Director, Dr. Brenda Lau has done a remarkable job in pulling together a diverse group of engaged care providers to produce a 2 year curriculum that does not focus on interventional pain therapies, but rather the multidisciplinary model of care for helping patients with chronic pain.

Teaching is what connects our department, with passion amongst so many for teaching students of all levels and interests. I would like to thank everyone who engages in teaching undergraduates and medical students as I know how important it is for the future of the department to incite passion for our work in our learners. Those teaching in pharmacology receive consistently, excellent teaching evaluations and our undergraduate and graduate programs in Pharmacology are highly competitive. Our anesthesia training core sites (VGH, SPH, BCCH, BCWH, RCH) and our affiliated sites (Lions Gate, Richmond, Burnaby, Surrey, Delta, Langley, Abbotsford, Chilliwack, Victoria, Nanaimo, Prince George, Kelowna, Vernon, Kamloops, Penticton, Terrace/Mills, Kootenay) all have numerous trainees from various disciplines, and have constant pressure to take on more.

I would like to thank all of you for continuing to be generous with your time, your energy, your knowledge and your passion. We continue to be in a difficult financial position in the department, as is the Faculty of Medicine, and this does not allow me to reward you for all your contributed time and effort as I would like to be able to. Let us work on our strategic priorities together, of which the most important is fostering the strengths of our people.

Most appreciatively

A handwritten signature in black ink, appearing to read 'Roanne Preston', with a stylized flourish at the end.

Roanne Preston, MD FRCPC
Department Head

Department Leadership

Roanne Preston – Department Head
David Fedida – Associate Head, Pharmacology & Therapeutics Section
James Wright – Therapeutics Initiative Co-Managing Director
Ken Bassett – Therapeutics Initiatives Co-Managing Director

Site Chiefs:

Hamed Umedaly – Head, VGH/UBCH Department of Anesthesia & Perioperative Care
Jim Kim – Head, St. Paul’s Hospital Department of Anesthesia
Norbert Froese – Head, BC Children’s Hospital Department of Anesthesia
David Lea and Simon Massey - Co-heads, BC Women’s Hospital Department of Anesthesia
John Ramsden – Head, Royal Columbian Hospital Department of Anesthesia
Dean Jones – Regional Head, Fraser Health Authority
Martin Roos – Head, Lions Gate Hospital Department of Anesthesia
Sam Tang – Head, Richmond General Hospital Department of Anesthesia
Alex Bouzane – Burnaby General Hospital Department of Anesthesia
Gerald Lim – Chilliwack General Hospital Department of Anesthesia
Curt Smecher – Abbotsford Regional Hospital (MSA) Department of Anesthesia
Tom Ruta – Head, Victoria General/Royal Jubilee Hospitals Department of Anesthesia
Aaron Jackson – Head, Kelowna General Hospital Department of Anesthesia
Tom Cull – Vernon Jubilee Hospital Department of Anesthesia
Shezhad Mehmood – Head, University Hospital of Northern BC Department of Anesthesia

Academic Leadership

T. Laine Bosma – Anesthesia Residency Program Director
Matt Klas – Competence by Design (CBD) Program Director
Don Griesdale – Anesthesia Research Director
Sastry Bhagavatula – Director/Advisor, PCTH Graduate Program
Brad Merriman – Medical Undergraduate Program Director
John McAlpine - Family Practice Anesthesia Residency Program Director
John Veall - Simulation Program Director
James Brown - Faculty Development Chair
Stephan Malherbe – Visiting Professor & Continuing Professional Development Program Director
Cynthia Yarnold and Juliet Atherstone - Whistler Anesthesia Conference co-chairs
Stephan KW Schwarz – Hugill Centre Chair

Divisions of Anesthesia

Ray Tang/Steven Petrar – Division Heads, Regional Anesthesia
Bobby Lee – Division Head, Cardiac Anesthesia
Alana Flexman – Division Head, Neuroanesthesia
Michael Negraeff – Division Head, Pain Management
Norbert Froese – Division Head, Pediatric Anesthesia
Roanne Preston – Division Head, Obstetric Anesthesia
Jens Lohser – Division Head, Thoracic Anesthesia

DEPARTMENT HIGHLIGHTS

Awards of Excellence



Dr. Allen Paul Kliffer – Clinical Professor
BC Women’s Hospital
Recipient of 2016 Clinical Faculty Award for Career Excellence in Clinical Teaching. This award is evidence of the high regard in which Dr. Kliffer is held for his outstanding and sustained teaching contributions over the course of his career.



Dr. Stan Bardal – Affiliate Senior Instructor
University of Victoria
2015/2016 Academic Year – runner up for the Teaching Excellence Award by the UBC Medical Undergraduate Class of 2018, recognizing an individual demonstrating an excellence and dedication to teaching and commitment to students

10th Annual Research Day and Awards Night

Objective: To review research currently conducted by graduate and post-graduate trainees and fellows in the Department of Anesthesiology, Pharmacology & Therapeutics at the University of British Columbia.

Guest Judge & Keynote Speaker

**Dr. Greg Hare – Professor, University of Toronto
Scientist, St. Michael's Hospital**

Acknowledgments:

Abstract Judges:

Dr. Steve Head
Dr. Simon Whyte
Dr. Raymond Tang
Dr. Andrew Hogle
Dr. John Dolman
Dr. Tillie Hackett
Dr. Cynthia Yarnold
Dr. Timothy Kaan
Dr. Mariah Wallener
Dr. David Ansley

Research Day Judges

Mitra Esfandiarei
Jennifer Shabbits
Andrew Horne
Dr. Bernie MacLeod
Joanne Leung
Dr. Stephan Schwarz

The Research Day Organizing Committee:

Dr. Don Griesdale	Research Day Coordinator (ANA Section)
Dr. Pascal Bernatchez	Research Day Coordinator (PCTH Section)
Dr. Matt Klas	Research Day Consultant (ANA Section)
Ms. Allison Rintoul	Administrative Manager
Ms. Jessica Yu	PCTH Administrative Assistant
Ms. Susan vanBruggen	ANA Residency Program Secretary
Ms. Jill Delane	ANA Residency Program Coordinator

Winning Presentations:

ORAL ABSTRACT # 14

Review of Recombinant Activated Factor VII (rFVIIa) Administration at a Tertiary Care Centre
Anne-Marie Madden, Kristine Roland, Tyler Smith
UBC APT and UBC Hematopathology

ORAL ABSTRACT # 21

Overnight oximetry at home before and after adenotonsillectomy
Elizabeth Allison, Ainara Garde, Aryannah Umedaly, Dustin Dunsmuir, Mark Ansermino
BCCH-PART

ORAL ABSTRACT # 1

Defective collagen I remodeling and contraction is a feature of asthmatic airway fibroblasts
Emmanuel T. Osei, Leila Mostaco-Guidolin, Soheil Hajimohammadi, Jari Ullah, Furquan Shaheen and Tillie L. Hackett

ORAL ABSTRACT # 5

The Off-Target Effects of Losartan in Marfan Syndrome: Role of Nitric Oxide

Stephanie L. Sellers, Nadia Milad, Rayleigh Chan, Michael Seidman, James C. Hogg, Mitra Esfrandiarei, Casey Van Breemen, Pascal Bernatchez

POSTER ABSTRACT # 4

Difficultintubationapp.com- A Difficult Airway Electronic Record

Enda Shanahan, Ray Tang

POSTER ABSTRACT # 6

Volumes and peak airway pressures with bimanual compressions of an adult Ambu® bag through a Frova intubation bougie using maximal and normal effort into a standard adult lung compliance simulator

Preeti Dewan, Vit Gunka, Alison Dube, Simon Massey

POSTER ABSTRACT # 10

The Pharmacokinetics of Second-Generation Long-Acting Injectable Antipsychotics: Limitations of Monograph Values of Half-Life

Lik Hang N. Lee¹, Charles Choi², Abby C. Collier², Alasdair M. Barr¹, William G. Honer³, Ric M. Procyshyn³

AWARDS NIGHT

RESEARCH COMPETITION WINNERS:

1st Place - Anesthesia Oral Presentation:

Anne-Marie Madden

2nd Place - Anesthesia Oral Presentation:

Elizabeth Allison

1st Place - Pharmacology & Therapeutics Oral Presentation:

Emmanuel Osei

2nd Place - Pharmacology & Therapeutics Oral Presentation:

Stephanie Sellers

1st Place - Anesthesia Poster Presentation:

Enda Shanahan

2nd Place – Anesthesia Poster Presentation:

Preeti Dewan

1st Place - Pharmacology & Therapeutics Poster Presentation:

Lik Hang Nicholas Lee

AWARDS

Dr. Dimitri Giannoulis Memorial Award in Regional Anesthesia – Sarah Sunderland

Dr. John A. McConnell Memorial Award for Academic Excellence – Steven Green

Dr. Derek Daniel Wolney Memorial Prize for Clinical Proficiency – Graham Noble

Dr. Jone Chang Memorial Award in Anesthesiology Excellence – Sadiq Abdulla

Dr. Jone Chang Memorial Prize in Chronic Pain – Miguel Fernandez

Dr. Anthony Boulton Award for FPA Clinical Excellence – Derek Sargent

*Dr. James Kimme Golden Epidural Award – Shannon Lockhart (Jr. Resident)
Alex Wong (Sr. Resident)*

Dr. Michael Smith Award for Pediatric Anesthesia – Sarah Sunderland & Su-Yin MacDonell

*RCH Resident Award for Clinical Excellence – Shannon Lockhart (Jr Resident)
Steven Green (Sr Resident)*

Ken C.K. Wong Award for Clinical Teaching – Aaron Lau

Kenny Wong Award for Clinical Excellence and Collegiality – Peter Rose

*UBC APT Advance Simulation Training Program –
Ryan Truant and Amber Galbraith*

Dr. Keith Mills Bursary for Neuroanesthesia Studies - Alexandra Kisilevsky

Dr. Keith Mills Award for Excellence in Neuroanesthesia Studies – Anne-Marie Madden

Pharmacology & Therapeutics Undergraduate Awards

*Esther Anderson Memorial Prize (highest graduating average in Honors Pharmacology)
Yanmin Alice Gu*

*Prakish Gill Memorial Prize (highest graduating average in Majors Pharmacology)
Kaiyi Betty Wen*

*MERCK Canada (formerly FROSST) Medical Scholarship (final year medical student who has made
achievement in Therapeutics - Leo Michael Loftus Smyth*

MERCK Canada Scholarship in Medicine - David Wallace van De Vosse

*Thomas L. Perry Memorial Prize in Medical Pharmacology & Therapeutics
Gregory Robert Lewis Costello*

Pharmacology & Therapeutics Graduate Awards

Sacks Prize (Best presentations in 2015/16 PCTH 514)

PhD: Emmanuel Twumasi Osei
MSc: Arash Yousefzadeh Therani

FACULTY AWARDS

Master Teacher Awards:

Vancouver General Hospital – Dr. Christopher Durkin

St Paul's Hospital – Dr. John Bowering

Royal Columbian Hospital – Dr. Laura Duggan

BC Children's Hospital – Dr. Mike Barker

BC Women's Hospital – Dr. James Brown

Rural/Community hospitals – Dr. John Veall (LGH)

Medicine – Dr. Don Griesdale (Critical Care)

Family Practice Anesthesia Master Teacher Award – Dr. John Veall (LGH)

Family Practice Anesthesia Master Teacher Award – Dr. Carolyn Montgomery (BCCH)

Family Practice Anesthesia Master Teacher Award – Dr. Simon Massey (BCW)

Family Practice Anesthesia Master Teacher Award – Dr. Joe del Vicario (SPH)

Dr. Dimitri Giannoulis Resident Appreciation Award - Ms. Jill Delane

PROMOTIONS, RESEARCH AWARDS, SCHOLARSHIPS AND OTHER KUDOS

In 2016:

Promotions:

Clinical Instructor to Clinical Assistant Professor:

Dr. James Brown – BC Women's Hospital

Dr. Natasha Broemling – BC Children's Hospital

Dr. Zoe Brown – BC Children's Hospital

Dr. Myles Cassidy – BC Children's Hospital

Dr. Muhammad Jamil Akhtar – UHNBC

Dr. Shezhad Mehmood - UHNBC

Clinical Assistant Professor to Clinical Associate Professor:

Dr. Katherine Bailey – BC Children's Hospital

Dr. Chris Chin – BC Children's Hospital

RESEARCH IN THE SPOTLIGHT

Dr. Laura Duggan **Clinical Associate Professor**

Dr. Laura Duggan is a staff anesthesiologist at Royal Columbian Hospital. Her research and education interest is in the airway. In the last few years she has accomplished some amazing things: an interdisciplinary and interprofessional Airway Committee at RCH that tracks and reviews all airway challenges at RCH, some excellent and thought-provoking publications including a top BJA 2016 article on transtracheal jet ventilation, the development of an Airway App, and the creation of an airway model to practice front-of-neck procedures.

Way to go Laura! You are transforming airway management practice in Canada and beyond!

Can J Anesth/Can Anesth
DOI 10.1007/s12630-017-0834-z



Can J Anesth/Can Anesth
DOI 10.1007/s12630-016-0804-x

SPECIAL ARTICLE

Airway management outside the operating room: how to better prepare **Gestion des voies aériennes en dehors de la salle d'opération: comment mieux préparer**

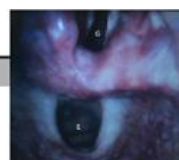
Peter G. Brindley, MD • Martin Beed, MD • J. Adam Law, MD • Orlando Hung, MD • Richard Levitan, MD • Michael F. Murphy, MD • Laura V. Duggan, MD



IMAGES IN ANESTHESIA

Glottic impersonation

George Kovacs, MD, MHPE, FRCPC • Laura V. Duggan, MD, FRCPC • Peter G. Brindley, MD, FRCPC



Airway Management and Definitive Care of a Toddler Following Impalement Injury by a Metal Straw

Duggan, Laura V. MD, FRCPC; Therasi, Rosalee MD, FRCPC; Hodgson, Alyssa L. MD, FRCPC; Kozak, Frederick K. MD, FRCSC

August 2, 2016 Community

Starbucks Recalls Stainless Steel Beverage Straws



Canadian Journal of Anesthesia / Journal canadien d'anesthésiologie
October 2017, Volume 64, Issue 10, pp 1079-1084

Front-of-neck airway meets front-of-neck simulation: improving cricothyroidotomy skills using a novel open-access three-dimensional model and the Airway App

Authors Authors and Affiliations

Laura V. Duggan, Shannon L. Lockhart, Kelli R. Romano, Scott D. Weingart, Richard M.



Transtracheal jet ventilation in the 'can't intubate can't oxygenate' emergency: a systematic review Top 20 BJA Articles 2016

L. V. Duggan^{1,2,*}, B. Ballantyne Scott³, J. A. Law⁴, I. R. Morris⁵, M. F. Murphy⁶ and D. E. Griesdale^{7,8}



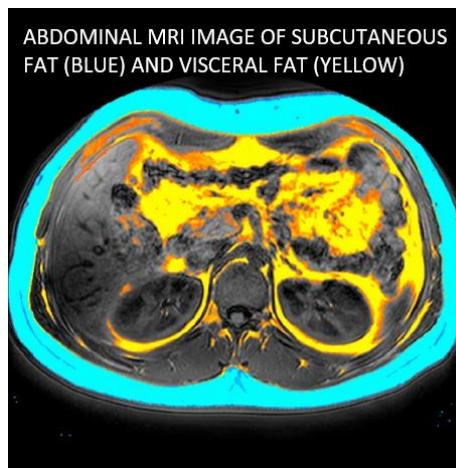
Dr. Alasdair M. Barr Ph.D.
Associate Professor



The central focus of my research is mental health and addictions, with a particular emphasis on psychosis and the medications used in its treatment. My research program is based on a multidisciplinary and translational approach that spans from "bench to bedside," as I aim to maintain productive research programs in both preclinical and related clinical research. Working in collaboration with some of Canada's finest researchers, I study "psychosis" from three different perspectives. These include (i) idiopathic schizophrenia-spectrum disorders, (ii) drug-induced psychosis and (iii) most recently, the post-operative delirium that occurs following cardiac surgery. Despite different etiologies and patient populations, these three conditions share many similarities in terms of symptoms and treatment, which I describe below.

Schizophrenia and antipsychotic drugs: schizophrenia and related disorders are highly disabling neuropsychiatric illnesses that usually manifest during the late teenage years, and represent a lifelong burden for most individuals. Expert opinion states that these disorders are more disabling than either paraplegia or blindness, and life expectancy may be as much as 25 years shorter than the general population. Studying schizophrenia - like most neuropsychiatric disorders - faces the huge challenge of trying to understand what is happening in the brain, as we obviously cannot use invasive procedures to measure what is going on.

My current research therefore focuses on studying the cardiometabolic side-effects of antipsychotic drugs, where the translational possibilities are excellent. Antipsychotics are used for many different conditions, but it is now well established that most of these drugs significantly increase the risk of developing metabolic syndrome, type 2 diabetes and cardiovascular disease: these early onset side-effects largely account for the dramatically shortened lifespan in patients with psychosis, and are a major barrier to medication adherence. Previously, it was thought that these cardiometabolic changes in psychotic patients were due to lifestyle factors (lack of exercise, poor diet and high rates of smoking), but in the past decade, [preclinical studies](#) have demonstrated that the drugs themselves have acute effects on glucose tolerance and insulin sensitivity. Our research team has contributed to this field with a number of important studies. Using state-of-the-art techniques such as the hyperinsulinemic-euglycemic clamp, we have used preclinical models to characterize the [relative differences](#) in acute metabolic liability between



established antipsychotic drugs, as well as with the [newer drugs](#), for which little human data are available. Consistent with the clinical literature, we have shown that [combining](#) antipsychotic drugs further increases metabolic dysregulation. Long term metabolic dysregulation with antipsychotics can contribute to [changes in the brain](#) which may result in lasting modification of [presynaptic proteins](#). We have also evaluated potential treatments for these side-effects. We noted that [specific classes](#) of antidiabetic drugs were more effective in controlling glucose dysregulation, and [certain combinations](#) of antidiabetic drugs could have even greater clinical benefits.

Furthermore, [routine exercise](#) could mitigate some of the metabolic changes, and our research identified that the Glucose Transporter-4 may play a key role in antipsychotic-induced glucose intolerance.

We are hopeful that these latter studies will be helpful in translating into future clinical trials. Indeed, the results of our earlier preclinical studies have led directly to some of our most recent clinical projects. For example, we observed that when animals were [treated chronically](#) with the antipsychotic drug olanzapine, they did not show an increase in body weight, but central adiposity was increased. As a follow up to these results, we have just completed a [clinical study](#) with 90 young patients who were recently started on antipsychotic therapy. Using abdominal MRI imaging, we have compared their subcutaneous and visceral adiposity shortly after starting medication and then again three months later. Our hypothesis is that central adiposity, in particular, will be increased in the patient cohort, as this form of visceral fat potently contributes to metabolic dysregulation and could explain much of the metabolic burden in this population.

Drug induced psychosis: a second area of interest focuses on the psychosis that can result from ingestion of psychostimulant drugs, such as cocaine and methamphetamine. This is a medical concern especially pertinent to much of British Columbia, and those working in local hospitals will likely be more than familiar with this issue. Approximately half of individuals who regularly abuse psychostimulant drugs will develop a [clinically significant psychosis](#), which is characterized by symptoms including paranoia, delusions, hallucinations and unusual thought content. In



collaboration with the department of Psychiatry at UBC, we have been [studying a cohort](#) of approximately 400 people for 8 years from the Downtown Eastside, who live in Single Room Occupancy hotels. Rates of drug use, mental illness and infection in this population are endemic. Subjects have routine assessments of [mental](#) and [physical](#) health, [neurocognition](#), and yearly [MRI brain scans](#). We have observed that the psychostimulant drug methamphetamine results in notably [more severe psychosis](#) than all forms of cocaine, and [combines with HIV](#) to severely affect the white matter pathways in the brain.

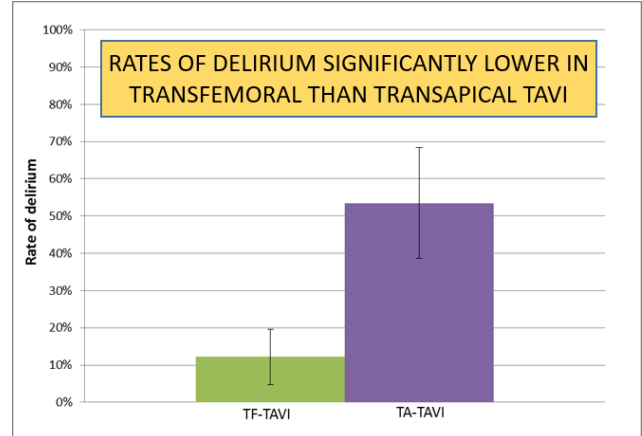
Interestingly, when we used MRI brain scans to compare psychostimulant users who had drug-induced psychosis to those who did not, we observed changes in [white matter pathways](#) and [subcortical grey matter brain regions](#) similar to those affected in schizophrenia, suggesting that these neural pathways may represent a shared common substrates for psychosis.

Post-operative delirium: post-operative delirium shares many symptomatic similarities with psychosis, and is commonly treated with antipsychotic drugs. The condition is associated with worse short and long-term outcomes, can be very distressing to patients, and represents a significant burden to hospital resources.

Working with our most excellent colleagues at St Paul's Hospital, we have investigated the risk factors for delirium following cardiac surgery.

Our [first study](#) in a small cohort indicated that post-operative delirium occurred commonly, in approximately one third of patients, and was associated with factors such as recent alcohol use prior to surgery. In a [follow-up study](#), where we compared rates of delirium between two different types of transcatheter aortic valve (TAVI) implantation techniques, we were amongst the first to demonstrate that rates of

delirium were markedly lower in transfemoral than transapical surgery patients – results which have now been replicated by other research groups around the world. When we [expanded our analysis](#) to include other types of cardiac surgery in 679 patients, it was evident that rates of delirium were lower in the TF-TAVI patients than all forms of on-pump surgery, despite the greater age and frailty of the TF-TAVI group. At present, our research on delirium is in limbo as we seek further funding, but we have a study approved by UBC to look at genetic risk factors for post-operative delirium (which could help identify those at risk prior to surgery) and so remain hopeful that we can continue with this avenue of research in the future.



OTHER NEWS

Terri Sun – recipient CAS Resident Grant



Congratulations to Terri Sun for securing the 2016 CAS Resident grant (\$10,000). The funding is being used to support “A usability and feasibility evaluation of Panda, a smartphone application designed to support postoperative pain management at home”, currently underway.

PAIN MANAGEMENT IN BRITISH COLUMBIA

New website for web based early intervention program for youth with evolving chronic pain was launched <https://www.mycarepath.ca>. This is a collaboration with Pain BC and the Strategies and Innovation Office from BCCH. All patients on the waitlist are directed to the online intervention.

Dr James Saunder, a recently hired plastic surgeon, who has an advanced fellowship in peripheral nerve entrapment and release, and Dr. Jacqui Hudson have initiated a City-wide Multidisciplinary Interventional Pain Journal Club, which is attempting to meet on a quarterly basis. The third Journal club was held in July 2016.

Pain BC continues to develop new content for education and self management and to bring new thought and research from around the world from leaders in their fields. This is done through a variety of formats including webinars, audio podcast interviews, and articles. These are all available (new and archived material) on Pain BC’s website: www.painbc.ca and on the Live Plan Be website: www.liveplanbe.ca

Hospitals and Health Centres

CLINICAL OVERVIEW

Department Statistics

Full-time faculty - 20

Clinical Faculty - 455

Fellows - 13

Residents - 63

Medical Students - 293

Pharmacology Graduate Students – 27

Pharmacology Undergraduate Students – 41

Postdoctoral Fellows - 8

Vancouver General and UBC Hospital



In 2016, VGH initiated the Perioperative Anesthesia Intervention Service (PAIS) which has a dedicated anesthesiologist who is able to place blocks, epidurals and monitoring lines before cases to reduce the anesthesia control times. An area in the PACU was created for the PAIS program which consists of 3 fully monitored bay areas staffed by a nurse and an anesthesia assistant. When the program is running well, anesthesia control times have been reduced but because of unforeseen staff shortages, the full benefit of the program has not been realized. It is anticipated when PACU nursing staff levels return to normal levels in the fall of 2017, that the PAIS program will be running at full capacity.

ST. PAUL'S HOSPITAL



How you want to be treated.

St. Paul's Hospital (SPH) has had a well-established block room program since 2009. Currently the main operating rooms are serviced by a block room area within the surgical daycare suite comprised of 4 monitored beds, with the capacity to overflow up to 6 beds if needed. A dedicated regional anesthesiologist, and anesthesia assistant, staffs the block area daily. In the main OR block area the focus is predominantly on performing both single-shot regional anesthetic techniques, as well as the placement of continuous peripheral nerve block catheters. When time allows, the regional anesthesia team may also place thoracic epidurals in the block area, prior to transporting the patient to the operating room. Volumes continue to be high, and the main block area processes approximately 2,500 patients annually.

St. Paul's Hospital also provides regional anesthesia services three times weekly in the ambulatory "Surgical Procedures Room" (SPR), which is a satellite operating room area in the Burrard Building of the SPH site. In this area, patients undergo orthopedic or plastic surgical procedures under regional anesthetic block as the sole anesthetic. All cases in the SPR area are ambulatory in nature, and have demonstrated a high degree of safety and efficiency.

2016 saw a decline in the number of patients at SPH opting for an ambulatory "home" perineural catheter technique. Previously the "home catheter" program had steadily grown to the point that SPH was placing 1-3 home catheters weekly. This decline is likely secondary to the increased use of perineural dexamethasone to prolong the duration of single shot regional blocks. The home catheter program is still active, however, and volumes are now closer to 0-2 placed per week. This ebbs and flows depending on the case mix booked by our surgeons.

BRITISH COLUMBIA CHILDREN'S HOSPITAL



Significant planning and changes in staffing occurred in 2016 at BC Children's Hospital. After many years of pediatric anesthesia practice, the last 14 years as a member of the UBC Division of Pediatric Anesthesia Dr. Richard Lee retired from permanent practice at the end of 2016. In anticipation of further imminent retirements, the division was active in recruitment efforts during the year. This work was successful in setting up the hiring of Lindsay McMillan, Lindsay Rawling and Heng Gan in early 2017.

With construction of BC Children's Hospital's new TECC Acute Care Center progressing to near completion in 2016, planning and preparing for the upcoming move intensified. Eleanor Reimer, James Chen and many other division members continued to be highly active in the hospital's redevelopment planning activities.

Our Pediatric Anesthesia Clinical Fellowship program continued under the direction of Katherine Bailey as fellowship coordinator. 2016 saw the successful completion of the fellowship year for James Gaynor and Liz Allison. In the summer, Cheryl Peters began her first of over two years of combined fellowship training in Pediatric Anesthesia and Pediatric Intensive Care Medicine and was joined by Jon Stacey for his year of pediatric anesthesia training. The division of pediatric anesthesia continued to be active in the education of anesthesia residents, off-service residents and medical students in 2016. An online accessible system of daily resident evaluations was introduced to optimize progress evaluation and feedback.

Significant planning took place in 2016 for the Pediatric Anesthesia Division's Pediatric Anesthesia Update Education event which took place in early 2017. This initiative at meeting our division's provincial education mandate provides simulation and discussion based pediatric anesthesia content directed at the community anesthesia provider. The division plans to repeat these sessions on an ongoing basis.

After many years of leading a stellar Pediatric Anesthesia Research program at BC Children's Hospital, Dr. Mark Ansermino prepared to hand off departmental responsibility for research. In 2016 the department planned for a restructuring of its research activity under new leadership. A departmental research committee was established with Simon Whyte and Matthias Gorges as co-chairs. Recruitment for a new Director of Research continued in 2016.

In 2016 Departmental involvement in international health continued with trips to Uganda (Eleanor Reimer, Jon Stacey, Trevor Coelho) India (Carolyn Montgomery) and Guatemala (Bob Purdy).

BRITISH COLUMBIA WOMEN'S HOSPITAL & HEALTH CENTRE

BC WOMEN'S
HOSPITAL+
HEALTH CENTRE



PHSA's strategic plan based to guide the actions of all PHSA's agencies is founded on shared values and includes three strategic priorities. These priorities are Quality Outcomes and Better Value for Patients, promoting healthier populations and contributing to a sustainable health care system. In 2015/2016 BC women's continues to focus on aligning these priorities with the priorities set out by the Ministry of health by the BC health system in the 2015/16 Service Plan.

New Initiatives

C&W Site Redevelopment is almost complete: hospital-wide move day into the new TACC centre is October 29, 2017! BC Women's will have a completely new 70-bed single room NICU spread over two floors of the new critical care building. Included is a ground-breaking mother-baby unit where postpartum mothers room-in with their babies who require intermediate level NICU care. There is also a new 14 bed LDR including 4 high acuity beds, and 4 new operating rooms – 3 dedicated to obstetrics and one shared room for NICU-LDR cases.

Staffing/Recruitment - Dr David Lea and Dr. Simon Massey are currently co-acting heads of BCWH Anesthesia.

ROYAL COLUMBIAN & EAGLE RIDGE HOSPITALS



Royal Columbian Hospital

As the tertiary care centre for the entire Fraser Health Authority, which serves over one-third of the population of BC, the Royal Columbian Hospital provides a wide spectrum of surgical services. In fact, the range of surgical services provided at RCH is unmatched by any other site in British Columbia. RCH is the highest volume cardiac center in BC and also sees the most high-level trauma--it is by far the busiest trauma neurosurgery center in BC and is one of the top three centers in Canada for trauma orthopedics. Year after year RCH continues to have one of the highest risk-adjusted performing NICU; it is the one of the few centers in BC that can handle high-risk OB cases that require ICU and/or cardiac care. Interestingly, over 60% of the cases performed at RCH are classified as urgent/emergent. Over the last decade, NSQIP data has consistently ranked RCH surgical patients as having the highest acuity amongst the hundreds of North American hospitals participating in the study; at the same time, RCH has managed to have exemplary results.

Eagle Ridge Hospital

The six operating rooms at ERH provide space for nearly 10000 surgical cases a year, the majority of which are Surgical Day Care cases. Most of the pediatric cases done by the Department are performed at ERH.

VANCOUVER ISLAND HEALTH AUTHORITY

Sites:

**Victoria General Hospital, Cowichan District Hospital
Royal Jubilee Hospital, Westcoast General Hospital
Saanich Peninsula Hospital, Nanaimo Regional Hospital
St Joseph's General Hospital, Campbell River Hospital**



The department successfully implemented a Perioperative Anesthesia Position responsible for ECT, PACU coverage, Acute Pain patients, ward consults and out of OR anesthesia. This position has become very busy and has created improvements in patient care and flow through the PACU.

Island Health has changed the administrative medical leadership structure creating new positions island wide. There are 4 regional division heads (eg. Quality, recruitment, education) responsible for governance and hospital site medical leaders responsible for operational activities in the OR. The division heads report to the Department Head.

University Hospital of Northern BC

(Prince George Regional General Hospital)



Dr. Shezhad Mehmood is currently the Head of the Department of Anesthesia. Over the next year, the department plans to implement the following changes:

1. Introduce Telehealth consultations within the Pre-Assessment Clinic
2. Continue updating and standardization of the Perioperative Guidelines

The newly opened Northern Simulation Centre at UHNBC has enabled physicians to utilise high fidelity simulation for teaching airway management to medical students and family practice residents. The opening of the Learning and Development Center has provided an improved facility for simulation as well as space for other educational activities.

KELOWNA GENERAL HOSPITAL



We have had a good year at Kelowna General Hospital in 2016. As Kelowna continues to grow our surgical services continue to expand. We now have 17 to 18 OR's running on a daily basis. Because of this we have hired more anesthesia staff bringing our department total to 27. Two members who have now become full time are Dr. Bryn Runkle and Dr. Angineh Gharapetian. We are excited to welcome these two new members to full time status.

We have added a new "rover" position. This will allow us to expand our peri-operative role outside of the OR's. We will now be able to deliver more anesthetics outside of the OR setting and see more patients in pre-operative consultation.

In September or October we will begin to deliver anesthetics in the GI lab on a daily basis. We hope this will increase efficiency and throughput in that setting.

The Southern Medical program had its second graduating class in 2016. One of these students will begin an FRCP training program in anesthesia on July 1.

The number of students doing anesthesia rotations at KGH continues to increase and we open these students with open arms. Our increase in surgical services has allowed us to expand our teaching capacity.

Pharmacology and Therapeutics

PHARMACOLOGY

As part of the Department of Anesthesiology, Pharmacology & Therapeutics (APT), we are committed to excellence in Pharmacology and Anesthesiology education and research through creativity and dedication. Our present research strength is in areas of neural, cardiovascular, respiratory, ion channels, and clinical pharmacology as well as drug development. We have strong collaborations within the Department in Anesthesiology, Pharmacology and the Therapeutics Initiative as well as outside of the Department.

In addition to research efforts, we have maintained our excellence in teaching at the undergraduate, graduate and postgraduate levels in both pharmacology and therapeutics. The department has been offering degree programs in undergraduate and graduate pharmacology. The PCTH 514 seminar series, now led by Dr. Peter Choi, continue to provide opportunities for our students to share their research interests and accomplishments; and the Department Seminar Series, organized by Dr. Pascal Bernatchez and Dr. David Fedida, continue to provide an opportunity for faculty and students to be exposed to other related research areas from within and outside the university.

Medical Undergraduate Teaching

Pharmacology-driven educational activities and assessable learning objectives were incorporated into nearly every week of the finalized year 1 schedule. It will be similarly represented in the year 2 syllabus, which is still in development. We have contributed pharmacology content to several new Case Based Learning (CBL) cases, and are working collaboratively to include pharmacology in multi-disciplinary clinical reasoning sessions. We have secured a pharmacology-focussed week in the second term of year 1 and a new CBL case on Adverse Drug Reactions has recently been written for that week.

The clinical experiences in years 3 and 4 continue to focus on clinical rotations where pharmacology teaching is integrated into the clinical setting. Pharmacology is included in some academic half-day teaching, as well as the Preparation for Medical Practice (PMP) course, which includes ~15 hours of pharmacology instruction in areas such as medication reconciliation, psychopharmacology, prescription writing and adverse drug reactions.

While the renewed curriculum provides many opportunities for pharmacology education, it is not without its challenges. Securing limited and highly sought-after curricular time is the most significant and ongoing challenge in years 1 and 2. However, persistence and a willingness to collaborate with other theme groups (patient safety, evidence based medicine, addictions, palliative care, etc.) has allowed for pharmacology content to be integrated into numerous teaching and learning activities. This raises the need for greater involvement of department

members to deliver these sessions. Once the years 1 and 2 course syllabi are finalized there will be a concerted effort to allocate teaching sessions to appropriate faculty members.

The next phase of curriculum development will be the integration of the 'themes' into the renewed year 3 and 4 experiences. The input and expertise of our clinical faculty will be critical for ensuring that the time allocated to the Pharmacotherapy theme is used in the most effective way.

Graduate Program

In 2016-2017, 2 new students joined (1 MSc and 1 PhD), and 3 students graduated with a degree (2 MSc and 1 PhD).

Undergraduate Pharmacology

Undergraduate Education-Non-Medical, Bachelor of Science

The Department offers a 4-year B.Sc. and a 5-year B.Sc. Co-op Education program in Honours as well as Major pharmacology. The aim of our programs is to produce a graduate broadly trained in all aspects of pharmacology.

The program emphasizes the experimental and laboratory aspects of Pharmacology and students learn both the whole animal and isolated tissue techniques as well as biochemical and chemical procedures. Skills that are stressed include the ability to search for information, design appropriate experiments, carry out experiments individually and as a member of a team, analyze data and, communicate and write effectively.

The Department of Pharmacology & Therapeutics has been offering a B.Sc. program in Pharmacology Honours & Majors for over a decade. This course is offered under the Faculty of Science. In first and second years the students take a basic science program.

Since there is room for a maximum of 18 students in third year, all those in registered second year are interviewed by Dr. S. Karim as part of the selection process. Entrance to third year is primarily on the basis of marks. Students then select Honours or Majors in either the four year or five year (Co-op) program.

Co-op Program

For the co-op program, in addition to classical laboratory-based university instruction, the students will 12 to 16 months of paid work placement (i.e., 3 to 4 work-terms) in pharmacology research laboratories in pharmaceutical companies or academic institutions.

Work placement starts in May or September after the completion of year 3 and continues through year 4. Students in the honours program will take additional credits in years 2,3, and 5 and conduct a laboratory-based research project for 6 months during year 5 (Sept. to March) within the Department and present an Honours thesis (PCTH 449).

Students participating in the Co-op program register for PCTH 398, 399, and 498, in addition to the normal academic requirements, and pay the Co-op Education Program fee for each course (see Index for Fees-Special Fees). PCTH 499 is optional for students who want to have four work placements.

Over the past few years, we have had our co-op students placed in various pharmaceutical and biotechnology companies in Canada, United Kingdom, Japan, Switzerland, and United States.

THERAPEUTICS INITIATIVE

Dr. James Wright MD PhD FRCPC
Co-Managing Director

Dr. Ken Bassett, MD MA PhD
Co-Managing Director



The Therapeutics Initiative (TI) was established in 1994 by the Department of Pharmacology and Therapeutics in cooperation with the Department of Family Practice at The University of British Columbia with its mission to provide physicians and pharmacists with up-to-date, evidence-based, practical information on prescription drug therapy. To reduce bias as much as possible, the TI is an independent organization, separate from government, pharmaceutical industry and other vested interest groups. We strongly believe in the need for independent assessments of evidence on drug therapy to balance the drug industry sponsored information sources.

Over the years the TI has substantially enhanced its ability to assess the clinical evidence presented in published articles, meta-analyses by the Cochrane Collaboration and scientific material presented by the pharmaceutical industry. In pace with the extensive assessment of clinical evidence, the TI has developed effective ways of knowledge translation and dissemination of this evidence to all active players involved in drug therapy: physicians, pharmacists, nurses and policy-makers (Ministry of Health) and is committed to analyzing its own impact.

Therapeutics Initiative is an active member of the [International Society of Drug Bulletins](#) and in 2016 Ciprian Jauca, Program Coordinator of the TI was elected Secretary General of the Society for a 3-year term.

The Education Working Group of the TI offered more than 30 different educational events of varying duration in various locations throughout British Columbia in 2016, but most significant among these was a very successful one-day course held on 29 October 2016 at Surrey Memorial Hospital: the course was sold out and received very good feedback from the participants (150 physicians and pharmacists). The brochure is attached to this email in PDF format.

Finally, the Cochrane Hypertension Group is also part of our research group. It is one of 50 review groups of the international Cochrane Collaboration, only 6 of which are based in Canada and Cochrane Hypertension is the only one based in Western Canada. A description of this group can be found here: <http://hypertension.cochrane.org> In 2016 Cochrane Hypertension provided the editorial support that facilitated the publication of 12 Cochrane systematic reviews and protocols. The list of these publications is appended below for ease of reference. In addition, Cochrane Hypertension has also been involved in knowledge synthesis and knowledge translation activities related to the dissemination of evidence from Cochrane reviews and has offered training to existing and aspiring authors of systematic reviews both in Canada and internationally.

Cochrane Reviews

- Taverny G, Mimouni Y, LeDigarcher A, Chevalier P, Thijs L, Wright JM, Gueyffier F. Antihypertensive pharmacotherapy for prevention of sudden cardiac death in hypertensive individuals. *Cochrane Database of Systematic Reviews* 2016, Issue 3.
- Wong GWK, Boyda HN, Wright JM. Blood pressure lowering efficacy of beta-1 selective beta blockers for primary hypertension. *Cochrane Database of Systematic Reviews* 2016, Issue 3.

Cochrane Protocols

- Finizola RM, Infante E, Finizola B, Pardo Pardo J, Flores Y, Granero R, Arai KJ. Pharmacotherapy for hypertension-induced left ventricular hypertrophy (Protocol). *Cochrane Database of Systematic Reviews* 2016, Issue 1.
- Masson SC, Tejani AM, Stabler SN, Tsang MP, Tam TSC, Wu MHY, Tung A, Kinkade A. Eplerenone for hypertension (Protocol). *Cochrane Database of Systematic Reviews* 2016, Issue 2.
- Adams SP, Sekhon SS, Wright JM, Tsang M. Fluvastatin for lowering lipids (Protocol). *Cochrane Database of Systematic Reviews* 2016, Issue 7.
- Zhang X-Y, Soufi S, Dormuth C, Musini VM. Time course for blood pressure lowering of beta blockers with partial agonist activity (Protocol). *Cochrane Database of Systematic Reviews* 2016, Issue 10.
- Sumar I, Kassam F, Dormuth C, Wright JM. Time course for blood pressure lowering of angiotensin-converting-enzyme inhibitors (Protocol). *Cochrane Database of Systematic Reviews* 2016, Issue 12.

Updated Cochrane Reviews

- Ho MJ, Li ECK, Wright JM. Blood pressure lowering efficacy of coenzyme Q10 for primary hypertension. *Cochrane Database of Systematic Reviews* 2016, Issue 3.
- Siebenhofer A, Jeitler K, Horvath K, Berghold A, Posch N, Meschik J, Semlitsch T. Long-term effects of weight-reducing drugs in people with hypertension. *Cochrane Database of Systematic Reviews* 2016, Issue 3.
- Semlitsch T, Jeitler K, Berghold A, Horvath K, Posch N, Poggenburg S, Siebenhofer A. Long-term effects of weight-reducing diets in people with hypertension. *Cochrane Database of Systematic Reviews* 2016, Issue 3.
- Shamon SD, Perez MI. Blood pressure-lowering efficacy of reserpine for primary hypertension. *Cochrane Database of Systematic Reviews* 2016, Issue 12.
- Adams SP, Sekhon SS, Wright JM. Rosuvastatin for lowering lipids. *Cochrane Database of Systematic Reviews* 2016, Issue 12.

EDUCATION

POST-GRADUATE MEDICAL EDUCATION PROGRAM ANESTHESIA RESIDENCY

Matthew Klas MD FRCPC
Program Director

New Graduates

All twelve of our PGY5 residents were successful in the 2016 Royal College specialty examinations in Anesthesiology. This is due to their hard work and the dedication of our teaching faculty. Our PGY 5 Seminar Series continues to be very successful and a model for Royal College exam preparation, under the leadership of Dr. Ron Ree. Most graduates have found faculty positions at our UBC academic hospitals

Overall, this has been a successful year for the UBC Anesthesiology Residency Training Program. This is due to the many hours of hard work on the part of our clinical faculty working with our residents, taking part in the academic program, as well as helping senior residents prepare for the oral exam and to become skilled anesthesiology consultants. The goodwill and high level of commitment to residency training is a credit to this department. Our full Academic Day and growing Simulation curriculum are a unique strength and selling feature of the residency at UBC. New and innovative programs continue to be developed to keep pace with new technology and training models. This will continue to expand as we move to a Competency based model in 2017. We also continue to attract high quality students to our program.

Resident Selection Committee

A very robust and active sub-committee of the Residency Training Committee (RTC) reviewed all applicants. The Selection Committee was chaired by Trina Montemurro, with committee members representing all of the major BC teaching hospitals: Bob Purdy, Yvonne Cysani-Fritz, Penny Osborne, Naomi Kronitz, Vit Gunka, Juliet Atherstone, Aeron Doyle, Ron Ree, Matt Coley, Cynthia Yarnold, Laura Duggan, Mike Atherstone, Hazhir Ahmadi, Jon McEwen and Peiter Swart. Also resident memberst Graham Noble, Sadiq Abdulla, Kali Romano, Justen Naidu, Chris Nixon-Giles, Miguel Fernandez and Ann-Marie Madden contribute to the committee.

Academic Program

The full day academic program involving active participation from each of the teaching hospitals was very successful. The new format and curriculum developed in 2012 continues be very successful and get excellent reviews from the residents. The feedback form residents and faculty has been very positive and the day is felt to be more interesting and interactive. It is more in line with the newly developed National Curriculum of the Royal College Specialty Committee in Anesthesiology.

Simulation

All of the PGY 2-5 residents went to the high fidelity UBC Anesthesia Simulator housed in the CESEI (Center of Excellence for Surgical Education and Innovation) at VGH. Dr. Laine Bosma, as the coordinator of the anesthesia simulator and their group of dedicated faculty ("Sim Docs"), ran the

highly successful simulations 2/year for each UBC Anesthesia residents. BCWH and BCCH have also incorporated regular Simulation into the Obstetric and Pediatric curriculums. Also for the first time PGY 5's went through and nationally developed Simulation scenario that will become standard for all Canadian Universities.

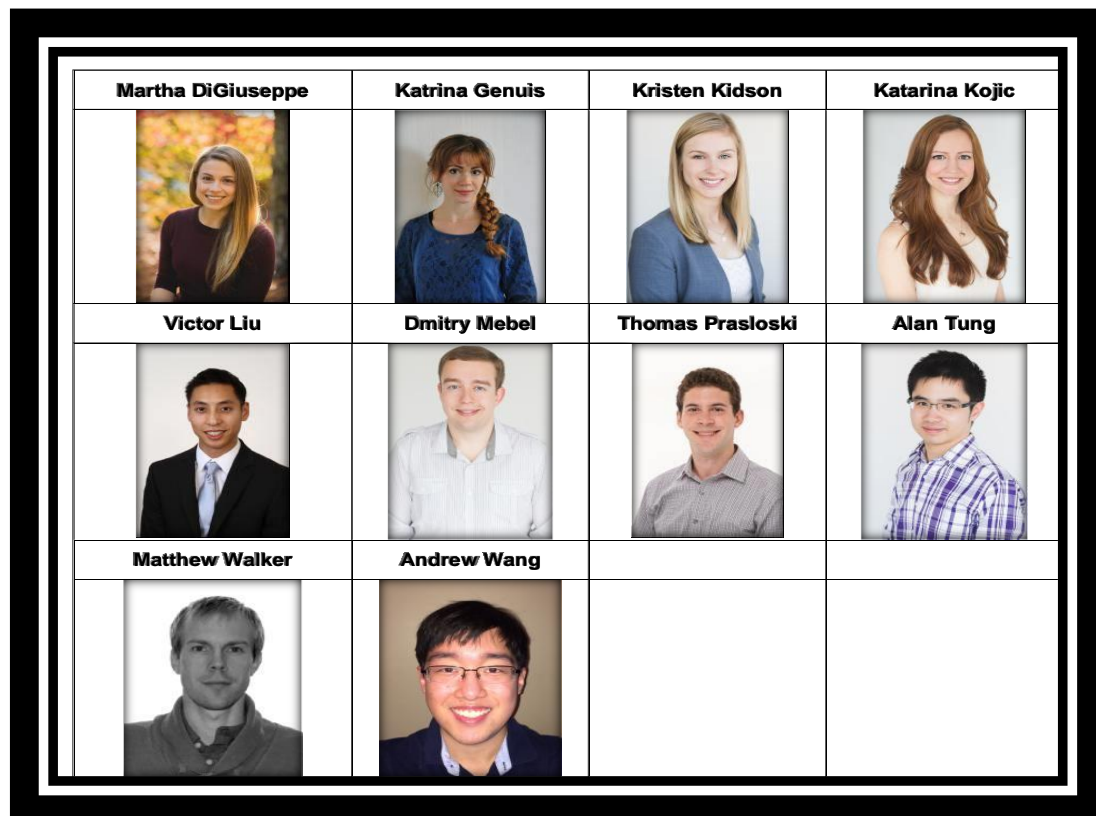
Journal Club

Journal Club remains an integral part of the academic program. Meetings occur monthly at faculty members' homes or other venues. Dr. Anton Chau has done an excellent job in the coordinator role for 2016.













Clinical Program

The clinical program continues to be a strong element of the UBC Anesthesiology training program. The regional anesthesia rotation provides very good educational experience. The mandatory community anesthesia rotations in Nanaimo and Prince George have received positive reviews by residents and Kamloops is joining this year. The four week anesthesia rotation at Victoria General Hospital/RJH continues to be well received and this year a more structured under the direction of on call experience is being developed. It will continue to be at the PGY 4/5 level, with residents able to choose pediatric anesthesia, adult general anesthesia, or subspecialty cardiac, neuro, thoracic or vascular anesthesia. BCCH continues its 4 consecutive mandatory pediatric rotations with 24 hour call to give better exposure to after-hours cases as well as out of OR care such as the Pain Service and Trauma calls. Many of the larger teaching hospitals continue to have increasing resident experience out of OR/Perioperative Medicine days which have been favorably viewed by residents and faculty. Residents are also on the Code Blue team at VGH and SPH.













UBC ANESTHESIA RESIDENTS 2015-2016 - PGY 1





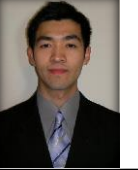











UBC ANESTHESIA RESIDENTS 2015-2016 - PGY 2

Richard Alexander 	Hao Chen 	Christine Graf 	Rana Hamidzadeh 
Alexandre Lefebvre 	Shannon Lockhart 	Disha Mehta 	Daniel Mok 
Kelli O'Reilly 	Derek Sargent (FPA) 	Evan Shao 	Terri Sun 








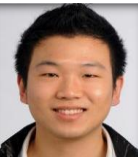





UBC ANESTHESIA RESIDENTS 2015-2016 - PGY 3

Navraj Chima 	Amber Galbraith 	Aaron Lau 	Pawel Martinka 	Justendra Naidu 
Christopher Nixon-Giles 	Jamie Oentoro 	Marcio Penner 	Kali Romano 	Ryan Truant 
	Vishal Varshney 	Hardy Zietsman 		

UBC ANESTHESIA RESIDENTS 2015-2016 - PGY 4

Tonia Berg	Landon Berger	Michael Chuang	Reza Faraji	Miguel Fernandez
				
Carrie Goodine	Su-Yin MacDonell	Anne-Marie Madden	Steven Moore	François Pomerleau
				
Alison Read	Peter Rose	Siu-Kae Yeong	Parisa Soltani	
				

UBC ANESTHESIA RESIDENTS 2015-2016 -PGY 5

Sadiq Abdulla	Claire Carroll	Steven Green	Alexandra (Sandy) Kisilevsky	Cristin McRae
				
Graham Noble	Julie Paget	Jeil Eung Park	Cheryl Peters	Sarah Sunderland
				
Sarah Waters (until 22 Nov 2015)	Alexander Wong	Donald Young		
				

**POST-GRADUATE MEDICAL EDUCATION PROGRAM
FAMILY PRACTICE ANESTHESIA**

**John McAlpine MD FRCPC
Program Director**

2016 was a notable and busy year for the UBC FPA program. Dr. Derek Sargent successfully completed his year and three new residents (Dr. Theresa Lee, Dr. Ross Taylor, and Dr. Cory Veldman) entered the program in July.

Through the continued support of REAP, the residents attended the intensive and innovative conference/simulation training in Ontario. This FPA 'Bootcamp' is a week in duration and comprised many hours of simulation sessions and lectures and receives very positive reviews from participants.

In November, the annual UBC FPA Refresher Course was held with high attendance from the BC FPA community and tremendous teaching contribution from UBC faculty to make the conference a great success. This course is an annual event which will hopefully grow beyond BC attendees.

2016 also marked the end of Dr. Jim Kim's term as program director. Dr. Kim has made an enormous contribution to the UBC FPA program and will be missed by UBC and the FPA community! His successor is Dr. John McAlpine who practiced as an GPA for several years and who currently works at Lions Gate Hospital. There was also transition within the Enhanced Skills leadership as Dr. Diana Chang is also stepping down to be replaced by Dr. Tina Webber. The program is very grateful to both Dr. Kim and Dr. Chang for all they have contributed.

MEDICAL UNDERGRADUATE PROGRAM

**Brad Merriman BSc MD FRCPC
Program Director**

The 2016 academic year has been one of transition for the Medical Undergraduate Program. The first major transition was the departure of Dr. Oliver Applegarth, whom I succeeded as Program Director in May. I owe him a debt of gratitude for his careful stewardship over the past 9 years. Chief among his many accomplishments was the program's successful transition to a distributed model with teaching sites now scattered across the province, and the accommodation of a greatly expanded student body in the Lower Mainland. Several years on, the distributed model has been enthusiastically embraced by dedicated preceptors throughout the province. They continue to be the lifeblood of the undergraduate program, and I thank them heartily, on behalf of all medical students, for their valued contributions.

The second major transition is the ongoing Curriculum Renewal, which Dr. Applegarth will continue to manage as the anesthesia lead. The fast-approaching go-live date for the new Year-3 Curriculum is June 2017. You may recall from the last program update that curriculum renewal is an attempt to move towards group-based learning with an emphasis on longitudinal knowledge acquisition in the form of a "spiralled" curriculum (i.e. concepts are continually reintroduced in

increasing complexity as clinical experience accumulates). Students starting the year 3 clerkship in June 2017 will have already navigated the renewed curriculum at the year 1 and 2 levels.

To accommodate the goals of this ambitious redesign, as of June 2017, the anesthesia clerkship rotation will be repackaged as part of a 12-week "Surgery and Perioperative Care" (SPC) block. This will not result in any practical changes to the way clerkship students rotate through anesthesia; they will still go through a distinct two-week rotation just as they do in anesthesia 430. What will change, however, is how they will be examined, how they will be taught and how they will be evaluated. To promote longitudinal learning, the final examination will now be a joint exam combining surgery, orthopaedics and anesthesia that will be written at the end of the 12-week SPC block. Teaching in the operating room will continue in the current fashion, but every second Tuesday will now be set aside for a full out-of-OR academic day run jointly by surgery, orthopaedics and anesthesia. These academic days will be an amalgam of lectures, case-based learning and hands-on simulation based on major themes relevant to surgery and anesthesia (e.g. trauma, airway management, preoperative assessment). Daily student evaluations will continue in the current fashion, but will sport a revised performance scale to identify students as "on-track" or "not on-track" with the goal of identifying students in need of assistance. The daily evaluations will be supplemented by a "work-based assessment" of exit competencies not unlike the Royal College's competency by design, whereby students will be evaluated on their ability to perform certain "entrustable physician activities" (e.g. take an anesthetic history, bag-mask ventilate a patient, etc.). Currently we assume that students adequately perform the activities of a physician based on time spent in a rotation; work-based assessment changes that perspective to focus on the acquisition of specific skills in a verifiable manner.

Transitions bring change and uncertainty; but, they also represent an opportunity to improve upon our past achievements. The present transition of the anesthesia medical undergraduate program is an opportunity to build an engaging curriculum for our medical students that is unique in Canada. I look forward to the challenge and I hope you will join me in making this a successful endeavour.

CONTINUING PROFESSIONAL DEVELOPMENT & VISITING PROFESSOR PROGRAM

Dr. Stephan Malherbe, MBChB, FCA(SA), FRCPC
Program Director

CPD within the Department of Anesthesiology Pharmacology and Therapeutics includes our Visiting Professor Program and the Whistler Anesthesiology Summit (WAS). The Okanagan Anesthesiology Conference and Pediatric Anesthesia/GPA conference are also opportunities for CPD within the department and will be described elsewhere.

Dr. Jean Templeton Hugill Memorial Lecture

The next Dr. Jean Templeton Hugill Visiting Professor Lecture was scheduled on April 27, 2016. Dr. James C. Eisenach was the invited speaker.

Visiting Professor Program

The goal of the Visiting Professor program is to provide anesthesiologists from around the province stimulating and thought provoking speakers throughout the academic year. Each regional hospital (Vancouver General Hospital, St. Paul's Hospital, Royal Columbian Hospital, BC Children's Hospital, BC Women's Hospital) selects a speaker which best reflects that hospital's interests at that particular time.

Our visiting professor committee consist of: Dr(s). Stephan Malherbe (BCCH), Alyssa Hodgson (RCH), Giselle Villar (BCWH), Cynthia Yarnold (SPH) and Stuart Herd (VGH).

Our speakers this academic year included:

Dr. Janice Chisholm, Dalhousie University
Dr. Hance Clarke, University of Toronto

We continue to video-conference the visiting professor lecture series with multiple sites now having access to our speakers in real time. Sites involved via video-conference link include Lions Gate, Nanaimo, Port Alberni, Prince George, Nanaimo, Vernon and Victoria. Feedback from the program has been very positive. Our video library of speakers continues to grow and is available on our website below.

<http://apt.med.ubc.ca/anesthesiology/video-lectures/>

The UBC department website is linked to the Canadian Anesthesiology Society Continuing Professional Development website so that interested anesthesiologists can access our departmental website and visiting professor videos.

Whistler Anesthesiology Summit (WAS)

The WAS held its fifth annual conference in Whistler on February 25 – 28, 2016. The conference host hotel will be the Westin Whistler Resort. Our key speakers this year include: Dr(s) Robert Arntfield, André Denault, PJ Devereaux, Michael Gropper, Edward Mariano, Mike Murphy, Mike Negraeff, Beverley Orser. This year we offered a hands-on Regional Anesthesia workshop and Bedside Point of Care Cardiac Ultrasound workshop for attendees.

RESEARCH

Donald Griesdale MD MPH FRCPC
Clinical Research Director (Anesthesiology)



The Department of Anesthesiology, Pharmacology and Therapeutics is composed of basic scientists, clinician scientists and epidemiologists who conduct impactful research in many diverse areas within and between these three pillars. The main research themes of our department include: neurosciences, cardiopulmonary, clinical outcomes and patient safety, and perioperative technology integration. Not surprisingly, there are broad research focuses within these domains. Important areas of basic research include: physiology and pharmacology of the cardiovascular, respiratory and central nervous system. Our clinical research touches all the major domains of anesthesiology: cardiothoracics, critical care, obstetrics, regional anesthesia, pediatrics, perioperative medicine, patient safety, and clinical monitoring. Finally, there is an important research program in pharmacoepidemiology.

With the strengths of three related but different sections in our department, our diversity enables us to build partnerships between the sections, which allow us to pursue investigations from the bench to the bedside to the population. Furthermore, our department has a long-standing tradition of collaboration with other groups within the UBC Faculty of Medicine (Critical Care, Neurology, Population and Public Health, Psychiatry) and other UBC faculties (Electrical and Computer Engineering).

We are fortunate to have an incredible group of talented researchers in our department.

Peer Reviewed Publication Summary:

1. Journals Articles refereed: 169
2. Editorials: 1
3. Commentaries and letters: 9

GLOBAL OUTREACH

Many department members are engaged global outreach activities. Specific missions were:

1. India – IPRAS Women for Women Charity Programme
2. India – Kaka-ba Hospital
3. Guatemala - Health for Humanity Surgical Mission
4. Uganda – Makerere Hospital/Mulago Hospital

Thanks to all faculty, clinical fellows and residents who organized and participated in such important outreach activities.

INDIA

Queens NRI Hospital Visakhapatnam, Andra Pradesh, India

IPRAS Women for Women Charity Programme (the International Society for Plastic Reconstructive and Aesthetic Surgery) perform plastic surgeries for women and children who are victims of burns and acid attacks



Dr. Giselle Villar and Dr. Nancy Van Laeken in O.R. with other volunteers





Drs. Villar & van Laeken with patient after reconstructive surgeries

ANTIGUA, GUATEMALA

Health for Humanity Surgical Mission – [Health 4 Humanity](#) (H4H) strives to improve the lives of Guatemalans by organizing multidisciplinary teams of volunteers health care professionals on annual medical assistance trips. Since 2002, the group of nurses, doctors and surgeons from around the world have been travelling at their own expense to, among many other things, repair the cleft lips and palates of infants and children. The Primary Health Care team has performed upwards of 300 surgeries to date.



Surgical Mission Team – Antigua, Guatemala

Anesthesiologists - at the Obras Sociales del Santo Hermano Pedro Hospital

Joe Del Vicario – Team Lead

William Abbott

Balvinder (Bal) Kaur

Wendy MacLeod

James Prentice

Peter Scoates

Tim Sveinbjornson

Robert Purdy



Selfie of Drs. Jim Prentice, Bob Purdy, Bal Kaur (former VGH Clinical Fellow)



Volunteers with tiny patient before surgery

UGANDA, AFRICA

Makerere Hospital/Mulago Hospital

BC Children's Hospital Team Uganda -

In 2016 Departmental involvement in international health continued with trips to Uganda (Eleanor Reimer, Jon Stacey, Trevor Coelho)



APPENDICE

SECTION REPORT

ANESTHESIOLOGY

***ANESTHESIOLOGY SITE CHIEF
REPORTS***

BC Children's Hospital
Provincial Health Services Authority
Norbert Froese, MD FRCPC
Department Head



Department of Pediatric Anesthesia June 2016

James Chen, James Gaynor (fellow), Liz Allison (fellow), Louis Scheepers, Simon Whyte, Clayton Reichert, Eleanor Reimer, Norbert Froese, Yvonne Csanyi-Fritz, Mark Ansermino, Katherine Bailey, Chris Chin, Myles Cassidy, Stephan Malherbe, Bob Purdy, Raymond Kahwaji
Absent: Michael Barker, Zoe Brown, Natasha Broemling, Gill Lauder, Richard Lee, Carolyne Montgomery, Andrew Morrison, Mike Traynor, Denise Taylor (administrative assistant)

BC Children's Hospital RESEARCH TEAM (PART) Newsletter

Our research unit encompasses two well-established and dynamic research groups; the Pediatric Anesthesia Research Team (PART – <http://part.cfri.ca>) and the Electrical & Computer Engineering in Medicine group (ECEM – <http://ecem.ece.ubc.ca>). The team is based at CFRI's Oak Street campus. PART's researchers include anesthesiologists, research staff, multidisciplinary trainees (medical, graduate, and undergraduate students), engineers, psychologists, surgeons, and nurses. Our trans-disciplinary team collaborates on projects that cover a wide scope of pediatric-focused research, including but not limited to basic science, clinical trials, and population and global health research.

IARS



Mark Ansermino, Matthias Görge and Sonia Brodie travelled to San Francisco in May for the International Anesthesia Research Society's annual meeting. The team presented 3 posters on closed-loop control of anesthesia relating to burst suppression, intraoperative blood loss and hemodynamic changes. *Photo credit IARS.*

CAS



Dr. Richard Merchant (UBC, Royal Columbian Hospital) travelled to Ottawa for the annual Canadian Anesthesiologists' Society meeting. He presented a poster on behalf of PART on iControl.

RBC Run for the kids



Team members of all ages completed the 5 km course around the hospital neighbourhood on June 5th. The run supports oncology research at BC Children's Hospital, and the PART has been an annual participant for more than 10 years. The event raised just over \$1 Million for research.

ST. PAUL'S HOSPITAL
Providence Health Care



How you want to be treated.

St. Paul's Hospital (SPH) has had a well-established block room program since 2009. Currently the main operating rooms are serviced by a block room area within the surgical daycare suite comprised of 4 monitored beds, with the capacity to overflow up to 6 beds if needed. A dedicated regional anesthesiologist, and anesthesia assistant, staffs the block area daily. In the main OR block area the focus is predominantly on performing both single-shot regional anesthetic techniques, as well as the placement of continuous peripheral nerve block catheters. When time allows, the regional anesthesia team may also place thoracic epidurals in the block area, prior to transporting the patient to the operating room. Volumes continue to be high, and the main block area processes approximately 2,500 patients annually.

Future Directions

The Department of Anesthesia at St. Paul's Hospital will continue to develop as one of the larger departments in Providence Health Care. This will certainly bring changes to the department both as a result of external pressures as well as internal changes within the organization. Expansion of the Cardiac Surgery Program into trans-apical valves has resulted in an endovascular OR suite where Trans-femoral aortic valves are also performed. This also supports vascular surgeries involved in endovascular stents. The CSICU continues to evolve under a small subset of departmental anesthesiologists. Future evolution of the surgical approach to heart failure as well as research initiatives in delirium promise to take it in new directions.

VANCOUVER ISLAND HEALTH AUTHORITY

Tom Ruta MD FRCPC

Department Head and Medical Director for Vancouver Island Health Authority



The department continued to recruit to fill vacant positions and hired 4 new members.

Dr Steve Head-Cardiac Anesthesia, Regional Anesthesia

Dr Kevin Yee-Cardiac Anesthesia

Dr Rob Rideout

Dr Mark Vu-Trauma Anesthesia

Education/CME

Dr Logan Lee is our Education Representative and has helped coordinate the many students and residents training in the South Island.

Dr Shuen King, together with other dept members, has launched a series of anesthesia simulations for south island anesthesiologists for 2016-17.

Dr Jacques Smit, together with dept members, organized an airway refresher course in the simulation center in 2016.

Dr Pooyah Kazemi is organizing a TTE course for early 2017

Dr Sara Waters, together with other dept members, created crisis checklists which are attached to all machines at RJH and VGH.

Meghan O'Connell, organizes our CME events for the year.

Nanaimo welcomed Dr Michael Pariser to the department where he balances work in the pain clinic with the main OR. He joins Alan Berkman (who now works primarily in Vancouver stamping out chronic pain), Hans Babst, John Riendl, Scott Neilson, Paul Castner, Sarah Hall, Judy Coursley, James Lindsay, Bob Gaultois, Georgia Hirst, Michael Seltenrich, Jim Capstick, Karen Wong and Trevor VanOostrom. Dr. Karl Muendel works exclusively in the pain clinic.

2016 Initiatives:

- iHealth (a completely electronic health record) was launched in March, completely eclipsing all other projects. All medical staff underwent extensive mandatory training prior to its installation. iHealth has been met with mixed reviews and much of the hospital has experienced frustration and delays, despite the system now having been in place for almost a year. The AIMS, however, was preceded by 18 months of work by a group of dedicated island anesthesiologists who transformed a basic Cerner program into a work of art (almost.) Thus, overall, the OR has had a more successful experience than the rest of the hospital.
- Dr. Georgia Hirst served as NRGH's medical director for 18 months and led our hospital through the challenging introduction of iHealth.

- The simulation program has been highly successful, with the island's first full day Simulation Based Perioperative Emergencies course offered in January. We have continued to expand with a new simulation event every two to three months. Many of these sessions over the past year have been cross-disciplinary, involving other specialties.
- Our innovative Chronic Pain Clinic expanded to include Dr. Michael Pariser, a recent grad from Western who passed Canada's first pain fellowship exam in 2016. We also welcomed back Trevor Van Oostrom from his pain fellowship year spent at the Cleveland clinic.
- Our already outstanding Anesthesia Assistant department increased its numbers to three. Jessica Barak joins Paul Gear and Sarah Repa to cover holidays so we are never without AA coverage during banking hours. One day we hope to have coverage in the evenings and weekends too!
- After the idea was inspired by an airway simulation scenario, we installed surgical airway (Scalpel, bougie, ETT) kits in every OR.
- We acquired a transthoracic probe for our Sonosite Ultra-sound machine.

**Dr. Shehzad Mehmood, MD
Head, Department of Anesthesia**



The Northern simulation centre at UHNBC has enabled us to utilise high fidelity simulation for teaching airway management to medical students and family practice residents Northern Clinical Simulation is a partnership between [Northern Health](#), the [School of Nursing at the University of Northern British Columbia](#), and the [Northern Medical Program](#). Our goal is to support educators with the development and integration of clinical simulation into healthcare education.

Dr.M. Jamil Akhtar is the Disciplinary Site Specific Lead (DSSL) for the Department of Anesthesia at UHNBC. The Department teaches 3rd year medical students from the NMP during their anesthesia rotation, participates in the training of Family Practice residents, provide opportunities to 1st and 2nd year medical students for shadowing, as well as teaching 4th year students from educational institutions within BC and other provinces during their electives.

Currently, anesthesia residents from UBC are not coming to Prince George during their one month anesthesia rotation. The Department of Anesthesia has written a letter to UBC's Anesthesia Residency Program Director encouraging residents of the UBC Program to consider Prince George for their rural anesthesia rotation.

While the operating capacity at UHNBC is seven operating rooms, there have been increasing disruptions to running all seven rooms due to a shortage of anesthesiologists but this has been managed very well with locum coverage. In addition to ORs, the anesthesiologists at UHNBC run a pre-surgical screening consult clinic and chronic pain clinic. Services are also provided for ECT, cardioversion, endoscopy, radiology, as well as in the Emergency and Critical Care Departments, especially when intubation is required.

The shortage of Operating Room nurses was resolved in the spring of 2016 and the Department of Anesthesia hopes this situation will not arise again once seven rooms are running in the near future.

The Department of Anesthesia is currently short staffed. Three anesthesiologists left the Department on short notice and one retired at the end of September 2016. The Department of Anesthesia and Northern Health's Physician Recruitment Department have been working hard to fill this gap and have filled almost all vacancies. The Department along with other members of the Surgical Council, have been working hard to improve the safety and efficiency of surgical services through several projects including recruitment initiatives, preoperative diagnostic testing and pre-surgical screening questionnaires for nurses and patients.

The Chronic Pain Clinic is currently staffed by one anesthesiologist with dedicated clinic space, a clerk and a registered nurse. There is a great need for an expanded chronic pain service within Northern Health.

DIVISION REPORTS

DIVISION OF CARDIAC ANESTHESIA

Head, Bobby Lee MD FRCPC

Resident Training

The UBC anesthesia residents complete a two month cardiac anesthesia rotation at SPH and/or VGH, where both sites offer the opportunity to gain experience in the surgical contexts of: CABG, valve repair/replacement, and transcatheter aortic valve implantation. VGH offers exposure to manage patients undergoing major thoracic aortic vascular surgery. In contrast, SPH offers the experience of caring for patients with cardiomyopathies who require ventricular assist devices and/or heart transplantation. With the advent of newer percutaneous cardiac procedures, SPH also offers exposure to managing patients undergoing transcatheter mitral valve replacements/MV rings, and percutaneous ASD closures.

CSICU

Penultimate and final year UBC anesthesia residents complete a 1 month rotation in the CSICU, either at VGH or SPH. Given the increasing complexity of cardiac surgery patients over the past 10 years, this has resulted in an excellent learning experience for residents in managing complex patients with a variety of mechanical assist devices such as ECMO as well as challenging medical conditions often seen in the ICU such as septic shock. On occasion at SPH, we have had ICU fellows also rotate through the CSICU, a positive development resulting in bi-directional flow of knowledge between the ICU and CSICU.

TEE

For those final year residents with an interest in TEE, a 1 month rotation has been established at SPH. There is also an opportunity at RCH for a 2 month rotation to be spent with cardiologists. Though the objectives of the rotation are for residents to be able to conduct a detailed exam of cardiac and valvular function independently, most realistically, residents become comfortable with the basic TEE exam within this 1 month period.

Fellowship Training

A 1 - 2 year cardiac anesthesia fellowship is offered at SPH and at VGH. I have found it challenging to be able to find funding in order to fund a combined cardiac anesthesia/TEE/CSICU fellowship program where the fellow would spend time training at all three Lower Mainland sites VGH, RCH, and SPH. I believe the fellowship could be stronger in the clinical material offered and would benefit from each hospital's strengths, i.e. VAD/transplant at SPH, thoracic aortic/arch repairs at VGH.

New Cardiac Anesthesia Staff Update

At VGH, Drs. Sean McLean and Travis Schisler have come on staff this past year to join the cardiac anesthesia team in the near future upon completion of their fellowships.

At RCH, their contingent of cardiac anesthesia staff continues to expand with the recent return of Dr. Laura Duggan from Duke and the anticipated return of Dr. Brady Warnick from Ottawa.

Though I am not aware of new staff at Victoria or Kelowna yet, I am aware that the cardiac anesthesia program at Victoria is currently searching to add one more person to their contingent.

UBC CARDIAC ANESTHESIA JOURNAL CLUB

Though it is a challenge with limited funding opportunities, in December of this past year, we were able to resurrect the UBC Cardiac Anesthesia Journal Club with the help of Baxter at Cioppino's. Our guest speaker was Dr. Abeed Jamal, Clinical Assistant Professor for the UBC Department of Medicine, Division of Nephrology. Two articles were reviewed and the evidence discussed regarding Balanced IV Solutions in cardiac surgical/critical care patients. Cardiac anesthesiologists from all 3 Lower Mainland sites (VGH, RCH, and SPH) were invited as well as cardiac surgeons and perfusionists in order to promote the interdisciplinary aspect of such discussions. Follow up with participants as well as Baxter indicated that the event was welcome and an event to look forward to in the future given the plan is to continue these events on an annual/semi-annual basis.

DIVISION OF NEUROANESTHESIA

Head, Alana Flexman MD FRCPC

Former Head, Dr. Cynthia Henderson, MD FRCPC

The Division of Neuroanesthesia has been active in providing education to the Residents and Fellows in the subspecialty of Neuroanesthesia, continuing medical education for staff members and expert clinical care for neurosurgical cases. Residents in their R4/5 year spent one month in Neuroanesthesia at Vancouver General Hospital gaining expertise in routine and unusual cases in Neurosurgery, Neuroradiology, and Major Spine Surgery. During their Neuroanesthesia rotation, each resident made a presentation of an interesting case or topic at Neuroanesthesia Rounds which are held monthly and attended by residents, fellows and staff in the Department of Anesthesia. Quarterly Combined Neuroanesthesia / Neurosurgery Rounds are held with the Division of Neurosurgery to discuss interesting and mutually relevant topics and concerns. The Division of Neuroanesthesia was fortunate to have an excellent Neuroanesthesia Fellow, Dr. William Rieley for a one year period from January to December 2016.

In June 2016 Dr. Cynthia Henderson stepped down as Head, Division of Neuroanesthesia. Dr. Henderson's significant contributions to the Division are acknowledged and appreciated. Division of Neuroanesthesia had eight members: Dr. Cynthia Henderson, Dr. Bali Dhaliwal, Dr. Alana Flexman, Dr. Henrik Huttunen and Dr. Jon McEwen, Dr. Kelly Mayson, Dr. Oliver Applegarth, and Dr. Yvonne Peng. In addition, the Division welcomed Dr. Alexandra Kisilevsky, who joined the Department in July 2016, as a future member of the Division. Dr. Kisilevsky will be undertaking a Neuroanesthesia fellowship at the University of California, San Francisco in January 2018.

The Division was active with education as in previous years. A handout was created to provide online educational resources and the residents continue to use the core textbook: Essentials of Neuroanesthesia and Neurointensive Care, Gupta AK and Gelb AW (eds), 2008. The Residents' Academic Days in Neuroanesthesia were presented on November 23 and 30, 2016 and lectures were given/supervised by Drs. Huttunen, Flexman, McEwen and Griesdale. Members of the Division of Neuroanesthesia were actively involved in the R5 Senior Anesthesiology Residents' Preparatory Course and the UBC Anesthesia Departmental Residents' Oral exams. Members of the Division also supported education of our nursing colleagues, including inservices on a variety of topics, as well as contributed to the new curriculum for Anesthesia Assistants.

In research, the Division continued to be productive as seen in the number of publications, abstracts and projects below. The division was supportive of several resident and fellow research projects in 2016. Several members of the Division of Neuroanesthesia organized and supervised the lectures and meetings of the Neuroanesthesia Section at the Canadian Anesthesiologists' Society meeting in Vancouver, BC in June 2016 and Miguel Fernandez presented an abstract supervised by Dr. Henrik Huttunen. Dr. Alana Flexman, Dr. William Rieley (fellow), Dr. Ryan Truant (Resident) and Ms. Ayda Askari (MSI) presented abstracts at the Society for Neuroanesthesia and Critical Care and American Society of Anesthesiology meetings in Chicago in October 2016. Dr. Griesdale continued a productive research program in Neurocritical care.

Finally, the Division pursued activities to increase engagement with UBC Anesthesiology faculty throughout the province. A Neuroanesthesia interest group was identified and Dr. Flexman has distributed a quarterly newsletter highlighting recent updates from the literature starting in October 2016.



UBC/VGH Neuroanesthesia Research Presented at the SNACC and ASA Meetings in October 2016

DIVISION OF THORACIC ANESTHESIA

Head, JENS LOHSER MD FRCPC

Two new staff have joined our thoracic anesthesia team after completion of their fellowships:

- Dr Travis Schisler returned from a Cardiothoracic Fellowship at the University of Pittsburgh in June 2016, where he has been actively involved in lung transplantation, ECMO lung support and critical care support for cardiothoracic patients.
- Dr Sean McLean returned from a Cardiothoracic Fellowship at the University of Washington in August 2016, where he has been actively involved in lung transplantation and minimally advanced thoracic and esophageal surgery.

Our surgical team has had staffing changes:

- Dr Basil Nasir left for a staff position at the University of Montreal.
- Dr Alexander Lee, was recruited from Brampton, Ontario. He is a Canadian trained cardiothoracic surgeon, with a focus on minimally invasive surgery.

LUNG TRANSPLANTATION

We have hit a further milestone by completing 40 lung transplantations in the year of 2016.

PUBLICATIONS

Durkin C and **Lohser J**, Oxygenation and ventilation strategies for patients undergoing lung resection surgery after prior lobectomy or pneumonectomy, *Current Anesthesiology Reports* 2016, 6(2):135-41, Review.

McIlroy D, Lin E, Hastings S, **Durkin C**. Intraoperative transesophageal echocardiography for the evaluation and management of diastolic dysfunction in patients undergoing cardiac surgery: a survey of current practice. *J Cardiothorac Vasc Anesth.* 2016;30(2):389-397.

Finlayson G, LV function and pericardium, in: *Basic TEE and critical care ultrasound*, Ed. Andre Denault, Book chapter.

ABSTRACTS/ POSTERS

Brohan J, **Lohser J**, Late complication after coronary angiography, Best Echo Case, CAS Annual Meeting, June 25, 2016.

Finlayson G, Romano K, The VGH PE Response Team: a first in Canada, *Critical Care Canada Forum* 2016, Toronto.

DIVISION OF REGIONAL ANESTHESIA

Co-Head, Ray Tang, MD FRCPC

Co-Head, Dr. Steven Petrar, MD FRCPC



St. Paul's Hospital provides regional anesthesia services three times weekly in the ambulatory "Surgical Procedures Room" (SPR), which is a satellite operating room area in the Burrard Building of the SPH site. In this area, patients undergo orthopedic or plastic surgical procedures under regional anesthetic block as the sole anesthetic. All cases in the SPR area are ambulatory in nature, and have demonstrated a high degree of safety and efficiency.

2016 saw a decline in the number of patients at SPH opting for an ambulatory "home" perineural catheter technique. Previously the "home catheter" program had steadily grown to the point that SPH was placing 1-3 home catheters weekly. This decline is likely secondary to the increased use of perineural dexamethasone to prolong the duration of single shot regional blocks. The home catheter program is still active, however, and volumes are now closer to 0-2 placed per week. This ebbs and flows depending on the case mix booked by our surgeons.

In 2016, VGH initiated the Perioperative Anesthesia Intervention Service (PAIS) which has a dedicated anesthesiologist who is able to place blocks, epidurals and monitoring lines before cases to reduce the anesthesia control times. An area in the PACU was created for the PAIS program which consists of 3 fully monitored bay areas staffed by a nurse and an anesthesia assistant. When the program is running well, anesthesia control times have been reduced but because of unforeseen staff shortages, the full benefit of the program has not been realized. It is anticipated when PACU nursing staff levels return to normal levels in the fall of 2017, that the PAIS program will be running at full capacity.

Academic Report:

Training of Residents:

The residents continue to go through St. Paul's Hospital for their regional rotation. There is a yearly regional day for residents at the CESEI. In 2016, the event was organized by Dr. Head and had members from several sites teaching. The event was very well received by the residents.

Training of Fellows:

At VGH, Genevieve Lowe, Nirooshan Rooban and Enda Shanahan completed their fellowships and research projects in 2016 with one ongoing into 2017 comparing rectus sheath catheters with epidurals in cystectomy patients. One notable study was a large randomized control trial comparing different adductor canal blocks with catheters for fast-track total knee arthroplasties involving 180 patients. Janice Nam and Sarah Phipps started their fellowships in July 2016 and have been involved with several research projects which are nearing completion.

At the SPH site, Nicholas Dennison completed his regional anesthesia fellowship in June 2016. Nick was instrumental in the creation of a clinical research study protocol to investigate the dosing of perineural dexamethasone in popliteal sciatic nerve blocks. This protocol has passed through UBC and Providence research ethics review and has been approved. In addition this study required Health Canada approval and this has also been granted. Enrollment of patients has been temporarily paused in light of recent changes in practice regarding the routine use of perineural dexamethasone, and the protocol may undergo modification and resubmission for ethics review. In July 2016 Jason Wilson began his fellowship at SPH and Jason has been active in streamlining and organizing follow-up of patients after regional anesthetic techniques. In addition Dr Wilson has gathered and analyzed a substantial dataset of patients who underwent regional anesthesia techniques at SPH and this has been invaluable in providing the SPH group objective data regarding local outcomes from the regional anesthesia program.

Conferences:

UBC continues to be well represented at local, national, and international conferences. The Whistler Anesthesia Summit in 2016 had a regional workshop organized by Drs. Tang, Ree, and Yarnold with instructors from several sites. Drs. Petrar, Prabhakar, and Tang were involved with the CAS 2016 workshop program. Drs Prabhakar and Petrar taught regional anesthesia techniques at the Cleveland Clinic Cadaveric Regional Anesthesia Ultrasound course in Cleveland OH.

Research Report:

VGH and SPH have worked with the residents and fellows and published many articles in the area of regional anesthesia, and both continue to do high quality research in this area. The Regional Anesthesia Research Team (RART) at VGH has formulated several working relations with UBC Engineering and Computer Science, as well as industry, and are collaborating on several research projects which are ongoing. Some interesting areas that RART is exploring are the use of machine learning for ultrasound and augmented reality for training. Below are the publications and abstracts in 2016:

Meeting abstracts:

Nirooshan Rooban, Genevieve Lowe, Raymond Tang, Claudia Krebs, Andrew Sawka, Himat Vaghadia, Steven Lee. Suprascapular nerve blocks: dye spread in unembalmed cadavers. Poster presented at the American Society for Anesthesiologists meeting in Chicago 2016.

Genevieve Lowe, Edmund Chedgy, Raymond Tang, Peter Black, Andrew Sawka, Himat Vaghadia, Kevin Froehlich, Alan So, Martin Gleave. Thoracic epidural analgesia versus surgically placed rectus sheath catheters in open radial cystectomy: is there a difference in patient outcomes? Poster presented at the Canadian Anesthesiologists Society Meeting in Vancouver 2016.

Prabhakar C, Sondekoppam R, Uppal V: Ultrasound-guided needle visualization using echogenic needles and beam-steer technology. 41st Annual Regional Anesthesiology and Acute Pain Medicine Meeting; New Orleans, LA, USA; March 31–April 2, 2016 (Abstract #1447).

Montgomery SH, Shamji CM, Yi GS, Yarnold CH, Head SJ, Bell SC, Schwarz SKW: Effect of nerve stimulation use on the success rate of ultrasound-guided subsartorial saphenous nerve blockade. International Anesthesia Research Society 2016 Annual Meeting; San Francisco, CA, USA; May 21–24, 2016 (Abstract #1308).

Prabhakar C, Sondekoppam R, Uppal V: Echogenic needles and beam-steer to assist ultrasound visualization. Canadian Anesthesiologists' Society 2016 Annual Meeting; Vancouver, B.C.; June 24–27, 2016 (Abstract #153042).

DIVISION OF PAIN MANAGEMENT

Head, Michael Negraeff MD FRCPC



VGH Transitional Pain Clinic

The working group continued developing a transitional pain clinic at VGH to treat the most vulnerable post surgical patients at risk for Chronic Post Surgical Pain and/or new/continued high dose opioid use after discharge from hospital. The clinic model has been presented to VCH leadership who are supportive of the clinic model in concept and funding it is very likely. They've asked for continued work on how this clinic could fit into a VCH/PHC Regional Pain Strategy.

VGH Regional Pain Strategy

During 2016, a small working group consisting of Dr. Michael Negraeff, Maria Hudspith (executive director of Pain BC Society) and a consultant supported by a grant from the VGH/UBC Hospital Foundation interviewed many stakeholders in the VCH region and thought leaders outside the region both across the country and internationally to gather ideas for how a regional pain strategy could look in VCH. VCH leadership received the report and committed to the idea for a regional pain strategy in concept. Working toward a strategy has gathered momentum with the involvement of Regional Anesthesia Department Head, Dr. Jim Kim, promoting and leading the work. Further work will continue throughout 2017 and a more detailed strategy will be presented to senior VCH/PHC leadership in 2017.

St. Paul's Hospital Pain Program has undergone significant changes with a reduction of funding for the interdisciplinary management previously funded through the department of psychiatry. Strong efforts are underway led by Dr. Jill Osborne and Dr. Jim Kim to reestablish the comprehensive resource of the program and integrate it into the effort of establishing a regional pain strategy across VCH.

Lion's Gate Hospital, Richmond Hospital, and Coastal areas will be engaged in the plans for a VCH wide regional pain strategy.

Change Pain Clinic

Change Pain Clinic, led by Dr. Brenda Lau in Vancouver, continues to provide leadership in the lower mainland community based pain clinic model. In a significant change, the self management modules no longer need a physician referral and patients can sign up directly for these for a fee. The modules cover Pain and Movement, Nutrition, Relaxation, Mood and Sleep.

UBC Pain Medicine Residency

The first resident, psychiatrist Dr. Mike Butterfield, has completed his first year in the program from July 2016 to July 2017 and will be continuing through his second year with many electives. He is a high caliber resident functioning at a very high level, and while he trained in psychiatry at Dalhousie, he is hoping to stay in British Columbia to start his career and will be a highly-qualified pain specialist physician to add to our stretched pain management resources in BC.

Monthly Pain Education Rounds

St. Paul's Hospital Monthly Pain Rounds.

These continue to be coordinated by Dr. William McDonald and are held on the last Wednesday of each month at noon at SPH media centre and are also available on GoTo Meeting

DeGroot National Pain Centre, McMaster Pain Rounds

There are monthly pain rounds coordinated through the pain centre at McMaster as well and are held by telehealth on the last Thursday of each month at 2pm Eastern.

Pain BC Society

Pain BC Society has continued to be successful in securing annual operating grants from the Ministry of Health to run several programs supporting people with pain including the online self management portal, Live Plan Be (liveplanbe.ca), Connect for Health, an online and phone service for patients to contact for support, and ongoing educational seminars, webinars and podcasts all available through Live Plan Be site or the main website www.painbc.ca. Two new Pain Champions programs for Mental Health Practitioners and Registered Massage Therapists were added to the ongoing programs for pain management training for health professionals.

Pain BC has partnered with the Ministry of Health to host a second Pain Summit in 2017. Many of the goals of the 2011 Pain Summit have been achieved.

Dr. Michael Negraeff stepped down as the Board Chair and founding member after serving 7 years

Pain Medicine Physicians of BC Society

2016 finally saw the development of a society and section of the Doctors of BC representing the interests of the highly diverse group of physicians in BC that help people with chronic pain manage. The physicians span the entire range of physician generalists and specialists including family doctors, anesthesiologists, orthopedic surgeons, neurosurgeons, radiologists, physiatrists, psychiatrists, neurologists, and trainees in several disciplines. The second AGM was recently held June 10, 2017. For more information and how to join please contact the Chair, Dr Owen Williamson at owen.williamson@monash.edu. All physicians irrespective of background or membership in other DoBC sections are welcome.

SIMULATION IN ANESTHESIA AT UBC

Dr. T. Laine Bosma

Clinical Assistant Professor/Director, Anesthesia Simulation Program

1) *Surgical Airway Simulation Lab*

For the fourth consecutive year, in keeping with international guidelines suggesting the need for greater skills training of anesthesiologists in surgical airway techniques, PGY5 anesthesia residents participated in a surgical airway simulation, that included Didactic teaching on two different surgical techniques; Hands on practice on resected pig trachea models; Simulation at the Jack Bell lab, practicing the surgical technique on euthanized pigs.

The residents felt the session helped to develop their confidence in technically performing a surgical airway and helped them to decide which techniques to use and the session was rated as excellent by the vast majority of residents

Thanks to Drs. Chris Prabhakar, Laura Duggan, Henrik Huttunen, and John Veall for their valuable assistance as mentors, as well as the staff at CESEI and the Jack Bell lab for their support.

2) *UBC Anesthesia Simulation Resident Rotation*

One-year longitudinal simulation education experience available to 2 residents, participating in the planning and administration of the ongoing simulation curriculum.

3) *Immersive High-fidelity Postgraduate Anesthesia Simulation Program*

- a) Biannual immersive simulation day for R2 - R5 Anesthesiology Residents
- b) Novel scenarios focused on technical skills, current medical management, and non-technical crisis resource management skills
- c) Video assisted debriefing following each scenario

4) *Undergraduate Simulation Program*

Anesthesia Resident-led airway management simulator course provided to medical students on the first day of their anesthesia rotation with the goal to introduce the students to the basic principles of airway assessment and management in a relaxed and open learning environment

5) *Obstetrical Anesthesia Simulation Course*

An OB simulation course for anesthesia residents, providing a standardized curriculum addressing core OB anesthesia knowledge and skills.

Given the amount of factual knowledge involved in the curriculum, the course is a combination of focused didactic teaching and simulation with debriefing.

6) *Pediatric Airway Management Simulation Course*

Designed to train Anesthetic Residents in management strategies that can be

instituted when faced with expected or unexpected difficult airway situations in pediatric patients, while also increasing understanding of how crisis resource management (non-technical skills) can improve team-working in the management of patients.

7) *Managing Emergencies in Pediatric Anesthesia*

An international paediatric anaesthesia simulation course that will help anaesthetic trainees develop a management strategy when faced with emergency situations in paediatric anaesthesia

Provides an introduction to crisis resource management in paediatric anaesthesia, translating knowledge into practice through simulation scenarios.

Addresses the current practice of paediatric anaesthesia through participation in simulated clinical scenarios which challenge both technical and clinical management.

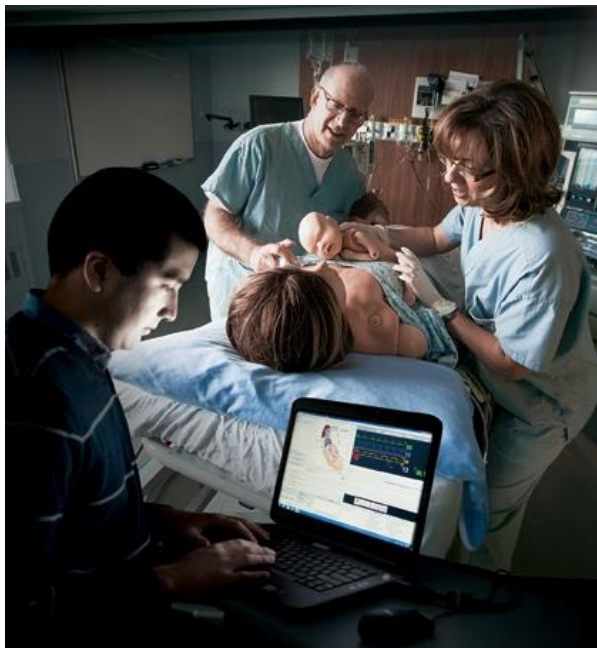
8) *Introduction to Anesthetic Emergencies*

One day, hands on simulation based introduction to common Anesthetic Emergencies for new (R2) Anesthesia Residents

9) *POEM Course*

- a) Two day course for approximately 50 junior Anesthesia, Surgery, and Emergency Medicine residents, multidisciplinary simulation course delivered by the Department of APT and Department of Surgery

Simulation at BCW Hospital



Clinical Professor Dr. Paul Kliffer (left) and nurse Isabelle Baribeau practice emergency obstetric procedures using computer automated mannequins.



**DR. JEAN TEMPLETON HUGILL CHAIR IN ANESTHESIA
HUGILL ANESTHESIA RESEARCH CENTRE
Chair, Stephan Schwarz, MD FRCPC**

The Hugill Anesthesia Research Centre is a collaborative initiative within the Department of Anesthesiology, Pharmacology & Therapeutics under the aegis of the *Dr. Jean Templeton Hugill Chair in Anesthesia*. Using *in vitro* and *in vivo* laboratory techniques as well as clinical studies, our research explores the neuropharmacology of anesthesia and analgesia and aims to build bridges between bench and bedside.

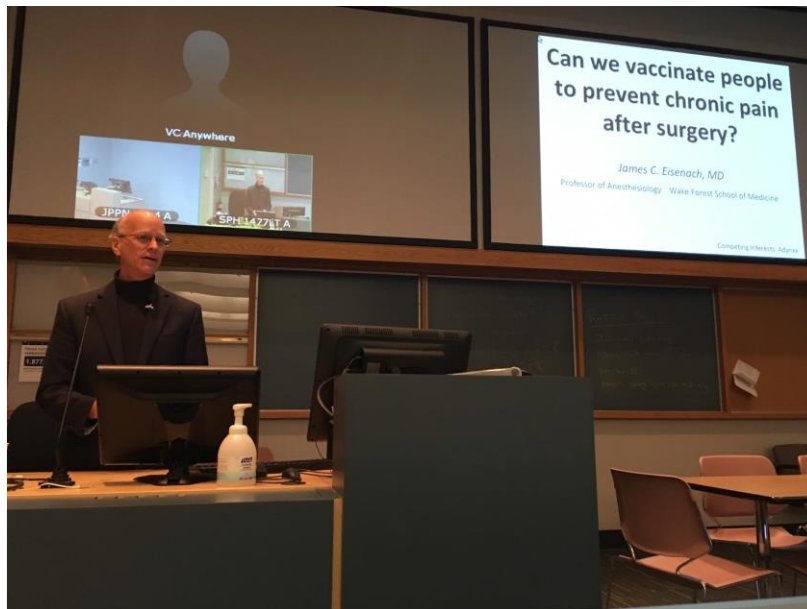
NOTE FROM THE CHAIR & 2016 HIGHLIGHTS

The last year has again been one of exciting research, and I am delighted to summarize below some of the activities that took place under the aegis of the Chairship in 2016. Among the highlights was the awarding of the “APT Paper of the Year” award to the Hugill Centre team! Also, I am very excited to be able to officially present the new logo of the Hugill Anesthesia Research Centre (see cover page and below). Commissioned from Berlin-based graphic designer, Franziska Schwarz (Senior Art Director at the agency, KKLD*, and the creative force behind the branding and advertising campaigns of such clients as MINI [BMW Group] and Baume & Mercier), the final design – generously provided free of charge – was arrived at following extensive consultation with members & colleagues, and reflects the Centre’s vision to build bridges between bench and bedside as well as anesthesiology and pharmacology.

Laboratory research in the Hugill Anesthesia Research Centre continued to feature new discoveries related to a first-in-class novel peripheral analgesic prototype drug developed in the Centre, isovaline. For example, as highlighted in a paper published in the *European Journal of Pharmacology*, one project provided further mechanistic insight into isovaline’s actions by studying its effects in comparison with the GABAB agonist, baclofen, in the guinea pig ileum. Another line of investigation, emphasizing local anesthetic pharmacology and funded in part by grants from the Canada Foundation for Innovation, the Canadian Anesthesiologists’ Society, and a Pfizer Canada Neuropathic Pain Research Award, unveiled a new mechanism of local anesthetic CNS toxicity; the corresponding manuscript was published in print in *Anesthesia & Analgesia* in early 2016. *Clinical research* focused on the St. Paul’s Hospital (SPH) Regional Anesthesia Program, which yielded new data from a completed randomized controlled trial (RCT) on ultrasound-guided techniques aimed to optimize saphenous nerve blockade for foot & ankle surgery patients. An abstract with the results was presented at the *International Anesthesia Research Society (IARS)2016 Annual Meeting* (San Francisco; May 21–24, 2016); the full-length manuscript was published in in the flagship journal, *Regional Anesthesia & Pain Medicine* (2017). In the same journal, the results from a quality improvement project on the incidence of unplanned health care resource utilization for postoperative pain following wrist fracture surgery under regional versus general anesthesia were published in print (*Reg Anesth Pain Med* 2016, 41: 22–27). This work gained considerable international attention: it was highlighted in the *Faculty of 1000* (F1000) as a recommended article of interest; referenced in an F1000 Faculty Review; featured in the “Blockjocks VIP Newsletter” [Issue 20: April 26, 2016; www.blockjocks.com];

BLOCKJOCKS Research and Education Foundation, Gulf Breeze, FL, USA]; and triggered a laudatory Letter to the Editor (Bansal V *et al.*: Continuous perineural catheters for postoperative pain from an ambulatory surgery center. *Reg Anesth Pain Med* 2016, 41: 543).

Most importantly though, the findings have led to a redesign process for the delivery of significantly improved post-discharge analgesia to orthopedic surgery patients here at home at St. Paul's Hospital. In addition to the resultant reduction of distress due to severe pain, this initiative aimed to reduce the economic burden on our stretched health care system through a decrease in resource utilization and associated expenditures. Lastly, a priority as *Hugill Chair* was for me to attract/recruit a suitable high-profile international speaker for our Department's second annual (i.e., 2015/16) memorial lecture in Jean Hugill's honour; this has succeeded and I am very pleased to be able to report on the outstanding visit on April 26/27, 2016 by the Editor-in-Chief of *Anesthesiology* and National Academy of Medicine Member, *Dr. James C. Eisenach* (FM James, III Professor of Anesthesiology and Physiology & Pharmacology, Wake Forest School of Medicine). This visit was a true academic highlight of 2016, with Dr. Eisenach giving world-class lectures on "*Can We Vaccinate People to Prevent Chronic Pain After Surgery?*" and "*Without Science There Is Little Art in Anesthesiology*" – the latter presented with involvement of UBC anesthesiology resident, Su-Yin MacDonell, and Vancouver-based dance artist, Lexi Vajda.



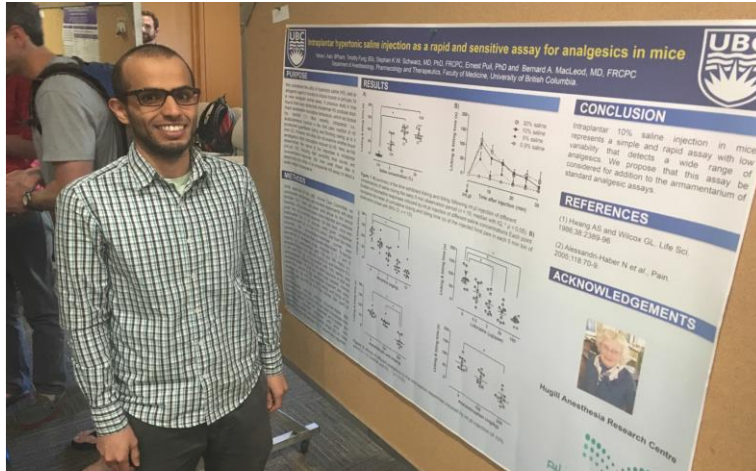
Hugill Visiting Professor, Dr. James Eisenach, presenting AM Grand Rounds at St. Paul's Hospital



Dr. James Eisenach discussing obstetric anesthesia research with Drs. Joanne Douglas (left) & Roanne Preston (centre)



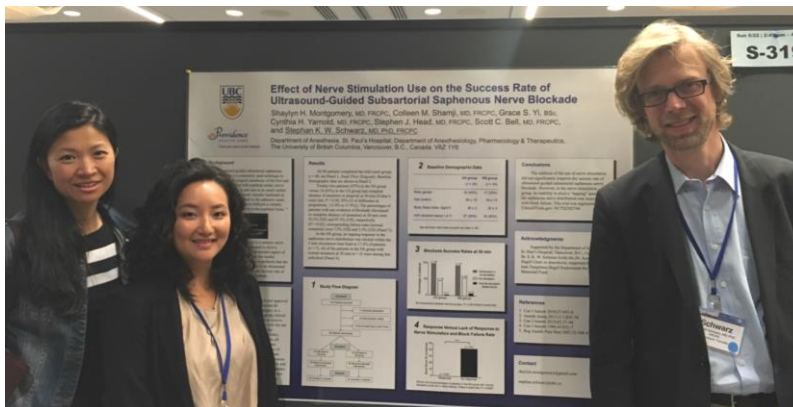
Dr. James Eisenach presenting the 2015/16 Dr. Jean Templeton Hugill memorial lecture, entitled *"Without Science, There Is Little Art in Anesthesiology"*, co-narrated by UBC anesthesiology resident, Su-Yin MacDonell



Hugill Anesthesia Research Centre graduate student, Yahya Asiri (APT Research Day; May 12, 2016)



Hugill Anesthesia Research Centre graduate student, Timothy Fung (APT Research Day)



Medical Student, Grace Yi (second from left), with Drs. Cynthia Yarnold and Stephan Schwarz (IARS 2016 Annual Meeting; San Francisco, CA, USA)