



THE UNIVERSITY
OF BRITISH COLUMBIA



DEPARTMENT OF
ANESTHESIOLOGY,
PHARMACOLOGY &
THERAPEUTICS ANNUAL
REPORT 2022

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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.

The Department began preparations for transitioning to a new department head in 2022. The External Review of the Department was completed in late spring, and the department response provided by September 2022 with acceptance by the Faculty of Medicine. There were six recommendations, the majority dealing with issues related to the anesthesia clinical faculty. The external reviewers recommended the department remain as a merged entity, focus on hiring clinician scientists including strong consideration for the next BC Patient Safety Chair being held by an anesthesiologist, negotiate support for growth of the Undergraduate Pharmacology program, and for FOM and UBC to work with the Department on the issue of alternate anesthesia providers. Work on several of these recommendations is underway. Formal strategic planning will take place under the leadership of the new Department Head.

Faculty Renewal

The Department has been successful in faculty renewal applications since 2018 with 2.5 positions gained via the FoM process, all of whom started by January 2022. In addition, the Therapeutics Initiative has received an endowment from the Ministry of Health that provides for the hiring of tenure-track faculty to support the work of the TI. Searches led to the hiring of one full-time TI researcher, and one part-time as part of the Dr. Wright 'replacement' tenure-track position. These individuals started in March 2022. An additional Assistant Professor position can be supported by the endowment, and the search for this individual began in the fall of 2022. Finally, the Department successfully recruited an individual into the 3-year limited term Assistant Professor Pharmacology position using accrued soft funds. This individual started in November 2022 and has already applied for a Michael Smith scholarship.

Staff

The Department's financial position is stable at present, with limited capacity to add any salaried positions given the recent faculty additions. We have had ongoing changes in the department staff as our department's needs change. This has been challenging as we have gone through periods of being quite short-staffed. I appreciate everyone's patience as we have worked through changes in responsibilities, and temporary position infills. The pandemic changed much in office practice and all of our staff continue to work in hybrid arrangements. The Faculty of Medicine is looking at space needs as all departments no longer occupy space in the same manner as pre-March 2020.

Academic Activities

The Vancouver Summer Program, capably led at FoM level by Dr. Andrew Horne, will restart in the summer of 2023. The study program for international medical graduates to prepare for the Royal College Exams in Anesthesiology continues to be successful, thanks to all the faculty reviewers that Katharine manages to recruit (thanks Katharine!).

The Whistler Anesthesia Conference returned to in-person, with virtual hybrid options, in March 2022 and was very well attended. The co-chairs, Dr. Su-Yin MacDonnell and Dr. Sandy Kisilevski have capably taken over and produce an excellent program, with the fantastic support from UBC CPD (Michelle Baysan).

The Pain Medicine Residency Program continues to do well with its increased capacity of 2 residents per year under the skilled leadership of Dr. Michael Butterfield.

Research continues to flourish within the department. We have some very strong pharmacology researchers with well-established careers and the first CRC Tier 1 in the department: Dr. Tillie-Louse Hackett, Canada Research Chair in Asthma and COPD Lung Pathobiology & Therapeutics. Department applications for the Tier 2 competition to be submitted at the end of 2022 required an internal competition, and the department put forward two applicants, with a 3rd taken on by the Department of Pediatrics for our shared faculty member Dr. Loucks. All of our new researchers put in applications for Michael Smith scholarships, with results to be announced in early 2023.

On the anesthesia side, we have clinician-researchers such as Mark Ansermino, Stephan Schwarz, Don Griesdale, Alana Flexman, Himat Vaghadia, Ray Tang, Steve Petrar, Kevin Froehlich, Juliet Atherstone, Gord Finlayson, Jens Lohser, Zoe Brown, Gillian Lauder, Simon Whyte, John Veall, Jason Wilson, Simon Massey, Aaron MacInnes, Peter Choi, Sean McLean, Rael Klein, Kelly Mayson, Andrew Sawka, Jacquie Trudeau, Neal Badner, Janny Ke and Anton Chau, all of whose work is making a difference in health outcomes.

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. We hope to substantially increase the size of the undergraduate pharmacology program with the support of the Faculty of Medicine. The Graduate program, now under the directorship of Dr. Pascal Bernatchez, is growing as our new faculty members open their labs, and there is ongoing work on renewal activities within the program including course content assessment and revision.

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. With the marked growth in our Anesthesiology residency program (now at 20 new positions per year) we now have more sites taking on PGY1 learners, and subspecialty rotation blocks such as thoracics have expanded beyond the traditional sites allowing learners and faculty to experience different practices. Dr. Laine

Bosma, the department's exceptional Anesthesiology Program Director, finished his term at the end of 2022. A search for his replacement was completed in the fall of 2022, and Dr. Zoe Brown (from BCCH) will be taking on the role as of January 1, 2023. Many thanks to Dr. Bosma who steered us through Competency by Design and the doubling of the residency program size!

As I come to the end of my second term in June 2023, I would like to thank all of you for continuing to be generous with your time, your energy, your knowledge and your passion. Despite our improved departmental financial picture, I can never provide adequate compensation 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. These are exciting times for our department as we have welcomed many new academic faculty in the last 2 years, all of whom are involved in department activities including teaching, and are actively applying for grants and awards. I look forward to celebrating their successes in the near future.

Most appreciatively

A handwritten signature in blue ink, appearing to read "Roanne". The signature is fluid and cursive, with a large initial "R" and a long, sweeping underline.

Roanne Preston, MD FRCPC
Department Head

Department Leadership

Roanne Preston – Department Head

Academic Leadership

Peter Choi – Vice-Chair, Education

Alana Flexman – Vice-Chair, Equity, Diversity and Inclusion

Tillie-Louise Hackett – Vice-Chair, Research

Pascal Bernatchez – Basic Science Research Director

Don Griesdale – Clinical Research Director

Colin Dormuth – Co-Managing Director, Therapeutics Initiatives

Ken Bassett – Co-Managing Director, Therapeutics Initiatives

Stephan KW Schwarz – Dr. Jean Templeton Hugill Chair in Anesthesia

K Malcolm Maclure – BC Patient Safety Chair

Pascal Bernatchez – Director/Advisor, PCTH Graduate Program

Peter Choi – Medical Undergraduate Program Director

T. Laine Bosma – Anesthesia Residency Program Director

Sadiq Abdulla – Anesthesia Residency Program Associate Director

Michael Butterfield – Pain Medicine Residency Program Director

John McAlpine - Family Practice Anesthesia Residency Program Director

John Veall - Simulation Program Director

Sadiq Abdulla – BC Anesthesia Clinical Fellowships Director

James Brown - Faculty Development Chair

Giselle Villar – Visiting Professor & Continuing Professional Development Program Director

Su-Yin Macdonell and Sandra Kisilevsky - Whistler Anesthesia Conference co-chairs

Bali Dhaliwal – Clinical Faculty Advisory Committee Representative

Site Chiefs:

Jens Lohser – Head, VGH/UBCH Department of Anesthesia & Perioperative Care

Jim Kim –Head, St. Paul’s Hospital Department of Anesthesia

Simon Whyte – Head, BC Children’s Hospital Department of Anesthesia

James Brown, - BC Women’s Hospital Department of Anesthesia

Feisal Mohamedali – co-Head, Royal Columbian Hospital Department of Anesthesia

Kenneth Ryan – co-Head, Royal Columbian Hospital Department of Anesthesia

Feisal Mohamedali – Regional Head, Fraser Health Authority

Magda Lipowska – Head, Lions Gate Hospital Department of Anesthesia

Glenn Dong– Head, Richmond General Hospital Department of Anesthesia

Liz Chuah – Head, Burnaby General Hospital Department of Anesthesia

Clara Gramberg/Alex Vesely/Freda Wong – co-Heads, Surrey Memorial Hospital

Parisa Soltani – Head, Chilliwack General Hospital Department of Anesthesia

Catherina Mattheus – Head, Abbotsford Regional Hospital & Cancer Centre

Desmond Sweeney – Head, Victoria General/Royal Jubilee Hospitals Department of Anesthesia

Alistair Graham – Head, Kelowna General Hospital Department of Anesthesia


Adam van der Merwe – Medical Director Kelowna General Hospital Department of Anesthesia

Tom Cull – Head, Vernon Jubilee Hospital Department of Anesthesia

Mark Edge – Head, Royal Inland Hospital Kamloops Department of Anesthesia
Kenneth Harder – Head, Penticton Regional hospital Department of Anesthesia
Pal Dhadly – Head, University Hospital of Northern BC Department of Anesthesia

Division Heads

Alexander Wong – Division Heads, Regional Anesthesia
Juliet Atherstone – Division Co-Head, Cardiac Anesthesia
Anne-Marie Madden - Division Co-Head, Cardiac Anesthesia
Sandra Kisilevsky – Division co-Head, Neuroanesthesia
William Rieley – Division co-Head, Neuroanesthesia
James Brown – Division Head, Obstetric Anesthesia
Aaron MacInnes – Division Head, Pain Management
Simon Whyte – Division Head, Pediatric Anesthesia
Su-Yin Macdonell – Division Head, Perioperative Anesthesia
Chris Durkin – Division co-Head, Thoracic Anesthesia
Travis Schisler – Division co-Head, Thoracic Anesthesia



Department Highlights

NEW ACADEMIC FACULTY



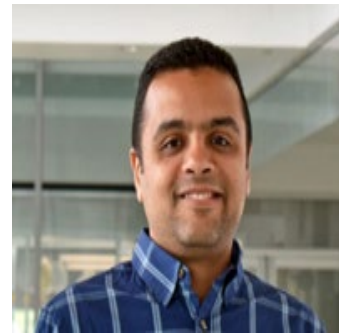
Dr. Amrit Singh
Assistant Professor, Tenure Track
Joined the Department – January 1, 2022



Dr. Wade Thompson
Assistant Professor, Tenure Track
Joined the Department – March 1, 2022



Dr. Anshula Ambasta
Assistant Professor, Tenure Track
Joined the Department – March 15, 2022



Dr. Khaled S. Abdelrahman
Assistant Professor, Grant Tenure Track
Joined the Department – November 1, 2022

NEW CLINICAL FACULTY

Dr. Ayda Askari – Clinical Instructor (VGH)
Dr. Saeid Behmanesh – Clinical Assistant Professor (RCH)
Dr. Katsiaryna Bellaousov – Clinical Instructor (SMH)
Dr. Lily Yu Long Chiu – Clinical Instructor (SPH)
Dr. Lynn Rudner Correll – Clinical Assistant Professor (BCCH)
Dr. Julia Cory – Clinical Instructor (VGH)
Dr. Erica Dibb-Fuller – Clinical Instructor (BCCH)
Dr. Connie Drewbrook – Clinical Instructor (LGH)
Dr. Ashleigh Farrell – Clinical Instructor (Victoria)
Dr. Julena Foglia – Clinical Instructor (VGH)
Dr. Montasser Ghazy – Clinical Instructor (Penticton)
Dr. Adriaan Greyling – Clinical Instructor (Penticton)
Dr. Hilary Grocott – Clinical Professor (VGH)
Dr. Elise Mareen Hindle – Clinical Instructor (BCWH)
Dr. Michael Jew – Clinical Instructor (SPH)
Dr. Shamir Karmali – Clinical Instructor (VGH)
Dr. Roy Khalaf – Clinical Assistant Professor (Kelowna)
Dr. Jimmy Lam – Clinical Instructor (VGH)
Dr. Ryan Latimer – Clinical Instructor (LGH)
Dr. Carl Leipoldt – Clinical Instructor (Victoria)
Dr. Edmond Li – Clinical Instructor (RCH)
Dr. Brodie Lipon – Clinical Instructor (Cowichan)
Dr. Brenda Lougheed – Clinical Instructor (Kelowna)
Dr. Thomas McCormick – Clinical Instructor (RCH)
Dr. Kaylyn Merrifield – Clinical Instructor (Victoria)
Dr. Katherine Mittermaier – Clinical Instructor (VGH)
Dr. Tetyana Postonogova – Clinical Instructor (RCH)
Dr. Thomas Rieki – Clinical Instructor (Kelowna)
Dr. Taren Roughead – Clinical Instructor (RCH)
Dr. Teresa Skelton – Clinical Assistant Professor (BCCH)
Dr. Victor Tran – Clinical Instructor (VGH)
Dr. Alan Tung – Clinical Instructor (RCH)
Dr. Andrew Wang – Clinical Instructor (BCWH)
Dr. Zacharias Van Den Heever – Clinical Assistant Professor (RCH)
Dr. Charles Vincent Yu – Clinical Instructor (SPH)

2022 ACADEMIC & CLINICAL PROMOTIONS

Approved for Promotion from Assistant Professor, Partner to Associate Professor, Partner

Dr. Matthias Görge

Approved for Promotion from Clinical Instructor to Clinical Assistant Professor

Dr. Prakash Krishnan – BC Children’s Hospital
Dr. Janny Ke – St. Paul’s Hospital
Dr. Clara Gramberg – Surrey Memorial Hospital
Dr. Beau Klaibert – Vancouver General Hospital

Dr. Kali Romano – Vancouver General Hospital
Dr. Amber Galbraith – Vancouver General Hospital
Dr. Riley Senft – Lions Gate Hospital
Dr. Ronelle Theron – Royal Columbian Hospital
Dr. Richard Alexander - Victoria General Hospital
Dr. Akintunde Dada – Chilliwack General Hospital
Dr. Colin Phillips – University Hospital of Northern BC
Dr. Simon Rose – University Hospital of Northern BC

Approved for Promotion from Clinical Assistant Professor to Clinical Associate Professor

Dr. James Brown - BC Women's Hospital
Dr. Katherine Selingman – BC Women's Hospital
Dr. Natasha Broemling – BC Children's Hospital
Dr. Jacqueline Trudeau – Vancouver General Hospital
Dr. Andrea Brovender – Vancouver General Hospital
Dr Christopher Durkin – Vancouver General Hospital
Dr. Clare Morrison – Lions Gate Hospital
Dr. Robert Fingland– Lions Gate Hospital

FACULTY & TRAINEE RESEARCH & EDUCATION AWARDS AND CHAIRS



Michael Smith Foundation Health Professional Investigator Award 2022

Dr. Alana Flexman – Assistant Professor, Partner Track

Dr. Flexman's research is focused on Perioperative stroke screening and outcomes in high-risk surgical patients. Up to two percent of patients will experience a stroke during or after surgery and these patients have a high chance of disability and death. Currently, we don't understand clearly how to prevent, detect, and treat stroke after surgery. Although risk factors have been identified including older age and cardiac surgery, high risk surgical patients are not usually identified and strokes can be missed, leading to fewer treatment options and more complications. Dr. Flexman's pilot study showed that anesthesia and surgery can limit the accuracy of standard screening tools for stroke. We urgently needed a screening tool and protocol specifically for surgical patients. We also don't understand well how patients recover after perioperative stroke, such as which patients survive, and whether they can stay in their homes. Building on our prior research, this multiphase study aims to: (1) Understanding which patients do poorly after perioperative stroke and whether those factors can be changed; (2) Compare mortality and other complications after stroke between those who had recent surgery and those who did not; and (3) Identify a useful perioperative stroke screening tool to quickly and accurately detect stroke after surgery.



Michael Smith Health Research BC Postdoctoral Fellowship Award

Dr. Gillian Goobie – Postdoctoral Fellow (Hackett Lab)

3-year Postdoctoral Fellowship to support her research project entitled **“Air pollution as a modulator of molecular, structural and clinical outcomes in patients with fibrotic interstitial lung disease”**

Canadian Lung Association Postdoctoral Fellowship Award

Dr. Gillian Goobie – Postdoctoral Fellow (Hackett Lab)

1-year Postdoctoral Fellowship to support her research project entitled **“Air pollution as a modulator of molecular, structural and clinical outcomes in patients with fibrotic interstitial lung disease”**



Michael Smith Health Research BC Postdoctoral Fellowship Award

Dr. Efthymios Kyriakis – Postdoctoral Fellow (Fedida Lab)

3-year Postdoctoral Fellowship to support his research project entitled **“Cryo-EM studies of activators and inhibitors of KCNQ1 and KCNQ1:KCNE1 channel complexes”**



Michael Smith Health Research BC Postdoctoral Fellowship Award

Dr. Yashodani Pillay – Postdoctoral Fellow (Ansermino / Wiens Lab)

3-year Postdoctoral Fellowship to support her research project entitled “**Smart discharges for mom+baby: Saving mother-newborn dyads by developing a predictive risk model to identify dyads and guide delivery of post-discharge care**”



Award – Carl Bradford Robertson Scholarship; Wesbrook Scholar Designation

Daniel Shirvani – 4th Year PCTH BSC student



HSBC Emerging Leader Scholarship; Wesbrook Scholar Designation

Katharine Feng – 4th Year PCTH BSC student

EDUCATION/TRAINING AWARDS 2022

Anesthesiology Residents

Dr. Derek Daniel Wolney Prize for Clinical Proficiency – Dr. Taren Roughead
Dr. John A. McConnell Award for Academic Excellence – Dr. Julia Cory
Dr. Jone Chang Memorial Award in Anesthesiology Excellence – Dr. Michael Jew
Dr. Jone Chang Memorial Prize in Chronic Pain – Dr. Naima Kotadia
Ken C.K. Wong Award for Clinical Teaching – Dr. Ryan Best
UBC APT Advanced Simulation Training Program –
Drs. Serenity Aberdour, Vivien Hu, Vladimir Kovalik, Amir Siddiqui
Dr. Dimitri Giannoulis Memorial Award in Regional Anesthesia – Dr. Cole Wong
Dr. Keith Mills Award for Excellence in Neuroanesthesia – Dr. Naima Kotadia
Dr. Keith Mills Bursary for Excellence in Neuroanesthesia Studies – Dr. Naima Kotadia
VGH Kenny Wong Award for Clinical Excellence and Collegiality – Dr. Stephen Miazga
BCAS Resident Award for Physician Leadership – Dr. Michael Jew
Dr. Anthony Boulton Award for FPA Clinical Excellence – Dr. Mimi He
Dr. Paul Kliffer Golden Epidural Award – Dr. Robertson Venema (Jr. Resident); Dr. Julia Cory (Sr. Resident)
Dr. Michael Smith Award for Pediatric Anesthesia – Dr. Michael Jew
RCH Resident Award for Clinical Excellence – Dr. Robertson Venema (Jr. Resident); Dr. Connie Drewbrook (Sr. Resident)
Dr. Murray Robinson Award – Dr. Cole Wong
Dr. Colin A. Sands Award for Most Collaborative R1 – Dr. Wendy Yao
Dr. Albert Pace Florida Memorial Award in Anesthesiology – Dr. Katrina Genuis

Pharmacology & Therapeutics Undergraduate

Esther Anderson Memorial Prize (highest graduating average in Honors Pharmacology)
Georgia Sloan De Rappard-Yuswack

Prakash Gill Memorial Prize (highest graduating average in Majors Pharmacology)
Amardeep Singh Sekhon

MERCK Canada Scholarship in Medicine -
Ms. Brynn Alexandra Walker

Thomas L. Perry Memorial prize in Medical Pharmacology
Ms. Vivian Morley-Senkler

Pharmacology & Therapeutics Graduate Awards

Sacks Prize (Best presentations)
Aileen Hsieh

Leighton Pharmacology Graduate Award
Arash Yousefzadeh

CIHR-CGSM award (2022 May-23 Apr)
Aileen Hsieh, MSc

The Cmolik Alumni Award (2022 Sept-2024-Aug)
Rachel McLellan-Carich, MSc

FACULTY TEACHING AWARDS 2022

Master Teacher Awards:

VGH – Dr. John Veall

SPH – Dr. Alana Flexman

RCH – Dr. Matthew Turnock

BCCH – Dr. Zoe Brown

BCWH – Dr. Jonathan Collins

Rural/Community – (Surrey)- Dr. Jeremy Neufeld

Medicine – (Critical Care) – Dr. Kali Romano

Dr. Dimitri Giannoulis Resident Appreciation Award – Dr. Laine Bosma

FPA Master Teacher Award – Dr. Vishal Varshney (BCCH)

FPA Master Teacher Award – Dr Heng Gan (BCCH)

RESEARCH DAY AWARDS 2022

Paper of the Year Awards - 2022

Dr. Jacqueline Trudeau: Rationalized preoperative management of hip and knee arthroplasty patients: A retrospective cohort study

Dr. Bern MacLeod of the Hugill Lab: A new hypertonic saline assay for analgesic screening in mice: effects of animal strain, sex, and diurnal phase

16th Annual Research Day and Awards Night - May 26, 2022

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.

[Winning Presentations](#)

[Oral – Anesthesiology](#)

1st Place – Christina Fokkens (Masters Student – Görges M lab)

[Oral - Pharmacology & Therapeutics](#)

1st Place – Kingsley Nwozor (Doctoral Student – Hackett lab)

[Lightning Talks](#)

James Taylor – Medical Student – Zoe Brown - supervisor

Stephanie Alexis – Medical Student – Kelly Mayson - supervisor

Hospitals and Health Centres Clinical Overview

DEPARTMENT FACULTY & STAFF NUMBERS

Full-time faculty - 26

Clinical Faculty - 518

Fellows - 22

Residents – 78 (Jay)

Medical Students – 332

Pharmacology Graduate Program – 17 students

Pharmacology Undergraduate Program – 39 students

Postdoctoral Research Fellows – 7

Research Associates – 4

BRITISH COLUMBIA CHILDREN'S HOSPITAL

Dr. Simon Whyte
Department Head



The UBC Department of Pediatric Anesthesia centred at BC Children's Hospital has continued in its role as the home of pediatric academic and clinical anesthesia, perioperative medicine, and pain medicine.

2022 was a difficult year for the Department. It brought the untimely death of Dr. Lindsay Rawling, friend & colleague. It brought a post-pandemic respiratory virus season of unparalleled virulence and duration, causing months of reduced operating capacity over the winter of 2021-22, compounding that already inflicted by the pandemic and the move to electronic health records.

2022 was also a busy year in some regards, with the hospital undergoing (successful) re-accreditation, as well as receiving ChildKind accreditation, which latter recognises the organisation's efforts to standardise and continuously improve comfort measures for children throughout their hospital experience. While much of that experience takes place outside of our immediate Department, in her role as Director of the Acute Pain Service, Dr Randa Ridgway has been instrumental in leading the wider hospital community in the right direction in many ways. Our clinical Faculty expanded in the academic 2022-23 year with the arrivals of Drs. Michelle Correia, Lynnie Correll and Teresa Skelton. In addition, Dr. Mary-Claire Simmonds graduated from her Fellowship & joined us in a 1-year term position, which she has since extended to two years.

The clinical Fellowship program remained strong and active, providing both advanced pediatric anesthesia clinical training and academic research and teaching opportunities for our Fellows. In 2022 our program doubled in size, from two to four: Drs. Ridhima Bhatia (India), Lorna Murphy (Ireland via Australia), Mei Foong Yeoh (Australia) and Arna Verholt (Netherlands). All four had a successful year. Drs Bhatia and Murphy both achieved acceptance of posters at international anesthesia meetings.

BC Children's Hospital remained an active and engaged partner in the expanding UBC anesthesia residency training program. In addition, the department continues to provide exposure to anesthesia to non-anesthesia residents and fellows as well as medical students and associated health care providers. Dr. Zoë Brown stepped down from the Residency Site Coordinator (RSC) position to step up into the Program Director role; Dr Lynnie Correll has succeeded her as RSC.

The Pediatric Anesthesia Research Team (PART) underwent major changes in 2022. After six years our research manager & coordinator, Andrew Poznikoff, moved to a role at the BC Children's Hospital Research Institute. Recognising how that role has grown, we hired both a new coordinator, Bianca Vizcaino, and a new manager, Steffanie Fisher. We were extremely fortunate, and grateful, to have former research coordinator Nick West visiting with us in person in the Summer of 2022, to help smooth this operational leadership transition at a time when we had also expanded our UBC Co-op Student hiring to three students and were supporting three Summer Students! Then, in a planned and graduated leadership transition,

Drs. Terri Skelton & Linnie Correll took over the PART co-chair roles (that Drs. Simon Whyte and Matthias G6rges had assumed on a 1-year interim basis in 2016!). The PART's effectiveness is evidenced by the breadth of active projects and the number of staff anesthesiologists involved in clinical research projects.

We continue to enjoy success in the competitive funding opportunities provided by the BCCH Research Institute, and to increase the number of Department members who are also BCCHRI members.

In September 2022 the BCCH Anesthesia Department hosted the Canadian Pediatric Anesthesia Society Scientific Meeting. This international three-day conference was postponed from pandemic-struck 2020 & had last been held in Vancouver in 2004. With 100 attendees, national and international acclaimed guest speakers, workshops run by BCCH Anesthesia faculty, an associated BCCH Surgical Suites Grand Rounds and a city-wide Wednesday morning UBC Anesthesia Grand Rounds, the conference provided a once-in-a-generation opportunity to host a series of invaluable teaching events & showcase the UBC & BCCH Departments of Pediatric Anesthesia.

BRITISH COLUMBIA WOMEN'S HOSPITAL & HEALTH CENTRE

Dr. James Brown

Department Head

Drs. Katie Seligman and Jonathan Collins

Associate Department Heads



DEPARTMENT OF
ANESTHESIA

2022 has been a year of recovery and getting used to the new normal, living with the aftermath of the pandemic (and CST implementation!). We have come out the other side busier than ever on the Obstetric side with increased cesarean section and epidural rates, and continued expansion of our Gynecology Surgical program, furthering our role of shifting low-risk ambulatory surgery from the larger centres to allow them to focus on procedures that can only be done at their sites. After a successful introduction the previous year, we have doubled the number of 23-hour inpatient stay beds, which has allowed the scope of surgeries we support to expand.

With increased services we continue to grow; we have been actively recruiting, most successfully from our Residency and Fellowship programs – we are lucky to have Dr. Katie Clark (One of our current Clinical Fellows; originally Canadian, completed undergrad in Ireland and Postgrad in the US), and two of our local UBC residents, Dr. Naima Kotadia (joint appointment with VGH) and Dr. Amir Siddiqui joining us after completion of their respective Fellowship Programs. We are still aspiring to 24/7 Anesthesia Assistant (AA) coverage, but are not there yet despite concerted efforts to bring on and train more AAs.

We have split up the roles of our Research and Fellowship Director; the idea is to allow Dr. Anton Chau more time to concentrate his own research interests and at the same time still be able to support the Department and Fellowship research education and programs. Dr. Clare Burlinson has taken over the Fellowship Director role and we are refreshing the curriculum to include medical leadership, QI/QA, and ethics to complement the traditional clinical and research focus. We are grateful for Dr. Helen Parker's work as our Education and Simulation lead, organising multiple in-house sessions and our first Provincial OB Anesthesia Simulation update session which was very successful. Many of you will know Dr. Katie Seligman from her tireless work with BCAS, she is our Quality and Safety Lead, and we are appreciative of her agreeing to also take on the role of Associate Department Head, expanding our leadership capacity.

We are learning to live with and make the most of CST, working hard to maximize the potential that is there for QI and QA. After much effort we are able to produce regular individualized anesthesiologist activity reports (including procedure volumes, numbers of epidurals requiring resites, % successfully topped-up for OR, complications etc...) – thank you to Drs. Elise Hindle and Mike Wong! We have generally managed to move things in the right direction this last year. In the first half of the coming year we have a Hospital Accreditation, which is expected to take up significant bandwidth. As well as the Group contract negotiations with the PHSA/MOH (with consideration of whether we adopt the Provincial APP), hopefully this will be an opportunity for the group to reflect and be a forum for discussions on how to support the ongoing development of our Department and services.

LIONS GATE HOSPITAL

Dr. Magdalena Lipowska
Department Head- Anesthesiology
VCH Coastal Community of Care.



2022 saw LGH continuing to recover from the effects of the COVID pandemic and the significant challenges brought on by being the COVID referral site for the VCH Coastal Community of Care. The entire OR team and our Anesthesia Department have worked hard to make progress on the OR cases canceled during the pandemic.

The summer of 2022 saw a transition in leadership in Anesthesia. Dr. Clare Morrison, who had held the dual positions of Department Head of Anesthesia for VCH Coastal Community of Care as well as the Comedical Director of the Surgical Program from 2019-2022, stepped down from her Department Head role in July 2022. During her tenure, she led the LGH Department of Anesthesia through an exceptionally challenging time, including the loss of a colleague as well as the COVID pandemic. She was, through it all, able to represent anesthesia and champion excellent clinical care as well as continue to build significant relationships with our anesthesia partners across the 3 VCH Coastal Community of Care Surgical programs in Squamish, Sechelt, and Qathet Hospital in Powell River. After several years as Deputy Department Head, Dr. Magda Lipowska was appointed to the position of Department Head in July 2022. Dr. Clare Morrison continues her very active involvement in the surgical program as Comedical Director of the surgical program, a role which has now been split from that of Department Head. Dr. Riley Senft has stepped into the role of Deputy Department Head. Dr. Teresa Ripley continues to be our Preadmission Clinic Medical Lead.

Dr. Randy Hewgill continues in his role of Education lead at our site, overseeing the ever-expanding presence of residents at Lions Gate Hospital. Our site also provides opportunities for refresher days and extra training for currently practicing FPs, as well as providing teaching for paramedic students and Anesthesia Assistant trainees.

Dr. John McAlpine serves in the role of Director of the Family Practice Anesthesia Program and Dr. Rob Fingland is the Local Site representative for the Family Practice Anesthesia Program. Due to our position as one of the hospitals in the Coastal Community of Care, Lions Gate Hospital and its Anesthesia Department maintain ties with the surgical programs across the other VCH Coastal Community of Care sites.

Under the excellent guidance of Dr. Rob Fingland and Dr. Teresa Ripley, Anesthesiology at LGH now also runs monthly perioperative Simulations for Department members and perioperative staff. We have also been involved in enhancing perioperative staff wellness with Dr. Clare Morrison and Dr. Kelly Chatterton representing the Department on the Perioperative Wellness Committee. Both initiatives have been well received and are helping with staff collegiality and morale.

In 2022 we added two extra ORs per week, providing extra capacity for Therapeutic Endoscopy and Closed Urology to our roster.

We also continued with an expanded half-day slate every day providing access to Obstetrical and Minor Gynecology cases outside of the Major Gynecology OR.

Work is continuing on the new Acute Care Facility Tower at Lions Gate Hospital, slated to open at the end of 2024. This will see our ORs expand by 2, and bring with it much-anticipated innovation in patientcare spaces.

Staffing Changes:

2022 saw the addition of Dr. Stephanie Peters and Dr. Ryan Latimer to our Department. Dr. Tom Kuca left the Department to pursue work outside of the Lower Mainland.

ROYAL COLUMBIAN HOSPITAL AND EAGLE RIDGE HOSPITAL

Dr. Feisal Mohamedali

Regional Medical Director & Regional Department Head



The Department of Anesthesiology and Perioperative Medicine at Royal Columbian Hospital (RCH) provides anesthesia services at both RCH and Eagle Ridge Hospital (ERH). RCH along with Vancouver General Hospital is one of two Level 1 trauma centers in the province and serves as the tertiary care referral center for the Fraser Health Authority (FHA), with approximately 1.9 million people or 38% of British Columbia's population, as well as patients from other regions. RCH, the oldest hospital in the province, is a general hospital providing a wide spectrum of surgical and medical services.

RCH is the highest-volume cardiac center in BC, and cares for an ever-growing volume of trauma patients, as a result of its large population base, and proximity to major transportation corridors, among other factors. Supporting this care is a robust critical care team and an ECMO service for patients with severe heart or lung dysfunction. RCH runs an orthopedic trauma operating room 364 days per year.

Additionally, we have created a block room in the operating room, to facilitate the conduct and teaching of regional anesthesia for orthopedic and plastic surgery patients. RCH is the regional neurosurgical referral center for FHA and sees a high volume of craniotomy, spine, and neuro-interventional procedures annually.

RCH continues to have one of the best neonatal intensive care units in North America in terms of neonatal outcomes, and is the provincial center of excellence for high-risk obstetrical care, specifically the management of complex invasive placenta conditions (eg. placenta accrete), cases that require ICU and/or cardiac care for expectant mothers, while also being able to care for low birth weight, premature infants. A multidisciplinary approach to this complex work underlies the successes we see at our site.

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 some of the highest acuity amongst the hundreds of North American hospitals participating in the program. Furthermore, RCH is actively involved in multiple multi-centre clinical trials and is actively expanding its research activities and quality improvement initiatives, supported by a full-time research assistant, summer students, and clinician scientists.

Royal Columbian Hospital and Eagle Ridge Hospital are core teaching sites for medical students and anesthesia resident training. The residency program has expanded recently to 20 positions per year. As well, there is a new Fraser track for 32 3rd year medical students based primarily at our site, but involving other sites within the FHA. We also train anesthesia assistant (AA) students and have a growing group of AA's who are integral to the work we do. We expect RCH to continue to evolve as an important academic and learning center for medical learners in the years to come.

Finally, RCH is undergoing a \$1.5 billion redevelopment. Phase 1 which is completed, is the

Mental Health and Substance Use Wellness Centre with a stand-alone neuro stimulation suite where our group provides anesthesia care for electroconvulsive therapy. Phase 2, the 10-level Acute Care Tower (ACT), is under construction with a planned opening in July of 2025. This includes an interventional platform with 17 operating rooms, 3 cardiac catheterization laboratories, and 5 interventional radiology suites. There will be a 3-bay block room, for regional anesthesia as part of the Interventional Platform. The obstetrical service will exist on its own floor with 2 obstetrical operating rooms. Phase 3 will renovate the existing hospital for future needs, and to support the function of the ACT.

Eagle Ridge Hospital (ERH), is our lower acuity community hospital in Port Moody, BC. There are six operating rooms that provide space for nearly 10,000 surgical cases a year, the majority of which are Surgical Day Care cases. This now includes a same-day arthroplasty program which has been launched this year at ERH, as well as minimally invasive major general surgery cases in selected patients. Most of the elective pediatric cases done by the Department are performed at Eagle Ridge Hospital. The work of the department is supported by a Certified Anesthesia Assistant at ERH

SURREY MEMORIAL HOSPITAL

Dr. Alexander Vesely
Dr. Clara Gramberg
Dr. Freda Wong
Co-Heads, Department of Anesthesiology.



2022 was a year of growth and maturation for the SMH Department of Anesthesiology, continuing a trend beginning during, and in part stimulated by, the Covid-19 pandemic. From head count to department engagement and leadership, governance and economics issues, steady incremental gains were seen across the board.

Involvement with the UBC Residency Program has continued to increase, led by 2019 UBC alumni Drs. Disha Mehta and Christine Graf. As a “tertiary teaching community hospital”, R1 to TTP Residents rotating through SMH/JPOCSC quickly appreciate the fertile learning environment, and the challenging but enjoyable combination of volume and acuity in community setting. Perennial favourites continue to include Pediatrics, major Head and Neck, and Thoracics, for all of which we are the designated FHA site, as well as our now well-established Block Program, which has excelled as both a high quality clinical service and a popular educational experience in providing thoracic epidurals, upper and lower extremity, and truncal blocks to SMH surgical patients.

Our in-house Surgical and Obstetric Hi-Fidelity Simulation Program, led by Dr. Clara Gramberg, has become a valuable safety/quality and team building asset. AA support remains strong, supporting an efficient and sustainable practice for our group.

Overall, SMH remains the second largest hospital in BC, with the busiest Emergency Department in the province, 46 bed ICU/HAU, and transfers from peripheral hospitals such as Delta and Peace Arch bringing further acuity. We also serve the busiest obstetric unit in BC outside of BCWH, now with over 5000 deliveries per year and growing. Between SMH and our satellite ambulatory facility (Jim Pattison Outpatient Care and Surgery Centre, or JPOCSC), our highly varied mix of acute and fast paced inpatient/ambulatory elective surgery continues to expand. Highly collaborative relations with our Surgical Department and our effective Management Team have allowed for sustainable growth, resulting in preserved working conditions, staffing and morale, and therefore very low closures. Despite lack of new construction, ongoing investments in modernizing, reactivating and optimizing OR spaces within the existing footprint are allowing growth of what is already the busiest surgical program in FHA.

At year end, our Department was sitting at 35 members totaling 25 FTE, having added several new members with a diverse range of expertise over the 2022 academic year. Our most recent hiring cycle brought substantial interest from prospective 2024 candidates. There is no question that UBC graduates will be an integral part of meeting our attrition and expansion needs in 2023-2025 and beyond.

ST. PAUL'S HOSPITAL

Dr. Jim Kim

Chair, Department of Anesthesiology, PHC



St. Paul's is a Clinical Medical Academic Centre in downtown Vancouver that is integral to the University of British Columbia Faculty Of Medicine. It is part of Providence Health, which comprises St. Paul's Hospital, Mt. St. Joseph's Hospital, and a number of residential facilities. The Department of Anesthesiology is an integral part of the surgical program and has demonstrated excellence in numerous aspects of perioperative care. Areas of clinical focus include Cardiac Anesthesia, Regional Anesthesia, Perioperative Medicine, Interventional and Complex Pain. The Department of Medicine houses major initiatives in Respiratory, Cardiac, Addictions, and Nephrology areas. The Department of Surgery aside from Cardiac sciences also has components including Urology, Otolaryngology, General, Gynecologic, Plastic, and Orthopedic surgery as well as Vascular surgery. Anesthesiology at St. Paul's Hospital is a major Department comprising 57 anesthesiologists and up to 6 subspecialty fellows. The Department also delivers anesthetic services at Mt. St. Joseph's hospital (a community hospital) with 4 Operating Rooms and 3 Ophthalmology Procedure Rooms.

The Cardiac Anesthesia Group is comprised of 15 members responsible for the intra-operative Trans-esophageal Echo Program, CSICU, Structural Heart and Open Heart and Transplant programs. The longtime leader, Dr Bobby Lee transitioned his role to Dr Anne Marie Madden at the end of the year. Dr Matt Klass leads the TEE group; Dr Matt Coley is the CSICU Lead; and Dr Simon Bruce is the anesthesia lead for structural heart program. Our successful Cardiac Anesthesia Fellowship program is lead by Dr. Kevin Rondi and welcomes 2 Fellows each year. The Cardiac Group welcomed the addition of two new members in 2021, Dr Jean Raubenheimer from South Africa and Dr Terri Sun who returned from a Cardiac Fellowship in the University of Washington and in 2022, Dr Dmitry Mebel who returned from training in Australia. Dr Terri Sun is the PI for two research projects that completed in 2022.

The Pain Group has been very active with Dr. Jill Osborn is the Physician lead for SPH Complex Pain Program (6 members) as well as Interventional Pain. Dr Ainsley Sutherland leads the Acute Pain Team (9 members) as well as the Transitional Pain Clinic where she is joined by Dr. Kat Kojic. The multidisciplinary Complex pain clinic provides services with outreach to many areas outside the lower mainland. Given its unique and well-planned efficiency this is hoped to be used as a model for the evolution of various chronic pain programs in the province. The multidisciplinary Neuromodulation Program (Dr Jill Osborn and Dr. Vishal Varshney) received extra funding because of the successful Health Technology Review which more than doubled resources available to the program. Working together with the SPH Foundation, two initiatives were prioritised: The creation of an Endowed Chair in Pain Medicine and support for the Neuromodulation Program. In 2022, the Transitional Pain Clinic was launched after the completion of a multimillion-dollar Supercluster project jointly funded by government, industry and PHC.

The Regional Anesthesia Group is lead by Dr. Chris Prabhakar and has 12 members. They perform over 4500 regional blocks per year at 3 separate locations with dedicated block areas (two at SPH and one at MSJ). There are three active research projects with cardiac surgery group. Dr Thomas Prasloski joined the group after completing Regional Fellowship in Australia.

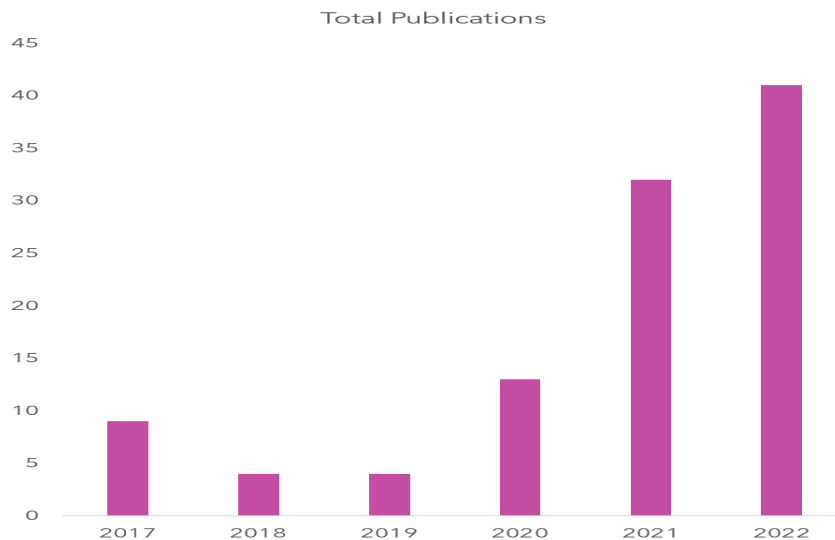
The Regional Fellowship is very competitive and welcomes two Fellows/year and a large number of residents. Dr Steve Petrar is the overall department Fellowship program director and also leads the Regional Fellowship program.

The Perioperative medicine group welcomed a new Physician Lead in Dr. Sui Yin McDonell. In 2022, Dr. Vincent Fruci joined the group. He recently completed his qualification in Palliative Care Medicine after completing his Anesthesia training in Ottawa. He will build bridges between the two specialties. The group continues to be innovative in terms of its team-based approach to perioperative care with residents, fellows and internal medicine staff.

Simulation is a major focus of the department with Dr. Shannon Lockhart as the Co-physician lead for PHC Simulation.

The PHC Anesthesia Research program, led by Dr. Alana Flexman, had numerous milestones including the following grants and awards and a record number of publications (42):

- Michael Smith Research BC \$450,000 (Dr. Alana Flexman)
- UBC New Faculty Grant \$10,000 (Dr. Tim Jen)
- UBC Health Innovation Award \$30,000 (Dr. Janny Ke)
- PHCRI Early Career Clinician Investigator Award \$35,000 (Dr. Janny Ke)
- PHC Skunkworks Innovation Award (Pain) \$65,000 (Dr. Ron Ree, Dr Michael Jew)
- BC MOH Research Priorities Award \$35,000 (Dr. Janny Ke)



The Department of Anesthesia at St. Paul's Hospital will continue to develop as one of the larger departments in Providence Health Care. New staff who will go on to subspecialty training include:

- Dr. Lily Chew (Regional Anesthesia)
- Dr. Michael Jew (Regional Anesthesia)
- Dr Charles Yu (Perioperative Medicine)

The PHC Anesthesia Academic Leadership continues to be active in the UBC system and abroad. These are some of the highlights from this year's activity.

- Stephan Schwarz, Editor-in-Chief, Canadian Journal of Anesthesia, Director of the UBC Hugill Anesthesia Research Centre
- Bobby Lee, Head, UBC Division of Cardiac Anesthesiology
- Alana Flexman, President, Society for Neuroscience in Anesthesiology and Critical Care & Past-Chair, Neuroanesthesia Section, Canadian Anesthesiologists' Society; Associate Editor, Journal of Neurosurgical Anesthesiology
- Su-Yin MacDonell, Head, UBC Division of Perioperative Anesthesiology
- Cynthia Yarnold, Co-Chair, UBC Promotions Committee; UBC Competency Committee
- Jim Kim, Past-Treasurer, Canadian Anesthesiologists' Society
- Vishal Varshney & Jill Osborn, Board Members-at-Large, Canadian Neuromodulation Society
- Anton Chau, Board Member, Anaesthesia Journal
- Raja Rajamohan and Vishal Varshney, Board Member, BCAS

The Department continues to grow and expand under the APP contract. Looking forward, major initiatives in 2023 include the creation of two clinical endowed Chairs of excellence (Chair in Pain Medicine and Chair in Perioperative Brain Health). The Department has weathered the Covid Pandemic and is excited to push new frontiers in clinical work, education, research in all disciplines of anesthesiology.



VANCOUVER GENERAL/UBC HOSPITALS

Dr. Jens Lohser
Department Head
Dr. Andrea Brovender, Dr. Raymond Tang
& Dr. Jacqueline Trudeau
Associate Heads



Clinical Activity:

The year 2022 saw a continued focus on OR expansion with the full implementation of our 24 OR suite at VGH. We performed roughly 15,000 cases in JPOR in 2022, 50% of which were urgent or emergent bookings.

Transplantation has become a growing and increasingly normalized part of our environment. In 2022 we performed 54 lung transplants and 101 liver transplants.

We run eight operating rooms at UBCH and performed nearly 7,000 procedures during the year. Additionally, we operate the full complement of out-of-OR sites, including interventional radiology, Cathlab, electrophysiology, urology, lithotripsy/ stone center and ECT.

In order to operate the 51-53 daily assignments, our department had expanded to 75 full-time staff by the end of 2022. We maintain a small temporary staff pool of 2-3 individuals for longitudinal assessment with the intent to hire. We maintain a locum arrangement with BCWH providing exposure to general anesthesia cases at UBCH to their staff.

We have multiple novel and exciting initiatives ongoing:

1. Our environmental stewardship group has moved Desflurane out of the operating room suites and has facilitated the decommissioning of our nitrous oxide manifold system throughout the hospital.
2. Our regional group has embarked on a number of pain pathway initiatives in collaboration with surgical services. Our rib fracture pathway identifies trauma patients who will benefit from regional anesthesia for pain control and morbidity prevention. Our hip fracture pathway delivers regional anesthesia to patients prior to surgical fixation irrespective to their in-hospital location, in period hold, the emergency department or on the orthopedic ward.
3. Our perioperative anaphylaxis clinic investigates perioperative events from our health authority and others in collaboration with allergist Dr Ruiz. Workups include skin testing and, if required challenge testing in PACU.
4. We run a resident POCUS rotation supported by cardiac and perioperative anesthesia staff members. Residents are exposed to a vast array of ultrasound pathology in the cardiac surgery ICU, the intensive PACU and in the preoperative arena. The feedback from residents has been overwhelmingly positive. We also support multiple POCUS-themed resident boot-camps per year.

5. Our perioperative group is responsible for the postoperative care of all non-cardiac patients going through PACU, facilitating recovery and triage to ward or ICU for patients after hepatobiliary, thoracic, vascular and major general surgery.
6. The Pre-Admission Clinic has benefited from the full integration of Pharmacy in the clinic. As well, pathways of Pre-Surgical Optimization continue to be developed for surgical patient benefit before their procedure. Optimization pathways include: Smoking Cessation, Perioperative Blood Management, Frail Patients, Blood Sugar management, Nutrition, Pain and Addiction Services.
7. Our Perioperative Blood Management Program (PBMP) is a part of our pre-anesthesia consultative clinic and aims to optimize patients with anemia or blood-related disorders prior to surgery. The current focus of the clinic is to provide surgical services with data and education to facilitate appropriate blood work ordering in elective surgical patients. As a result, we have decreased preoperative patient bloodwork resulting in fewer patient trips to the hospital and improved patient satisfaction, decreased CO2 emissions, and significant cost savings.

Staffing departures:

Drs Josh Bennitz and Beau Klaibert, unfortunately, left our department for family reasons.

New staff hires:

Drs Ayda Askari, Julia Cory, Jimmy Lam and Kate Mittermaier joined our department after completion of their residency at UBC. Dr Sham Karmali, a former fellow, joined our Department after completion of his UK anesthesia training. Dr Brendon Chung joined our Department from the University of Alberta. Dr Claire Broe joined our Department, staying on after completing a fellowship and locum with us. Dr Simone Schulein joined our Department and Cardiac division from Royal Columbian Hospital. Finally, yet importantly, we were excited to welcome Professor Hilary Grocott, from the University of Manitoba (and previously Duke University) into our Department and Cardiac division.

Staff returns:

Dr. Kristen Kidson returned after a Critical Care Fellowship at VGH with plans to complete an additional Cardiac Anesthesia Fellowship at Stanford University in 2023. Dr Sandy Pitfield returned after a combined cardiac and thoracic fellowship at St Paul's Hospital and Toronto General Hospital, respectively. Dr. Rana Hamidzadeh returned from a Regional Anesthesia fellowship at St Paul's Hospital.

Anesthesia Division Reports

DIVISION OF CARDIOVASCULAR ANESTHESIA

Dr. Anne-Marie Madden and Dr. Juliet Atherstone
Division Co-Heads

The UBC Division of Cardiac Anesthesiology continues to grow and thrive as we expertly navigate the increased demands of growing cardiac surgical waitlists, increased surgical acuity and patient complexity, as well as educating more junior level UBC Anesthesiology residents.

While providing the highest level of care to our patients, we contributed to and initiated robust research and participated in practice changing multi-centre trials as well as important local research. Many members of the division have taken advantage of the leadership and QI training and mentorship programs that are available and this has resulted in important practice changing and outcome changing site specific interventions which makes us all proud and renews our passion for our work and our patients. The division is also making strides in equity hiring across the province which is great to see.

Importantly, Cardiac Anesthesiology is taking on an increased role with cardiac surgery triage at many sites, working to help optimize patients prior to their surgery and help patients determine the best course of treatment based on their wishes. We are instituting early recovery programs for certain cardiac surgery procedures and making strides in preoperative optimization. As we are limited by lack of database data for our specific patients and outcomes, many sites participate QI/QA and M and M rounds at our sites to help inform and optimize care for future patients.

Cardiac Anesthesiology divisions are also contributing and leading education in the post Cardiac Surgery Intensive Care Unit and are physician leads at many of the units. The cardiac anesthesiologists are very involved in protocol development as well as have been leading educational simulation sessions for critical events for all members of the patient care team.

UBC Anesthesia Residency and Fellowship Training

UBC offers residents a 2-month rotation in cardiac anesthesia at one of the sites: Vancouver General (VGH), Royal Columbian (RCH), St. Paul's Hospitals (SPH), Royal Jubilee Hospital (Victoria). Residents can also pursue elective educational opportunities in cardiac anesthesia at Kelowna General Hospital. Fellowships are offered at the 3 primary sites and new in 2022 at the Royal Jubilee Hospital is their Cardiac Anesthesia Fellowship affiliated with UBC.

Each of the sites have their own unique educational opportunities such as endovascular thoracic aortic aneurysm repair, mechanical assist devices, transplants, and transcatheter aortic, mitral, and tricuspid valve repair/replacements outside of the standard experience during such a rotation.

Residents also spend one month in the Cardiac Surgery ICU (CSICU) while fellows complete a 3-month rotation. Given the increasing complexity of cardiac surgery patients, this has resulted in an excellent learning experience in managing complex patients with a variety of mechanical

assist devices such as ECMO and LVAD's as well as challenging medical conditions historically seen in the ICU.

An additional one-month TEE/POCUS elective is also offered, focusing on both cardiac anesthesia and perioperative medicine. We have our fellows participate in regular echoeducation rounds.

Site Updates/Highlights

Kelowna General Hospital

New Hires:

Dr. Elmari Neethling

Dr. Tonia Tauh

Research:

TRICS IV: Transfusion Requirements in Younger Patients Undergoing Cardiac Surgery An international, multi-centre, randomized controlled trial to assess transfusion thresholds in younger patients undergoing cardiac surgery, Site lead: Dr. N. Kuzak

DEPOSITION – Decreasing Postoperative Blood Loss by Topical vs. Intravenous Tranexamic Acid in Open Cardiac Surgery

Royal Jubilee Hospital

The section of Cardiac Anesthesia in the Capital City has experienced a number of positive developments in 2022, especially in the areas of quality assurance, CVICU program development, and human resources, and fellowship development. We welcomed our first Cardiac Anesthesia Fellow, Dr Jeffrey Campbell. He has been a practicing anesthesiologist in Victoria for several years. Jeff is also a physician member of the Canadian Armed Forces, and participates in specialized front-line operative management of personnel injury. To further refine his skills in the management of critically ill and hemodynamically unstable patients, he has endeavored to complete a Cardiac Anesthesia Fellowship with us and sit the National Board of Echocardiography Transesophageal Echo Exam. His fellowship will be completed in early 2025.

New Hires:

Dr. Mark German

Education/Quality Initiatives:

Quality Measures tracking Cardiac Surgery patients: Multidisciplinary sessions with monthly quality meetings led by Cardiac Anesthesia and Cardiac Surgery. Dr. Paul Serowka co-chair role of quality in Cardiac Surgery, which he shares with our cardiac surgical colleague Dr Kenny Kumar. Topics for meetings and ongoing improvement include morbidity and mortality, continuous renal replacement therapy, and mechanical circulatory support among others. Implementation of cardiac anesthesia lead CRRT program. Wanting improved access to renal replacement therapy for our patients, and in working closely with our nurse educators, we launched the program in 2021. The program launch involved widespread education and training for our members, as well as members of our nursing team. We continue to take part in regular

continuing education in the area of renal replacement therapy, and in 2022 the CVICU ran a total of 3360 hours of CRRT therapy, making us a major user on Vancouver Island.

Development of a local protocol to guide the management of cardiac arrest in Cardiac Surgery patients. Dr Mark German. The goal is to apply CSU:ALS principles, in place of ACLS for our patients. The project is ongoing, and will involve training, simulation, and a patient centered approach to management in the Cardiovascular Unit and on our post-operative ward. Development and implementation of a protocol for the management of lumbar drains in vascular surgery patients undergoing Thoracic Endovascular Aneurysm Repair. Dr Steve Head

Royal Columbian Hospital

New Hires:

Dr. Jared McCormick
Dr. Ryan Best
Dr. Renier Verbeek

Research:

FARES-II . RCH PI Dr. Brar
CODEX trial. RCH PI Dr. Martinka

Education/Quality Initiatives:

Assumption of formal echo reporting from cardiology, local echo rounds

St Paul's Hospital

Research:

SPH Publications 2022

Leung L, Lee LHN, Lee B, Chau A, Wang EHZ. The safety of high-dose dexmedetomidine after cardiac surgery: a historical cohort study. *Can J Anaesth.* 2022 Mar;69(3):323-332. English. doi: 10.1007/s12630-021-02167-z. Epub 2021 Dec 29. PMID: 34966972.

Rahmouni K, Naidu J, Pearce N, Chan V. Successful Explantation of a Ball and Cage Mitral Valve Prosthesis 48 Years After Initial Implantation. *CJC Open.* 2021 Nov 21;4(3):344-346. doi: 10.1016/j.cjco.2021.11.007. eCollection 2022 Mar. PMID: 35386136

Sharma VJ, Arghami A, Pasupala D, Haddad A, Ke JXC. Outcomes of Coronary Artery Bypass Grafting in Patients with Poor Myocardial Viability: A Systematic Review and Meta-Analysis of the Last Decade. *Heart Lung Circ.* 2022 Mar 23; S1443-9506(22)00071-3. doi: 10.1016/j.hlc.2021.12.016. Online ahead of print. PMID: 35339371

Pitfield AF, Bedard A, Bashir J, Bruce S, Augoustides JG, Cormican DS, Marchant BE, Fernando RJ. Anesthetic Management for Cardiac Surgery During Pregnancy Complicated by Postoperative Threatened Abortion. J Cardiothorac Vasc Anesth. 2023 Jan;37(1):158-166. doi: 10.1053/j.jvca.2022.09.098. Epub 2022 Oct 3. PMID: 36319562.

Ongoing Research:

Cognitive Outcomes after Dexmedetomidine Sedation in Cardiac Surgery Patients: CODEX Trial. Lead Site: Sunnybrook Health Science Centre Site PI: Dr. Raja Rajamohan Status: Actively Recruiting since May 9th, 2022.

The Efficacy of Superficial Parasternal Intercostal Plane Catheter for Sternal Pain Reduction in Patients undergoing Cardiac Surgery with Complete Median Sternotomy: A Quadruple-Blinded, Randomized, Placebo-Controlled Trial Lead investigator: Dr. Tim Jen Outcomes after Perioperative Stroke in Cardiac Surgical Patients Lead Investigator Dr. Alana Flexman Feasibility of Perioperative Stroke Screening Tools in Cardiac Surgery Patients: A Pilot Study Lead Investigators: Dr. Alana Flexman, Dr. Terri Sun Pragmatic Cluster Crossover Randomized Trial: Benzodiazepine-free Cardiac Anesthesia for Reduction of Postoperative Delirium (B-Free). Site lead: Dr. Raja Rajamohan

Vancouver General Hospital

New Hires

Dr Hilary Grocott

Dr Sandy Pitfield

Retirement from Cardiac Anesthesiology Division

Dr Paul Kapnoudhis

Research/Publications

TRICS IV: An international, multi-centre, randomized controlled trial to assess transfusion thresholds in younger patients undergoing cardiac surgery.

clinicaltrials.gov: NCT04754022

Enrollment: 50 patients at VGH. Estimated completion Jan 2024

VGH P.I. Darren Mullane. Sub- Investigators: Juliet Atherstone, Rael Klein, Joel Price

FARES II: Prospective, multi-center, active-control randomized trial comparing prothrombin complex concentrate with frozen plasma in bleeding adult cardiac surgical patients.

Clinicaltrials.gov: NCT05523297

Enrollment: 50 patients at VGH. Estimated date of completion October 2024. VGH P.I. Darren

Mullane. Sub Investigators: Bevan Hughes, Andrew Shih

NOAC OHS Trial: "A randomized trial of the safety of non-vitamin K oral anticoagulants compared to warfarin early after cardiac surgery: a pilot study" PI Erica Wana. CoInvestigators: Ricky Turgeon, Terri Sun, Jain Ye, Jamil Bashir, Richard Cook, Juliet Atherstone, Tracy Leanne Gwozd, Catherine Gauthier. Ethics Approval 2022

Chitnis S, **Mullane D**, Brohan J, Noronha A, Paje H, Grey R, Bhalla RK, Sidhu J, **Klein R**.

Dexmedetomidine use in intensive care unit sedation and postoperative recovery in elderly patients post-cardiac surgery (DIRECT). Journal of Cardiothoracic and Vascular Anesthesia. 2022

Mar 1;36(3):880-92.

Shuster C, Kanji H, **Isac G**, Jeovens R, Sidhu A, Kalan S, Yee J, Finlayson G. Seventy-seven days on veno- venous extracorporeal membrane oxygenation for severe acute respiratory distress syndrome from SARS-CoV-2. *Perfusion*. 2023 Sep;38(6):1311-1314. doi: 10.1177/02676591221103545. Epub 2022 Jun 2. PMID: 35653234; PMCID: PMC9519602.

Pitfield AF, Bedard A, Bashir J, Bruce S, Augoustides JG, Cormican DS, Marchant BE, Fernando RJ. Anesthetic Management for Cardiac Surgery During Pregnancy Complicated by Postoperative Threatened Abortion. *J Cardiothorac Vasc Anesth*. 2023 Jan;37(1):158-166. doi: 10.1053/j.jvca.2022.09.098. Epub 2022 Oct 3. PMID: 36319562.

Hilzenrat RA, English JC, McGuire A, **Finlayson G**, Choi J, Yee J. Lung transplantation for COVID-19 acuterespiratory distress syndrome: The British Columbian experience with new disease pathology. *Semin Thorac Cardiovasc Surg*. 2022 Dec 23:S1043-0679(22)00282-9. doi: 10.1053/j.semtcvs.2022.12.004. Epub ahead of print. PMID: 36572370; PMCID: PMC9788843.

Erin Long, Juan Camilo Ruiz, **Julena Foglia**, Kamen Valchanov, **Andrew Meikle**. Recognition, treatment, and prevention of perioperative anaphylaxis: a narrative review[J]. *AIMS Medical Science*, 2022, 9(1): 32-50. doi: [10.3934/medsci.2022005](https://doi.org/10.3934/medsci.2022005)

Azar P, Westenberg JN, Ignaszewski MJ, Wong JSH, **Isac G**, Mathew N, Krausz RM. Case report: acutecare management of severe opioid withdrawal with IV fentanyl. *Addict Sci Clin Pract*. 2022 Apr 5;17(1):22. doi: 10.1186/s13722-022-00305-6. PMID: 35382882; PMCID: PMC8980769.

Klaibert B, Lohser J, Tang R, Jew M, McGuire A, **Wilson J**. Efficacy of ultrasound-guided single injectionerector spinae plane block for thoracoscopic wedge resection: a prospective randomized control trial. *Reg Anes Pain Med*. 2022, doi:10.1136/rapm-2022-103602.

Kramer AH, Holliday K, Keenan S, **Isac G**, Kutsogiannis DJ, Kneteman NM, Kim P, Robertson A, NickersonPW, Tibbles LA. Premortem anticoagulation timing and dose in donation after circulatory death: multicentre study of associations with graft function. *Can J Surg*. 2022 Jul 28;65(4):E474-E484. doi: 10.1503/cjs.023120. PMID: 35902105; PMCID: PMC9343016.

Shuster C, Kanji H, **Isac G**, Jeovens R, Sidhu A, Kalan S, Yee J, **Finlayson G**. Seventy-seven days on veno- venous extracorporeal membrane oxygenation for severe acute respiratory distress syndrome from SARS-CoV-2. *Perfusion*. 2022 Jun 2:2676591221103545. doi: 10.1177/02676591221103545. Epub ahead of print. PMID: 35653234.

COVIDSurg 3. Kelly Mason site lead. Shirley Lim and **Dr Mullane** Cardiac Anesthesia Representation.

Presentation: "Behind the Mask: Art in Medicine, and Anesthesiology on the Pandemic Front Line." Visual Art and Storytelling Presentation. Celebration of Art in Medicine, VGH and UBC Hospital Foundation 17-June-2022. **Dr Cyrus MacEachern**

Education/Quality Initiatives:

- 1) QI for Transesophageal Echocardiography. Echo studies reviewed by independent reviewers quarterly with report generated. **Simone Schulein and Sean McLean**
- 2) Prevention of post-operative atrial fibrillation after cardiac surgery. Development of a risk score and treatment algorithm/order set aimed at preventing atrial fibrillation in patients at risk postcardiac surgery. **Sean McLean Dr S Egan**, G Ghatti.
- 3) Ventricular Fibrillation Post Aortic Cross Clamp Removal Audit/prevention QI: **Dr Collins-Smyth, Dr Darren Mullane, Dr Juliet Atherstone** Assessing our current practice and creating a departmental approach to this common complication. Dr Coliin CollinsSmyth, Dr Sean McLean, Dr JulietAtherstone
- 4) **TEVAR Temperature management QI project.**
Investigators: Jamie Head, **Darren Mullane, Travis Schisler, Hilary Grocott.**
- 5) **IPU Quality Initiative for TEVAR surgery.**
Site leads: Joel Price, **Darren Mullane**, Jason Faulds
- 6) Combined cardiac surgery and anesthesiology critical incident/MM/ECHO interesting caserounds **Dr Mullane Dr Atherstone Dr McLean, Dr Au**
- 7) **ERAS MIS Cardiac Surgery Implementation:** Lead physician **Dr Travis Shisler, Dr Mullane**
- 8) **IPU for Cardiac Surgery: Multidisciplinary support for improving patient outcomes.**
LeadPhysicians: Dr Joel Price, **Dr Darren Mullane, Dr Juliet Atherstone**
- 9) Comparison of patient outcomes and pain management in patients with and without PVB catheterspost MIS cardiac surgery. **Dr T Schisler**, Dr R Cook

Education/patient care:

- Combined Cardiac Anesthesiology Cardiac Surgery M and M rounds.
- Participation in Cardiac Surgery Triage Rounds with the goals of being better informed of cardiacsurgical patient triage process and Identifying high risk in-patients that MAY come to the OR and coordinate anesthesia consultation for the purposes of optimization and complex case discussion CSICU simulations/education.
- Monthly Perioperative echo rounds.

DIVISION OF NEUROANESTHESIA

Dr. Alexandra Kisilevsky and Dr. William Rieley
Division Co-Heads

2022 members:

Dr Josh Bennitz
Dr Bali Dhaliwal
Dr Cynthia Henderson
Dr Henrik Huttunen
Dr Sandy Kisilevsky
Dr Kelly Mason
Dr Jon McEwen
Dr Lynn Martin
Dr Yvonne Peng
Dr William Rieley
Dr Evan Shao
Dr Jason Wilson

Division Member Updates:

Dr Evan Shao returned from neuroanesthesia fellowship at Toronto Western Hospital and joined the division in July 2022.

Dr Josh Bennitz left the division in August 2022 to relocate to Foothills Hospital in Calgary, AB. He is missed by the entire department of anesthesiology at VGH and especially the neuroanesthesia division. We thank him for his contributions towards our subspecialty over the past few years.

Resident Education:

Dr Evan Shao took over the role of Neuroanesthesia Resident Subspecialty Co-ordinator from Dr Kisilevsky in September 2022. UBC anesthesiology residents spent 3 weeks each (as part of their VGH subspecialty block) in neuroanesthesiology and spine surgery in the 2022. During this time, each resident completed a unique neuroanesthesia specific "Question of the Month". Resident write-ups can be found at <https://www.vghanes.com/neuro-questions-of-the-month>.

The neuroanesthesia resident journal club took place in-person on November 15, 2022 and was well attended.

Dr Liz Kim (R2) presented the article Chowdury et al. 2022. Brain Cancer Progression: A retrospective multicenter comparison of awake craniotomy versus general anesthesia in high grade glioma resection. JNA. 34(4): 392-400. Dr Stewart Brown (neuroanesthesia fellow) moderated the discussion.

The second article was presented by Dr Cassandra Poirier (R2). This was Koch et al. 2020. Ephedrine versus phenylephrine effect on cerebral blood flow and oxygen consumption in anesthetized brain tumor patients: A randomized controlled trial. Anesthesiology. 133: 304-313. The discussion was moderated by Dr Evan Shao.

Fellowship Training:

Dr Rieley continued in the position of the Neuroanesthesia Fellowship Program Director. The fellowship program retains its International Council of Perioperative Neuroscience Training (ICPNT) accreditation through 2025. Dr Lillian Lukoko completed fellowship in October 2022 and returned to Kenya to take a position with Aga Khan University hospital in Nairobi. Under the supervision of Dr Rieley, Dr Lukoko is working on a research project investigating the use of aprepitant for PONV in posterior fossa craniotomy cases. The successive fellow Dr Stewart Brown started fellowship in July 2022. He attended the 50th SNACC annual symposium in Seattle in September 2022 which included the neuroanesthesia fellow bootcamp. His two quality improvement projects include use and decommission of nitrous oxide at VGH and UBC and a comparison of telephone versus in person cognition testing.

Multi-disciplinary rounds:

Combined neuroanesthesia, neurointerventional radiology, and stroke neurology rounds took place in-person on November 17, 2022. Notable events during “code stroke” activation for mechanical thrombectomy were reviewed. A stream-lined process for activation and information sharing, including a formal time out with all services present, was advocated. The importance of clear, timely and respectful communication during these cases was highlighted. A guideline for peri-procedural management of these patients for all anesthesiology department members was created by Dr William Rieley.

Publications:

Dr L Lukoko “Neuroanesthesia Experience in Vancouver” 2022 ICPNT newsletter

Dr S Brown “Fellow’s report of the ICPNT EEG workshop” fall 2022 SNACC newsletter

Presentations

Dr Lillian Lukoko presented the following:

- “Management of spinal cord injury” at the resident academic day in 2022
- “Spinal anesthesia vs GA in hip surgery” at departmental grand rounds in 2022

Dr Stewart Brown presented the following:

- “Nitrous oxide project proposal at VCH executive meeting on October 5 2022
- “An update in TBI” November 16 2022 at the resident academic day
- “Reducing Nitrous oxide waste” 2nd May 2023 at an international forum and also as a poster at the CAS
- “A lucky catch!” case report at the ICPNT webinar on April 27 2022

Dr Rieley presented “Postoperative airway management of patients undergoing transsphenoidal surgery” at the CAS annual meeting in Halifax June 2022

Dr Kisilevsky “Post-op cognitive outcomes: Is general anesthesia harmful?” Whistler Anesthesiology Summit (WAS) Whistler, BC, March 2022.

DIVISION OF PAIN MANAGEMENT

Dr. Aaron MacInnes

Division Head

The Division of Pain Management has continued to see growing activities as well as ongoing interest provincially in the arena of chronic pain and pain medicine.

Within the last year we have seen formal announcement of Pain Care BC (PCBC) as a provincial health improvement network. PCBC is dedicated to working with health-care partners to optimize health outcomes for patients living with pain and to improve the quality and coordination of pain services across B.C. The network also promotes innovation in pain care to enhance provider and patient experience. PCBC is in the process of recruiting a medical director and we look forward to the work to come from this group to help assist the one in five British Columbians that are living with chronic pain.

Educational opportunities continue through the BC Echo Program. The monthly meetings provide multidisciplinary case-based education for all health care providers within the province in the area of pain management. The program is funded through a Shared Care grant and the regularly scheduled meetings are organized through PainBC and are available free virtually. For further information and to access prior topics please see the following:

<https://painbc.ca/health-professionals/education/echo>.

The Canadian Pain Society provides monthly National Pain Rounds to discuss a range of basic science and clinical topics. The rounds occur on the last Friday of each month and more information can be obtained from the following link.

<https://www.canadianpainsociety.ca/painrounds>.

DIVISION OF PERIOPERATIVE MEDICINE:

Dr. Su-Yin MacDonell

Division Head

Division Highlights:

In 2021 Dr. Su-Yin MacDonell (SPH) proposed the creation of the Perioperative Medicine division of UBC Medicine. Perioperative Medicine fellowship-trained anesthesiologists are now found in many hospitals in BC, including Lions Gate, St. Paul's, VGH, and Victoria. The focus of the division has been engagement, collaboration (both in anesthesia and in other specialties) and education.

A provincial group of those engaged in perioperative medicine was created, not only to disseminate information on perioperative medicine, but also to ask questions and share information between one another.

Dr. Lindi Thibodeau (Comox Valley Hospital) is leading an exciting collaborative project called "Perioperative Care Alignment and Digital Screening Committee" with collaboration from the BCAS and Perioperative Clinical Action Network. This committee has diverse representation in both site and specialty and is creating an alignment of pre-surgical screening, perioperative medication management, choosing wisely investigations, and prehabilitation guidelines.

Dr. Amelie Pelland (Lions Gate Hospital) is the CAS Perioperative Section Chair. After her perioperative medicine fellowship, she practiced in Quebec, St. Paul's Hospital/Lion's Gate and now practices solely at Lion's Gate Hospital. She continues to lead the resident Perioperative Medicine academic days in addition to her leadership role within CAS.

Resident Education:

Perioperative medicine has been a dedicated subspecialty rotation since 2019. Until recently, this was composed of both a junior and senior rotation. The junior rotation was discontinued to maximize other learning opportunities, but the senior call-protected rotation has been increased from three weeks to four weeks this year.

Dr. Mario Kovacevic (R5) created a perioperative medicine website and has summarised almost 75 key perioperative papers. Residents who complete their senior rotation routinely assist this project by summarizing new perioperative papers. These summaries can be found at sphpom.com under "curriculum".

St. Paul's Hospital hosts two weeks of Perioperative Medicine academic days and was last led by Drs. Flexman, MacDonell, and Pelland. The Perioperative Medicine division looks forward to this year's perioperative medicine academic days in March/April 2024.

Multi-Disciplinary Rounds:

St. Paul's hosts a provincially broadcast monthly rounds on a topic within perioperative medicine. The program frequently gets asked to include other provinces on this monthly teaching and looks forward to broadening its reach. The Perioperative Medicine division is

looking for other sites to present on one of these rounds to share information and encourage discussion.

A successful journal club was held on October 10, 2023 and led by the SPH perioperative fellow, Dr. Michele Homby. This hybrid event was not only held in person at Boulevard Kitchen and Oyster Bar, but also broadcasted to BCAS members (organized by Dr. Alan Tung, BCAS education chair and RCH anesthesiologist). This hybrid format allowed people to discuss perioperative medicine and maximized participation. It probably was the best attended UBC journal clubs to date, with over 100 people (in-person and online combined) attending this session.

Research Report:

Ongoing:

ALOFT. RCT of GA versus neuraxial for vascular surgery. RCH PI/Project lead: Drs. Dan Mclsaac/Susan Lee.

Anesthesia Technique in COVID-19 Positive Hip Fracture Patients. (Manuscript in-press at Canadian Journal of Anesthesia). PHC PI/Project lead: Dr. Janny Ke.

Association between wildfire smoke exposure and emergency room visit, readmission, and death after major inpatient surgeries: a retrospective population cohort study. PHC PI/Project lead: Dr. Janny Ke.

Association between extreme weather events and postoperative adverse outcomes: a systematic review. PHC PI/Project lead: Dr. Janny Ke.

BuTT-OUT. Pilot RCT of remote intervention vs control for smoking cessation. RCH PI/Project lead: Dr. Susan Lee.

Continuous noninvasive troponin monitoring in patients after noncardiac surgery: prospective feasibility cohort study. PHC PI/Project lead: Drs. Charles Yu and Janny Ke.

Defining the Minimal Clinically Important Difference (MICD) of Days Alive and At Home (DAH) within 30 days after inpatient noncardiac surgery. PHC PI/Project lead: Dr. Janny Ke.

Development and internal validation of models involving vital signs to predict troponin level and myocardial injury after noncardiac surgery: a single-centre retrospective cohort study. (Presented at the Oct 2023 American Society of Anesthesiologists conference by 2023 graduate Dr. Ryan Best). PHC PI/Project lead: Dr. Janny Ke.

Development and internal validation of a model to predict the risk of functional decline after discharge from elective total knee arthroplasty in functionally independent elderly adults: a retrospective population cohort study. PHC PI/Project lead: Dr. Janny Ke.

Machine learning modeling of intraoperative hemodynamic predictors of postoperative morbidity and health utilization outcomes (manuscripts in progress, presented at the Oct 2023

American Society of Anesthesiologists conference). PHC PI/Project lead: Dr. Janny Ke.

Mortality and outcomes after perioperative stroke (Master's Candidate Jaycee Farmer): Analysis of a large cohort of non-cardiac and cardiac surgical patients who experienced a perioperative stroke; identified predictors of poor outcome after perioperative stroke in these populations. Presented results at the ASA 2022 & SNACC 2022. PHC PI/Project lead: Dr. Alana Flexman.

Mizubuti GB, Maxwell S, Shatenko S, Braund H, Phelan R, Ho AHM, Dalgarno N, Hobbs H, Szulewski A, Haji F, Collins P, Tan CHE, Couture EJ, St-Pierre M, Denault AY, Azzam MA, Amir A, Miller EC, Allard R, Tanzola R, Lapierre D, d'Empaire PP, Mashari A, McDonald S, Smith R, Borger J, Gonzalez N, Li GJ, de Souza CM, Lucy M, Sidhu S, Kruger M, Maher NP, MacDonell DS, Prabhakar CPK, Fridfinnson J, Arellano R. Defining Competencies for Basic Proficiency in Point-Of-Care Ultrasound in Anesthesiology: A National Delphi Consensus. Pending publication.

Predictive Time-to-Event Model for Major Medical Complications After Colectomy. PHC PI/Project lead: Dr. Janny Ke.

PREPARE Trial. Ottawa based exercise-based prehabilitation study in frail elderly. RCH PI/Project lead: Drs. Dan McIsaac/Susan Lee.

Screening for stroke in surgical patients 2022-2023: A feasibility study to investigate the application of large-vessel occlusion stroke screening tools in surgical patients. Abstract presented at the ASA 2023. PHC PI/Project lead: Dr. Alana Flexman.

TAK-330. Takeda trial for emergency reversal of DOAC. RCH PI/Project lead: Dr. Susan Lee.

The impact of enhanced postoperative continuous vitals monitoring for high-risk patients in-hospital and at home on days alive and at home after surgery within 30 days postoperatively: A pilot randomized controlled study. PHC PI/Project lead: Dr. Janny Ke, co-investigators Drs. Charles Yu and Su-Yin MacDonell.

Published:

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DIVISION OF REGIONAL ANESTHESIA

Dr. Alexander Wong

Division Head

Clinical Report:

In the era of climate change, PACU nursing shortages, and emphasis of multimodal analgesia, regional anesthesia continues to have a prominent role going forward for all UBC-affiliated sites in providing high quality of care in a system with finite resources. St. Paul's Hospital (SPH) has continued on with its well-established block room program with a high volume of both upper and lower limb nerve blocks. This is in addition to the breast program at Mount St. Joseph's Hospital, which continues to provide paravertebral blocks for various oncological breast procedures. At Vancouver General Hospital (VGH), the hip fracture and rib fracture protocols have continued to provide improved analgesia and care for these clinically vulnerable patient populations using regional anesthesia. A wide variety of techniques are commonly utilized including SIFI, PENG, and serratus anterior plane blocks. Furthermore, there has been ongoing growth and planned further expansion of the block program at VGH for elective and urgent cases. The growing contingent of staff with advanced regional anesthesia training has allowed for the full implementation of the Perioperative Anesthesia Intervention Service (PAIS) to provide this increase in regional anesthesia for optimal patient care.

Academic Report:

Training of Residents:

With the significant increase in the size of the residency program, SPH will not have the capacity to accommodate all the residents for their core regional anesthesia rotations in the current format for coming academic years. Therefore, the Distributed Site Regional Anesthesia Training Committee was established to oversee the expansion of the regional anesthesia rotation to include sites other than SPH. Members on this committee include the Division Head of Regional Anesthesia, Program Director, and representatives from each potential distributed site (SPH, VGH, Surrey Memorial Hospital, and Burnaby Hospital). The specific details are still to be determined pending further review and discussions. The new rotation format will be rolled out for the 2023/2024 academic year with plans for ongoing reassessment to ensure a strong educational experience for the residents.

Training of Fellows:

Dr. Rana Hamidzadeh completed her regional anesthesia fellowship at SPH in 2022 and will return to VGH in 2023. She will be looking to bring her experience and expertise to the expanding block program at VGH.

Conferences:

The Whistler Anesthesia Summit (WAS) returned to in-person attendance in 2022 following a hiatus due to the COVID-19 pandemic. This conference included the regional anesthesia basic and advanced workshops as organized by Dr. Peter Rose. These were well received by the attendees and there was a good turnout of instructors from various UBC-affiliated sites.

Research Report:

UBC faculty has continued to work with the residents and fellows in publishing articles in the area of regional anesthesia and continues to do high quality research. For example, Drs. Klaibert, Lohser, Tang, Jew, and Wilson published their research on the use of ESP blocks in the setting of VATS wedge resection surgery in the journal of Regional Anesthesia & Pain Medicine.

DIVISION OF THORACIC ANESTHESIA

Dr. Chris Durkin and Dr. Travis Schisler

Division Co-heads

Membership

In 2022, there were 10 members in the Division of Thoracic Anesthesia at Vancouver Acute - Dr. Chris Durkin, Dr Gord Finlayson, Dr Brett Fitzmaurice, Dr. Patrick Hecht, Dr Bevan Hughes, Dr Jens Lohser, Dr. Sean McLean, Dr. Sandy Pitfield, Dr. Kali Romano, and Dr. Travis Schisler. The division looks forward to welcoming Dr. Julia Cory who is returning from a cardiothoracic fellowship at The Alfred Hospital in Melbourne, Australia.

Education

The UBC anesthesia residents complete a three-week rotation at Vancouver General Hospital where they gain experience primarily in anesthesia for video assisted and open lung resection surgery. Further exposure is gained at Surrey Memorial Hospital, Kelowna General Hospital and Victoria General Hospital. Emphasis is placed on the preoperative assessment for lung resection surgery and understanding bronchoscopic anatomy to inform lung isolation strategies and ultimately develop a plan that is safe, patient-centered and considers the risk and benefits of all approaches. Evidence based one-lung ventilation strategies are discussed as are approaches to the less common scenarios of anterior mediastinal masses and pulmonary hemorrhage. Residents also gain exposure to several different approaches to esophagectomy including MIS, Ivor Lewis and trans-hiatal. Opportunities are plenty to acquire skill in thoracic epidural, paravertebral catheter, and serratus anterior catheter placement. The division remains engaged with leading the thoracic themed academic days as well as providing mentorship for a UBC wide thoracic journal club. With expansion of the residency program we are preparing for a new distributed thoracic anesthesia rotation that will include 2 weeks at Vancouver General Hospital and 4 weeks at either Kelowna, Victoria or Surrey.

Research

The division continues to remain active in both local and international research projects. Dr. Sean McLean has been the site lead for the international COP-AF trial looking at the prevention of perioperative atrial fibrillation in patients undergoing thoracic surgery. Dr. Schisler continues to contribute to the "Thoracic Year in Review" published annually in the Journal of Cardiothoracic and Vascular Anesthesia. The division is collaborating on quality improvement work alongside thoracic surgery to discover best practices for pain management after VATS lobectomy surgery.

Lung Transplantation

The lung transplant program continues to expand in frequency and complexity. In 2022, 66 double lung transplants were completed with excellent outcomes.

DIVISION OF OBSTETRIC ANESTHESIA

Head – Dr. James Brown

Included as part of the BC Women's Hospital report

DIVISION OF PEDIATRIC ANESTHESIA

Head – Dr. Simon Whyte

Included as part of the BC Children's Hospital report

Education

ANESTHESIA RESIDENCY

Dr. T. Laine Bosma

Former Program Director

Dr. Zoë Brown

Incoming Program Director

Training Positions

As of December 2022, a total of 76 residents were registered in the 5-year Royal College Physicians and Surgeons program. We welcomed twenty new PGY1 residents, an increase from fifteen the previous year and two Program transfers. Eleven residents are scheduled to complete their residency during the 2022/2023 academic year and will be taking their RCPSC examinations in Anesthesiology in the spring of 2023. The number of CARMS positions will remain at 20 for 2023/2024. We continued to have a large applicant pool of over 180 well qualified students with a large contingent of UBC students applying.

New Graduates

All the PGY5 residents were successful in the 2022 Royal College specialty examinations in Anesthesiology. Our Exam Seminar Series, led by Dr Katarina Kojic and Dr Nav Chima and supported by many faculty, continues to be successful and a model for Royal College exam preparation. The vast majority of 2022's graduates have faculty positions at UBC academic hospitals.

Resident Selection Committee

A robust and active sub-committee of the Residency Program Committee (RPC) reviewed all applicants. The Selection Committee was chaired by the Associate Program Director, Dr Sadiq Abdulla, with twenty-five committee members representing all the major BC teaching hospitals. Resident members are also well-represented on the committee. The selection committee was refreshed this year with a focus on improving equity, diversity and inclusion of the selection process.

Academic Program

- Academic Day - The full day academic program involving active participation from each of the teaching hospitals has been very successful. Sessions returned to in-person with an online option for those unable to attend. The return to in-person is seen as an important way of maintaining contact between the academic years, particularly with the significant expansion.
- Residency Program Committee continues to support the autonomy of each participating UBC teaching hospital in delivering their contribution to the residents' educational program.
- Simulation - Led by Dr. John Veall and assisted by Dr Taren Roughead, simulation continues to be a mainstay of our residency program. The Royal College CanNASc scenarios, required by the new curriculum, continue to be delivered successfully, recognizing that these sessions demand a large portion of our simulation human resources. Please refer to the simulation report for specific details
- Journal Club - an integral part of the academic program, meetings moved back to

in-person during this academic year. Dr. Terri Sun continued in the coordinator role with two residents supporting her.

Clinical Program

The clinical program continues to be a strong element of the UBC Anesthesiology training program. Training in both core anesthesiology as well as subspecialty anesthesiology is distributed between the primary teaching sites, as well as many secondary teaching sites. The program continues to work at recruiting new training experiences for residents, with Surrey Memorial Hospital, Burnaby General Hospital and Kelowna General Hospital increasing their participation in the program. Plans are in place to expand sub-specialty training to these sites for the 2023/2024 academic year. The expansion of residency has meant that residents are able to go to new sites for training opportunities which is exciting for the Province but will be monitored closely.

Residency Program Committee (RPC)

This committee met 4 times in 2022 and as always was effective in guiding the activities and path of the residency training program. Committee members include hospital program coordinators from each site, our Royal College Examiners, members at large, UBC APT Department Head, resident representation from all years, and the program director as chair.

Administration

We sadly say goodbye and thank you to Dr Laine Bosma this December, 2022, after 6 years at the helm as Program Director, having supported the program through CBD and COVID. He will be sorely missed, but not forgotten as he will co-chair the Competency Committee with Dr Cynthia Yarnold.

Summary

2022 was yet another highly successful year for the UBC Anesthesiology Residency Training Program. Moving away from changes made due to COVID, back to in-person has been a welcome return. The teaching and support that our clinical faculty provide to our residents is key to our success whether it is taking part in the academic program, helping senior residents prepare for the oral exam or mentoring residents in and out of the OR. In addition, the determination of the resident body to maintain a tight-knit group despite an increase in numbers is a compliment to them. The goodwill and high level of commitment to residency training is a credit to this department.

FAMILY PRACTICE ANESTHESIA

Dr. John McAlpine
Program Director

The UBC FPA Enhanced Skills program expanded to 5 residents per year with the mandate to produce skilled family practice anesthetists committed to working in rural British Columbia. It is a challenging and demanding 12-month program with a blend of tertiary center rotations in the lower mainland (adult, pediatric, obstetrical anesthesia, and critical care) and rural community rotations (including Whitehorse, Terrace or Campbell River, and an elective block).

Although it is an Enhanced Skills program within the Dept of Family Practice, it naturally has a very close relationship with the Royal College anesthesia program and shared administration. It benefits greatly from this relationship with shared participation in a number of educational opportunities including full academic days, simulation, journal club, transfusion medicine bootcamp, and focused workshops on airway techniques and regional anesthesia to name a few. Additionally, every year the FPA residents are supported to attend the NOSM FPA Bootcamp which is an intensive and innovative simulation training program. The UBC FPA program is very grateful to the BC REAP program for supporting the tuition for this resident event which consistently receives very positive resident reviews

This is the inaugural year of full implementation of our new CBD curriculum with corresponding evolution of our competency committee structure and process. The program benefits greatly from its highly engaged CC and RPC members for the continued review and evolution of the FPA curriculum.

Each November the annual UBC FPA Refresher Course is held with strong attendance from the BC FPA community and increasing attendance from other regions of the country. This conference receives tremendous support from the UBC Anesthesia faculty towards the academic content of lectures and workshops and is of great educational benefit to the broader BC FPA community.

The enormous depth of our UBC anesthesia faculty committed to teaching our residents is certainly our greatest asset and key to the success of our training programs.

PAIN MEDICINE RESIDENCY PROGRAM

Dr. Michael Butterfield

Pain Medicine Residency Program Director

1. Program Overview

A. New Residents

- i. The UBC Pain Medicine Program continues attract excellent applicants from a variety of specialties and this year the two positions were again filled by individuals whose primary specialty is Emergency Medicine. Both of these individuals have been leaders in the field of medical education in emergency medicine.

B. Graduating residents

- i. Dr. Mario Francispragasam and Dr. Patrick Oxciano graduated from the program this year and they both will be remaining in British Columbia to start their careers in pain medicine. These individuals have already started at community pain clinic in Richmond and have been working in Kamloops to provide pain services to underserved areas. They are both actively involved in medical education and will be contributing to the education of incoming pain medicine residents.

2. Education

A. Competency by Design (CBD)

Pain Medicine is one of the last specialties to transition to CBD and as such have been focused on faculty development to prepare for this implementation in July 2023. We are looking forward to this transition and look forward to the improved the educational experience for our residents. It is our hope that with a more competency based educational model, residents may be able to complete the program in less than 2 years and will attract more applicants.

3. Clinical Program

- A. We have continued to expand our educational sites which have included the Bill Nelems Pain and Research Centre in Kelowna and the Central Island Pain Program in Nanaimo as part of our multidisciplinary pain clinic sites. Also, this year we have made connections with Pain School International in Budapest, Hungary, and one of our residents completed an elective rotation there to expand his scope of procedural pain medicine.

4. Future Directions

- A. Ensure that the Competency by Design model is seamlessly integrated into the pain medicine residency program.
- B. Develop a dedicated simulation program for managing emergencies that can occur when performing interventional procedures.
- C. Improve the research component of the pain medicine residency program
- D. Increase resident engagement in leadership and community advocacy for individuals with chronic pain.

PHARMACOLOGY EDUCATION

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 with Honours as well as pharmacology Major. The aim of our programs is to produce graduates broadly trained in all aspects of pharmacology. The B.Sc. Pharmacology program has been in existence under the Faculty of Science for about three decades. In the first and second years, the students take a basic science program. Since there is room for a maximum of 24 students in third year, all those registered in 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 and completion of a minimum of 60 credits within the winter terms of year 1 and 2. Students then select Honours or Majors in either the four year or five year (Co-op) program.

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.

Co-op Program

For the co-op program, in addition to classical laboratory-based university instruction, the students will do 12 to 16 months (i.e., 3 to 4 work-terms) 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. 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, Japan, Germany, Singapore, Austria, and the United States.

UNDERGRADUATE EDUCATION COMMITTEE

Dr. Andrew Horne

Medical Undergraduate Program Director

In 2022, the Undergraduate Education Committee undertook an informal review of our upper-level PCTH courses, as well as our general requirements for a BSc degree in Pharmacology. Through discussion with key stakeholders including course directors, faculty, and students in our program, we identified several action items:

- Modification of 2nd year BSc requirements to reflect updates in course offerings provided by other departments.
- Addition of PCTH 201 as a requirement for the BSc Pharmacology degree. PCTH 201 was previously an elective course open to all and while it can still be taken as such by non-PCTH students, discussions with 3rd and 4th year students about which courses best set them up for success in our program continually identified this course as a key element of their success.
- Replacing PCTH 300, our previous 6-credit lecture course required for our 3rd year students, with PCTH 301 and PCTH 303, two 3-credit courses that must be taken in sequential order. To our students, this is more of a cosmetic change as there is no change in the course material covered in comparison with PCTH 300; however, this does open up the course to non-PCTH students whomay find the full-year 6-credit PCTH 300 difficult to fit into their course schedule. We hope that this change will encourage greater interest in our course offerings.

In addition to these curricular changes, we are in the early stages of a dramatic change in how administrative tasks related to teaching will be carried out, with the phased transition to Workday Studentas part of UBC's Integrative Renewal Program, replacing archaic software that is struggling to meet the demands of UBC faculty, staff, and students. The first phase of this transition is not set to occur until October 2023, but early efforts have been undertaken to train departmental faculty and staff. Beyond these behind-the-scenes updates, the Undergraduate Education portfolio for 2022 can be best summarized through discussion of each of the three 4-month academic terms:

2021W, Term 2 (January to April, 2022)

After an initial few weeks of UBC switching to online education, the remainder of the term was conducted in person. With the exception of Midwifery (MIDW) 125, the remainder of our classes in 2021W2 are continuations of courses started in Term 1.

Below is a summary table of courses offered in Term 2, along with course director and enrolment:

Course	Title	Course Director	2021W Enrolment
MIDW 125	Pharmacology for Maternity Care Providers	Jennifer Shabbits	20
PCTH 300	Introduction to Pharmacology	Catherine Pang	23
PCTH 305	Basic Human Pharmacology	Catherine Pang	16
PCTH 302	Introductory Pharmacology Laboratory	Catherine Pang	23
PCTH 400	Systematic Pharmacology	Sastry Bhagavatula	18
PCTH 402	Systematic Pharmacology Laboratory	Joanne Leung	3
PCTH 404	Drug Assay and Pharmacometrics	Andrew Horne	16

BSc Graduation (May 2022)

May 2022 saw 17 of our students graduate with their Bachelor of Science degree in Pharmacology; three of our students fulfilled the requirements for Honors distinction, with the remaining 14 completing the necessary requirements for a Majors degree. Amardeep Sekhon was awarded the Esther R. Anderson Memorial Prize, as the Honours Pharmacology with the highest graduating average. Georgia De Rappard-Yuswack was awarded the Prakash Gill

Memorial Prize in Pharmacology and Therapeutics, as the Majors Pharmacology student with the highest graduating average. Congratulations to Amardeep, Georgia, and our entire graduating class of 2022!

2022S (May to August, 2022)

PCTH 548A (Course directors: Catherine Pang and Roanne Preston) was the only UBC credit course taught this term, with an enrolment of 10 students in the Dentistry Graduate program.

The Vancouver Summer program, which had been on hiatus since 2020 due to pandemic-related issues, returned for this summer. The department offered a program but there was insufficient enrolment to proceed with our course package, a common theme seen by all but one of the departments offering VSP programming.

2022W, Term 1 (September to December, 2022)

In September 2022, we welcomed 19 students into the third-year pharmacology program (PCTH 300 and PCTH 302), and 20 students into fourth year standing (PCTH 400 and PCTH 404); the latter is a combination of students advancing directly to fourth year from 2021W and those returning from 12-16 months of optional co-operative work experience. The balance of enrolment in our 400-level core courses were from students taking these courses as an elective or as part of their requirement for alternate BSc degrees such as Integrated Sciences.

PCTH 201 and PCTH 325, offered as elective courses for students in BSc programs at UBC (though they are frequently taken by students in other programs as well) continued to see high enrolment in line with historical averages. Of note, Alasdair Barr assumed the role of PCTH 325 course director for 2022W, taking over from Jennifer Shabbits who had previously served in the role since the course's inception.

The following table summarizes the PCTH courses offered in Term 1 of 2022W, along with course directors and student enrolment:

Course	Title (Credits)	Course Director	2022W Enrolment
PCTH 201	Drugs and Society	Andrew Horne	83
PCTH 300	Introduction to Pharmacology	Catherine Pang	19
PCTH 305	Basic Human Pharmacology	Catherine Pang	16
PCTH 302	Introductory Pharmacology Laboratory	Catherine Pang	19
PCTH 325	Rational Basis of Drug Therapy	Alasdair Barr	232
PCTH 400	Systematic Pharmacology	Sastry Bhagavatula	26
PCTH 402	Systematic Pharmacology Laboratory	Joanne Leung	0*
PCTH 404	Drug Assay and Pharmacometrics	Andrew Horne	26

*This course did not run in 2022W

MEDICAL UNDERGRADUATE PHARMACOLOGY

Dr. Jennifer Shabbits
Co-Managing Director

The pharmacotherapy content in the MD Undergraduate Program (MDUP) curriculum continues to undergo revision. This includes the development of a new UBC MDUP Formulary

app, which was created by two 1st year students as part of their FLEX projects. Pharmacology-driven educational activities and assessable learning objectives continue to be prominent in most weeks of the first- and second-year curricula. Lectures and exams returned to in person delivery.

GRADUATE PHARMACOLOGY PROGRAM

Dr. Pascal Bernatchez

Program Director

The Department offers both Ph.D. and M.Sc. degrees in pharmacology and therapeutics. In 2022, 5 new MSc students and 2 new PhD students joined our graduate program, for a total of 21 graduate students. One MSc student and 1 Ph.D student graduated with a degree .

Research

Dr. Tillie-Louise Hackett
Professor, Vice Chair of Research APT Department.

On behalf of the research committee, we proudly present the Department of Anesthesiology, Pharmacology and Therapeutics' 2022 Annual Research Report —a reflection on a year of dedicated research pursuits and academic efforts. In the ever-evolving landscape of healthcare and medical research, this report serves as a snapshot of our commitment to advancing knowledge and enhancing patient care. At the core of this report, are our people—our faculty, researchers, students, and support staff. Their combined efforts, dedication, and curiosity are the driving force behind these research advances.

With this in mind, we would like to first congratulate our faculty and post-doctoral fellows for their exceptional achievements in securing Investigator and Fellowship awards over the last year.



2022 – Michael Smith Foundation Health Professional Investigator

Dr. Alana Flexman – Assistant Professor, Partner Track

Project: Perioperative stroke screening and outcomes in high-risk surgical patients.

Post- doctoral Fellowships awardees



Dr. Gillian Goobie, MD, PhD

1 year Canadian Lung Association fellowship
3 year Michael Smith Health Research BC Research Postdoctoral Fellowship on the role of air pollution in fibrotic interstitial lung disease
- Hackett Laboratory



Dr. Yashodani Pillay, PhD

3 Year Michael Smith Health Research BC Research Postdoctoral Fellowship on predictive risk models to identify mothers and babies at risk post discharge
- Wiens and Ansermino Laboratory

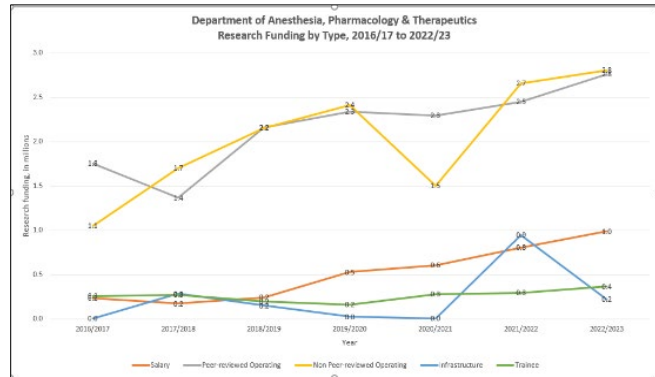


Dr. Efthymios Kyriakis, PhD

3 Year Michael Smith Health Research BC Research Postdoctoral Fellowship on KCNE1 channel complexes
- Fedida Laboratory

APT Research output

Our researchers, both seasoned faculty members and ambitious students, have undertaken projects that span the intricacies of anesthesiology, pharmacology, and therapeutics and resulting in **283** papers. The number of research publications only provides a glimpse into the dedication of our work to the medical field. This research only thrives through collaborative efforts, from partnerships with medical institutions our faculty and engagements with patient groups. These connections amplify the impact of our research, allowing us to translate discoveries into meaningful changes that resonate within healthcare settings and patient outcomes. Despite the ongoing global recession, our Department remains on track with operating grants.



APT Research Day

This year marked the 16th Annual APT Research Day, which was again a great success thanks to the organizing committee led by Dr. Don Griesdale, Dr. John (Kip) Kramer, Dr. Alana Flexman, and Dr. Stephan Schwarz. In addition to the Dr. Jean Templeton Hugill Memorial lecture, given this year by Dr. Hance Clarke, and the Emerging Faculty Invited Lecturer given by Dr. Catrina Loucks, the Research Day showcased the Research Excellence of fellows and trainees within our Department. Below are the award winners for each presentation category.

Research Committee

The past year witnessed the research committee's completion of the rebranding of the Department's website. This undertaking was driven by a deliberate focus on showcasing our expertise and capacity across all Research Themes that our Department invests in. The committee also developed a review process for the 2022 Canada Research Competition, from which we put forward two candidates and one partnered candidate with pediatrics. This framework is now poised to serve as a guiding structure for all forthcoming faculty applications and future CRC competitions as announced by the Faculty of Medicine. Moving forward, the committee will focus on developing a platform for ease of data entry to enable population of Faculty Biostetches on the APT website. Drawing further from this information, we hope to develop an APT Faculty mentorship initiative to support our faculty, residents, and postdoctoral fellows.

While challenges may punctuate our path over the coming year, our shared dedication to knowledge, medical advancement, and patient-centered care remains unwavering. It is our collective belief that the essence of our department's progress lies within our people. The unwavering dedication of our clinicians, researchers, supported by administrative staff and institutional resources, forms the cornerstone of the accomplishments highlighted in this report. Their inquisitive spirit, resilience, and determination fuel our pursuit of better medical practices and improved patient care.

16th Annual Research Day Report

We held our annual APT Research Day on May 26th, 2022 at the Cullen Family Lecture Theater at St. Paul's Hospital. We were fortunate to have two stellar keynote presentations. Dr. Hance Clarke (Associate Professor, University of Toronto) presented the Dr. Jean Templeton Hugill Memorial Lecture. Dr. Catrina Loucks (Assistant Professor, UBC) gave the Emerging Faculty Invited Lecture.

Our Papers of the Year award winners were [Dr. Bernard MacLeod](#) and [Dr. Jacqueline Trudeau](#).

The research day awards were as follows:

Presentation	Name	Title
Oral	Kingsley Nwozor	Effect of cigarette smoke exposure on airway epithelial barrier function in never-smokers and ex-smokers with and without COPD
Oral	Christina Fokkens	Development of a tool to communicate postoperative pain risks of children to families – results of a second round of clinician and family co-design
Lightning Talk	James Taylor	A facilitated peer discussion pilot program for improving anesthesia resident wellness: Pre- and post-intervention survey
Lightning Talk	Stephanie Alexis	A streamlined preoperative screening process can successfully identify patients with modifiable risk factors and can be used to coordinate patient optimization before surgery

Overall, it was a successful return to an in-person event.

Respectfully Submitted,

Drs Donald Griesdale and John (Kip) Kramer

On behalf of the Research Day
Organizing Committee

Dr. Stephan Schwarz

Dr. Jean Templeton Hugill
Chair in Anesthesia

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 and mentorship 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, led by Drs. Pascal Bernatchez and Issy Laher, and our annual departmental research day continue to provide opportunities for our students to share the progress they made in their research programs and accomplishments with opportunity for faculty and students to be exposed to other related research areas from within and outside the University.

Therapeutics Initiative

Dr. Colin Dormuth
Co-Managing Director

The Therapeutics Initiative (TI) was established in 1994 at the University of British Columbia (UBC). The TI mission is to provide drug reviews, pharmaco-epidemiological studies, as well as education and quality prescribing programs. It is supported by research grants, donations, an endowment and a shared cost agreement with the BC Ministry of Health (MoH) to the UBC.

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 also developed effective ways of knowledge translation and dissemination of this evidence to all active players involved in drug therapy: physicians, pharmacists, nurses, and drug policy at the MoH.

The TI is composed of 4 working groups that collaborate to prioritize topics, share in the assessment of evidence and disseminate findings. Activities of all TI working groups support priorities of the provincial Pharmaceutical Care Management Strategy and other health system objectives:

1. **Drug Assessment Working Group (DAWG):** assesses the clinical evidence of effectiveness and safety of new and existing drug therapies in the province and relate that evidence to the care of individual patients. This year the DAWG completed the following therapeutic reviews:

- Ulipristal for emergency oral contraception
- Lurasidone therapeutic review for bipolar 1 depression
- Fremanezumab for migraine prevention

The DAWG provides problem-based learning opportunities regarding critical appraisal of clinical trials. Medical and pharmacy student trainees have attended the DAWG meetings where they learn to critically appraise systematic reviews and discuss the findings with the rest of the team.

2. **PharmacoEpidemiology Group (PEG):** uses epidemiological methods to analyze linked administrative data to answer population-based questions which have not been adequately addressed in clinical trials. Projects include evaluation of drug policies and educational interventions, monitoring of drug utilization, and analysis of prescription drug safety and effectiveness. The PEG also help design, deliver, and evaluate the Portrait program to improve the quality of prescribing in BC. The Portrait provides primary care prescribers with a concise evidence overview, a comparison of their prescribing to peers or evidence-based targets, and advice about possible improvements to their prescribing. After last year's debut of **Portrait online** with a selected group of family physicians, the **TI secure web-based platform has been made available to all physicians and nurse practitioners in BC to receive individual prescribing feedback for appropriate drug use.**

In 2022, the PEG completed the following pharmacoepidemiological studies:

- Paxlovid effectiveness and safety evaluations
- Predictors of type 2 diabetes over-treatment

The PEG developed and distributed two prescribing portraits to physicians in BC:

- Inhaled corticosteroids (ICS) for chronic obstructive pulmonary disease (COPD)
- Bisphosphonate for osteoporosis

3. Education Working Group (EWG): provides health professionals with up-to-date, evidence based, practical information about rational drug therapy. In addition to the Best Evidence and Method Speaker monthly webinars, the EWG launched this year a **new BC Provincial Deprescribing Webinar Series** to create a platform for healthcare providers, patients, caregivers, advocates and policy makers to address undesirable polypharmacy effectively through responsible deprescribing. **The first case-based webinar was a huge success with 427 attendees from BC, Canada and overseas.** The EWG held 42 educational events attended by over four thousand healthcare professionals, highlights:

- Nurse and Nurse Practitioners of BC - Clinical Corner Presentation Series
- Vancouver Coastal Health - Family Practice Rounds
- BC Divisions of Family Practice (Nanaimo and Kootenay Boundary)
- Island Health Pharmacy Rounds
- Peace Arch Hospital Grand Rounds
- Bringing Best Evidence to Clinicians: Annual Therapeutics Initiative Course
- BC Provincial Deprescribing webinar series to address undesirable polypharmacy effectively through responsible deprescribing
- Best Evidence monthly webinar series on various clinical therapeutics issues
- Methods Speaker monthly webinar series on topics related to systematic reviews, meta-analysis, methods and statistics in evidence synthesis.

The EWG also publishes the Therapeutics Letters that provide brief practical messages on how to deal with problematic therapeutic issues. All issues of the Therapeutics Letter are distributed to physician prescribers across BC and available on the TI website in English and Spanish. The EWG published 6 Therapeutics Letters in 2022:

Issue Number / Publication Date	Title
TL 135 / February 2022	Empiric antibiotic therapy for uncomplicated lower urinary tract infections
TL 136 / March 2022	How do YOU respond to conflicts of interest?
TL 137 / May 2022	Physical activity is medicine: Prescribe it
TL 138 / July 2022	Reducing prescribing cascades
TL 139 / September 2022	How well do you know your dopamine antagonists?
TL 140 / November 2022	What to do about borderline hyperglycemia?

Website and Social Media

In 2022 the TI website received close to one million visits, averaging 70,000 visits per month or a visit every 28 seconds, with over 30 million “impressions” (number of times any page was viewed). The TI maintains Facebook and LinkedIn pages as well as two active Twitter profiles: TI (@DrugEvidence) and Cochrane Hypertension Group (@CochraneHTN) with a combined total of 12,535 followers and over one million Tweet impressions (number of times our tweets were viewed). This year @DrugEvidence has surpassed @RevuePrescrire with the most followers among all members of the international society of drug bulletins (ISDB).

4. **Cochrane Hypertension Group (CHG):** prepares, maintains and promotes systematic reviews of the effects of healthcare interventions for hypertension. The scope of CHG includes randomized controlled trials of interventions evaluating blood pressure and clinical outcomes for the prevention and treatment of essential hypertension. Part of the international Cochrane Collaboration, the CHG published the following Cochrane systematic reviews and protocols in 2022:

- Shantsila E, Koziel-Siolkowska M, Lip GYH. Antiplatelet agents and anticoagulants for hypertension. Published 28/07/2022 in Issue 7, 2022. DOI: 10.1002/14651858.CD003186.pub4
- Saiz LC, Gorricho J, Garjón J, Celaya MC, Erviti J, Leache L. Blood pressure targets for the treatment of people with hypertension and cardiovascular disease. Published 18/11/2022 in Issue 11, 2022. DOI: 10.1002/14651858.CD010315.pub5
- Cormick G, Ciapponi A, Cafferata ML, Cormick MS, Belizán JM. Calcium supplementation for prevention of primary hypertension. Cochrane Database of Systematic Reviews 2022, Issue 1. Art. No.: CD010037. DOI: 10.1002/14651858.CD010037.pub4
- Zhu J, Chen N, Zhou M, Guo J, Zhu C, Zhou J, Ma M, He L. Calcium channel blockers versus other classes of drugs for hypertension. Cochrane Database of Systematic Reviews 2022, Issue 1. Art. No.: CD003654. DOI: 10.1002/14651858.CD003654.pub6
- Morley-Senkler V, Jobin P, Wright JM. Blood pressure lowering effect of hydrochlorothiazide compared to other diuretics for hypertension [Protocol]. Published 21/11/2022 in Issue 11, 2022. DOI: 10.1002/14651858.CD015250

Selected TI Publications

- Fisher A, Kim JD, Carney G, Dormuth C. Rapid monitoring of health services use following a policy to switch patients from originator to biosimilar etanercept—a cohort study in British Columbia. *BMC Rheumatol.* 2022 Jan 27;6(1):5. doi: 10.1186/s41927-021-00235-x. PMID: 35081991; PMCID: PMC8793256.
- Carney G, Kim JD, O'Sullivan C, Thompson W, Bassett K, Levin J, Dormuth CR. Treatment pattern trends of medications for type 2 diabetes in British Columbia, Canada. *BMJ Open Diabetes Res Care.* 2022 Nov;10(6):e002995. doi: 10.1136/bmjdr-2022-002995. PMID: 36356988; PMCID: PMC9660664.
- Morrow RL, Mintzes B, Sovereign PC, Hallgreen CE, Ahmed B, Roughead EE, De Bruin ML, Kristiansen SB, Lexchin J, [...], Dormuth CR. Hydroxyzine Initiation Following Drug

- Safety Advisories on Cardiac Arrhythmias in the UK and Canada: A Longitudinal Cohort Study. *Drug Saf.* 2022 Jun;45(6):623-638. doi: 10.1007/s40264-022-01175-2. Epub 2022 Apr 19. PMID: 35438459;PMCID: PMC9189086.
- Erviti J, Wright J, Bassett K, Ben-Eltriki M, Jauca C, Saiz LC, Leache L, Gutiérrez-Valencia M, Perry TL. Restoring mortality data in the FOURIER cardiovascular outcomes trial of evolocumab in patients with cardiovascular disease: a reanalysis based on regulatory data. *BMJ Open.* 2022 Dec30;12(12):e060172. doi: 10.1136/bmjopen-2021-060172. PMID: 36585131; PMCID: PMC9809302.
 - Lunny C, Reid EK, Neelakant T, Chen A, Zhang JH, Shinger G, Stevens A, Tasnim S, SadeghipouyaS, Adams S, [...], Wright JM. A new taxonomy was developed for overlap across 'overviews of systematic reviews': A meta-research study of research waste. *Res Synth Methods.* 2022 May;13(3):315-329. doi: 10.1002/jrsm.1542. PMID: 34927388; PMCID: PMC9303867.
 - Mintzes B, Reynolds E, Bahri P, Perry LT, Bhasale AL, Morrow RL, Dormuth CR. How do safetywarnings on medicines affect prescribing? *Expert Opin Drug Saf.* 2022 Oct;21(10):1269-1273. doi: 10.1080/14740338.2022.2134342. PMID: 36208037.
 - Fisher A, Kim JD, Dormuth CR. Mandatory nonmedical switching from originator to biosimilarinfluximab in patients with inflammatory arthritis and psoriasis in British Columbia: a cohort study. *CMAJ Open.* 2022 Feb 15;10(1):E109-E118. doi: 10.9778/cmajo.20200319. PMID: 35168933.
 - Fisher A, Paterson JM, Winqvist B, Wu F, Reynier P, Suissa S, [...], Dormuth CR; Canadian Network for Observational Drug Effect Studies (CNODES) Investigators. Patterns of antiemeticmedication use during pregnancy: A multi-country retrospective cohort study. *PLoS One.* 2022Dec 1;17(12):e0277623. doi: 10.1371/journal.pone.0277623. PMID: 36454900; PMCID: PMC9714905.
 - Dulku M, Sekhon T, Tejani AM. Assessment of Intravenous versus Oral Antimicrobials in a LargeRegional Health Authority *Can J Hosp Pharm.* 2022 Spring;75(2):108-112. doi: 10.4212/cjhp.v75i2.3173. Epub 2022 Apr 4. PMID: 35387377; PMCID: PMC8956462.

Dr. Jean Templeton Hugill Chair in Anesthesia

Dr. Stephan Schwarz
Professor & Dr. Jean Templeton Hugill Chair in Anesthesia



Welcome to the *Dr. Jean Templeton Hugill Chair in Anesthesia* section of the APT Annual Report! I am delighted to summarize below some of the highlights and activities that took place in 2022 under the aegis of the Chairship.

In 2022, the Chairship supported two graduate students: In the domain of clinical and outcomes research, Jaycee Farmer (co-supervised by Dr. Alana Flexman and co-supported by the Department of Anesthesia at St. Paul's Hospital), pursued a project on to the important topic of perioperative stroke. In the laboratory domain, Tony Zhou (co-supervised by Dr. Michael Walker) worked on a research project to assess the potential clinical utility and properties of quaternary amines as long-lasting local anesthetics.

Another highlight was the fruitful work of a new interdisciplinary research group created in 2020 and dedicated to the intersection of perioperative medicine with BC's worsening opioid crisis. Together with faculty colleagues, Drs. Malcolm Maclure, Anton Chau, and Michael Krausz (Addiction Psychiatry) as well as numerous students, we completed two extensive projects to study postoperative opioid prescription patterns and trends in BC, the results of which appeared as two full-length manuscripts in the top-quartile peer-reviewed literature. One of the group's medical students, Stefanie Polderman, subsequently was accepted in the UBC postgraduate training program in anesthesiology and, as of July 1, 2023, is a first-year anesthesiology resident! Overall, and despite the challenges imposed by the COVID-19 pandemic, the various research avenues in 2022 again led to numerous presentations at national and international conferences as well as nine full-length manuscripts in leading peer-reviewed journals, listed in the APT Annual Report's Publications section.

The year 2022 also was marked by being the second year of my tenure as the new Editor-in-Chief the *Canadian Journal of Anesthesia/Journal canadien d'anesthésie*, a national leadership position which I commenced effective January 1, 2021 and undoubtedly represents the greatest privilege of my career. I feel deeply honoured and humbled to be able to pursue this prestigious portfolio here at UBC as our Department's *Dr. Jean Templeton Hugill Chair in Anesthesia* and am immensely grateful to our university department and particularly also my clinical department at St. Paul's Hospital/Providence Health Care for their invaluable support.

As those who know me are aware, it has been a priority of mine to utilize the *Hugill Chair* position to continue to build bridges between Anesthesiology and Pharmacology & Therapeutics; as a reflection of this spirit, an important goal was to once again bring in a high-profile speaker for our Department's annual *Hugill Lecture* who could help accomplish just that. Supported by the *Hugill Endowment* and honoring Dr. Hugill's spirit and intent to celebrate and promote research, we again held the annual *Hugill Lecture* concomitantly with the *Annual APT Research Day* as keynote presentation. Accordingly, on May 25, 2022, we hosted the distinguished Canadian pain medicine

leader, anesthesiologist, and clinician-scientist, Dr. Hance Clarke from the University of Toronto, who spoke on *The future of Canadian Pain Care: The value of Transitional Pain Services and the evolution medical cannabis*.

Some of the other activities as *Hugill Chair* included service on numerous national committees and as invited presenter, panellist, and/or session chair at various meetings, including the Euroanesthesia 2022: Annual Congress of the European Society of Anaesthesiology and Intensive Care (Milan, Italy; June 4, 2022) and the Canadian Anesthesiologists' Society 2022 Annual Meeting (Halifax, NS; June 25–26, 2022). I also was invited to serve as a lecturer during BC Centre for Disease Control Research Week (Vancouver, BC; October 11–14, 2022).

Lastly for 2022, I humbly report that was nominated and sponsored by Providence Health Care to enroll in the UBC Sauder School of Business Physician Leadership Program (January–June), which I graduated from in June.

It has been an immense privilege to again serve to honour and spread Dr. Jean Hugill's spirit and vision in 2022, and I look forward to exciting academic years moving forward!
Respectfully submitted with gratitude,

Stephan Schwarz
Professor & Dr. Jean Templeton Hugill Chair in Anesthesia



BC Patient Safety Chair Report

Dr. Malcolm Maclure
BC Academic Chair in Patient Safety

The Chair is held by Professor Malcolm Maclure, ScD, a health services epidemiologist who uses BC's population healthcare databases to improve prescribing safety and surgical safety.

Dr. Maclure completed two papers on trends in opioid prescribing in BC after cesarean deliveries¹ and other abdominal surgeries,² and submitted a paper demonstrating use of population data for low-cost monitoring of surgery site infections after colorectal surgery.³

He conducted the evaluation of the impacts of opioid prescribing portraits sent to BC family physicians.⁴ He contributed to a similar evaluation of impacts of portraits on prescribing of antibiotics for urinary tract infections,⁵ and to portraits aimed at reducing use of inhaled corticosteroids for non-asthma chronic obstructive pulmonary disease.

Collaborations continued with investigators evaluating walk-in clinic use in Ontario⁶ and comparing opioid agonists buprenorphine-naloxone versus methadone in BC.⁷

Dr. Maclure also responded to a request for grant proposals from Environment and Climate Change Canada, as the climate crisis is becoming a patient safety issue. Although the proposal was not funded, it led to collaborations on a planetary healthcare issue – the need to reduce respiratory inhalers with propellants that are potent greenhouse gases.

As inventor of the case-crossover study design, Dr. Maclure continued to collaborate on explanations,⁸ applications⁹ and methodology developments of that design.

He continued as Co-Lead of the Patient Safety and Quality Theme in UBC Medical Undergraduate Program's curriculum, and contributes as an Ex-Officio Member of the BC Patient Safety and Quality Council.

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2. Nann P, Nabavi N, Ziafat K, Preston R, Chau A, Krausz MR, Schwarz SKW, **Maclure M**. Trends in opioid dispensing after common abdominal and orthopedic surgery procedures in British Columbia: a retrospective cohort analysis. *Can J Anaesth*. 2022 Aug;69(8):986-996. doi: 10.1007/s12630-022-02272-7.

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