

# News

# Pathology

Spring/Summer 2013

The University of British Columbia

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a place of mind



pathology  
laboratory medicine



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# PATHOLOGY

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## Welcome to Dr. Amanda Bradley – The New BMLSc Program Director!

### BMLSc Announcement

It gives me great pleasure to announce that Dr. Amanda Bradley has accepted the position of Program Director, Bachelor of Medical Laboratory Science (BMLSc), effective August 1, 2013.

Dr. Bradley is transferring to our department as a Senior Instructor from the MD Undergraduate Program. We are very fortunate to have someone of Dr. Bradley's caliber taking on this very important role. She will be providing educational leadership as the Program Director and also teaching in the BMLSc Program.

Please join me in welcoming her to the program and the Department.

*Michael F Allard MD FRCPC*  
Professor and Head  
Department of Pathology and  
Laboratory Medicine  
University of British Columbia



**Dr. Amanda Bradley, PhD**

I am very pleased to be the new Director of the BMLSc Program. This position feels like an extraordinary chance to make a difference. Before I tell you about myself and my thoughts about the program, let me first say that I am indebted to Dr. Carol Park, the steadfast, generous, thoughtful and caring leader of the BMLSc Program for the past 19 years. Her efforts and dedication to the program have always been stellar. I have some very big shoes to fill. I will do my best.

I have a positive “developmental” history in this Department as I completed my PhD with Drs. Dana Devine and Don Brooks: I am “home grown”. After postdocs with the Canadian Red Cross, Albany Medical Center in New York (with Dr. Mark Scott, now also a member of our Department), and then Canadian Blood Services, I became a Research Associate. At that time, my enthusiasm for teaching was awakened and could not be ignored. With the

**“I am looking forward to committing my full attention to the BMLSc Program and the Department of Pathology and Laboratory Medicine. I feel privileged to be working with the BMLSc team and Department colleagues.”**

expansion of the UBC Medical School, the Faculty of Medicine recognized the need for dedicated instructors and hired a cohort of instructors, including me. Since then, I have been focused on education, for almost ten years.

While there were many highlights in my Medical Undergraduate Program Instructor position, there were three in particular that have shaped who I am as a teacher.

First, I had the pleasure of supervising 67 students as they worked on a wide variety of projects including community outreach, population health research, medical education research, and self-study module development.

Second, being a Problem Based Learning (PBL) tutor, tutor-trainer and case writer, taught me an incredible amount about student engagement and the responsibility of students for their own learning. Witnessing first-hand

so many student-generated powerful learning moments has made me a staunch advocate for PBL and other evidence-based, student-centered pedagogies.

Third, I had the opportunity to redevelop immunology teaching in the Principles of Human Biology medical course (including creating a new problem-based learning case and assisting students develop on-line modules). These experiences (and the learning literature!) all inform my approach to teaching and educational leadership.

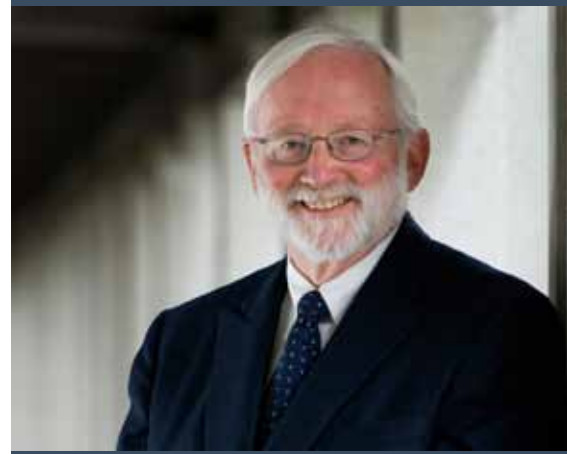
I am looking forward to committing my full attention to the BMLSc Program and the Department of Pathology and Laboratory Medicine. I feel privileged to be working with the BMLSc team and Department colleagues. I am no stranger to the program, having taught in five BMLSc courses and coordinated three. I enjoy this program so much because the class size facilitates getting to know the students, learning about their aspiration, and witnessing their growth. As Program Director, I will continue to teach, coordinate and redevelop several courses, striving to use more effective pedagogies. I hope to contribute to innovative educational practices and disseminate best practices.

A critical goal of mine is to assist with instructor recruitment and support. As a member of our Department's Peer Assisted Teaching Development Committee, I already have an interest in learning about (and learning from) colleagues' teaching practices. I look forward to working with colleagues, learning what their ambitions are with respect to teaching, and assisting my fellow instructors to achieve their goals. The BMLSc is a high quality program that supports students in preparing themselves for diverse futures. The

program has accomplished this by supporting students as they learn a variety of knowledge-based and practical skill, focusing on higher order skills development, promoting self-reflection and being student-centred. I am very excited to steward the program continuing to emphasize these goals. The program's many strengths must be preserved and nurtured. At the same time, we should look for opportunities to further enhance our execution of these goals.

**Where to start?** I plan to begin by listening and learning. I welcome your thoughts on the strengths and successes of the program as well as ideas to help shape future directions. How can we enhance students' learning? What (if any) elements of the program deserve attention and further strengthening?

If you are an instructor or Course Coordinator in the BMLSc program and have opinions and ideas to share, please contact me. Similarly, if you have the desire to make sessions with your students even more participatory, or if you are not yet involved in the program but would like to be, let's discuss the opportunities. I look forward to working with you in our unique and wonderful BMLSc Program!



Donald E. Brooks, a Professor in the Department of Pathology and Laboratory Medicine, has won the inaugural 2013 Blood Safety Innovation Award from Terumo BCT, a Colorado-based maker of blood component and cellular technologies.



## Researcher Dr. Sohrab Shah Awarded Two CIHR/Genome Canada Bioinformatics Grants

Dr. Sohrab Shah awarded two grants in the Canadian Institutes of Health Research / Genome Canada 2012 Bioinformatics And Computational Biology Competition:

1. *Measuring and modeling tumour evolution from next generation sequencing data: enabling clinical study of clonal diversity in cancer patients*
2. *Computational interpretation of cancer genomes: defining mutational landscapes for translational genomics*

# The Bachelor of Medical Laboratory Science (BMLSc) Program

JOANNE WOUTERSE

## Our Heartfelt Appreciation to Dr. Carol Park, BMLSc Coordinator from 1994 to 2013

**// Gratitude is the inward feeling of kindness received. Thankfulness is the natural impulse to express that feeling. Thanksgiving is the following of that impulse. //**

Henry Van Dyke

"The greatest pleasure of my working career has been the opportunity to experience a working relationship built on mutual respect and shared ideologies (with humour and a piece of chocolate, when required). Over the years I learned much from Carol, for she is a true teacher, not only of academia, but of life. Carol's thoughtfulness, generosity and understanding, have had a profound impact on me both personally and professionally. I wish her all the best."

Joanne Wouterse

"Carol is a wonderful instructor and mentor of mine. While I was her student, her caring nature helped me get through an intensive undergraduate program. Her passion for histology made me appreciate the subject. It is a privilege to work with a caring and giving person like Carol. Her gentle and effective guidance has helped me to achieve more at work."

Jenny Tai

"In her quiet, gentle manner Carol has guided, supported, mentored and educated a vast number of individuals. Through example she has taught me to be more thoughtful, professional, introspective and inclusive. She had the ability to make each member of the BMLSc Program feel special and valuable in her own unique way."

Jennifer Xenakis

"Carol has been an influential mentor. By providing guidance, encouragement, valuable insights and objective feedback, she has helped me become a more effective instructor. Her tireless dedication to the BMLSc Program will have a lasting impact on all individuals that she has educated and supported."

Juliana Li

## Farewell and Thanks to...

**DR. CATHERINE HALSTEAD**, who taught several lectures in PATH 406 Clinical Chemistry, for 25, years as well as teaching in PATH 407 Clinical Toxicology, since 2007.

Students commented: *"Teaches well and motivates students to learn."*

**DR. JOSEPH TAI**, who coordinated and taught in PATH 415 Immunopathology, for 30 years.

Students commented: *"Dr. Tai is an enthusiastic teacher. He made the objectives clear and provided interesting, real-life examples. Great stories!"*

## A Warm Welcome to...

### ■ DR. AMANDA BRADLEY, DIRECTOR, BMLSc PROGRAM

Dr. Bradley joins the BMLSc Program after many years as an Instructor in the Medical Undergraduate Program. She is a long time member of the Department of Pathology and Laboratory Medicine and has taught in several BMLSc Program courses over the years. The BMLSc staff look forward to working with her.

### ■ DR. HELENE BRUYERE

Clinical Associate Professor, who will co-teach Basic Human Genetics and Cytogenetics in Pathology 303.

### ■ DR. TANYA GILLAN

Clinical Assistant Professor, who will co-teach Basic Human Genetics and Cytogenetics in Pathology 303.

### ■ DR. WILLIAM HSIAO

Clinical Assistant Professor, who will be joining Pathology 327 Medical Microbiology to present lectures in Bioinformatics and Whole Genome Sequencing.

### ■ DR. TONY NG

Clinical Assistant Professor, who will be taking over the role of Course Coordinator of Pathology 304 Normal Human Histology.

### ■ DR. JOHN O'KUSKY

Associate Professor, who will be taking over the lectures and Coordination of Pathology 404 Histochemistry in addition to his long time teaching and co-coordination of Pathology 305 Modern Microscopy.

**DR. NADINE URQUHART**, who for 30 years taught “Methods of Protein Analysis – Electrophoresis & Immunoprecipitation Techniques” in PATH 406 Clinical Chemistry.

Students commented: *“Involving the students in the presentation was beneficial to our learning. Talking about relevant diseases was interesting. Thank you for your time.”*

## 2013 Graduates



**This past May fifteen students received their BMLSc degrees, bringing the total number of program graduates to 467.**

**DR. DAVID WALKER** who taught in and co-Coordinated PATH 305, Modern Microscopy for over 30 years and who graciously hosted the student potluck dinners at his home for the past 18 years.

Students commented: *“Dr. Walker is one of the most caring, sincere and passionate teachers I have ever had the pleasure to meet.”*

## HAPPY RETIREMENT!



**At the BMLSc Awards Tea, held on May 21st, the following students were recognized for their outstanding academic achievements:**



Kristin Gendron achieved the highest overall standing of the graduating class and was awarded the Professor C.F.A. Culling Bachelor of Medical Laboratory Science Prize. Kristin is currently working as a Laboratory Technologist at Children's Hospital.



James Kong received the Donald M. McLean Prize in Medical Microbiology.



Susana Contreras-Whitney received the B.J. Twaites Prize in Laboratory Administration, awarded to the student with the highest standing in Laboratory Administration.



Mrs. Janet Reid presented to Denise Wong, the Eugenie Phyllis and Philip Edward Reid Prize in Morphological Sciences for academic excellence in histology, histochemistry and microscopy. Denise will be attending the BCIT Medical Laboratory Science program.



Michelle Tra was awarded the William J. Godolphin Prize for Excellence in Critical Thinking. Michelle is pursuing a Masters in Craniofacial Science at UBC.



Kristin Gendron and Denise Wong were jointly awarded the Prize for Best Overall Performance in PATH 405 Seminars in Current Topics

#### ■ GRADUATES' CHOICE FOR TEACHING EXCELLENCE AWARDS

The graduates recognized the following instructors, who each received the BMLSc Graduates' Choice for Teaching Excellence Award: **Dr. Carol Park, Dr. Morris Pudek, and Dr. Mike Nimmo.**

#### ■ THE REID MEMORIAL CUP

This award, chosen by the graduating class, recognizes a faculty, staff member or student, who made an outstanding contribution to the educational experience of BMLSc students. This year's recipient is **Dr. David Walker.**

**CONGRATULATIONS  
TO OUR 2013 BMLSC  
GRADUATES AND AWARD  
RECIPIENTS!**



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# Infection Prevention and Control (IPC) Certificate

■ ELIZABETH BRYCE, DIANE ROSCOE, JOANNE WOUTERSE ■

Infection prevention and control continues to be increasingly important across the spectrum of health care. It has always been a challenge to educate not only individuals who wish to practice infection control as a career, but also to educate all healthcare workers in the principles and practices of good infection control.

Reflecting the breadth of skills necessary in the field of infection control, courses leading to this foundational knowledge were developed and continue to be taught by members of the *Department of Pathology and Laboratory Medicine* (**Drs. Elizabeth Bryce, Diane Roscoe, Fred Roberts, and Aleksandra Stefanovic**) and the *School of Population and Public Health* (**Drs. Monika Naus, Bonnie Henry, and David Patrick**) with the assistance of the Centre for Teaching and Learning Technology.

The UBC recognized IPC Certificate consists of four 3-credit courses: three on-line courses that use a problem-based, interactive format relevant to the practice of infection prevention and control; and a fourth course taken on-site with a mentor as a clerkship in infection control tailored to the needs, experience and interests of the student. The courses can be taken as a stand-alone or with the intent of completing the entire certificate program.

The certificate attracts students from a wide range of backgrounds, including medicine, nursing, laboratory technology, dental sciences, epidemiology, and public and occupational health. Students appreciate the case-based interactive format, the online availability, and the scheduling flexibility offered to the working professional and adult learner. The courses have been fully subscribed since their introduction and continue to receive very favourable reviews.

To date, 148 students have registered for the IPC Certificate, with 30 new students expected this fall. Fifty two certificates have been awarded since 2007, when the certificate received approval from UBC Senate. Approximately 132 students have taken stand-alone courses without pursuing the certificate. The IPC Certificate is endorsed by CHICA-Canada, the national society for infection control professionals.

*"I thoroughly enjoyed the course. My research skills and problem solving skills have improved."*

*"I liked the way the instructor inspired us to read more and think outside the box."*

*"I really enjoyed the questions the instructor posed each week; they challenged students to think critically."*

*"I enjoyed every bit of the course and I can say I am now an infection control advocate."*

*"The instructors were very engaged in the student learning and provided good insights through their experience and knowledge."*

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## Advisory Board Members

- **Dr. Elizabeth Bryce**, Clinical Professor, UBC Faculty of Medicine, Regional Medical Director, Infection Control Vancouver Coastal Acute
- **Dr. Diane Roscoe**, Clinical Professor, UBC Faculty of Medicine, Regional Microbiology Discipline Lead and Division Head, Medical Microbiology and Infection Control
- **Dr. Fred Roberts**, Professor Emeritus, UBC Faculty of Medicine, Head, Infection Control, Fraser Health
- **Dr. Aleksandra Stefanovic**, Clinical Instructor, UBC Faculty of Medicine
- **Dr. Monika Naus**, Associate Professor, Associate Director, Communicable Disease Epidemiology, Distance Education Instructor, School of Population and Public Health, BC Centre of Disease Control
- **Dr. Bonnie Henry**, Assistant Professor, School of Population and Public Health, BC Centre for Disease Control
- **Dr. Eva Thomas**, Clinical Professor, UBC Faculty of Medicine, Infection Control Officer, Children's and Women's Hospital
- **Ms. Mary McNaughton**, IPAC, PHC, and representative, CHICA-BC
- **Mr. Brian Wilson**, Instructional Design/Project Manager, Centre for Teaching and Learning Technology.

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# Making a Successful Transition from College to a Career

Freedom was only an exam away! An organic chemistry final was all that stood between countless hours of studying and the '99 Christmas break. Anxious that the B-line would fail, I arrived at the Chemistry building at UBC an hour before the start time. As I strolled down the hallway towards the lecture theatre, I glanced at a board full of colourful posters: "1991 Toyota Corolla, \$5,500", "Rascalz/Arts County Fair '00 Tix", "Grizzlies vs. Lakers tickets for SALE". Then one flyer caught my attention: "Bachelor of Medical Laboratory Science (BMLSc), Faculty of Medicine..."

ANANTA GURUNG



After surviving the exam season and the prophesied Y2K apocalypse, I made inquiries into the BMLSc program and eagerly entered the program in the fall of 2001. I had the pleasure of meeting many outstanding faculty members including Drs. Carol Park, Morris Pudek and Michael Nimmo. One faculty member in particular, Dr. Elizabeth Maurer, nurtured and fostered my interest in research. The work in her lab on platelet preservation techniques fuelled my appetite for research. At the end of

my undergraduate studies, I boarded a Toronto bound flight and entered Dr. Benjamin Alman's lab as a graduate student at the University of Toronto. My research, which involved studying the signalling pathways of the Canonical WNT pathway, covered disciplines of wound healing and musculoskeletal neoplasia. During this time, I spent some time shadowing Dr. Rita Kandel, a Mount Sinai pathologist, co-supervisor and thesis defence committee member.

Inspired by my clinician-scientist committee members, I entered UBC's medical school in 2005. Medical school offered many unforgettable experiences: I will never forget the first baby I delivered or my first patient to pass away in the trauma bay of the emergency department. As I went through my clerkship rotations, particularly in medical, surgical and radiation oncology, I soon realized the critical role pathologists play in the management of cancer patients. After a handful of electives with inspiring pathologists including Drs. Malcolm Hayes, Blake Gilks and Douglas Webber, I decided

that anatomical pathology was definitely for me! I completed my 1st year of rotating internship at St. Paul's Hospital and entered UBC's anatomical pathology program in 2010. As a PGY-5, and in my final year of residency, I fondly look back at my time in pathology residency over the past 4 years. Each subspecialty rotation was immensely stimulating, challenging and fulfilling. During my residency, I received a tremendous amount of support from my fellow residents and my program director Dr. Diana Ionescu, to whom I am forever indebted.

Highlights over the last 4 years of my life and residency include: the opportunity to work with clinical faculty at the BCCA, SPH and VGH who are deeply devoted to educating the next generation of pathologists; gastrointestinal pathology electives at UCLA, the Cleveland Clinic and Memorial Sloan Kettering Cancer Center; and the day (may I add, just recently!) I became the newest member of the married club.

The journey thus far, through undergraduate and graduate studies, medical school and residency, has been a time of profound intellectual and personal growth. After this year, all that remains before practising as a fully licensed pathologist is a one year gastrointestinal pathology fellowship program, which I hope to complete at Yale University. As I reflect upon the various crossroads I encountered during my journey, it's astonishing to realize that a split-second glance at the BMLSc program flyer 14 years ago, unknowingly kick-started my career in medicine.



Jason Ford, MD, FRCPC  
Associate Director, Curriculum, UBC  
Faculty of Medicine; Undergraduate  
Program Director, Dept. of Pathology  
& Laboratory Medicine

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## Pathology at UBC Medical School: Curriculum Renewal Update

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**“Pathology has a strong voice at the curriculum table, and I expect that we will be asked to be leading players in many of the new cases for year 1.”**

The new MD curriculum at UBC is scheduled to start next fall with the incoming Year 1 class, in August 2014. Before this happens, the new curriculum plan must be approved by the UBC Senate, and the first set of lectures and small group sessions and case-based learning modules must be planned and written. UBC's old (*i.e.* existing) MD curriculum divides the first two years into blocks, such as Cardiovascular and Reproductive, and further divides the material into separate courses: Principles of Human Biology and Foundations of Medicine (basic biomedical sciences); Doctor, Patient, and Society (professionalism, public health, and communication); Clinical Skills (basic clinical interaction with patients, *i.e.* histories and physical exams); and the Family Practice Continuum (weekly half days in a family doctor's office). In the new curriculum, these different blocks and these different courses will be integrated.

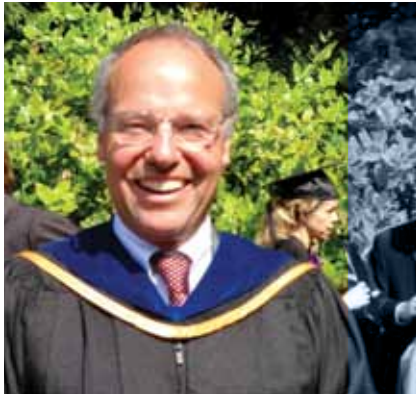
Integration means, first, that there will be no more blocks: students will not immerse themselves for five weeks in (for example) cardiovascular topics, and then avoid cardiovascular material until the exam. Instead, students will encounter cardiovascular topics in shorter bursts (such as two weeks back to back, rather than five), and then will address cardiovascular material every few weeks throughout the first two years. This approach is called the “spiral curriculum”, and there is good evidence that students learn and retain information better with this approach than with the block-by-block approach. Integration also means that there will be no more individual courses: the basic biomedical sciences and professionalism and clinical skills will be integrated into a single course. Almost everything the students encounter will be in the form of a case or presenting problem, such as shortness of breath or C-spine trauma or suicidality. The basic science material and everything else—from ethics to history taking to public health—will arise out of that case.

There are many implications for pathology teaching in this new curriculum. In general, pathology's role will be similar to what we have done in the old curriculum: there will be pathology small group sessions, as well as lectures and workshops run by pathologists. However, what we teach will likely be more tightly integrated with the “main” topics of each week or case. We will also likely be more integrated with histology: although this has not yet been entirely established, I strongly suspect that students learning histology will also see, in the same lab sessions, the abnormal alongside the normal. My own opinion is that the main purpose in learning the normal is to better understand the abnormal, and I expect that pathology will be better incorporated into histology. Because histologists cannot teach pathology, I suspect that we will be asking pathologists to contribute a few photomicrographs and some brief explanatory slides to add to each histology session. It may be that the pathology small group sessions are linked more strongly to histology as well, although this has not yet been determined.

We are in the “rubber hitting the road” phase of curriculum renewal right now. The leadership groups for the first year of the new curriculum are being established, and within the next several months the lectures and labs and cases for the first year will start to be written. Pathology has a strong voice at the curriculum table, and I expect that we will be asked to be leading players in many of the new cases for year 1.

Many of the faculty and staff in the Department of Pathology have played critical roles in supporting the existing curriculum, from Helen Dyck and Zoey Giannias in the Hardwick Pathology Learning Centre, to pathologists in Vancouver and Kelowna and Victoria and Prince George who have taught small group sessions and students on pathology rotations. We will continue to rely on your support to incorporate our strong pathology brand in the new curriculum.





# Graduate Studies in Pathology

 HAYDN PRITCHARD

## The Past

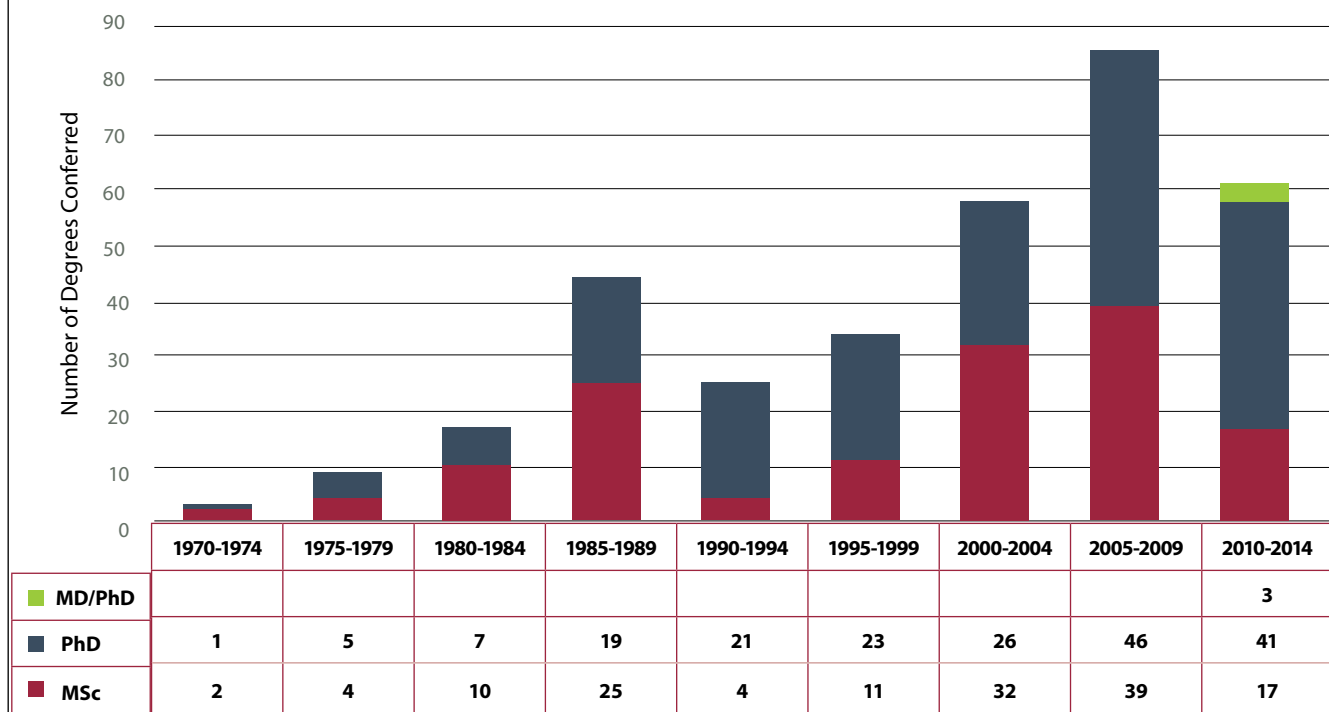
We have embarked on an ambitious project to track down all of our past graduates from our program. This ‘Alumni Project’ is being led by Wilson Luong. UBC Pathology and Laboratory Medicine Graduate Programs graduated 336 students with MSc, PhD or MD/PhD from 1970 to present. (See figure 1). Our challenge is that we have lost contact with many those graduates who graduated in the 70s, 80s and 90s. Over the next few weeks, we will try to track everyone down and one of our strategies is to work with past supervisors. If you have graduated students from our program, you may well get an email or call from Wilson. I ask that you help him and provide

us with any info you have on where your students are now, together with their current contact information if you have it. Long term, we will use this resource for past students to:

- Help our past graduates place students into graduate studies in PALM
- Provide a resource to current graduate studies looking for their next position
- Develop a network of alumni to reconnect both socially and professionally
- Play a valued role in funding our program through the establishment of alumni awards

figure 1

## Pathology and Laboratory Medicine - Degrees Conferred 1970-2013 *Lustrum stratification*



## The Present

This year several students have joined our emerging alumni club and have been granted their degrees. Congratulations to both students and supervisors, and thank you to the members of their supervisory committees, who play such a critical role in their development. They are:



Student	Program	Supervisor	Thesis Title	Thesis Exam	Graduated
Wendy Boivin	PhD	David Granville	Extracellular granzyme B and pathophysiological implications	2012-07-12	Nov-12
Loraine Bischoff	PhD	Bruce Verchere	Modulation of autoimmunity in type 1 diabetes	2012-07-27	Nov-12
Jerry Wong	PhD	Honglin Luo	Host protein manipulation as a mechanism in viral cardiomyopathy	2012-08-03	Nov-12
Corinne Krentz	PhD	Judy Isaac-Renton	An evaluation of new and traditional approaches to monitoring drinking water quality in British Columbia	2012-09-14	Nov-12
David Lin	PhD	Bruce McManus	Biomarkers of acute and chronic human heart allograft rejection	2012-10-12	Nov-12
Jennifer Kennett	MSc	Wan Lam	Molecular genetic characterization of retinoblastoma tumors lacking RB1 mutations	2012-11-22	May-13
Hayley Spencer Hiebert	MSc	Helene Cote/David Walker	Ultrastructural changes and mitochondrial DNA content in the hepatocytes of individuals co-infected with HIV and Hepatitis C virus following HCV combination therapy	2013-03-28	May-13
Paul Hiebert	PhD	David Granville	Granzyme B in skin aging, injury and repair	2013-04-02	May-13
Zsuzsanna Hollander	PhD	Bruce McManus	Novel approaches to biomarker discovery for heart health	2013-04-03	May-13
Vincent Montoya	MSc	Patrick Tang/David Huntsman	Metagenomic analyses of two female genital tract diseases : bacterial vaginosis and ovarian cancer	2013-04-09	May-13
Jordan Cran	MSc	Andrew Minchinton	Development of a hypoxia activated prodrug for the selective inhibition of DNA-dependent protein kinase	2013-04-15	May-13
Kim Wiegand	PhD	David Huntsman	Clear Cell Ovarian Carcinoma and Emergence of the Novel Tumour Suppressor Gene ARID1A	2013-06-18	Nov-13
Alex Choi	MSc	Donald Sin	The role of surfactant protein D in atherosclerosis	2013-06-28	Nov-13
Alon Hendel	PhD	David Granville	Granzyme B in Vascular Remodeling and Pathological	2013-07-04	Nov-13
Rika Aleliunas	MSc	Angela Devlin	Programming of adult metabolic phenotype by maternal dietary folic acid and vitamin B12 imbalance in mice	2013-07-25	Nov-13



## The Future:

Once again, our students have been successful in winning numerous awards to support their research. Here is a list of some of the more highly valued competitive awards:

PhD student Melissa McConechy and her supervisor Dr. David Huntsman

Student	Program	Supervisor	Agency	Award Title	Title of Research Project	Award Amount
Ada Leung	PhD	Marcel Bally	CIHR	Vanier Canada Graduate Scholarship	Characterization of genes and pathways conferring cytoprotective responses and validation of potential targets that will enhance first-line platinum-B\based chemotherapy in non-small cell lung cancer	\$50,000
Deborah Chen	PhD	Dana Devine	Canadian Blood Services	Canadian Blood Services Graduate Fellowship Program	Identification of protein biomarkers for red cell quality	\$21,000
Linda Yang	MSc	Mark Scott	Mitacs	Mitacs Globalink Fellowship	The effects of excess iron overload on immune function	\$35,000
Melissa McConechy	PhD	David Huntsman	CIHR	Doctoral Research Award - Frederick Banting and Charles Best Canada Graduate Scholarships	Mutational and functional analysis of PPP2R1A in high risk endometrial carcinomas	\$35,000
Robert Kridel	PhD	Randy Gascoyne	CIHR	CIHR Fellowship	The pathogenic role of tumor-associated macrophages in Hodgkin lymphoma	\$40,000
Lynn Huang	PhD	Ru Tan	Multiple Sclerosis Society of Canada	Wagh Family MS Society of Canada Doctoral Studentship Award	The role of SAP signaling in EAE	\$20,000
Tom Cheng	PhD	Cheryl Wellington	Alzheimer Society Research Program	Dr. and Mrs. Spatz Doctoral Award	The interaction of mild repetitive traumatic brain injury and apolipoproteinE (apoE) genotype on the development and progression of alzheimer's disease	\$24,500

## Current Four-Year Doctoral Fellowship (4YF) Holders:

Ada Leung	Melissa Glier
Clara Westwell-Roper	Melissa McConechy
Emily Vucic	Robert Kridel
Jacob Rozmus	Sarah Fernando
Jaswinder Khattrra	Alistair Chenery
Lisa Ang	Tom Cheng

Of note is the **Vanier** award won by **Ada Leung** from Dr. Bally's laboratory. This is the fifth year in a row that our program has won at least one of these prestigious awards. Well done to both student and supervisor!

Once again this has been a busy and productive year for our program. We continue to 'set the bar' for our attention to the student's needs and administrative support. We certainly have developed a program that all in our Department can be proud of.





Some of Aleya's travel photos

## ALEYA IS TRAVELLING



Our Program Administrator, Aleya, will take a well-deserved leave of absence from Aug 15th to October 10th to embark on her long planned trip to Europe. We wish her Bon Voyage!

In her absence, we will have excellent admin support from Tricia Jeffs. She will handle all Aleya's day to day duties. You can contact her through Aleya's usual email and phone.

## WHO'S UP FOR THE NEXT HIKE? ALL ARE WELCOME!

Staff from the Pathology Education Centre and OBER recently challenged themselves to a post-work trek up the Grouse Grind. There were a few newbies in the group, including Tomo Osako, Post-Doctoral Fellow from Japan, and Sara Nussbeck, Visiting Scientist from Germany, as well as OBER's very own Simon Dee. After their ascent up the 2,830 stairs, the crew treated themselves to well-deserved burgers at North Vancouver's legendary Tomahawk restaurant.



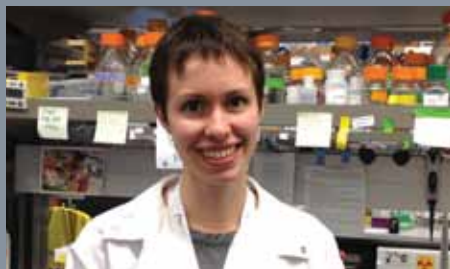
(L-R): Tomo Osako, Simon Dee, Sara Nussbeck, Aleya Abdulla, Stefanie Cheah, Steve Wong, Dzifa Foli



## On the Rewards of Science Outreach: Four Generations of Mentorship

CLARA WESTWELL-ROPER

MD/PhD Candidate (Laboratory of Dr. Bruce Verchere)



**“I am extremely grateful to my own supervisor, Dr. Bruce Verchere (the great-grandfather in this academic family!), for providing a superb example of effective mentorship and a supportive environment focused on student development.”**

Team Greater Vancouver at the 2013 Canada-Wide Science Fair in Lethbridge, Alberta

Photo: Robert Young

On May 11, 2013, I marked my first exam-less spring in 15 years with a celebratory trip. Destination: Lethbridge, Alberta. Travel partners: seventeen students aged 12-17 (and thankfully, three other adults) heading to the 52nd annual Canada-Wide Science Fair (CWSF) at the University of Lethbridge.

I can think of few other experiences as academically energizing as a week with 500 of Canada's brightest and most enthusiastic young scientists. Science fairs represent the largest project-based science activity for youth in Canada, run by a remarkable network of volunteers with a passion for science education. Supported by Youth Science Canada nationally and the Science Fair Foundation BC provincially, over 100 regional fairs operate across the country each year. Fourteen of these are in BC, involving 40,000 students from over 300 schools. Walking the aisles at this year's CWSF, I was reminded of the impressive capacity for innovation among students

who haven't yet finished high school. Through discussions with their peers and with judges, these students were starting to envision career paths they had never before considered. My own early interest in health science research was strongly influenced by projects that I took to the CWSF in grades 11 and 12. Of all my roles in the science fair community since then (including judging, helping run the Greater Vancouver Regional Science Fair, representing alumni on the Board of Directors of the Science Fair Foundation BC, and coordinating a provincial mentorship program), I think that the most important activity is one to which most of us in academia can relate: mentoring.

My first “scientist” mentor worked at the NIH, and I found him through an online science forum for kids. As a grade nine student, I would receive large envelopes in the mail containing journal articles that he had printed for me. This seems unimaginable in our digital era, but the gap between the academic research



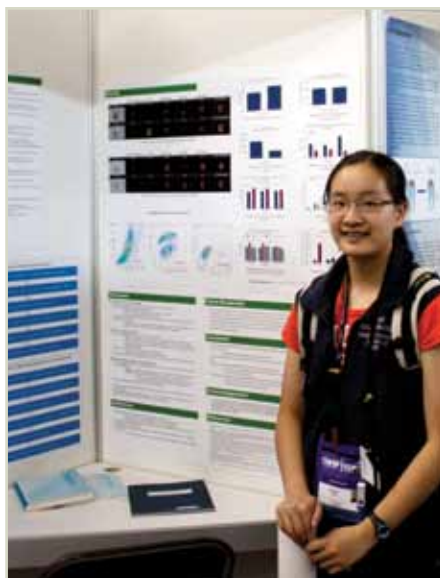
community and the public Kindergarten to Grade 12 education system was almost insurmountable, at least to a 14-year-old with no prior experience. I was subsequently fortunate to find Dr. Alice Mui (UBC Dept of Surgery), who made time to meet and helped me set up several small experiments in her lab. The past decade has seen much progress in the formalization of outreach programs for high school students, including various internships, CFRI's Mini Med School, CIHR's Synapse Program, the Sanofi BioGENEius Challenge, Let's Talk Science, Virtual Researcher on Call, and the BC Science Fair Alumni Mentorship Program, to name just a few. All have the common goal of sharing expertise, promoting knowledge translation, and encouraging students to explore exciting and emerging areas of science and technology.

I was particularly proud this year to join one of my own mentees, Janice Pang, on the trip to Lethbridge. In addition to winning two consecutive gold medals at Canada's highest level of science competition, her knowledge, analytical

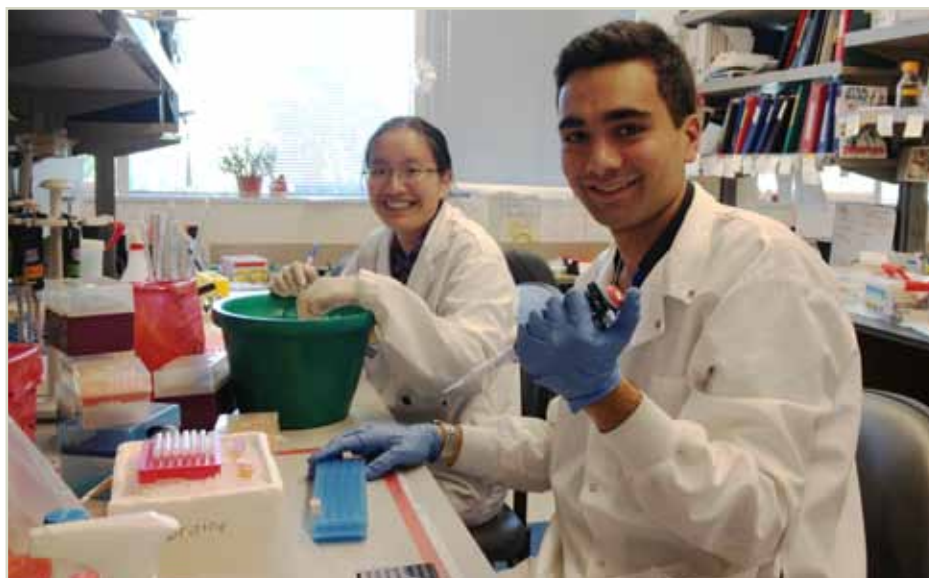
skills, and capacity to communicate complex ideas have developed rapidly over the two years that we have worked together. She has even started setting up collaborations, embarking on a joint project with a student from Ontario that they plan to enter in next year's Google Science Fair. I have also gained a great deal from this relationship. By focusing on the basics, Janice reminds me why I am driven to pursue important research questions. She hasn't experienced negative grant reviews or rejected manuscripts and brings an enthusiasm to the bench that keeps me motivated. She hasn't constructed theoretical boxes to categorize knowledge, so her creativity is unrestricted by existing frameworks. She isn't afraid to ask seemingly simple questions. In these ways, I aspire to be more like her.

This summer I was also fortunate to work with an outstanding undergraduate student, Cyrus Chehroudi, funded by the PALM Summer Student Fellowship Program. I have frequently left Cyrus to supervise Janice and he has developed into an excellent teacher with a big-

picture understanding of his work, full of analogies for answering questions with multiple levels of complexity. He recently won a prize at the CFRI Summer Student Research Day for a poster authored by what I like to think of as four generations of mentorship: Bruce, me, Cyrus, and Janice. I am extremely grateful to my own supervisor, Dr. Bruce Verchere (the great-grandfather in this academic family!), for providing a superb example of effective mentorship and a supportive environment focused on student development. There are many opportunities for students, staff, and faculty in our department to participate in science fair outreach activities. Consider volunteering with a formal mentorship program to help increase access to research expertise for high school students, teachers, and parents. Judge at a science fair, encourage your kids to participate, or reply to that email from the student with no experience who is keen on learning about the work that you do. It will likely mean a great deal to them, and you might learn something valuable too.



Janice Pang with her project display at the 2013 Canada-Wide Science Fair  
Photo: Robert Young



Cyrus Chehroudi (R), PALM Summer Research Fellowship Program undergraduate, at the lab bench with Janice Pang (L), grade 10 student at Pinetree Secondary and Canada-Wide Science Fair gold medal winner





Neuropathology Program Director Chris Dunham with Neuropathology Resident Fahad Alghamdi



Neuropathology Resident Zahra Al-Hajri

## Pathology Residency Programs

MICHAEL NIMMO

### Annual Events

The successful completion of residency training is an accomplishment worthy of celebration. Each May, residents, their guests and staff gather for an evening to acknowledge this milestone. The grad dinner was at the Royal Vancouver Yacht Club. Highlights of the festivities included a look ahead at the future plans of graduates as they received their training certificates.

The PMI course “Professionalism and Ethics” was held June 24th and 25th 2013. This two day workshop provided a foundation of relevant ethical principles and commonly encountered scenarios, including a review and consideration of current issues and challenges in medical professionalism.

### Congratulations to our 2012/2013 Graduates



**DR. ZAHRA AL-HAJRI**

- UBC Neuropathology (2010 -2013)



**DR. FAHAD ALGHAMDI**

- UBC Anatomical Pathology (2006-2010)
- UBC Neuropathology (2010 -2013)



**DR. RASHMI GOSWAMI**

- Residency/ Fellowship Program Hematopathology (2012-2013)



**DR. SALWA EL MATI**

- UBC Hematopathology (2009-2013)



Malcolm Hayes and Anatomical Pathology Chief Resident Patrick Wong



Anatomical Pathology Program Director Diana Ionescu and AP Resident Tawny Hung



Hematopathology Resident Salwa El Malti



Malcolm Hayes and AP Chief Resident Jason Morin

## Dr. Melvyn Bernstein Award

The Melvin Bernstein Award is to recognise faculty members for outstanding contributions to the residency programs.

The award is intended to recognize faculty members who are involved not just in resident academic education, but who are also involved in professional education and mentoring of residents. **Dr. Malcolm Hayes** (2011 AP) and **Dr. Michael Nimmo** (2012 GP) are the recent recipients of this teaching award.

***History of Dr. Melvyn Bernstein Award:** Dr. Melvyn Bernstein was head of Medical Biochemistry at UBC Hospital in the 1990s. He passed away at an early age from glioblastoma multiforme. This award was created in honor of his contributions to the department. Awardees are recognized for their outstanding efforts to resident academic and professional education and/or mentorship. We would like to honor awardees for outstanding contributions to not just resident academic education, but also for professional education as well as mentorship. One member from the Department of Pathology will be recognized each year.*



**DR. HANS FRYKMAN**

- UBC Medical Biochemistry (2009-2013)



**DR. CHRISTOPHER CONKLIN**

- UBC Anatomical Pathology (2008-2013)



**DR. TAWNY HUNG**

- UBC Anatomical Pathology (2008-2013)



**DR. EHSAN DAVANI**

- UBC General Pathology (2009-2013)

# NEW GENOMICS COURSE FOR PATHOLOGY RESIDENTS

**TENTATIVE DATES: JAN 6-10, 2014,  
(SUBJECT TO CHANGE).**

We have developed a highly integrative, practical and focused approach to genomics teaching for residents and trainees in the Department of Pathology and Laboratory Medicine to be offered as a 1 week intensive program in Jan 2014. Simple genetic tests with a limited detection threshold are gradually being replaced by multiplex, deeply interrogative assays which coincide with the recent revolutions in massively parallel sequencing and advanced molecular profiling technology. This is further propelled by simultaneous ongoing discoveries of novel cancer pathway aberrations that drive the development and clinical application of novel targeted therapeutics. More questions are being asked of the pathologist and biopsied tissues are getting smaller. This course provides the residents a review and refresher of relevant topics in genomics and epigenomics followed by a survey of available clinically significant molecular diagnostic assays as well as bioinformatic tools.

Genomic medicine and lab medicine, especially pathology, are natural and symbiotic partners in the future of patient care. In many cases, molecular diagnostic assays complement rather than supplement “glass-based” pathology. For example, correct identification of tumor cells and estimation of tumor fraction facilitates downstream analysis. In an era of personalized medicine, understanding of the genomic and epigenomic makeup of a disease lesion, *via* the appropriate application of advanced molecular tests and bioinformatic analytic tools, represents a logical progression from special stains to epitope-specific antibodies to genetic tests, for making an accurate and informative diagnosis. We will draw from the community of local experts at UBC, the Michael Smith Genome Sciences Centre, the Centre for Disease Control and the BC Cancer Agency in the fields of molecular pathology, molecular biology, microbiology, bioinformatics and genomics to offer an immersive introductory program on current state of the art and emergent technologies and their applications.



Sohrab Shah



Stephen Yip

The core competencies students will obtain and the course outline are listed below:

## Core competencies:

- Solid understanding of the concepts of human molecular biology including the human genome, resources to navigate it, the nature and extent of human genetic variation as it applied to pathology and genetic disorders
- Available and emerging molecular assays for diagnosis
  - understanding the nature of the test, its limitations and assumptions for interpretation
  - appreciate that specific molecular variants can lead to unique histopathology, biochemical findings, and biological behaviour with direct impact on clinical management of patients
  - understand that careful evaluation of the tissue (for extraction of genetic material) and proper pathologic diagnosis are necessary prerequisites for molecular assays
- Understand qualitative differences between human genomes and prokaryotic genomes and highlight the role of genomics in the field of microbiology and infectious diseases
- Understanding the role of computation and bioinformatics in emergent assays

## Syllabus, lead instructors: Dr. Stephen Yip and Dr. Sohrab Shah

**Day 1:** *Concepts in molecular biology*

**Day 2:** *Diagnostic tests in 'omics'*

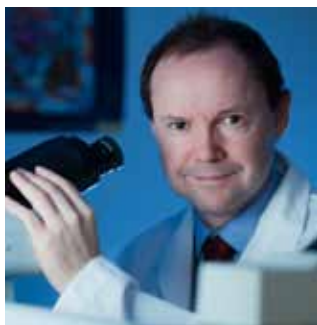
**Day 3:** *Whole genome/transcriptome approaches + systems biology*

**Day 4:** *Pathogen genomics*

**Day 5:** *Future trends near and long term*



## AWARDS AND ACCOMPLISHMENTS



David Huntsman



Torsten Nielsen

### Torsten Nielsen and David Huntsman receive Canadian Cancer Society Awards

**Torsten Nielsen**, Professor in the Department of Pathology & Laboratory Medicine and Clinician Scientist at the BC Cancer Agency, received the **2012 Young Investigator Award**. The Young Investigator Award is given to a promising young Canadian investigator judged to have made outstanding contributions to basic biomedical research and had the potential to lead to, or has led to, better understanding of cancer, improved cancer treatments, cures or new advances in cancer control.

Dr. Nielsen is an international leader in the development of new diagnostic tools and predictive clinical tests that lead to improved treatments. His research focus is in the areas of breast cancer and musculoskeletal tumours. Dr. Nielsen shared the award with Aaron Schimmer, an Associate Professor in the Departments of Medicine, Medical Biophysics, and Institute of Medical Sciences at the University of Toronto.

**David Huntsman**, Professor in the Department of Pathology & Laboratory Medicine and Clinician Scientist at the BC Cancer Agency, received the **2012 William E. Rawls Prize**. The William E. Rawls Prize is given to a young investigator whose work has led to important advances in cancer control within the past decade.

Dr. Huntsman is a leader in the field of genetic abnormalities. His notable contributions to the genetics of familial gastric cancers and ovarian cancer have changed the way these diseases are studied, diagnosed and managed.

The 2012 research awards were presented on June 5 by the Canadian Cancer Society at their annual research brunch.



### Celebrating Excellence in the Faculty of Medicine

Six faculty members of the Department of Pathology and Laboratory Medicine have been recognized for excellence in teaching, research, administration, innovation and public service by the Faculty of Medicine, UBC. Please join us in congratulating our latest award recipients:

**Dr. Malcolm Hayes:** Clinical Faculty Awards for Career Excellence in Clinical Teaching

**Dr. Richard Crawford:** Clinical Faculty Awards for Excellence in Clinical Teaching

**Dr. Jay Kizhakkedathu:** Distinguished Achievement Awards for Excellence in Basic Science Research

**Dr. Sohrab Shah:** Distinguished Achievement Awards for Overall Excellence – Senior Faculty

**Dr. Sam Aparicio:** Distinguished Achievement Awards for Overall Excellence – Early Career

**Dr. Michael Nimmo:** UBC Killam Teaching Prize



**DR. JUDY ISAAC-RENTON**  
RECENTLY RECEIVED THE  
**HIGHLY PRESTIGIOUS 2013**  
**AMERICAN SOCIETY FOR**  
**MICROBIOLOGY (ASM)**  
**GEN-PROBE JOSEPH**  
**PUBLIC HEALTH AWARD**

# Kizhakkedathu Laboratory: Polymer Based Therapeutic Approaches for Unmet Clinical Needs

JAYACHANDRAN KIZHAKKEDATHU

We are living in a world full of potential. Our life expectancy has been increased and people in their 90's and beyond are leading healthy lives. Now, look at another scenario, where the average life expectancy of a person with thalassemia or sickle cell anaemia (both hemoglobin disorders) is only around 40 years! Rough estimates are that world-wide there are 300 000-400 000 children born annually

drug administration. The motivation and major thrust of my research program at the Centre for Blood Research is to address the various unmet clinical needs of treating individuals with diseases such as Thalassemia.

As a scientist, I have always been fascinated by the opportunities polymers offer for developing novel biomaterials and using them to address unmet clinical needs.



Jayachandran Kizhakkedathu



Jasmine talking at ASH



with inherited hemoglobin disorders. There are no real values, as there is no data on diagnosis and management due to the lack of interests or resources by respective governing bodies in the most affected parts of the world. Infant mortality rates are very high in nations with high prevalence of these diseases. Quality of life of the surviving patients is low too! The major contributing reasons for this are lack of care, toxicity of current drugs, low efficiency of the drugs, high cost of the treatment, and above all non-compliance due to difficulties with the

Modern medicine has greatly benefited from the advancement in biomaterials. The design and development of novel therapeutics/materials for the replacement of natural tissues and organs has had an impact on the health care of millions of people. Synthetic polymers played critical roles in the success of many biomaterial applications and are widely used in implants, contact lenses, vascular grafts, stents, dental materials and in drug delivery. Understanding, at the molecular level, the interactions of synthetic materials with biological

systems and development of methods for tailoring these interactions to achieve a specific biological activity, has been an important goal of my research program. My research interests are to develop macromolecular agents to treat iron overload in thalassemia and sickle cell anaemia patients, develop new technologies and therapeutic agents to address problems related to blood transfusion, and novel therapies for addressing the bleeding complications of current anticoagulation therapy. We are also developing polymers





Lab lunch



Lab bowling



Farewell party for Imran

**“Recent advancements of our laboratory include the design and development of a long acting iron chelator which increased the circulation half-life of a clinically used iron chelator desferoxamine from 5 minutes to 44 hours. This helped to enhance the iron excretion capacity and drug tolerance”**

which are antithrombotic and antimicrobial for implant applications, and macromolecular reagents for improving the detection of protein biomarkers present in blood to aid early cancer diagnosis. I was recruited by the Department of Pathology and Laboratory Medicine and Center for Blood Research (CBR) in 2005 to contribute to the multidisciplinary research team dedicated to blood research. I am very fortunate to work with excellent colleagues and mentors including basic scientists as well as

clinicians, and our research program has greatly benefited by these day-to-day interactions with prominent scientists. The Department of Pathology and Laboratory Medicine, the Centre for Blood Research and UBC helped me to build these strong partnerships. The strong collaborative aspects of my research not only help to advance important ideas from conception to finding a solution, but also help graduate students and postdoctoral fellows to gain breadth of knowledge and experience beyond their core disciplines. I strongly

believe in partnerships and collaborations and feel this is the key to the success of my research program. Recent advance of our laboratory include the design and development of a long-acting iron chelator which increased the circulation half-life of a clinically used iron chelator desferoxamine from 5 minutes to 44 hours. This helped to enhance the iron excretion capacity and drug tolerance for the treatment of iron overload. We were successful in developing a universal antidote for clinically used parenteral anticoagulants including

heparin, low molecular weight heparins and fondaparinux to prevent bleeding complications. Another important achievement is the development of a cell-surface modification method whereby we created universal blood donor cells by combining an enzymatic treatment with polymer grafting techniques. Our laboratory was also successful in the discovery of a universal cell-adhesion mechanism based on choline phosphate, and the design of a polymeric proteomic reagent which aids the identification of N-terminals of thousands of proteins by

a single analysis step for the discovery of cancer biomarkers. Polymer designs that take into consideration blood and tissue compatibility and interactions are key to the success of all these applications. The program provides unique interdisciplinary training to graduate students and postdoctoral fellows while making significant contributions to address the various unmet clinical needs in treating hematological disorders. This would not have been possible without the strong collaborative nature of the University of British Columbia, the

encouragement I received from mentors, strong support from the Department of Pathology, the Centre for Blood Research and the generous funding from various organizations including MSFHR, CIHR, NSERC, CFI and some industrial grants, and I am truly grateful.

## Research News



Members of Dr. Dunham's and Dr. Dunn's lab

# \$200,000 over 2 years

Congratulations to **Drs. Chris Dunham & Sandi Dunn** for their successful grant application to the Michael Cuccione Childhood Cancer Research Foundation. Their study entitled "Personalizing the treatment of pediatric medulloblastoma" has been awarded full funding for 2 years.



# A Measured Plan: Early Diagnosis and Prevention of Kidney Disease in Guyana

DAVID SECCOMBE



Grand Challenges Canada  
Grands Défis Canada

Chronic non communicable diseases (diabetes, cardiovascular (CVD) and chronic kidney disease) are responsible for 60 percent of morbidity and mortality in the Caribbean. The incidence of these diseases is increasing throughout the region and strategies are needed to reverse this trend.

With current medical practice, CKD (chronic kidney disease) is being recognized late in the course of the disease process with opportunities for intervention/prevention being lost. To help address this problem KDIGO (Kidney Disease: Improving Global Outcomes) has recommended that medical laboratories routinely report a new index of kidney function - eGFR (an estimation of glomerular filtration rate). This index, which is calculated on the basis of the patient's age, gender and serum creatinine test result, identifies kidney disease at an earlier stage of the disease process thereby affording an opportunity



for interventions that can prevent or slow progression of the disease. It is essential that a number of requirements be in place to ensure accuracy and uniformity in the routine reporting of eGFR. Foremost among these is that the serum creatinine test results must be accurate, standardized and traceable to the internationally accepted ID/MS reference method for the measurement of this analyte. This project will standardize the measurement of creatinine by the clinical labs in Guyana and introduce the routine reporting of eGFR into this country.

Dr. David Secombe is mentoring Dr. Julie Shaw (a recent graduate in Clinical Chemistry from the University of Toronto) on this project which has been funded by Grand Challenges Canada. At the time of his most recent visit to Guyana, he outlined the project at a meeting with the Prime Minister of Guyana Mr. Sam Hinds O.E.

For more info:

<http://www.grandchallenges.ca/grantee-stars/0223-01/>

Faculty members awarded  
Queen Elizabeth II Diamond Jubilee Medals  
Mel Krajden, Professor  
Victor Ling, Professor





## UBC Department Members Part of Vancouver General Hospital Team

Recognized for Innovative Research to  
Reduce Hospital Infections

A multidisciplinary team at Vancouver General Hospital led by Dr. Elizabeth Bryce has been recognized at an international infection control conference in Geneva for their innovative work to reduce the risk of surgical site infections (SSIs). The hospital-based team included members of the UBC Department of Pathology and Laboratory Medicine and VGH Division of Medical Microbiology and Infection Control (Dr. Elizabeth Bryce, Dr. Diane Roscoe, and Dr. Titus Wong), Department of Surgery (Dr. Bas Masri), and VGH Perioperative Services (Shelley Errico, Kelly Barr), and Quality and Patient Safety (Leslie Forrester).

SSIs typically develop from patients' endogenous bacteria flora, contributing to patient morbidity and mortality, and adding substantial hospital costs and extended patient stays. Literature suggests that decolonizing the nares and body prior to surgery can reduce the risk for SSIs; this is achieved traditionally with chlorhexidine to decolonize the body, and mupirocin ointment for the nares twice a day. Mupirocin treatment takes 5 to 7 days, is narrow spectrum, has poor patient compliance, and is coupled with the potential for the development of antimicrobial resistance.

The innovative strategy employed by the team included using chlorhexidine as a means of body decolonization, but replaced the problematic mupirocin ointment with photodisinfection technology: a non-toxic photosensitizer dye, methylene blue, is applied to the nares, and a specific wavelength of light is delivered *via* nasal inserts. The light activates the methylene blue to create reactive oxygen species, eradicating microorganisms. Unlike mupirocin

ointment, this technology does not generate antibiotic resistance, it is effective immediately against a broad range of microorganisms and takes less than 10 minutes to apply.

The focus of the 12-month project was to determine whether a pre-surgical decolonization program with a combination of nasal photodisinfection and body chlorhexidine wipes decreased surgical site infections (SSI). Over 5,000 patients were treated, and of the 3,274 patients who would routinely be followed for SSI surveillance according to CDC guidelines, ninety-four percent were treated (3,068 patients). A 4:1 matched propensity score analysis was performed on treated patients and untreated patients to remove confounders and found that the pre-surgical decolonization program was protective, reducing the risk of SSIs

by more than ten-fold. Compared to a four-year historical SSI rate, a 42% reduction of SSIs was achieved. The program also reduced SSI re-admission rates from 4 to 1.25 per month. The treatment was very well tolerated, with only a 0.12% adverse event rate, each of which were described as mild, transient irritation of the nasal passages.

The work was recognized at the International Conference on Prevention and Infection Control, held at the University Hospitals of Geneva, and chaired by Dr. Didier Pittet, a world-renowned expert on Infection Prevention and Control. The Vancouver General Hospital team competed against 40 international teams at the conference's Innovation Academy over three days of competition, winning the top prize: the Innovation Award of Excellence, and 10,000 Swiss Francs.

The award money will be used to advance clinical applications of photodisinfection therapy. The team was also recognized provincially with the 2012 Excellence in Quality – Getting Better award from the BC Patient Safety and Quality Awards, nationally with the 2012 Innovation Academy top prize at the Association of Medical Microbiology and Infectious Disease Canada conference, and by the BC Ministry of Health. The project could not have been completed without the cooperation and support from the Medical Microbiology laboratory technologists, Perioperative services team, and VCH operations and senior leaders. “It’s important to acknowledge the commitment to patient safety by the team who cheerfully took on this project in addition to their regular work” said Elizabeth Bryce.

**The Vancouver General Hospital team competed against 40 international teams at the conference’s Innovation Academy over three days of competition, winning the top prize: the Innovation Award of Excellence, and 10,000 Swiss Francs.**



On July 10th, Dr. Bruce McManus, CEO of the Centre of Excellence for the Prevention of Organ Failure (PROOF Centre), and Professor in the Department of Pathology & Laboratory Medicine, presented to summer students at the Centre for Heart and Lung Innovation’s Career Day. Visit the new PROOF Centre blog at [www.proofcentre.tumblr.com](http://www.proofcentre.tumblr.com) to read about the advice he and other researchers have for young investigators.

Keys to career success: advice for emerging scientists

<http://proofcentre.tumblr.com/post/55710345081/keys-to-career-success-advice-for-emerging-scientists>

Visit [www.proofcentre.ca](http://www.proofcentre.ca) to learn more about biomarker research in heart and lung health.

**Follow us on Twitter  
@PROOFCentre**



# Tumour Cells Hijack an Ancient Pathway to Adapt to Metabolic Stress

POUL SORENSEN

& GABRIEL LEPRIVIER



A recent study published in *Cell* by Dr. Gabriel Leprivier and Dr. Poul Sorensen of the UBC Department of Pathology and Laboratory Medicine highlights a new molecular pathway that supports the adaptation of aggressive tumours to acute metabolic stress, and may represent a potential novel therapeutic target.

The ability of tumours to manage and adapt to acute nutrient deprivation is critical for outcome. Indeed, as tumours grow they are increasingly subjected to limited nutrient availability within the tumour microenvironment due to the defective nature of the tumour neovasculature. While such metabolic stress is initially detrimental for tumour progression, it appears that a small sub-population of tumour cells can activate a specific molecular pathway that allows them to adapt and to survive when nutrients are limiting, which may contribute to the aggressive behaviour of these tumour cells. As detailed below, the pathway represents a highly promising therapeutic target for interfering with tumours' ability to handle stress.

In Leprivier *et al.*, *Cell*, 2013, Dr. Leprivier, a research associate in Dr. Poul Sorensen's lab, along with collaborators from UBC, University of Toronto, McGill University, Germany, the UK, and France, characterized a kinase that is critical for the adaptation of tumours to

nutrient deprivation. This kinase, called eukaryotic elongation factor 2 kinase (*eEF2K*) is known to inhibit protein synthesis at the elongation step by inactivating the translation elongation factor *eEF2* when nutrients are low, thus preserving the high amounts of energy normally consumed by this process.

The study shows that tumour cells modeling the early stages of tumorigenesis are hypersensitive to nutrient withdrawal due to defects of the activation of *eEF2K*. Remarkably, some tumour cells can be selected to adapt to these conditions, a process which is strictly dependent on the activation of the *eEF2K* protein. Genetic inactivation of this kinase in aggressive tumour cells resistant to nutrient starvation rendered the cells especially sensitive to the removal of nutrients. *In vivo*, using an immunodeficient mouse model, Leprivier *et al.* show that xenotransplanted tumours engineered to overexpress *eEF2K* are profoundly resistant to caloric restriction of the mice, in contrast to tumours with low activity of this kinase and consequently their growth is drastically reduced.

The relevance of these findings to humans are revealed by the tight association between high levels of *eEF2K* expression and poor prognosis for aggressive human tumours such as medulloblastoma and glioblastoma multiforme. In addition,

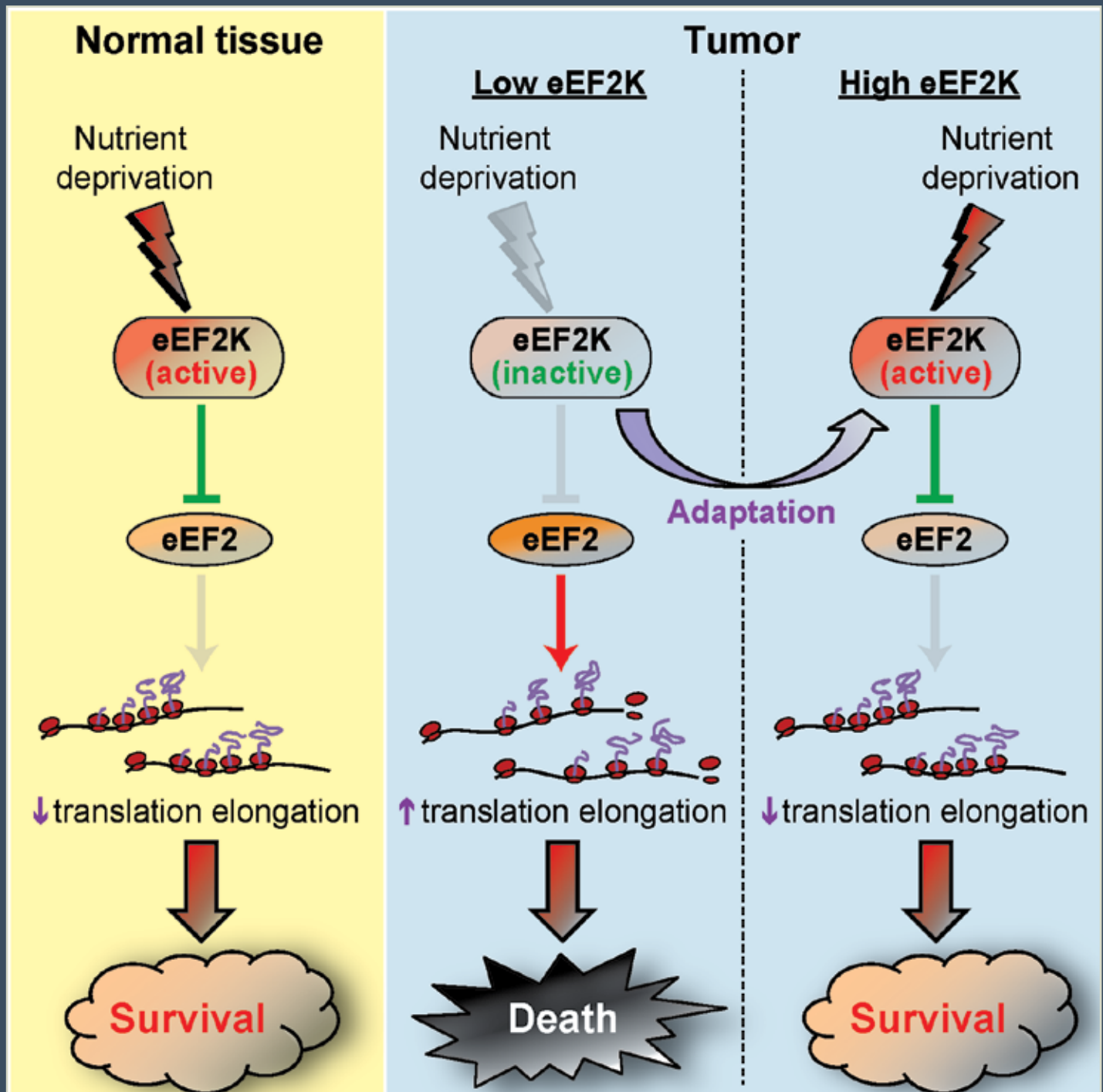
*eEF2K* activity is high in tumour tissues of medulloblastoma whereas it is not detected in the surrounding normal brain tissues from the same patients. Interestingly, the results highlight that this pathway is a fundamental component of the nutrient stress response in living organisms, as the survival of a *C. elegans* model lacking the *eEF2K* ortholog (called *efk-1*) is severely compromised in nutrient-free conditions.

Overall, this study reveals an important new mediator of the nutrient stress response, which is evolutionarily conserved and is hijacked by aggressive tumours to support their adaptation to nutrient deprivation. The implications for tumour therapy are important as the targeted inhibition of *eEF2K* in aggressive tumours is expected to affect their survival ability under the nutrient-deprived conditions of the tumour microenvironment.

This work was supported by fundings to Dr. Poul Sorensen from the Canadian Cancer Society Research Institute and the British Columbia Cancer Foundation through generous donations from Team Finn and other riders in the Ride to Conquer Cancer.

## Reference

Leprivier G, Remke M, Rotblat B, Dubuc A, Mateo AR, Kool M, Agnihotri S, El-Naggar A, Yu B, Somasekharan SP, Faubert B, Bridon G, Tognon CE, Mathers J, Thomas R, Li A, Barokas A, Kwok B, Bowden M, Smith S, Wu X, Korshunov A, Hielscher T, Northcott PA, Galpin JD, Ahern CA, Wang Y, McCabe MG, Collins VP, Jones RG, Pollak M, Delattre O, Gleave ME, Jan E, Pfister SM, Proud CG, Derry WB, Taylor MD, Sorensen PH. The eEF2 kinase confers resistance to nutrient deprivation by blocking translation elongation. *Cell*, 2013 May 23;153(5):1064-79.



## Figure Legend

Model for the function of the eEF2K in mediating the biological response to acute nutrient deprivation. In response to nutrient deprivation, eEF2K gets activated in normal tissues, promoting cell survival by inactivation of the translation elongation factor eEF2 and inhibition of mRNA translation elongation. In tumours, eEF2K similarly confers protection against nutrient deprivation stress but only in tumours harbouring high levels and/or activity of eEF2K. If eEF2K fails to be increased and/or activated, tumours are unable to survive nutrient deprivation by lack of inhibition of eEF2 and of mRNA translation elongation. However, the ability of such tumours to induce eEF2K levels and/or activity leads to adaptation and resistance to nutrient deprivation stress.



Dr. Dragoș M. Vasilescu, PhD  
Department of Pathology  
Faculty of Medicine, UBC

## Postdoctoral Fellowship Awards for Dr. Dragoș Vasilescu

Dr. Vasilescu was awarded Postdoctoral Fellowships from both the CIHR/IMPACT Strategic Training Program in Health Research and the Canadian Thoracic Society (CTS) to support his work at the UBC James Hogg Research Center (JHRC) located at St. Paul's Hospital.

His project is focused on chronic obstructive pulmonary disease (COPD), currently the 4th leading cause of death. COPD is caused primarily by the inhalation of toxic particles and vapors primarily but is not exclusively associated with tobacco smoke. These exposures induce a chronic inflammatory process in the lungs of everyone who smokes. For a susceptible minority of approximately 20% of smokers, the chronic inflammation becomes coupled with a destructive tissue repair process that gradually produces severe obstruction to flow in the small airways and emphysematous destruction of the alveolar tissue.

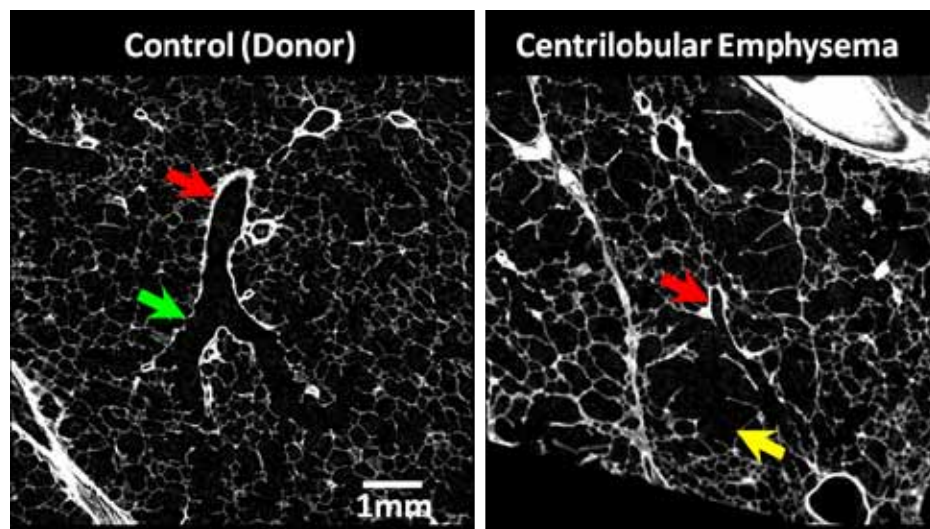
The primary goal of Dr. Vasilescu's project is to identify the mechanisms responsible for the small airway obstruction and emphysematous lung destruction by combining novel three dimensional (3D) imaging with direct measurements of lung histology and profiling of gene expression. During the course of his fellowship, Dr. Vasilescu will be mentored by Dr. James Hogg,

Emeritus Professor, and Dr. Peter Paré, Professor in the Department of Pathology and Laboratory Medicine at UBC. Prior to coming to UBC, Dr. Vasilescu obtained his undergraduate education at the University of Applied Science at Giessen, Germany. He completed his PhD degree at Philipps University in Marburg, Germany where he received advanced training in the use of micro Computed Tomography ( $\mu$ CT) imaging and had the opportunity to work with Professor Eric Hoffman at the

University of Iowa who is a pioneer of this novel technique. In addition he also had the opportunity to work directly with Professor Ewald Weibel, a world-renowned expert on lung anatomy and quantitative histology. This experience has allowed him to link the 3D  $\mu$ CT images with histology to visualize some novel features of lung morphology and provide quantitative measurements of the lung pathology.

The ongoing collaboration between UBC James Hogg Research Center (JHRC) and the Boston University Medical Center's bioinformatics group directed by Dr. Avrum Spira, will allow Dr. Vasilescu to link the structural alterations to changes of gene expression profiles in companion samples within the same lung.

These experiments are designed to develop new biomarkers to improve the early diagnosis of COPD, to identify better therapeutic strategies to improve the quality of life of Canadians suffering from COPD, and to lower the cost of treating this disease.



**Figure:** The two  $\mu$ CT images of inflated and fixed tissue samples enabled the visualization of small airways and parenchymal structures such as alveoli. (A) Normal appearance of terminal (red arrow), respiratory bronchioles (green arrow) where alveoli first appear. (B) Narrowed bronchioles (red arrow) and dilated partially destroyed respiratory bronchioles (yellow arrow) forming an early centrilobular emphysematous lesion.



NOV 22,  
2013

UBC THUNDERBIRD  
ARENA



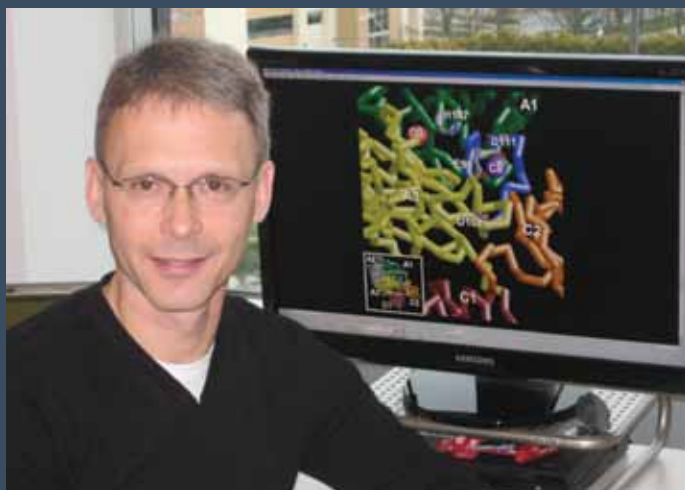
Helping the Homeless through Sport...

# ARE YOU READY TO WIN?

Each year since 2008, Hockey Helps the Homeless (HHTH) Vancouver has been held at UBC. The HHTH organization, which is dedicated to raising funds to help homeless men, women and youth across Canada, has raised over \$4.2M since it began.

Last year, Mike Allard (an avid recreational ice hockey player) participated in HHTH Vancouver 2012 that was held at UBC on Friday November 23rd, 2012. The day was a great success! Over \$330,000 were raised, surpassing the fundraising goal and setting a national record for this event (it is also held in Toronto, Montreal, Ottawa and Calgary). The money was used to support key organizations in our local community such as Covenant House, First United Church, Rain City Housing, St. James Community Service Society, Lookout Emergency Aid Society, and Urban Native Youth Association, that help those unfortunate individuals who find themselves without a home. Homelessness is one of the most serious problems in our community and these organizations rely on private donations to make a difference and provide food and shelter for the most unfortunate members of our society. To make a great day even better, his team managed to win the tournament. In addition to regular participants, each team has one to two ex-pros, typically Canucks alumni, on the roster, a situation that not only raises the quality of play but also the general experience.

Mike plans to lace up his skates again this year to defend the title and, more importantly, raise funds for an extremely worthwhile cause. HHTH Vancouver will take place this year at UBC Thunderbird Arena on November 22, 2013. Information about the organization and the event can be found at its website, <http://www.hockeyhelpsthehomeless.com/>.



## Pathology and Laboratory Medicine at **The UBC Life Sciences Centre**

ED PRYZDIAL

With guidance from the medical community, 2002 saw the BC Liberal government promise to nearly double the provincially distributed medical school cohort in two years. With this insight came the need for a new facility large enough to house the expanded class. Without much time, construction of the Life Sciences Centre on the UBC Point Grey Campus was fast-tracked. Winning international awards for green space and sustainability, doors to the campus' largest building (greater than 52,000 square meters) were initially opened to first year medical students. The LSC comprises three 5-storey towers above-ground. These are separated by two huge atria used for casual meetings, studying and filming movies, but most importantly to enable daylight to penetrate to all of the open-concept research laboratories on the upper floors – a welcome feature during Vancouver's winter months. On the first floor, classrooms and three large lecture halls equipped to televise across-province are scheduled with priority for the Medical School, but empty time slots are continually filled by others. Also on the first floor is a state-of-the-art multipurpose laboratory, containing 125 computer stations for interactive audiovisual learning, where all the medical students can examine the same hematopathology specimen by microscope simultaneously. Three sub-ground levels feature a gross anatomy lab, a biohazard containment facility and

the Centre for Animal Modeling, for teaching and research purposes.

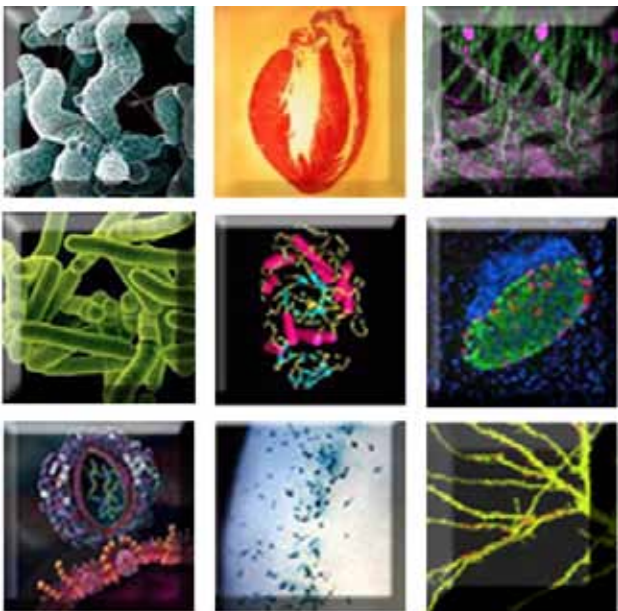
While the new cohort of medical students enjoyed their first year of class, the second to fifth floor LSC research facilities were completed. Along with their lab teams, there are over 85 faculty members who occupy the LSC. All are affiliated with at least one of ten trans-departmental thematic groups encompassed by the Life Sciences Institute (<http://lsi.ubc.ca/>), the research arm of the LSC. The writing of this article is timely, since in early July, Dr. Pieter Cullis was announced as the new LSI Director, accepting the responsibility formerly held jointly by Drs. Christian Naus and Linda Matsuuchi. His new vision includes personalized medicine, interdisciplinary investigations and pursuit of fund-raising for translation of knowledge to application.

It seems that Pathology and Laboratory Medicine Faculty pseudopods extend into most, if not all, of the research institutes across Vancouver. The LSI is no exception. Within a Senate-approved Centre that comprises one of the LSI thematic groups is a hub of eight of our Department members, and the reason I joined UBC. That group is the Centre for Blood Research (<http://cbr.ubc.ca/>), the brain-storm of Pathology's Drs. Dana Devine and Don Brooks, Drs. Ross MacGillivray and Grant Mauk from Biochemistry and Molecular Biology, and Dr. Charles Haynes from Chemical Engineering. The unifying mission of the CBR is to "improve the health and well-being of patients by performing innovative research in blood and blood related processes, emphasizing: blood transfusion products; restoring hemostatic balance; and reducing inflammation and infection." CBR was originally conceived in response to Justice Horace Krever's inquiry into Canada's tainted blood tragedy of the 1980s and has affiliation with Canadian Blood Services. Dr. MacGillivray, as founding Director, admirably steered the CBR and his leadership facilitated new multidisciplinary interactions through provision of a team grant-funded infrastructure and a dynamic training program. Over the past four years, Dr. Ed Conway (Experimental Medicine) has done a superb job of taking over the reins, continuing the primary strategic goals, furthering private sector fund-raising and building on knowledge translation especially by strengthening ties with our clinical colleagues. The LSC Naiman-Vickers Multipurpose Lab was recently named to honour and thank revered Vancouver hematologists for establishing a CBR endowment. Thirteen CBR Principal Investigators occupy the fourth floor of two towers in the LSC, with approximately 30 more off-site affiliated investigators, who span 12 UBC Departments and 6 Faculties, making it the largest interdisciplinary blood research centre in the world.





The Life Sciences Centre construction broke ground in 2002 just south of the UBC Hospital. Winning international architectural awards, it was completed in 2005.



In addition to the Centre for Blood Research, the Life Sciences Institute is organized into nine thematic groups whose creative work is featured (from top left to right): Bacterial Adaptation and Response Networks; Cardiovascular; Cell Developmental Biology; Centre for Tuberculosis Research, Chemical Biology of Disease, Diabetes, Infection, Inflammation and Immunity, Molecular Epigenetics, and Neuroscience.

While initiated as a virtual Centre in 2002 through generous Canadian Foundation for Innovation funding, the CBR became a geographic reality as the first research occupants of the LSC.



# From Farm to Laboratory: a “Magnetic” Journey by a New Faculty Member

CORREE LAULE

■ My interest in science began very early on; really, I think I've always been a researcher at heart. As an only child and immigrant from Germany, growing up on a farm in Lumby, a small rural BC town, fostered my curiosity and taught me independence as I searched for ways to entertain myself using what was at hand. Local flora and fauna, and the tools in my dad's shop, led to some pretty elaborate houses for the caterpillars, frogs and beetles I managed to capture in the forest. My dad was a welder and when I was about 5 years old he brought me home a magnet and a glass jar filled with metal filings – I was mesmerized by how the magnet could make the filings move through the glass and intrigued by the patterns they made on a piece of paper when the magnet was underneath. It all just seemed like magic. I roamed around the farm to see what else I could move with my magnet, including nails, rocks, toads and ants. Some items worked better than others.

■ Fast-forward a few years and there I was, a first year science student at university. Like the vast majority of first year science students, medical school was in my future – I was going to practice medicine and save lives! Alas, my dream was short-lived. First year biology and I did not mix well – dissecting a trout and memorizing its organs was not

my cup of tea. However, my interest in math and science held strong; I settled on physics as the idea of using math to solve problems was appealing. The newly started co-op program was also a big selling feature as the idea of taking breaks from courses while getting paid seemed like a pretty sweet deal. A few particle physics and electrical engineering jobs later my mind returned to medical research – I never really stopped being interested in medicine and helping people, but I was still haunted by the trout. Then I took a course that changed my life – Introduction to Biophysics. The concept of using math and physics to solve biological and medical problems was the perfect fit to my passions and skills. It was also at this time that I first learned about magnetic resonance imaging (MRI) – I was amazed that you could use giant magnets to take detailed pictures of the inside of someone's body without cutting it open. Even though I now understand the mechanisms and technology behind how the images are generated, the magic of it all still stays with me.

■ I completed my PhD in Physics specialising in MRI and multiple sclerosis (MS) in 2005, after which I joined the Department of Radiology as a Research Associate. My graduate and post-graduate work focused on developing and applying an *in vivo* MRI marker for the measurement of myelin in human brain and spinal cord. In 2009 I was the inaugural recipient of the Women Against MS Transitional Career Development Award from the endMS Research and Training Network and the Multiple Sclerosis Society of Canada. This five-year award (\$500,000) funds two years of a post-doctoral fellowship and the first three years of a junior faculty position at a Canadian university. I recently completed a post-doctoral fellowship with Dr. Wayne Moore in the Department of Pathology & Laboratory Medicine where my research focused on MRI-pathology correlation studies in MS brain tissue. On January 1, 2013 I was appointed as an Assistant Professor in the Departments of Radiology and Pathology & Laboratory Medicine.



Newlywed as of August 2, 2013

- Not including my very early research days as I attempted to pick up ants with magnets, I have now been formally involved with nuclear magnetic resonance (NMR) and MRI research for 16 years. I am interested in understanding the microstructural and pathological determinants which govern magnetic resonance signal changes in central nervous system tissue. While my primary area of research is MS, my interests extend to many other applications including schizophrenia, cerebral malaria, spinal cord injury, bipolar disorder, leukodystrophies and Huntington's disease, as well the characterization of normal controls. For more information about my research, please visit my website, [www.mripathology.ca](http://www.mripathology.ca).
- My transition from research associate / post-doctoral fellow to assistant professor

has been exciting and overwhelming. Navigating the university's appointment process for the first time requires patience, perseverance, and then more patience – I received tremendous support from my mentors and colleagues during the entire process. The required documentation and paperwork has been mountainous—luckily both departments provide excellent administrative assistance. Attempting to set up my own accounts and learn about UBC Finance has been eye opening - nothing is ever simple or easy when it comes to money! Besides the various bureaucratic and administrative hurdles, the most challenging part of my new appointment has been becoming familiar with the people and the vast array of research going on in the department. With such a large and extensive research program this will obviously take some time, but

I am keen to learn more about what's going on in the department and how my expertise and background might lead to new collaborations. To that end, I was an abstract reviewer and judge at this year's Pathology Day and I will be helping coordinate PATH 535/635 this year. I look forward to meeting many of the trainees in the graduate program in the fall!

- In my spare time I enjoy gardening, pilates, painting, spending time with our bunnies Turbo and Rocky and eating tasty food. I've been a board member of the North Shore Community Garden Society for 5 years and we'll be opening our 6th community garden in 2014. I am a newlywed as of August 2nd and will hopefully now have a lot more free time now as wedding planning takes up a surprisingly large amount of energy.

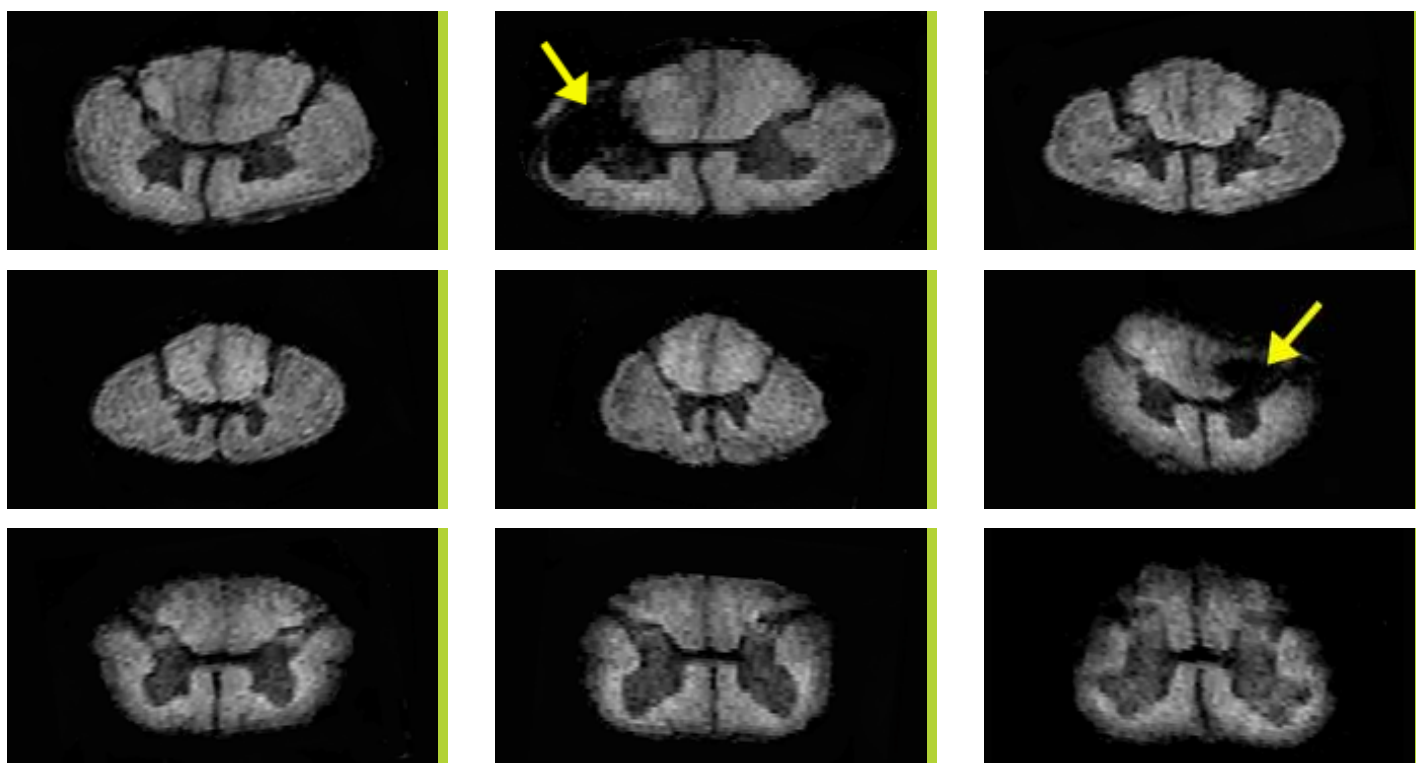


Figure: Myelin water images from a formalin-fixed multiple sclerosis (MS) spinal cord. Representative images show the anatomical variation in myelin along the cervical, thoracic and lumbar regions. Arrows indicate MS lesions which show loss of myelin. Samples were prepared with the assistance of Dr. Wayne Moore and Ms. Vlady Pavlova, Department of Pathology & Laboratory Medicine. Images were acquired at 7 Tesla at the UBC MRI Research Centre with the assistance of Dr. Piotr Kozlowski, Mr. Andrew Yung and Mr. Barry Bohnet, Department of Radiology.

# HAPPY RETIREMENT

DR. CEDRIC J CARTER  
RETIRES FROM VANCOUVER  
GENERAL HOSPITAL  
HEMATOPATHOLOGY



KATE CHIPPERFIELD

On June 14th, 2013 friends and colleagues gathered at the Royal Vancouver Yacht Club to roast and toast Dr. Carter on the occasion of his retirement from VGH Hematopathology. The program featured digs and innuendo appropriate to Cedric's level of humour. Although the entire Carter family was present, speakers were assured that nothing could offend, having lived with the man himself for decades. With this carte blanche, Drs. Bakul Dalal, Kate Chipperfield, Monika Hudoba, Bob Coupland, Dana Devine, Don Brooks, Louis Wadsworth and Tyler Smith entertained. We also heard from Dr. Salwa El-Malti, representing the residents; from Caroline and Grace Carter; and Cedric himself.

Dr. Carter arrived in Vancouver from McMaster University in 1985 and eventually became an Associate Professor in the UBC Faculty of Medicine. Throughout his early years in Vancouver he worked at the Shaughnessy and UBC Hospitals before settling in more recent years to a laboratory-based hemostasis practice at VGH and St Paul's Hospital (SPH), with academic offices at the Centre for Blood Research. A tireless teacher, Dr. Carter was active in teaching Path 300, 402 and 500 in addition to educating residents in the clinical hematology, hematopathology and general pathology UBC programs. Known more for enthusiasm and brilliance than clarity as an educator, Dr. Carter has been a favourite amongst residents and students alike. He has authored more than seventy refereed publications, supervised numerous post graduate students, and served long-term on grant review committees. As such his academic expertise will be sorely missed by his colleagues at VGH.

Dr. Carter plans to remain active on a part-time basis in Hematopathology practice at St. Paul's Hospital, and at the UBC Centre for Blood Research. This will allow him to pursue his passion for sailing, cycling and cross country skiing.





Top, L-R: Brittany Swanson, Eddie Carter, Caroline Carter, Ryan Holmes; Bottom, L-R: Diana Carter, Cedric Carter, Grace Carter



Don Brooks



Dana Devine



Kate Chipperfield



L-R: Linda Vickars, Cedric Carter, Shelly Naiman, Camilla Boldt



Salwa El-Malti



Grace Carter



Louis Wadworth



Tyler Smith

Credit: Dr. Bakul Dalal

# MEET THE PEOPLE OF PATHOLOGY

**KEVIN L. BENNEWITH, PHD**  
SCIENTIST, DEPARTMENT OF  
INTEGRATIVE ONCOLOGY, BC  
CANCER AGENCY

MICHAEL SMITH FOUNDATION FOR  
HEALTH RESEARCH SCHOLAR

ASSISTANT PROFESSOR, DEPARTMENT  
OF PATHOLOGY AND LABORATORY  
MEDICINE, UBC



## ... Little known facts:

---

Backpacked around Thailand for three weeks while in grad school

---

Musical tastes range from John Coltrane to Metallica

---

Worked four jobs during and after high school to put himself through University – worked in a bakery, delivered pizza, worked retail in a comic book store, and worked in a freezer plant processing fish and driving a forklift

---

Played saxophone in a community jazz band for 6 years

---

---

Can open a bottle of beer using pretty much anything

---

Decided to pursue his PhD instead of attending medical school at UBC

---

Spent four years in northern California where he developed a taste for good red wine

---

Has never been to Europe

---

Absolutely hates shopping for clothes

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Was once an extra on an episode of 21 Jump Street

---

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Is an avid DIYer – framing, drywall, roofing, plumbing, electrical, building fences and decks, renovating kitchens and bathrooms, etc

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Enjoys playing ice hockey, despite his obvious lack of skill

---

Can become obsessed with killing mosquitoes and wasps; thinks hand-held bug zappers are among the greatest inventions of all time

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## BRIEF LIFE HISTORY

Dr. Bennewith was born and raised in Langley, British Columbia, attended high school in Aldergrove, and received a BSc in Chemistry from the University of British Columbia in 1997. He received his PhD in Pathology and Laboratory Medicine from UBC in 2004 before heading to Stanford University for his post-doctoral training.

He was recruited into a Research Scientist position at the BC Cancer Agency in 2008 with a Clinical Assistant Professor appointment in Pathology and Laboratory Medicine at UBC. In 2011, Dr. Bennewith was promoted to a Scientist at the BC Cancer Agency with an Assistant Professor appointment in Pathology and Laboratory Medicine.

Dr. Bennewith's research interests involve the role of poorly oxygenated (hypoxic) tumour cells in promoting tumour resistance to treatment, tumour progression, immune modulation, and metastasis. His previous work has shown that hypoxic tumour cells secrete a variety of proteins that induce the mobilization of cells from the bone marrow and the aggregation of these bone marrow-derived cells into 'pre-metastatic niches' in metastatic target organs. These bone marrow-derived cells are thought to create localized environments in tissues that promote the subsequent survival and proliferation of metastatic tumour cells.

His laboratory is interested in how solid tumours dampen or manipulate the host immune system in order to promote the growth of metastatic tumour foci in tissues, and the influence of hypoxia in promoting the migration and invasion of tumour cells. Dr. Bennewith's research team currently consists of seven outstanding and dedicated lab members, including three Pathology and Laboratory Medicine graduate students.

Dr. Bennewith is the recipient of a Michael Smith Foundation for Health Research Biomedical Research Scholar Award, and research in his laboratory is funded by the Terry Fox Foundation, the Canadian Breast Cancer Foundation, the BC Cancer Foundation, and the Canadian Institutes of Health Research. In addition to his research program at the BC Cancer Agency, Dr. Bennewith is also a course co-coordinator for PATH 500B.

Dr. Bennewith lives in Pitt Meadows with his wife Lauren and their two kids Ella (6 years old) and Reid (15 months). He can often be seen running to catch the evening train, and when he's not spending his free time commuting he has a tendency to renovate his house (or other people's houses). He enjoys camping in the summer and skiing or playing hockey in the winter.

## ... JUST FOR FUN

### 1. WHERE DO YOU SEE YOURSELF IN 20 YEARS?

Heading into retirement with plans to build a house on one of the Gulf Islands.

### 2. WHAT DO YOU DO WHEN YOU ARE DRIVING ALONE IN A CAR?

My daily commute from Pitt Meadows consists of a short bike ride (rain or shine!) followed by travel on the West Coast Express and Canada Line. The only time I drive is on the weekends and I have two kids so I am very rarely driving alone!

### 3. IF YOU COULD CHOOSE ANYONE, WHO WOULD YOU PICK AS YOUR MENTOR?

Yoda. That little dude had some sick skills.

### 4. IF YOU HAD TO CHANGE YOUR FIRST NAME, WHAT WOULD YOU CHANGE IT TO?

Ben – it has a nice ring with the last name..

### 5. WHAT IS SOMETHING YOU LEARNED IN THE LAST WEEK?

From my 6 year old: a first bike is a truly loved object that is mourned when it is gone. From my 15 month old: a crying baby can, in fact, damage your hearing. That, and spinach can fly.

### 6. WHAT BAD HABIT WOULD YOU BE WILLING TO GIVE UP IF IT GUARANTEED YOU WOULD LIVE TO BE 100?

I skip lunch and/or breakfast all the time, which is a very bad habit that I would love to give up!

### 7. IF YOU COULD PREDICT THE FUTURE, WHAT WOULD YOU DO WITH THAT KNOWLEDGE?

Two words: Vegas, baby. Oh, and trying to use my powers for the good of humanity, etc. Come to think of it, science would be SO much easier if you knew which experiments weren't going to work!

### 8. WHAT'S YOUR FAVORITE INDOOR/OUTDOOR ACTIVITY?

Playing with my kids.

### 9. WHERE IS YOUR FAVORITE HIKING TRAIL?

The West Coast Trail on Vancouver Island. I spent 6 days hiking the Trail with family right before my grade 12 year in high school and it completely changed me as a person. I would not be where I am today without that trip.

### 10. WHAT'S YOUR LEAST FAVORITE MODE OF TRANSPORTATION?

The bus, hands down. I was a 99 B-line commuter in grad school. Rainy bus commutes are particularly bad – the windows get all fogged up, everybody is soggy, and what is that smell anyway? Some sort of hybrid of feet and wet dog with a hint of BO. Yuck.



# ANNUAL EVENTS

A new twist this year was the opportunity to showcase Faculty and their research programs.

## Celebrating Together: Path Day May 2013

JACQUELINE QUANDT

Pathology Day was another terrific success this year, bringing together students, staff, fellows and faculty at the Paetzold Education Centre at Vancouver General Hospital.

Dr. Mike Allard introduced the day and our James Hogg lecturer, Dr. David Hardwick, who provided a classic overview of Pathology and its roots here in Vancouver. Most captivating were his recommendations for experimental and clinical pathology in the years to come to shape and build our programs while “Investing in the Future of Pathology.”

Over 60 abstracts were submitted highlighting the breadth of research topics throughout the department; from these several were selected for presentation in either the Resident or Graduate Student Oral Platform Sessions that took place concurrently. More than 160 departmental members participated in these sessions, demonstrating once again that Pathology Day truly is a terrific occasion to experience the caliber and diversity of research taking place throughout our department. Both sun and enthusiasm brought everyone to the luncheon poster session held at the MSAC—offering both increased opportunities for networking and catching up with the people and the science of our department.

A new twist this year was the opportunity to showcase Faculty and their research programs. **Dr. Randy Gascoyne** highlighted several recent achievements from his group in “*Impacting the lives of lymphoma patients through translational research.*”

**Dr. Helene Cote** shared her more recent work using mitochondrial DNA to study “*HIV and antiretroviral therapy: how does it affect cellular aging?*”.



In addition, we heard from **Dr. Ed Pryzdial** and his recent success regarding “*Dissolving clots: a clarifying mechanism*”. We look forward to including more departmental members for these sessions in the future, as a means to introduce junior faculty and re-introduce our more established researchers and their achievements to our growing department.



The Keynote address “*Tackling concussion: neuromechanics and neuropathology*” was given by **Dr. Douglas Smith** of the University of Pennsylvania. His overview on the frequency and repercussions from brain injury (even what we have come to define as mild) was not only timely but hit home for many in light of youth and sports injuries as well as other clinical settings. The lecture was extremely well received with attendees spanning several departments and faculties at UBC.



We would like to recognize **Ms. Sophie Stukas**, who received the Dutkevich Memorial Trust Graduate Student Seminar award for the best Graduate Student Seminar presentation as judged by her peers.



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The following trainees are also to be commended for their excellent presentations at Pathology Day this year:

### Resident Oral Platform Presentations:



1st Place: Patrick Wong



2nd place: Veronica Hirsch-Reinshagen



3rd place: Peyman Tavassoli

### Graduate Student Oral Platform Presentations:



1st place: Ada Leung



2nd place: Kevin Yang



3rd place: Jesse Olson

## Graduate Student Poster presentation award :



1st place: Jason Hung



2nd place: Charles Soong



3rd place: Chansonette Baduke

During the reception at the Shaughnessy Restaurant, we had the opportunity to relax and walk through the Van Dusen Gardens, enjoying both the lovely weather and the company of colleagues. The following faculty and staff were recognized with awards for their respective contributions to our department:

## Faculty Recognition Awards:



**Most Valuable Player:**  
Dr. Douglas Webber



**Excellence in Research and  
Discovery:** Dr. Sam Aparicio



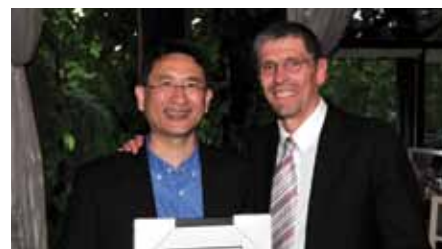
**Excellence in Education:**  
Dr. William Godolphin



**Excellence in Service:**  
Dr. Graham Sinclair



**Staff Service Award in the  
Technologist/Technician  
Category:** Ms. Leslie Trowski



**Staff Service Award  
in the Administration  
Category:** Mr. Tony Lin

**David Hardwick Lifetime  
Achievement:** Dr. Carol Park

Once again, the success of the day was largely attributable to the time and expertise offered by faculty and staff. We look forward to both increased faculty attendance and new opportunities to showcase the expertise and successes of our departmental members for Pathology Day 2014. **Mark your calendars for May 23, 2014!**

Jacqueline Quandt, Mike Nimmo and Avi Ostry, Co-Chairs of Pathology Day 2013



# QUENVILLE INVITATIONAL ANNUAL GOLF TOURNAMENT

THE 2013 QUENVILLE  
INVITATIONAL GOLF  
TOURNAMENT (QIT) WAS HELD  
ON MAY 16 AT MCCLEERY GOLF  
COURSE IN VANCOUVER.

WILLIAM SCHREIBER

This annual tournament is open to all pathologists and pathology residents in the province and has attracted competitors from as far away as Kelowna. The format is a Texas scramble (best ball), which allows even rank amateurs to come out and enjoy some friendly competition.

The QIT is named in honor of Dr. Noel Quenville. Noel served as head of the Pathology Department at Vancouver General Hospital for many years and was widely respected for his skills as a pathologist and administrator. He also played a good game of golf and encouraged both staff and residents to play. In 1995, the first QIT was held at the UBC Golf Course. Since then, the tournament has become an annual event. A picture of Noel wearing

the green jacket that symbolizes the tournament hangs in the department at VGH. This year four teams entered the competition, with even numbers of pathologists and residents participating. The first group teed off just before 1 pm, and the final group walked off the 18th green at 6 pm. After totaling the score cards over a pitcher of beer, two teams tied for cumulative low score (Team Doyle and Team Schreiber). During the awards ceremony, all players were recognized for their good sportsmanship and spirit of fair play.

In keeping with tradition, the ceremony culminated in the presentation of the green jacket. If you would like to view the green jacket, please contact a member of the winning teams to arrange an appointment.



**Team Darbyshire:** Ehsan Davani, Leigh Lindsay, Patrick Wong, Jim Darbyshire



**Team Doyle:** Pat Doyle, Michael Payne, David Chercover, Nick Sunderland



**Team Seccombe:** Ananta Gurung, Chris Conklin, Hamid Massoudi, Dave Seccombe



**Team Schreiber:** Wes Schreiber, Jenny Davis, Tyler Verdun, Peyman Tavassoli



Tyler Verdun modeling the green jacket

# Pathology Arts Gala, June 2013

MARIA ISSA, PATHOLOGY'S ON-SITE CORRESPONDENT

Inspired by Dr. David Walker, MCs Aleeya Abdulla and Jesse Olson presented the audience with an evening to remember: performances from pre - and early career to "seasoned" Pathology types! We saw growth, we heard experience, we delighted in colleagues' accomplishments, were surprised by people we had known for a long time.... but never knew of their amazing abilities.



The visual arts were varied and wonderful – photographs with an eagle's eye for detail, paintings with a flair, water colours full of life and sunshine, classic pen and ink graphics: we had it all.



Then there were the performances – and it takes gumption to get up on that stage in front of your scientific colleagues and show them something completely different!



There were the great vocals from Ash Marwaha and Graham Verchere, "the Next Generation"; and some beautiful, complex classical pieces from our own chamber music ensemble – that just keeps growing and evolving. We could start our own inter-cultural orchestra - a hauntingly beautiful guzheng, played by Tina



## PATHOLOGY'S GOT TALENT!!!!

THE ANNUAL PATHOLOGY ARTS GALA – ARTS IN SCIENCE 2013 WAS AN EVEN GREATER SUCCESS THAN LAST YEAR – EVEN THOUGH 2012 WAS A HARD ACT TO FOLLOW. THIS YEAR A STAR-STUDED CAST OF PERFORMING AND VISUAL ARTISTS TOOK TO THE STAGE AND GALLERY TO SHOWCASE PATHOLOGY TALENT - YES PATHOLOGY HAS LOTS!





and Kevin Tsai's piano with Hungarian Rhapsody #2, dear to my Hungarian heart, bracketed the evening with David Twa's wonderful clarinet solo. The ballet (Amanda Dancsok) and the oriental dances (Cheryl Wellington and group) were visual joys. Dr. Hardwick's "something silly" wasn't, or was it? We loved it and wondered how many different instruments he can really play? For me, Genny Trigo-Gonzalez was the peak - beautiful melodies, beautifully rendered.

They say that when you approach ART, you should approach it hungry... Well, we tried, but were met with a delectable feast and flowing libations. But the best was yet to come: all this - and the heart-warming knowledge that we helped Arts Umbrella and supported the future of art.

Kudos to all involved – the MCs, the organizers, the artists, the essential 'behind-the-scenes' volunteers – I enjoyed it so much I'm hoping for another one next year! See you there!!!







## Cruising the Mediterranean: Engagement in a Scholarly Activity

MARIA VICTORIA (VICKY) MONSALVE

Several years ago Celebrity Cruises solicited proposals at UBC for on-board “Edu-tainment” - lectures on topics of interest to cruise passengers on specific itineraries. My proposal for a series of talks on “Early Settlements in the Americas”, drawing on my research in early American populations supported by current studies in ancient DNA, was accepted for a cruise from Florida through the Panama Canal and around South America to Argentina. This turned out to be a rewarding and memorable experience. I watched for a suitable opportunity to expand my scholarly activities through another, different cruise.

Early this year I proposed a series of lectures linking DNA findings in ancient human remains and modern populations to archaeological, anthropological, linguistic and historical records for geographic regions of a Mediterranean cruise itinerary. Much to my delight, my proposal was accepted for a 10 day cruise out of Civitavecchia (near Rome) Italy, with visits to Messina and Naples (Italy), Piraeus (Athens, Greece), Kusadasi (Ephesus, Turkey), and Rhodes, Santorini and Mykonos (Greece). Once my initial excitement subsided, the intensive preparation began. In a few short weeks I needed to become an ‘expert’ in early Mediterranean settlements and migrations, as well as familiarize myself with recent DNA studies of the relevant populations. Many valuable suggestions from LSC colleagues during rehearsals were much appreciated.

From Rome and before embarking on the Celebrity Cruises ship ‘Reflection,’ I was able to explore ancient places such as Pompeii in Italy. The visit to Pompeii fulfilled a dream of many years, and helped ‘bring to life’ my presentation on those unique ruins. Celebrity Cruises had requested five different lectures for the cruise, with only two actually scheduled at the time of boarding. Following my first presentation, several participants promptly arranged with the ‘authorities’ to schedule as many additional presentations as I was prepared to make. This was encouraging, but resulted in a great deal of time alone in the ship’s library and in my cabin working on and polishing additional talks. My presentations addressed topics such as what DNA tells us about the origins of the ancient Greeks, the Alpine ‘Otzi’ iceman, and early inhabitants of different Mediterranean islands and regions of what is now modern Italy.

As it turned out, I believe I learned as much from my audiences as they did from me. Many were very eager to participate in the interactive presentations and discussions. Some were surprisingly knowledgeable of their biological heritage while others were amazed that they shared genes with Neanderthal ancestors! Particularly popular were sessions where I presented a UBC souvenir pen to the first people to answer questions.



**Dana Devine** has been named as one of five finalists in the Burroughs Wellcome Fund Innovation in Regulatory Science Award inaugural program. The award of \$500,000 was granted to her to support a research project entitled, ‘Refreshing the regulatory approach to ensuring the safety and efficacy of blood transfusion products’.

BWF’s Innovation in Regulatory Science Awards provide up to \$500,000 over five years to academic investigators who are addressing research questions that will lead to innovation in regulatory science, with ultimate translation of those results into improving the regulatory process. These awards are intended to provide support for academic researchers developing new methodologies or innovative approaches in regulatory science that will ultimately inform the regulatory decisions the Food and Drug Administration (FDA) and others make.

**This is right out of one of the blood industry newsletters (America’s Blood Centers):** “Terumo BCT recently announced the Terumo BCT recipient of the 2013 Blood Safety Innovation Award, as well as news of the company breaking ground on its new Vietnam manufacturing facility. Terumo BCT named **Donald E. Brooks**, PhD of the University of British Columbia, Canada, as the recipient of the inaugural 2013 Blood Safety Innovation Award. The award is part of a program that supports one or more grants up to \$100,000 to fund innovative science and research that will generate novel blood safety practices. Dr. Brooks is investigating the prevention of bacterial growth and the shelf-life extension of platelets for transfusion through the modification of the surface of platelet storage bags.”

Celebrity Cruises offered a variety of land tours in partnership with Italian, Greek and Turkish tourist agencies. From the ship I visited Ephesus in Turkey, the Acropolis in Rhodes and the Parthenon in Athens. I even braved public transport to visit an active excavation in Santorini. As a diversion, I participated in a dance comedy competition called “Dancing with the Officers” where my name was selected in a draw to partner with an exceedingly accomplished and extremely exuberant dancer. We reached the semifinals!

In summary, my scholarly activity was a unique opportunity both to teach and to learn. It’s hard to imagine a more enjoyable experience than making presentations in such an interesting environment to such appreciative audiences. I don’t hesitate to recommend that other educators investigate the cruise opportunities in search of their own unforgettable academic adventure.





# WELCOME TO NEW FACULTY MEMBERS



**JATINDER BHAN, MB, FRCP**  
Clinical Instructor, Royal  
Columbian Hospital

I graduated from medical school from Kashmir University, India, in 1982 and moved to Canada in 1989. I trained as a general pathologist at Dalhousie University and became a fellow of the Royal College of Physicians and Surgeons of Canada in June 1993.

I started working with Dr. CJ Coady Associates in July 1993 and have been with the group ever since. After a brief stint at Chilliwack, I moved to Royal Columbian Hospital where I have been practicing as a general anatomical pathologist since 1997. I chaired Dr. CJ Coady Associates from January 2005 through 2010 and also served as President of BC Biomedical Laboratories for the same duration. I have also participated in several committees of the Society of Specialists Physicians of BC as well as the BCMA. I love the outdoors and enjoy golf.



**DAISUKE ENNISHI, MD, PHD**  
Postdoctoral Fellow, BC  
Cancer Research Centre

I received my MD in 2002 from Okayama University School of Medicine, Okayama, Japan, where I also completed an internship and residency in hematology at Okayama University Hospital, and my Fellowship in Medical Oncology at the Cancer Institute Hospital, Tokyo. During my PhD training I worked for several clinical researchers to identify novel biomarkers of aggressive B-cell lymphomas. After joining the Centre for Lymphoid Cancer at the BC Cancer Agency in April 2011, my research focused on the relationship between genetic alterations and the clinical outcomes of B-cell lymphomas. I received the Banting fellowship provided by the Government of Canada for the project "Development of the Mutational Landscape of Hodgkin Lymphoma" and started my work as a post-doctoral fellow at UBC in June 2013.

**MICHAEL CUMMINGS, MD, FCAP**  
Clinical Instructor, Mill  
Memorial Hospital, Terrace

I attended Davidson College for my BSc degree, then the Medical University of South Carolina for my MD degree and did my residency in Vancouver, BC. I am board certified in Anatomic and Clinical Pathology by the American Board of Pathology. I have been in practice at various locations for 36 years. I make my home in the Kispix Valley just north of Hazelton. I came here in August of 2009 as an independent contractor to Northern Health Authority serving as the Medical Director of the Northwest region from my office in Wrench Memorial Hospital. My main professional interests have been surgical pathology, cytology and especially fine needle aspiration techniques and cytological diagnosis. I am an outdoor enthusiast and have various interests such as fishing, hunting, photography and writing.



**KAMRAN AZAR, MD, FRCPC**  
Clinical Instructor, Fort St  
John Hospital

I received my MD from the Memorial University of Newfoundland in 1994, followed by a residency in anatomical pathology at McGill University, and practiced anatomical pathology in community hospitals in the Montreal area for seven years before deciding to take on the challenge of a solo pathology practice in northern British Columbia. I have been a staff pathologist (and the only pathologist) at Fort St John hospital since 2006. Surgical pathologists will know the difficulty of providing preliminary diagnoses without access to immunohistochemistry or the next door colleague to consult with. Of course, later you will have the immunohistochemistry results and/or formal consult on the case but you will be judged on first impressions! I enjoy teaching pathology to family medicine residents and third year UBC medical students in the integrated clerkship program here at Fort St John hospital. I am an avid plane spotter and an enthusiastic soccer fan and will do anything to attend the world cup of soccer in Brazil next year to watch my native country of Iran face the world powers of soccer.



**JAMES CUPPLES, MD, FRCPC**  
Clinical Instructor, Royal  
Columbian Hospital

I am a practicing surgical pathologist at Fraser Health, based out of Royal Columbian Hospital. A graduate of UBC Medical School and the General Pathology Program, I completed a fellowship in surgical pathology at the MD Anderson Cancer Center. Presently I am Regional Director for Anatomic Pathology for Fraser Health with interest in general surgical pathology and non gynecological cytology. I am the Chair of Dr. CJ Coady Associates and have been involved with the BCALP for many years with two years as President. I have been involved in proposed changes to the BC lab system including the synoptic reporting initiative and look forward to seeing how lab services can be improved.



**SHANE KIRBY, PHD, MD, FRCPC**  
Clinical Instructor, UBC  
Faculty of Medicine

I completed my PhD in Microbiology and Infectious Disease in 2000 and my medical degree in 2003, both at the University of Calgary. I came to Vancouver the same year, completed a residency in General Pathology, and have been working as a general pathologist at Burnaby Hospital since 2009. I have an interest in microbiology and infection control practice, and until recently had been active as the Chair of the Burnaby Hospital Infection Control Committee. I recently became a member of the board of directors of the Pacific Northwest Society of Pathologists.

When not immersed in work, I keep busy with my wonderful wife raising three young children.





**ANDY DE SOUZA, PHD**  
Clinical Instructor, Children's  
and Women's Health Centre  
of British Columbia

I obtained my PhD in analytical chemistry from the University of Alberta in 2011. My dissertation focused on the development and application of mass spectrometry techniques for the bioanalysis of proteins and endogenous metabolites. Prior to relocating to Vancouver, I worked in the Department of Comparative Biology & Experimental Medicine at the University of Calgary where I developed and optimized assays for the quantitative analysis of steroids from biological samples using mass spectrometry. I am currently a Laboratory Scientist in Prenatal Chemistry & Newborn Screening at BC Children's Hospital. My research interest is in clinical applications of mass spectrometry. In my spare time, I enjoy working out and staying active. I look forward to discovering what Vancouver has to offer.



**IVA KULIC, PHD**  
Research Associate  
Child and Family Research  
Institute

I obtained a BSc from Simon Fraser University with a major in Cell and Molecular Biology and a minor in Environmental Toxicology. My PhD thesis work, completed in the laboratory of Dr. Aly Karsan at the British Columbia Cancer Research Centre, focused on identification of factors that play a causative role in breast cancer. I then transitioned into an industry setting as a Postdoctoral Scientist at Tekmira Pharmaceuticals where I was involved in the development of nanoparticle drugs as cancer therapeutics. Currently, as a Research Associate in Dr. Cheryl Wellington's lab, my interest has shifted to the brain and neurodegenerative disorders. Specifically, the research explores the pathogenesis of Alzheimer's disease in parallel to evaluating candidate therapeutics. Outside of work, I enjoy dance and outdoor activities such as running, biking, hiking, and sailing in our beautiful surroundings.



**MARI DEMARCO, PHD**  
Clinical Assistant Professor,  
Dept of Pathology and  
Laboratory Medicine, UBC;  
Clinical Chemist, Dept of  
Pathology and Laboratory  
Medicine, St Paul's Hospital

I received a BSc in Honours Biochemistry and a minor in Mathematics from Mercyhurst University. I earned a PhD from the University of Washington, as part of the Biomolecular Structure and Design Program. I subsequently completed a Clinical Chemistry fellowship at Washington University School of Medicine in St Louis. For my PhD thesis I explored protein misfolding pathways and focused on the pathological mechanisms (misfolding, aggregation and replication) involved in human prion diseases. This interest in amyloidosis and neurodegeneration has carried over to my clinical work, where I am pursuing assay development to support diagnostic and research efforts in these areas. Another active area of research is the application of mass spectrometry to tackle challenging diagnostic problems in Laboratory Medicine. When not in the lab, you are likely to find me on a mountain somewhere, biking or hiking.



**TOMO OSAIKO, MD, PHD**  
Postdoctoral Research Fellow,  
The BC Cancer Agency

I obtained my medical degree at Kyoto Prefectural University of Medicine (Kyoto, Japan) in 2001. I practiced for 6 years as a general surgeon and a breast cancer specialist in 2007 I began research and training in pathology at the Japanese Foundation for Cancer Research (Tokyo, Japan). In 2011, I received my PhD for my research on molecular diagnostic techniques for lymph node metastasis. In 2012 I completed my training in anatomical pathology and became a board-certified pathologist in Japan. In May 2013, I joined the CIHR Training Program in Molecular Oncologic Pathology. I am now working in Dr. Samuel Aparicio's laboratory at the BC Cancer Research Centre on breast cancer genomic and translational research. I am also receiving biobank training from Dr. Peter Watson at the BC Cancer Agency - Vancouver Island Centre.

I have traveled worldwide, backpacking in 40 different countries, and now I am enjoying beautiful British Columbia.



**SAHAR MAHMOUD, MD, PHD**  
Postdoctoral Research Fellow  
Department Integrative  
Oncology, BC Cancer  
Research Centre

I obtained my MD from, Mansoura University in Egypt with specialization in Clinical Pathology. I believe in the power of manipulating the immune system to devise highly targeted cancer immunotherapeutics and obtained a PhD in breast cancer immunobiology with Prof. Ian Ellis at the University of Nottingham, UK. I have first-author publications in the Journal of Clinical Oncology, the BCRT Journal, Journal of Clinical Pathology, and Oncoimmunology. Upon completion of my PhD research, I rejoined the Mansoura University medical school where I worked as a lecturer of clinical pathology. My biggest ambition is to establish my own academic/clinical research group in the field of cancer biology working towards discovery of new prognostic and therapeutic targets for cancer treatment. I am motivated to contribute to research that could defeat cancer and enable patients to reclaim their normal lives. My immigration to Canada, therefore, presented me with the ideal opportunity to follow this aim and I recently joined Dr. Kevin Bennewith's laboratory to study the role of hypoxia on the promotion of breast cancer metastasis. Outside of the lab, I have many interests including cooking, hiking, rambling, and attending multicultural social events.



**WILLIAM LAU, MD, FRCPC**  
Clinical Instructor, Royal  
Columbian Hospital

I received my MD degree from UBC in 1996 and then completed a family practice residency. After working as a family doctor for a year, I re-entered residency training and completed a general pathology residency in 2003. I have since been working in surgical pathology with a great group of pathologists in the Fraser Valley.

## WELCOME TO NEW FACULTY MEMBERS cont'd



**SEBASTIAN SCHEER, MSC, PhD**  
Postdoctoral Research Fellow,  
Biomedical Research Centre

During my Masters studies in molecular biotechnology with focus on immunology and medicine at Aachen University and my PhD thesis at the Max Planck Institute of Immunobiology and Epigenetics, I realized that a scientific career is the most desirable way to answer the many open questions about how our immune system has evolved and works in close communion with coevolved commensals and parasites. I am grateful to continue my work at the Biomedical Research Centre and at the Department of Microbiology and Immunology. Here, my research focus is based on the idea that, during evolution, we have always been infected with several commensals and parasites. Of course, this was also true during pregnancy and therefore I am highly interested in how changes of the maternal state of infection influenced the immune system of their offspring. Outside the lab, I enjoy riding my mountain bike or playing and watching soccer and tennis.



**FRANCES VICE, MD, FRCPC**  
Clinical Instructor, Royal  
Columbian Hospital

I completed medical school in Hamilton, ON and split residency between Calgary, AB and London, ON. Upon finishing fellowship training in London with a special interest in Cytology, breast and gynecological pathology, I moved to BC in 2006 and began working at the Royal Columbian Hospital. Although my main area of interest remains cytology, I really enjoy seeing a variety of surgical pathology cases in this busy community hospital department. When not at work, usually, I can be found hiking or skiing the trails of North Vancouver or Whistler with my 2 children, or racing my mountain bike.



**CAROLYN SHIAU, MD, FRCPC, DABP**  
Clinical Instructor, Royal  
Columbian Hospital

I obtained my BSc in Physics at the University of British Columbia and continued on to my MD at the University of Toronto. After completing residency in anatomical pathology in Toronto, I completed a 1-year fellowship at the University Health Network in Toronto with additional time in Sydney, Australia at the Melanoma Institute of Australia and the Royal Prince Alfred Hospital. Throughout my training, I have pursued available opportunities to teach students and residents at various levels, including developing the undergraduate pathology curriculum for the Physician Assistant program through the University of Toronto. My desire to improve the educational experience for residents led me to participate in various committees at the post-graduate medical education and province-wide levels (PAIRO). In my spare time, I can be found making music with community groups in Vancouver and Toronto, or finding a new back-country trail to hike. I look forward to participating in new educational opportunities as I settle back home in BC.



**HAILAN YAO**  
Visiting Scientist, St Paul's  
Hospital

Hi everyone, my name is Hailan Yao and I'm an Associate Researcher from the Department of Molecular Immunology, Capital Institute of Pediatrics, China. I joined Dr. Decheng Yang's laboratory as a Visiting Scientist. My research focuses on studies of the mechanism and strategies in anti-coxsackievirus infection. When not at work, I'm interested in travelling, taking pictures, updating my blog, watching movies and shopping. I am very excited to be working here. I also look forward to meeting all of you.



**KENNARD TAN, MD**  
Clinical Assistant Professor,  
Royal Jubilee Hospital

I'm a medical microbiologist with an interest in health informatics. I obtained my MD at the University of Alberta and did my microbiology residency at UBC. After, I pursued a research fellowship at the Johns Hopkins Hospital where I assessed the potential impact of MALDI-TOF MS in the laboratory and for patients. I have been working at Royal Jubilee Hospital since 2012, and am involved with infection control and antimicrobial stewardship. In Victoria, I am also completing a MSc in Health Information Science at UVic, with a thesis on the development and data-mining of a large clinical data warehouse. I cannot imagine a more exciting time to be working in this field. Within the next few years, the advances and applications of genetics, robotics and informatics will change the way we diagnose and manage infections. Outside of the laboratory, I enjoy biking, kayaking, and skiing.



**MAREK ZARZYCKI, PHD**  
Research Associate, St. Paul's,  
iCAPTURE Center

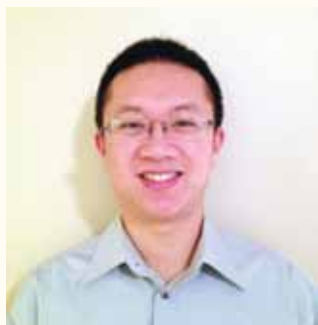
I pursued a PhD at the University of Wrocław, Poland, investigating carbohydrate metabolism through enzyme post-translational modifications, by MALDI TOF MS at the University of Leipzig, Germany. Then I spent two years as a post-doctoral fellow at Roche Diagnostics, Germany, where I worked on myocardial and diabetes strip tests and electro-chemi-luminescence tests. I performed QC testing of antibodies and also developed ELISA assays for the determination of glycosidases of glyco-engineered anti-myeloma therapeutic antibodies. They are being used as the QC of obinutuzumab, currently in phase III clinical trials. Subsequently, I lectured on molecular diagnostics and did research on protein crystallography and proteolytic activity in cancer, at the University of Wrocław. My scientific interest is translational research of biomarkers and pharmaceuticals. As a research associate at the PROOF Centre, I focus on assay development for proteins and DNA markers used in transplantation. I spend my spare time on birdwatching, hiking and photography.



THE DEPARTMENT OF  
ANATOMICAL PATHOLOGY  
AT C&W WELCOMES  
OUR NEWEST FULL  
TIME MEMBER OF THE  
PATHOLOGIST STAFF,  
DR. ANNA LEE

#### **Anna Lee , Staff Pathologist at C&W**

Dr. Lee will be staying in room L220. Her local will be 2395 and her pager will be 41-01301. Dr. Lee will be covering Surgicals, Placentas, Autopsies, and Embryofetopathology rota. Please join me in welcoming her to our department.



A NEW FACULTY  
ADDITION AT VGH,  
DR. TONY NG, FRESH  
OFF FINISHING HIS  
FELLOWSHIP AT  
STANFORD

#### **Tony Ng, Staff Pathologist at VGH**

Born in Hong Kong and raised in Burnaby, BC, I am what you can call a “lifer” in the Department of Pathology and Laboratory Medicine. My first exposure to the department was in senior high school, when I spent a summer month in Dr. Haydn Pritchard’s lab as part of the Heart and Stroke Foundation High School Summer Studentship. During medical school at UBC, I worked with Dr. Torsten Nielsen to study diagnostic markers in sarcomas, and then joined the UBC Anatomical Pathology residency program. While completing the residency program, I also joined the PhD program under the supervision of Dr. Poul Sorensen, investigating cellular stress mechanisms in tumor cell metastasis.

Following a clinical fellowship in Surgical Pathology at Stanford University, I will be starting as a Staff Pathologist at Vancouver General Hospital, with a focus on Head and Neck Pathology and Bone and Soft Tissue Pathology.



**“ALL FITNESS LEVELS  
ARE WELCOME  
TO JOIN IN.  
UBC HOSPITAL  
EMPLOYEE FITNESS.”**

Sharon Smith  
[Sharon.Smith@vch.ca](mailto:Sharon.Smith@vch.ca)

I started volunteer teaching the classes shortly after I started working here at UBCH in 1987 – just over 26 years now. Classes are held in the Purdy Pavilion Garden Room from 12:30 to 1:00, Monday through Thursday. All fitness levels are welcome to join in. Everyone should work at his or her own pace. Each participant should either modify or make the exercises more challenging as required. Participants should dress in fitness wear that they feel comfortable in. The classes may only be 30 minutes in length but I do try to arrange the workout to cover as much as I can in that short period of time.

I am certified through BCRPA (BC Recreation and Parks) as Fitness Leader – Group Fitness. The first class is free to try. After that, it is almost free – 50 cents drop-in, or \$5 for a strip of 10 tickets and a free class. The fee has remained the same since May 1987. We do not want cost to be an excuse. It is a great way to re-energize in the middle of the day.





**UNIVERSITY OF BRITISH COLUMBIA**  
**Faculty of Medicine**  
**Department of Pathology**

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