



# UBC MD PhD

## UBC MD/PhD Program

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### Newsletter – Summer 2008

[http://www.med.ubc.ca/education/md\\_ugrad/mdphd/news.htm](http://www.med.ubc.ca/education/md_ugrad/mdphd/news.htm)



#### Governor General's Gold Medal Winner

#### Liam Brunham

The Governor General's Gold Medal is awarded to **Liam Brunham** who has achieved the most outstanding academic record in the graduating class 2008 for the Doctoral degree at UBC. The medal is one of the most prestigious awards that a student in a Canadian educational institution can receive.

### Congratulations, Liam.

**Liam Brunham** started in the MD/PhD Program in September 2001 and graduated in May 2008. His PhD research supervisor is Dr. Michael Hayden, Professor, Department of Medical Genetics, and Director, Centre for Molecular Medicine & Therapeutics (CMMT). Liam's PhD thesis is entitled, "The Impact of Genetic Variation in ABCA1 on Cholesterol Metabolism, Atherosclerosis and Diabetes". Liam's thesis was a truly outstanding body of work and his examination committee unanimously awarded his thesis a Class I rating. His research focused on understanding the function of the *ABCA1* gene in specific tissues in HDL metabolism, atherosclerosis and diabetes. This has involved the establishment of novel tissue-specific ABCA1 mouse models which Liam succeeded in generating and subsequently used to answer critical questions regarding the physiological role of tissue-specific ABCA1 in cholesterol metabolism and glucose homeostasis. His research helped to define the physiological role of this critical cholesterol transporter in a number of tissues, including liver, intestine, and pancreas. His findings represent truly novel contributions to knowledge that have the potential to translate to new therapies and diagnostics in lipid metabolism, cardiovascular disease, and diabetes.

Liam has a superb publication record; he has authored thirteen peer-reviewed manuscripts, all in excellent journals. He is the first author of seven of his papers – a remarkable level of productivity for a graduate student. One of his research papers was featured as the cover article in the *Journal of Clinical Investigation*, 116(4):1052-62, 2006. Liam has presented his research work in national and international conferences, including: Canadian Society for Clinical (CSCI) Investigation Young Investigators Forum, American Society for Clinical Investigation (ASCI) and Association of American Physicians (APP) Joint Meeting, Western Student Medical Research Forum, US National MD/PhD Student Forum, International Atherosclerosis Society (IAS) Workshop on HDL, and Western Region Islet Study Group.

## Liam Brunham (con't)

Liam served on the Board of Directors of the 1985 Nobel Peace Prize organization International Physicians for the Prevention of Nuclear War (IPPNW) for 2005-2006 and prior to this served as National Student Representative for the Canadian IPPNW affiliate for 2002-2005. As Regional Vice-President for North America, Liam represented both the Canadian IPPNW affiliate as well as the US affiliate (Physicians for Social Responsibility) at the level of the IPPNW Board of Directors. As student representative, Liam sought to promote student involvement in environmental, disarmament and social justice activities, and chaired the organizing committee of 3 major student-run conferences held at the University of British Columbia that attracted speakers and participants from across North and South America and Africa. The themes of these conferences were: War and Health, The Pharmaceutical Industry and Global Health, and Women's Health.



Even while still a student, Liam was asked to review articles submitted to *Canadian Medical Association Journal* (CMAJ) and *Clinical Genetics*. Liam also has diverse interests and talents, he speaks four

languages, including English, French, Japanese and Italian. Liam is an amazing classical guitar performer. In 2006 he performed with the UBC Opera Program in their fall performance of Carmen. He also performed at the UBC Faculty of Medicine Spring Gala at the Chan Centre for Performing Arts for the past 6 years. Liam previously worked as a magician and continues to perform magic as a hobby. Liam also holds a 2<sup>nd</sup> degree black belt from the World Taekwondo Federation and has competed in the Canadian National Taekwondo Championships. Liam was our MD/PhD student representative in 2004-2005.

### Awards received by Liam (selected list)

- Pacific Blue Cross Medical Entrance Scholarship, 2001
- CIHR MD/PhD Studentship, 2002-2008
- BC Science Council GREAT Award, 2002
- Lowell Glasgow Student Research Award, 2003
- Michael Smith Foundation for Health Research Doctoral Award, 2003-2007
- Canadian Society for Clinical Investigation Young Investigators Award, 2003
- Gordon Research Conference on Lipoprotein Metabolism Outstanding Poster Award, 2004
- Arteriosclerosis, Thrombosis and Vascular Biology (ATVB) Young Investigator Award, 2005
- First Prize, Poster Competition, Gordon Research Conference on Atherosclerosis, 2005
- Canadian Society for Clinical Investigation Young Investigators Award, 2005
- Gold Medal, Canadian Institute of Health Research National Poster Competition, 2007
- Outstanding Accomplishment by a Doctoral Trainee, Child and Family Research Institute, UBC, 2007

### To Liam:

Your tremendous achievements in research, outstanding record of external research funding and awards, and commitment to community and scholarly activities in medicine, makes you a worthy recipient of the prestigious Governor's General Gold Award. You are a special individual; this stems from a profound intellect, coupled with a deep sense of commitment to the community, all expressed with grace and humour. I look forward with great anticipation as you continue this path towards a career in biomedical research and clinical medicine. It has been a delight supervising you and I wish you the very best in all your future undertakings. Congratulations Liam!

*Dr. Michael R. Hayden  
Canada Research Chair in Human Genetics and Molecular Medicine  
University Killam Professor, Department of Medical Genetics  
CMMT, CFRI, UBC*

Your academic, research and extra-curricular accomplishments and commitment and contributions to the cause of peace and social justice have been remarkable, and I am so pleased that you have been recognized for these. Please accept my warmest congratulations, and best wishes for continuing success in all your future endeavours.

*Dr. Susan Porter, Assistant Dean  
Graduate & Postdoctoral Education  
Faculty of Medicine*

What a great honour!! Please accept my heartiest congratulations for this wonderful and well deserved recognition of your outstanding achievements over the years. Congratulations, again, Liam. We are all so proud of your achievements.

*Dr. Anthony Chow  
Professor Emeritus*

That is fantastic news, and very well deserved. We are very proud of your outstanding accomplishments and wish you all the best in your future career.

*Dr. Lynn Raymond, Director  
MD/PhD Program*

## Our Graduates 2008

### Liam Brunham

I began the MD/PhD program at UBC seven short years ago. These have been exciting and challenging years for me, full of long nights studying, long days in the histology lab, the joy of working with patients through clerkship, and through it all the excitement of scientific research. I have had the opportunity to work with talented, creative people from around the world and to see many new parts of the globe. Looking back, those 2 or 3 moments where I truly felt that I had discovered something stand out as the highlights. That feeling of being the first person in the world to know something about biology, no matter how minute, make any amount of toil and failure worthwhile for the opportunity to experience this again.

Of course it is the learning about disease and working with patients that forms the basis for what we do in the lab, and provides both the motivation and the opportunity to ask clinically relevant questions.

I feel exceedingly privileged to have had the opportunity to pursue this training at UBC, and to continue my training in medicine and research through the Internal Medicine Residency Program at UBC.

I would like to express my thanks to our Program Directors Drs. Chow, Raymond and Nielsen for their never-failing support and important advocacy for our program within the university and beyond. Thank you to all my classmates through the years and fellow MD/PhD students. Thank you to my supervisor Dr. Michael Hayden and my close collaborator Dr. Bruce Verchere for your guidance, mentorship, encouragement and friendship. And a special thank you to Jane Lee for making everything so much easier for us!

Liam.

### Bryan Coburn

It's a bit strange to be writing a farewell letter when I'm in the middle (almost exactly) of my training, but I suppose graduation, matching to a residency program, moving to a new city, getting paid (more) and NOT PAYING TUITION are all markers of some kind of transition. My wife and I have even managed to buy a house in Toronto and get some traveling done in the final few months before residency (I'm writing this on the plane).

I'm certainly looking forward to the next phase of training, just as I remember looking forward to the end of PBL, the start of my PhD work, my comprehensives, my defense, clerkship, electives, CaRMS... but I'd also hate to think that I'm marking my life by stages that are still coming or already passed, rather than keeping my mind on 'where I am or what I'm doing' (to paraphrase Yoda).



I'd like to thank Dr. Anthony Chow, who has created a unique combined MD/PhD program with an excellent track record of graduating high-quality, well respected, attractive, humorous and well-dressed students; and with the majority of trainees doing so in 7 years (or less). The UBC MD/PhD Program provides flexibility and leeway that is an exception amongst the programs within Canada, which is its strength and the reason it has been able to train such a diversity of trainees. Also, Jane Lee has been an incredible resource and is overall stupendous, magnificent, unbelievably efficient and helpful. Whoever lured her away from Medical Genetics has made all of our lives better. Thanks also to Drs Raymond and Nielsen, who will no doubt continue the tradition of excellent training at UBC's combined program.

I've been very lucky to go through the program with Liam and also my wife (who did her PhD and MD sequentially). The three of us started out together in the Hayden lab in 2000, and have all finished our Medical and Doctoral degrees together as well. And, if the scientific rigour of our  $n=3$  experiment holds up (which it no doubt will), expect that before you all finish, one third of you will be bald, two thirds will be married (to each other) and the other third will be on a first name basis with the Holt Renfrew shoe department.

Best of luck to everyone, please visit us in Toronto.

Bryan (Somewhere over the prairies en route to Vancouver from Paris, altitude 10000m, June 4<sup>th</sup>, 2008, 0100h EDT.)

**Bryan Coburn** started in the MD/PhD Program in September 2001, he graduated in May 2008. Bryan's PhD research supervisor is Dr. Brett Finlay, Professor in the Michael Smith Laboratories, and the Departments of Biochemistry and Molecular Biology, and Microbiology and Immunology.






# UBC MD/PhD PROGRAM

## MD/PhD Award Winners



Congratulations go to our Associate Program Director, **Dr. Torsten Nielsen**, who was one of just two recipients of Senior Scholar awards in the clinical category from the Michael Smith Foundation for Health Research. The other recipient was **Dr. Delbert Dorscheid**, MD/PhD, who is one of our active members in the UBC MD/PhD Admissions/Advisory committee.” Dr. Nielsen (Associate Professor, Pathology and Laboratory Medicine) won for his research program “Translating gene expression into clinical care for sarcomas and breast cancer,” and Dr. Dorscheid (Associate Professor, Critical Care Medicine) for “IL-13 and the glycomics of airway epithelial repair.”

Congratulations also go to **Arezoo Astanehe, Suze Berkhout, Will Guest, Claire Heslop** and **Matt Mayer**, for winning Michael Smith Foundation for Health Research (MSFHR) Graduate Studentship Awards. For those students already holding competitive national graduate studentships, MSFHR uses this fund to provide additional top-up funds as a reward incentive for top students. This is an amazing success rate for our program, and we are very proud of all of you.

	<p><b>Arezoo Astanehe</b>, Year III (Supervisor: Dr. Sandra Dunn, Experimental Medicine Graduate Program)  <i>Research Project:</i> YB-1 induction of PIK3CA mediates herceptin resistance in Breast Cancer patients</p>
	<p><b>Suze Berkhout</b>, Year IV (Supervisor: Dr. Mark Tyndall, Experimental Medicine Graduate Program)  <i>Research Project:</i> Exploring the social structural dynamics of health barriers and determinants of women in Vancouver's survival sex trade: An ethnographic study</p>
	<p><b>Will Guest</b>, Year I (Supervisor: Dr. Neil Cashman, Experimental Medicine Graduate Program)  <i>Research Project:</i> The demi-globule hypothesis: A thermodynamic model for prion protein template-directed misfolding</p>
	<p><b>Claire Heslop</b>, Year IV (Supervisor: Dr. John Hill, Department of Pathology and Laboratory Medicine)  <i>Research Project:</i> Prediction of cardiovascular mortality in patients with coronary artery disease using plasma and genetic markers of oxidative stress</p>
	<p><b>Matt Mayer</b>, Year I (Supervisor: Dr. Robert Hancock, Department of Microbiology and Immunology)  <i>Research Project:</i> Identification and therapeutic modulation of protein targets in dysfunctional innate immune networks associated with hyperinflammation and microbial susceptibility in cystic fibrosis and chronic granulomatous disease</p>

Our sincere thanks go to  
**Michael Smith Foundation for Health Research**  
 (MSFHR) for their continued funding support  
 to the MD/PhD students.

## MD/PhD Award Winners (con't)

Four Year I MD/PhD students have been offered an MD/PhD Studentship Award, for a period of six years (\$21,000 per year) beginning 1 March 2008.

**Jeremy Daniels** (Supervisors: Drs. Mark Ansermino & Karon MacLean,  
Department of Anesthesiology, Pharmacology & Therapeutics)

**William Guest** (Supervisor: Dr. Neil Cashman, Experimental Medicine Graduate Program)

**Matt Mayer** (Supervisor: Dr. Robert Hancock, Department of Microbiology & Immunology)

**David McVea** (Supervisor: Dr. Timothy Murphy, Graduate Program in Neuroscience)

These students have completed the MD/PhD Year I curriculum, and will be starting their PhD research in the summer of 2008.

### *Congratulations!!*

Great news! **Aaron Joe**, Year V MD/PhD student, won the Top Trainee Presentation Award at the Network Centres of Excellence Stem Cell Network (SCN) Annual General Meeting (7-9 November 2007, Toronto, Ontario). Aaron presented his research work "Committed progenitor cells, not multipotent stem cells, regulate skeletal muscle regeneration". Aaron is currently completing his PhD research with Dr. Fabio Rossi, in the Experimental Medicine Graduate Program. Congratulations, Aaron.



Fantastic news! **Kate Potter**, Year III MD/PhD student, won the Best Trainee Research Presentation Award (Podium) \$500, at the 11<sup>th</sup> Annual BC Transplant Research Day (13 December 2007). This annual event was hosted by the BC Transplant Research Institute, in conjunction with UBC and its affiliated teaching hospitals. There were 11 podium presentations and 25 poster presentations. Kate presented her research work, "Lack of amyloidogenicity of pig islet amyloid polypeptide may contribute to improved function and survival of pig islet xenografts". Kate is currently completing her PhD research with Dr. Bruce Verchere, Department of Pathology & Laboratory Medicine. Congratulations, Kate.



Great news! **Arezoo Astanehe**, Year III MD/PhD student, won two research presentation awards:  
Best Poster Award (\$100) at the Reasons for Hope Scientific Conference, Canadian Breast Cancer Research Alliance, Vancouver, BC (25-27 April 2008) for her presentation, "The transcription factor Y-box binding protein-1 (YB-1) induces invasion of human basal-like breast carcinoma cells through a novel interaction with *PIK3CA*".  
Best Oral Presentation Award (\$100) at the UBC Experimental Medicine Student Research Day (13 June 2008) for her presentation, "The YB-1/PIK3CA/uPA network promotes invasion of basal-like breast cancer cells". Arezoo is currently completing her PhD research with Dr. Sandra Dunn, in the Experimental Medicine Graduate Program. Congratulations, Arezoo.



Terrific news! **Patrick Yang**, Year III MD/PhD student, won the American Society for Clinical Investigation (ASCI) and the Association of American Physicians (APP) Joint Meeting Best Poster Award (25-27 April 2008, Chicago, Illinois). The best poster award (\$1000 US) was based on “scientific novelty, quality, clarity of presentation”. There were 220 poster submissions from MDs, MD/PhDs, and MD/PhD students alike, the biggest poster session yet for this meeting. Patrick presented his research poster, entitled “Expression of transgene GFP following *in vivo* fetal gene therapy using a non-viral chitosan vector in mice”. Patrick also received a medal “American Association of Physicians Stanley J. Korsmeyer Young Investigator Award”. Patrick is completing his PhD research with Drs. Erik Skarsgard (Department of Surgery) and William Jia (Brain Research Centre), in the Experimental Medicine Graduate Program. Congratulations, Patrick.



## Student Presentations (selected list)

Besides **Patrick Yang**, three other students also presented their research work at the American Society for Clinical Investigation (ASCI) and the Association of American Physicians (APP) Joint Meeting (25-27 April 2008, Chicago, Illinois).

- **Liam Brunham** (Year VII) – Critical role of ATP-binding cassette transporter A1 (ABCA1) in beta cell function, glucose homeostasis and response to thiazolidinedione treatment
- **Claire Heslop** (Year IV) – Multiple plasma biomarkers of oxidative stress predict risk of cardiovascular mortality
- **Fiona Young** (Year III) – Regulation of huntingtin palmitoylation and its role in Huntington Disease

The MD/PhD students are grateful to the Faculty of Medicine for their continued funding support (in terms of travel awards) for them to attend and present at national and international research conferences (such as the CSCI, ASCI, NSC and WSMRF). The conferences are rewarding for all concerned.

## UBC CIP Research Day

Two MD/PhD students presented their research projects on the UBC Clinical Investigator Program 7<sup>th</sup> Annual (CIP) Research Day (5 June 2008).

**Suze Berkhout**, Year IV MD/PhD student, presented “Resources and risks: Gendered access to HIV care in Vancouver's inner city”.

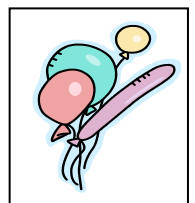
**Arezoo Astanehe**, Year III MD/PhD student, presented “The YB-1/PIK3CA/uPA network promotes invasion of basal-like breast cancer cells”.

Our students are invited to join the CIP trainees at their annual research day. This event provides them a good opportunity for networking and collaboration with other trainees and residents. Thanks go to the CIP Program.

## MD/PhD Party

The MD/PhD group enjoyed a very pleasant evening at Dr. Torsten Nielsen’s residence (North Vancouver) on Sunday, 13 July 2008.

The food was yummy and everyone had an enjoyable time. After dinner, we exercised ourselves in the pool and took some great pictures. The party was a great success! Thanks, Dr. Nielsen!!



## Annual Meetings

Our Program Director and Associate Director meet with each student and his/her supervisor annually to review student’s progress and the proposed curriculum. These meetings serve as a very effective tracking mechanism, are usually being held in the summer.

## PhD Comprehensive Exams

The intent of the comprehensive examination is to ensure that the student has adequately prepared for the proposed thesis research and can gain maximum benefit from this experience. The comprehensive examination format consists of two parts:

- a CIHR style research grant proposal in an area of the student's research
- an oral examination.

**Claire Heslop** (Year IV) successfully passed her PhD comprehensive examination on 22 April 2008.

Her thesis topic is "Prediction of cardiovascular mortality in patients with coronary artery disease using plasma and genetic marks of oxidative stress".

Her examination committee members are:

Drs. Torsten Nielsen (Chair), Haydn Pritchard, Keith Walley, Cheryl Wellington and Gordon Francis.

Thanks everyone.

**Fiona Young** (Year III) successfully passed her PhD comprehensive examination on 13 May 2008.

Her thesis topic is "The role of palmitoylation in the pathogenesis of Huntington disease".

Her examination committee members are:

Drs. Jan Friedman (Chair), Blair Leavitt, Elizabeth Conibear, Wendy Robinson and Shernaz Bamji.

Thanks everyone.

Both Claire and Fiona have been admitted to candidacy. Congratulations!

For admission to candidacy the student must:

- pass the comprehensive examination
- have their research proposal approved by their supervisory committee
- have completed all required coursework

**Great job!**

## MD/PhD "Building Bridges Seminar Series" - ALL ARE WELCOME

This well established seminar series is aimed at illustrating the relationship that exists between clinical practice and medical research. The meetings offer a casual and relaxed atmosphere in which to profile individuals who have successfully combined both clinical and research aspects into their medical careers. In addition to talking about their active research, the invited speakers also talk about their experiences, discuss their training background, share their advice for prospective clinician-scientists, and talk about their opinions on career development options for clinician-scientists.

All faculty, clinical investigator trainees and students in the Faculty of Medicine are invited. Presentations are video-conferenced and broadcast to the Island Medical Program and the Northern Medical Program. The event is being held at the Medical Student Alumni Centre, 12th Avenue & Heather Street, at 6:00 - 7:00 pm. Please keep an eye on our website [http://www.med.ubc.ca/education/md\\_ugrad/mdphd/seminars.htm](http://www.med.ubc.ca/education/md_ugrad/mdphd/seminars.htm) for upcoming presentations, which will resume in fall 2008.

Date of presentation: 10 March 2008

**Dr. Rusung Tan**, Professor, UBC Department of Pathology & Laboratory Medicine  
Head, Pathology & Laboratory Medicine, BC Children's & Women's Hospital

Date of presentation: 12 May 2008

**Dr. Peter Rieckmann**, Professor, UBC Department of Medicine (Neurology)  
Director, Multiple Sclerosis Program at VCHRI & UBC  
Regional Director (Pacific Northwest), endMS National Research & Training Network

*Our sincere thanks go to our invited speakers.*

## Upcoming Events

### \* Open House and Student Research Forum

The ninth annual UBC MD/PhD Student Research Forum and Open House has been scheduled for Monday, **8 September 2008, 1-4 pm, at the UBC Brain Research Centre**. We will have presentations from guest speakers and our students. Please check out our webpage for detailed information. ALL ARE WELCOME!

### \* CSCI/CIHR Joint Program: Young Investigators Forum, Toronto, September 2008

UBC will be very well represented at this year's Canadian Society for Clinical Investigation (CSCI) Young Investigators Forum, on Thursday 25 September 2008, in Toronto. Eight current MD/PhD students have been selected to present their outstanding research projects!

#### **Arezoo Astanehe** (Year III)

The transcription factor Y-box binding protein-1 (YB-1) induces expression of the *PIK3CA* oncogene leading to increased invasion of basal-like breast carcinoma cells

#### **Suze Berkhout** (Year IV)

"It's More Than a Pill Drop" Adherence support and the clinical gaze in inner city home-based HIV care

#### **Claire Heslop** (Year IV)

EFFECTS of low neighbourhood socioeconomic status on inflammation, oxidative stress, and risk of mortality in patients with coronary artery disease

#### **Aaron Joe** (Year V)

Committed adipogenic progenitors are responsible for novel adipocyte generation in response to dietary stimuli

#### **David McVea** (Year II)

Cortical area 5 is necessary for long-lasting memories of obstacles encountered by walking cats

#### **Kate Potter** (Year III)

Species-specific sequence variation of porcine islet amyloid polypeptide reduces its amyloidogenicity and may contribute to improved function and survival of pig islet xenografts

#### **Patrick Yang** (Year III)

*In Utero* gene delivery using chitosan-DNA nanoparticles in mice

#### **Fiona Young** (Year III)

Regulation of huntingtin palmitoylation and its role in Huntington disease



We wish everyone  
a very nice summer!



### 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, 2N6 - 2818 Detwiller Pavilion, 2255 Wesbrook Mall, UBC, Vancouver, BC, Canada V6T 2A1. Phone: 1-604-822-7198 Fax: 1-604-822-7917 Email: [ubcmdphd@interchange.ubc.ca](mailto:ubcmdphd@interchange.ubc.ca) Website: <http://www.med.ubc.ca/mdphd>

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