



UBC MD/PhD Program

2894 DETWILLER PAVILION, 2255 WESBROOK MALL, VANCOUVER BC V6T 2A1
Tel: 604-822-7198 Fax: 604-822-7917 Email: md.phd@ubc.ca Website: www.med.ubc.ca/mdphd

Newsletter – 2017 Summer Term

<http://mdprogram.med.ubc.ca/mdphd/news/>

Funding for UBC MD/PhD Student Stipend Awards



The UBC MD/PhD Program has an increased opportunity to recruit students, due to generous philanthropic donations targeted to supporting clinician-scientist training. With further improvements in funding we hope to increase the number of students we can support, and to further expand and build on the excellence of the program. We welcome applicants with strong academic records and leadership skills, combined with experience in and a passion for research.

Two new MD/PhD studentship awards have been set up for the class that will be coming in 2018. Both awards cover the entire cost of the MD/PhD student's tuition and stipend.

- ★ [The UBC Faculty of Medicine Clinician Investigator Scholarship](#). This is a 6-year MD/PhD studentship award to be assigned to the top-ranked applicant to the combined program from the 2017-2018 cycle. A similar award will be available for the following two application cycles (2018-2019 and 2019-2020), with the potential of further awards in future years. We are grateful to the anonymous donor who generously provided this funding to support outstanding MD/PhD student trainees.



- ★ One 6-year MD/PhD studentship award will be funded by UBC's largest ever endowed scholarship, thanks to a \$6-million donation from the Faculty of Medicine's first two members – [Constance Livingstone-Friedman and Sydney Friedman](#). This MD/PhD studentship award is on-going and the first award will be assigned in 2018.

As well, the MD/PhD Program receives tremendous funding support from four UBC affiliated research institutes who contribute to MD/PhD student stipends – the BC Cancer Agency, the Child and Family Research Institute, the Providence Health Care Research Institute (based at St. Paul's Hospital) and the Vancouver Coastal Health Research Institute. Each has pledged funding for a period of 6 fiscal years (2016-2022) to support MD/PhD student stipends.

All MD/PhD students receive a studentship award through the MD/PhD Program (minimum annual stipend \$21,000, renewable each year for a maximum of 6 years). Incoming students also receive a Faculty of Medical Graduate Award through the Graduate Support Initiative funding from the Dean's office, and have the opportunity to be nominated for the UBC Four Year Doctoral Fellowship. Students also benefit from reduced tuition.

Please visit our website for more information on [program overview](#), [admission requirements](#) and [funding support](#).

MD/PhD Award Winners



**Rozlyn
Boutin**



**Paulina
Piesik**



**Michael
Skinnider**



**Alvin
Qiu**

The current group of UBC MD/PhD students have been very successful in 2017 external award competitions. **Rozlyn Boutin, Paulina Piesik and Michael Skinnider** won prestigious Canadian Institutes of Health Research (CIHR) Vanier Canada Graduate Scholarships. The Vanier Scholarship is to strengthen Canada's ability to attract and retain world-class doctoral students and establish Canada as a global centre of excellence in research and higher learning. **Alvin Qiu** won a Canadian Institutes of Health Research (CIHR) Frederick Banting and Charles Best Canada Graduate Scholarship – Master's Award (CGS-M) in his first year of eligibility.

Congratulations to all the recipients and their supervisors for this year's outstanding results!

Rozlyn Boutin (supervisor: **Dr. Brett Finlay**)

Hosting department: Microbiology & Immunology

- Mechanistic elucidation of the asthma-protective and -predictive effects conferred by specific members of the gut microbiota in early life

Paulina Piesik (supervisor: **Dr. Jan Dutz**)

Hosting department: Experimental Medicine

- Using the skin immune system to induce systemic tolerance

Michael Skinnider (supervisor: **Dr. Leonard Foster**)

Hosting department: Genome Science & Technology

- Understanding human biology and disease through tissue-specific protein-protein interaction networks

Alvin Qiu (Co-supervisors: **Dr. Martin Hirst** and **Dr. Torsten Nielsen**)

Hosting department: Interdisciplinary Oncology

- The role of topologically associating domains in defining regions of epigenetic silencing in synovial sarcoma

Congratulations!

Besides their success in achieving external funding, these four students also won additional awards!

Rozlyn Boutin received a Ferring Canada Studentship Grant Award in April 2017. She will present her work at the Canadian Digestive Disease Week in 2018.

Paulina Piesik received a William, Sadie and Edwin Rowan Scholarship in Medicine, UBC (2016-2017), and Teaching and Learning Enhancement Fund (2016-2017).

Michael Skinnider received a Killam Doctoral Scholarship Travel & Research Allowance Award (2017-2019).

Alvin Qiu received a Canadian Epigenetics, Environment and Health Research Consortium Network Travel Award and attended the Canadian Bioinformatics Workshop: Epigenomic Data Analysis in June 2017.

UBC MD/PhD Award Winners

UBC MD/PhD PROGRAM

Class of 2017

We had a bumper crop of four graduates this spring. The graduation ceremony was held on 24 May 2017 where they received congratulations from the Dean of Medicine **Dr. Dermot Kellehar**, MD/PhD Program Directors **Dr. Lynn Raymond** and **Dr. Torsten Nielsen**, and their family and friends. We had a group photo with **Dr. Andrew Seal**, former Associate Dean of the Faculty of Medicine's Office of Student Affairs, and **Dr. Santa Ono**, UBC 15th President and Vice-Chancellor. Congratulations!



From left: Drs. Andrew Seal, Farzad Jamshidi, Alexis Crabtree, Gareth Mercer, Julia Pon and Santa Ono

Messages from Our Graduates (Class of 2017)

Alexis Crabtree

As I write this I am starting my last week ever of medical school. What a strange and exhilarating feeling to see the culmination of eight years of work!

My dissertation drew from community-based participatory research conducted with the Vancouver Area Network of Drug Users, the BC-Yukon Association of Drug War Survivors, and the Eastside Illicit Drinkers Group for Education. First, we conducted an assessment of health and harm reduction needs of people who use drugs outside the Lower Mainland. This revealed a need to better engage with people who drink non-beverage alcohol (e.g. mouthwash and hand sanitizer), and so we conducted follow up work to investigate the harms they perceive from these products, the harm reduction strategies they already use, and potential strategies to better support them. One outcome of my research was the formation of an activist group of “illicit drinkers” which continues to meet to promote health and human rights for their community. I was fortunate to have Jane Buxton as my supervisor; the manner in which she combines scientific rigour as a physician epidemiologist with community engagement is always inspiring.

Messages from Our Graduates (Class of 2017) (con't)

I want to extend my sincere thanks to Lynn and Tortsen for supporting my unconventional journey through this program, and to Jane Lee for her infinite patience. Past and present MD/PhD students have been important to my time at UBC. I owe a debt of gratitude to Suze Bekhout, Fiona Young, Claire Heslop, Clara Westwell-Roper, Long Nguyen, and David McVea for their guidance and support. Cynthia Min and Andrea Jones, your enthusiasm for your work has been an inspiration. Julia Pon and Farzad Jamshidi, I have been proud to be your colleague during the clinical years of med school.

No one has played a more important role in the MD/PhD program for me than Gareth Mercer. In first year, when we were both members of the Old Man study group, I remember how impressed I was that someone with his intellect could be so kind and supportive of his fellow students. In our PhD years, I am grateful we had the chance to learn together through coursework and preparing for public health comprehensive exams. I remember my delight when Gareth told me he and Rachel were expecting; I have been so happy to share the joys and challenges of parenting with him. In our clinical years, texting with Gareth about experiences on the wards has been a sanity-saver. Although I am sad I didn't manage to convince him to follow me into public health residency, I am confident his population health training, in combination with his caring nature and strong clinical skills, will lead him to important contributions in the field of ophthalmology.

I am thrilled to share that I matched into Public Health and Preventive Medicine at UBC. This coming year, I'll be working at the BC Centre for Disease Control on the response to the opioid overdose crisis, which I hope will allow me to put my research and medical training to productive use. Public health was where I saw myself when I started medical school, and despite everything else that has changed since beginning this program, I still think it's a discipline that provides a unique opportunity to put research to immediate and practical use.

Farzad Jamshidi

Finally reaching the end of this long journey, which felt surprisingly short, I have been asked to write a parting blurb for our summer newsletter. I feel grateful to have been a member of a collection of incredibly talented and brilliant young scholars who were not only colleagues but also sources of inspiration. Additionally, the support from our program directors, faculty members, and staff has been beyond what I have seen or experienced elsewhere. Thus it is with mixed feelings, excitement for what the future has in store for me and longing for an incredibly supportive program, that I leave to pursue a post-doctoral fellowship at the Ocular Genomics Institute at Massachusetts Eye and Ear. The experiences I ended up having because of the combined degree, from the joy of state of the art experiments to understand cancer to delivering newborns and hearing reflections on life from terminally ill patients, have been deep, humbling, and meaningful. Yet there were many challenges and transitions beyond what medical students and graduate students experience that only in hindsight appear as valuable experiences. Thus my word of advice would be to stick to your values and move forward as at the end, you will fully develop the core competencies of a physician and a scientist though at times it may not seem possible during your journey.

I wish all the current and future members of our program success and look forward to hearing about their contributions to science and medicine in the future.

Messages from Our Graduates (Class of 2017) (con't)

Gareth Mercer

Completing the MD/PhD degree at UBC has been a truly formative experience. I appreciate this chance to reflect on the journey and to thank the many people who supported me along the way.

During the interview for the program, I expressed a desire to do research that might improve the health of populations. I admit, at the time, I had only vague notions of what that research, or even the discipline, would be. I am tremendously grateful to Lynn and Torsten for taking me in anyway, and supporting me to grow into those ideas. Their willingness to accommodate me in completing coursework and research internationally was instrumental to my success.

During the applicant dinner I met Alexis Crabtree. Her passion for public health led me to explore this field myself, and her dedication to social justice continues to inspire me. The numerous enthusiastic and thoughtful epidemiologists and public health practitioners I met during my PhD training further helped ignite and fuel the inner public health fire, which will light and power my career. I mention, in particular, my supervisor, Julie Bettinger, co-PhD students on the Mother Infant Health Study, Amy Slogrove and Moleen Zunza, and my supervisory committee members, David Patrick, Jane Buxton, Ying MacNab, Rachel Jewkes, and (the late) Clyde Hertzman. The instructors and colleagues at UBC, Johns Hopkins, Stellenbosch University and The University of Cape Town who inspired, encouraged and challenged me are too numerous to name individually but are remembered with gratitude. It is not possible to reflect on the MD/PhD process at UBC without recognizing Jane Lee for her kind and consistent encouragement and support.

Family has had a profound influence on my MD/PhD journey. When I started the program I had just returned from a brief time living in Québec. An important reason for choosing UBC's program was to be closer to my parents and sister during what I knew would be a demanding period of training. Early on in the program I met my partner, Rachel, and was quickly and warmly welcomed into her family, too. I cherish the pleasurable memories of frequent dinners at both sets of parents' houses, during which I became comfortable informally discussing research, medicine, and whatever random topic my PhD reading had recently lead me into. In light of the centrality of family to my journey, it is, perhaps, unsurprising that my research project ultimately focused on the contributions fathers make to the wellbeing of their children. In fitting culmination, my son Leon was born in 2015, as I was finishing up the PhD. In the absence of words to adequately convey my gratitude to them, I will let it speak for itself that the very core of my research endeavor was for others to enjoy a similarly nurturing family environment to the one I have.

As I turn my mental gaze to the future (in the near term, Ophthalmology residency at McGill) I do so with excitement and confidence, built on the solid foundation of clinical and research training I obtained through the UBC MD/PhD program. However, running through these is a pulse of nostalgia at the prospect of leaving the good friends and comfortable sense of belonging I have found here.

Julia Pon

Over the past seven years I've been privileged to experience both medical practice in a wide variety of settings and research at a world-leading institution – I'm grateful to Lynn Raymond, Torsten Nielsen, Jane Lee and the army of administrators that have made possible these diverse opportunities. I've been privileged to work with my PhD supervisor, Marco Marra, who has been a great role model in his care for his students and his innovation in research. I've been fortunate to have met many inspiring researchers and clinician-scientists, and give special thanks to Torsten Nielsen for helping introduce me to the world of pathology - I look forward to starting residency at UBC in Anatomical Pathology. I hope to continue research as a part of my career and appreciate all the staff and residents who've mentored me in my career directions.

Thanks also to my MD/PhD lab buddy at the Genome Sciences Centre, Dan Woodsworth, and to the students of the Marra lab for their comradery on the long evenings and weekends. Congratulations to Alexis, Gareth and Farzad – I look forward to seeing the fantastic things you'll do and thank you for all the good company in our clerkship years!

Julia Pon was featured in the UBC Faculty of Medicine "Meet the Grads" profile -- [From Medicine to Research and Back](#)

PhD Oral Defense

Four of our students successfully defended their PhD dissertations. Congratulations!

Sandy Wright

Research supervisor: **Dr. Paul van Donkelaar (UBC-O)**

Hosting department: Experimental Medicine

Defense date: 19 April 2017

Dissertation title: A Prospective, Multidisciplinary Approach to Understanding Sport-related Head Trauma: Novel Insights into the Effects on Myelin and Cerebrovascular Function

ABSTRACT

Sport-related concussion occurs at an alarmingly high rate, affecting millions each year, while concern is growing over the effects of repetitive subconcussive head trauma towards the development of long-term neurological deficits. There are calls within the field to shift from symptom-based assessments towards reliable, objective tools to improve identification and management of dangerous levels of sport-related head trauma. The overall objective of this thesis was to elucidate the roles of cerebrovascular dysfunction and brain myelination within this context.

In study 1, a novel brain imaging technique termed myelin water imaging permitted the first direct evaluation of the effect of sport-related head trauma on myelin integrity. While transient post-concussion disruptions in myelin were observed for at least 2-weeks in multiple brain areas, no myelin changes were observed as a consequence of repetitive subconcussive trauma. Study 2 assessed the effects of concussion on indices of dynamic cerebral autoregulation (CA), demonstrating a delay in the CA response to blood pressure alterations persisting beyond symptom resolution and suggestive of autonomic dysregulation of the cerebrovasculature; deficits did not appear to be cumulative across multiple injuries. Study 3 revealed detrimental effects of one season of contact sport participation on both the timing and magnitude of CA responses that were related to the degree of exposure to repetitive subconcussive head trauma. Study 4 assessed the effect of concussion on neurovascular coupling (NVC) dynamics within the artery supplying the occipital cortex following visual stimulation, and revealed delays in achieving peak response rate in concert with an elevated response magnitude acutely post-injury with resolution by 1-month; deficits did not appear to accumulate across multiple injuries. Study 5 revealed no changes in NVC dynamics as a function of exposure to one season of participation in contact or non-contact sport, suggesting subconcussive trauma may not impair NVC.

Collectively, these results suggest sport-related head trauma can impair myelin integrity and cerebrovascular function; the potential role for autonomic dysregulation towards these findings is discussed. While the effect of repetitive subconcussive trauma on susceptibility to injury remains unclear, the disruptions observed following acute concussion highlight the emerging distinction between clinical and physiological recovery.

Daniel Woodsworth

Research supervisor: **Dr. Robert Holt**

Hosting department: Genome, Science & Technology

Defense date: 29 May 2017

Dissertation title: Characterizing the Granzyme-Perforin Pathway and its Utility as a Cell-to-Cell Delivery System for Cellular Therapeutics

ABSTRACT

Alongside small molecules and biologics, cell-based therapies are emerging as a third class of medical therapy. Additional sensors, actuators and control circuits would greatly expand the range of function and application of cellular therapeutics. To this end, a cell-to-cell delivery module has been developed by investigating and re-engineering the granzyme-perforin pathway of cytotoxic lymphocytes. A computational biophysical model of this process was developed and implemented using a spatial stochastic simulation algorithm, which indicated that hindered diffusion in the immune synapse is critical to ensure reliable granzyme internalization and that large amounts of granzyme escape the synapse, but should not have toxic effects due to rapid spatiotemporal dilution. Additionally, these results indicated that passive diffusion is sufficient for granzyme entry into the target cell, which motivated efforts to use granzyme as a molecular chaperone to transfer exogenous payloads from effector to target cells. Using a fluorescent protein payload, the subcellular localization of several granzyme B derived chaperones was characterized using fluorescence microscopy, and then their capacity to transfer the payload to target cells was evaluated in co-culture experiments. The results indicated that the motifs in granzyme B that are required for lytic granule loading are only functional and contiguous in the folded protein. Additionally, these experiments demonstrated that full length granzyme B is a suitable chaperone for delivering protein payloads to target cells via the granzyme-perforin pathway. Attempts were then made to use this system to deliver potent orthogonal toxins to apoptosis and lymphocyte resistant tumor cells. A range of granzyme B toxin fusion proteins were constructed, all of which retained toxic activity to varying degrees. To render target cells resistant to lymphocyte attack both small molecule and protein based inhibitors of apoptosis were tested in several cell lines, which delayed cell death, but did not stop it. Using effector target dose response curves, a moderate increase in target cell death was observed in cells targeted by lymphocytes expressing granzyme toxin fusion proteins, as compared to wild type lymphocytes, but the biological significance of this effect is uncertain. Approaches to improve this granzyme-perforin mediated delivery system and its therapeutic utility are discussed and explored.

PhD Oral Defense (con't)

Victor Li

Research supervisor: **Dr. Yu Tian Wang**

Hosting department: Neuroscience

Defense date: 2 June 2017

Dissertation title: Functional Characterization of a Novel NMDA Receptor Positive Allosteric Modulator

ABSTRACT

The NMDA receptor is a glutamatergic ionotropic receptor key in mediating neuronal plasticity across virtually all synaptic circuits in the brain. An increasing list of neurological disorders have implicated NMDA receptor hypofunction as an integral part of pathogenesis, necessitating the production of NMDA receptor potentiators as therapeutics. To date, most of these attempts have used increased co-agonism at the glycine binding site of NMDA receptors, but this strategy has been plagued by low specificity and efficacy. Specific allosteric modulation of NMDA receptors is an ideal solution, but until recently, no known drugs were capable of doing so. Building off previous work in our lab that discovered a novel family of compounds capable of modulating NMDA receptor activity through its apical N-terminal domain, we identified and characterized a drug candidate, Npam59, predicted to potentiate both GluN2A- and 2B-containing NMDA receptors. Npam59 was shown to potentiate NMDA currents mediated by both subtypes with EC50 in the low-micromolar range. Npam59 also potentiated d-amphetamine-induced dopamine release in the ventral striatum in an NMDA receptor-dependent manner, but had no observable effect when administered alone. Finally, Npam59 potentiated d-amphetamine-induced hyperlocomotion in Sprague-Dawley rats. These results demonstrate that Npam59 can potentiate the function of NMDA receptors, including both GluN2A- and 2B-containing ones, suggesting its potential as a research tool and drug candidate for further development.

Npam59 is the first known NMDA receptor allosteric potentiator with specificity for both GluN2A and GluN2B. Its characterization provides the foundation for therapeutic development and novel insights into the interaction of dopamine-glutamate signaling in the ventral striatum.

Philip Edgcumbe

Research co-supervisor(s): **Dr. Robert Rohling/**

Dr. Christopher Nguan

Hosting department: Biomedical Engineering

Defense date: 20 July 2017

Dissertation title: Development of Surgical Navigation Tools for Minimally Invasive Surgery Using Ultrasound, Structured Light, Tissue Tracking and Augmented Reality

ABSTRACT

Surgeons and their patients would benefit if, during an operation, a surgeon could inexpensively, safely and non-invasively peer beneath the surface of the organ they are operating on. Peering below the surface would allow the surgeon to see blood vessels, tumours and other important structures. Furthermore, it would allow them to better plan their surgery and avoid damaging important structures with their tools. Giving surgeons the ability to peer beneath the surface and better formulate their surgical plan is the goal of image guided surgery research and the focus of this thesis. In this thesis, accurate 3D models of cancer tumour phantoms are generated and displayed to the surgeon. This is achieved via the development of: an ultrasound calibration technique (Chapter 2); the augmented reality ultrasound navigation system (ARUNS)(Chapter 3); a miniature projector for surgery called the Pico Lantern (Chapter 4); and the Projector-based Augmented Reality Intracorporeal System (PARIS)(Chapter 5). The ultimate goal is to improve surgical navigation which will help surgeons be more accurate and reduce the amount of healthy tissue they excise during operations.

The ultrasound calibration technique improved ultrasound-based pinhead point reconstruction accuracy from 3.1mm to 1.3mm. The Pico Lantern and the PARIS were developed to improve surface reconstruction and to improve the realism of the augmented reality in surgery. The Pico Lantern is a miniature projector for surface reconstruction, augmented reality and guidance in laparoscopic surgery. The PARIS was tested by two surgeons in a user study of 32 simulated kidney cancer surgeries. Compared to using a laparoscopic ultrasound transducer alone, when using the PARIS, surgeons found the surgical navigation more intuitive and they had a better spatial understanding of the underlying anatomy. Furthermore, positive margin rates decreased and there was a statistically significant reduction in the amount of healthy tissue excised. Key conclusions are that wide baseline ultrasound calibration is effective, simple guidance cues are important in augmented reality in surgery and that projected light in surgery is a viable strategy for surface reconstruction and augmented reality.

Meet Incoming Student Daniel Kwon



Daniel Kwon






Daniel Kwon was admitted into the MD/PhD program in May 2017, applying and entering during his Med 1 year. He is supervised by **Dr. Francois Benard** in the Interdisciplinary Oncology Program.

Daniel began his BSc at Simon Fraser University and transferred to the University of British Columbia in his second year to finish his BSc in Chemistry. During his undergraduate studies, he worked with Dr. David Perrin on the synthesis of a modified core of amanitin for cancer therapy, and with Dr. Marco Ciufolini on the synthesis of novel tanshinone analogues as a potential treatment of osteoporosis. Afterwards, he completed his MSc in Chemistry with

Dr. Robert Britton at Simon Fraser University, completing the total syntheses of amphirionin-4 and biselide A, two tetrahydrofuranol-containing natural products with useful biological properties. During his undergraduate and graduate studies, Daniel became interested in the application of synthetic organic chemistry in the areas of biomedical sciences. As Dr. Perrin and Dr. Britton were collaborating with Dr. Francois Benard at the BC Cancer Research Centre in developing novel radiotracers for cancer imaging, Daniel became familiar with Dr. Benard's work and decided to apply his synthetic skillset in the field of nuclear medicine in the Benard lab. For his PhD, Daniel is working on the development of radiotracers toward several targets heavily expressed by cancer cells. Outside research, Daniel enjoys reading, listening to music, exercising, spending time with friends and loved ones, and following competitive sports, including hockey and baseball. Welcome to the Program!

PhD Comprehensive Exam

So far in 2017, five of our current MD/PhD students passed their comprehensive examinations and have been admitted to candidacy. The MD/PhD Comprehensive Examination format consists of two parts: a CIHR style research grant proposal in an area of research, and an oral examination.

Name of student	Exam date	Research supervisor	Research topic
 Allen Zhang	30 Jan 2017	Dr. Wyeth Wasserman and Dr. Sohrab Shah Bioinformatics	Effects of the tumour microenvironment on clonal evolution and treatment response in high-grade serous ovarian cancer
 Jordan Squair	29 Mar 2017	Dr. Andrei Krassioukov and Dr. Christopher West Experimental Medicine	Neuroprotective strategies to improve cardiovascular function after spinal cord injury
 Adam Ramzy	20 Apr 2017	Dr. Timothy Kieffer Cell and Developmental Biology	Removing, replacing, and processing proinsulin in the β -cell
 Frank Lee	23 May 2017	Dr. Edward Prydzial Pathology & Laboratory Medicine	In search of a novel clot-buster: dissecting the role of clotting factor Va in clot dissolution
 Cynthia Ye	27 Jun 2017	Dr. Wyeth Wasserman and Dr. Millan Patel Medical Genetics	Identifying the genetic mechanism and corresponding phenotypic features of strabismus

Dr. Liam Brunham – MD/PhD Alumnus and Committee Member

Congratulations! **Dr. Liam Brunham**, Assistant Professor of Medicine at UBC, and a graduate of the UBC MD/PhD program in the Class of 2008, was recently named one of “[Canada’s Top 40 Under 40](#)” for 2017. “Canada’s Top 40 Under 40” is an annual recognition of the exceptional achievements of forty outstanding Canadians across all fields of endeavor, who are under the age of 40. This program is supported by several prominent organizations all enthusiastically committed to Top 40’s success.

As well, Dr. Brunham is one of a very select set of Michael Smith Foundation for Health Research (MSFHR) 2017 [Scholar Award Recipients](#). The MSFHR Scholar Program is designed to support early career researchers as they establish independent research careers, form their own research teams and develop research programs that advance cutting-edge health solutions. Only [four such awards were made for clinical research](#) in British Columbia this year.

Dr. Brunham, a Principal Investigator at the [Centre for Heart Lung Innovation](#), focuses on understanding how changes in specific genes contribute to differences in drug-response as well as to alterations in plasma lipid levels and their relationship to metabolic and cardiovascular disease.

Cardiovascular disease (CVD) is the leading cause of death of Canadians, and is strongly influenced by genetic factors. Integrating basic biomedical research into how specific gene variants influence the function of cardiac cells, with clinical research of patients and families with early onset CVD, will lead to important advances in translating the results of genetics research to improved care for patients and families with CVD.

Dr. Brunham won the Governor General’s gold medal for the top PhD thesis at UBC. After a residency in internal medicine, he took up a faculty position at the National University of Singapore, before eventually being recruited back to UBC. His track record of success makes him an excellent role model for our trainees. He is currently sitting on the MD/PhD Advisory/Admissions Committee, and is the PhD research supervisor of one of our current students.



Dr. Liam Brunham



Dr. Lynn Raymond – MD/PhD Program Director



Dr. Lynn Raymond

In recognition of [International Women’s Day](#) on March 8, the UBC Faculty of Medicine interviewed our Program Director, **Dr. Lynn Raymond**. Dr. Raymond shared with the audience her passion in research, her active research projects, and offered her advice for women wanting to pursue a career in scientific research.

Dr. Raymond is a Professor and Neurologist in the UBC Departments of Psychiatry and Medicine, Clinical Director of the Centre for Huntington Disease, and a member of the [Djavad Mowafaghian Centre for Brain Health](#). Her lab is especially interested in synapses in the area of the brain associated with motor systems – which is the region most affected in Huntington disease. She has authored over 140 peer-reviewed clinical and basic science publications. She is also the President of the Canadian Association for Neuroscience ([CAN-ACN](#)).

MD/PhD Social

The MD/PhD group and their families had a wonderful time on the afternoon of 22 May 2017. Our Associate Director, **Dr. Torsten Nielsen**, kindly offered to host our annual summer social at his beautiful home in North Vancouver. We had a catered party with great food and a chance for students and their families to swim in his warm pool. This annual event is celebrates our graduates (for 2017: **Alexis Crabtree, Farzad Jamshidi, Gareth Mercer** and **Julia Pon**) and also serves as a great opportunity for our significant others to join us for fun. Thanks everyone, for making this event so memorable! The group picture turned out really well ...



From left: David Twa, Rozlyn Boutin, Julia Pon, Farzad Jamshidi, Amanda Dancsok, Andrea Jones, Parker Jobin, Dr. Lynn Raymond, Alvin Qiu, Philip Edgcumbe, Daniel Kwon, Wissam Nassrallah, Eric Zhao, Alexis Crabtree, Gareth Mercer. Front: Dr. Torsten Nielsen.

Comments and Suggestions

We welcome comments and suggestions to the UBC MD/PhD Program and to our newsletters. Please send comments to the MD/PhD Program office, 2894 Detwiller Pavilion, 2255 Wesbrook Mall, UBC, Vancouver, BC, Canada V6T 2A1. Phone: 1-604-822-7198 Fax: 1-604-822-7917
Email: md.phd@ubc.ca Website: <http://www.med.ubc.ca/mdphd>

Edited by Jane Lee, Program Coordinator, MD/PhD Program, UBC