

News

Pathology

Spring/Summer 2010

www.pathology.ubc.ca



a place of mind

THE UNIVERSITY OF
BRITISH COLUMBIA

pathology
laboratory medicine

Contents

1 *Overview*

- From The Department Head 3
- New Faculty Members 4

2 *Research*

- BC BioLibrary 6

3 *Academic activities*

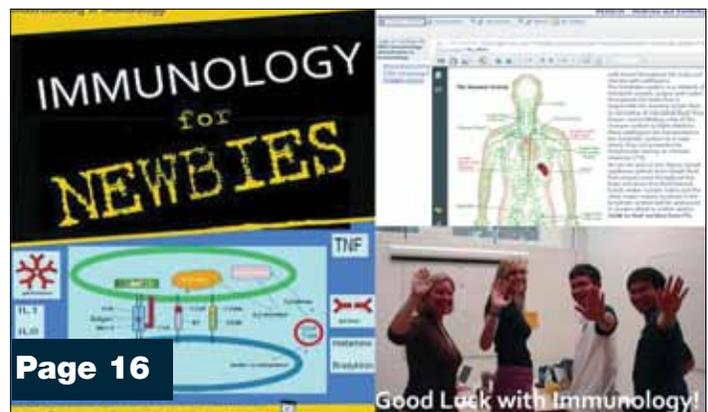
- Residency Training Program 8
- Graduate Studies in Pathology 12
- BMLSc 15
- Undergraduate Education 16

3 *Meet the people of pathology// creative interests*

- Meet the People of Pathology 20
- Pathology Day 22
- The Art of Science 24
- Medical Surveillance Program 26
- A Culture of Safety 27

EDITORS: Maureen Barfoot
Debbie Bertanjoli

Email: dbertanjoli@pathology.ubc.ca



INTERIM HEAD GREETING



Pathology Day 2010 Award Ceremony. Michael Allard, James Hogg and David Hardwick

The arrival of summer brings an opportunity to rest, relax, and refresh. It is also a useful time to reflect upon personal accomplishments and contributions as well as those of others.

In looking back over the past year and having had the privilege to learn about the department and its faculty, trainees, and staff over the last 10 months, it is clear that much has been achieved and that these achievements continue to be rightfully recognized by fellow departmental members as well as by those outside the department.

As in years past, contributions and accomplishments of selected individuals were recognized by their peers or trainees in the form of annual departmental awards for work that spanned a broad spectrum of activities. A number of our faculty and staff were also recognized this past year outside the department with several receiving awards from the UBC Faculty of Medicine. Notably, others were recognized by the University as well as by organizations external to the University for accomplishments and contributions over their career. This included the induction of one of our faculty, Dr. Jim Hogg, into the Canadian Medical Hall of Fame.

The future of our medical specialty and scientific discipline resides in our trainees. Reassuringly, their collective excellence was clearly displayed at this year's Pathology Day by way of their oral and poster presentations. Additionally, two of our graduate trainees each received a highly prestigious *Vanier Canada Graduate Scholarship*, an award that is a definitive demonstration of their personal excellence and testament to the quality of our graduate program. Further highlighting the excellence residing in our trainees is the fact that all of our resident trainees successfully passed their exams. Collectively, these successes indicate their is reason to be very confident for the future.

In keeping with past practice, this issue of the newsletter highlights successes and stories of selected departmental members and programs. There is no doubt that its contents provide an excellent portrayal of the diversity of talents in our department across a broad spectrum of activities and sites. In closing, please enjoy the summer months spending well-deserved time with family and friends and, possibly, take a few moments to reflect on your own accomplishments and those of others in our department over the past year.

Michael F. Allard BSc MD FRCPC
Professor & Interim Head
Department of Pathology & Laboratory Medicine

WELCOME NEW FACULTY MEMBERS



Madhab Bajgai
Postdoctoral Research Fellow
Centre for Blood Research

Dr. Madhab Prasad Bajgai was born and raised in Nepal where he received his Master's Degree from Tribhuvan University in 1995. After his Master's education in Organic Chemistry, he served as Chemistry Lecturer at Tribhuvan University for more than 10 years. He earned his Doctor of Engineering under the Department of Bionanosystem Engineering with the supervision of Dr. Hak Yong Kim in August 2009 at Chonbuk National University, South Korea. His PhD dissertation title was "Synthesis, Characterization and Biomedical Applications of Graft and Brush Copolymers". He worked as a PDF in Dr. Kim's lab at Chonbuk National University for three months. From November, 2009, Madhab is working as PDF in Dr. Jayachandran's lab at the Centre for Blood Research, UBC. His current research focuses on the development of biocompatible polymeric coatings for neural implants. In addition to research he likes to travel and learn various cultures.



Stephen Yip, MD, PhD, FRCPC
Clinical Assistant Professor
BC Cancer Research Centre

Stephen is a UBC boy - undergraduate education at UBC followed by a combined M.D.-PhD. degree in immunology. Stephen started his residency training in neurosurgery at Vancouver General Hospital and completed four years of surgical training prior to transferring to the neuropathology program, obtaining his FRCPC certification in 2006. To continue with the theme of a peripatetic academic, Stephen then completed two years of Royal College- funded Clinician Investigator Fellowship training in experimental molecular neuro-oncology at the Massachusetts General Hospital under the mentorship of David Louis and one year of molecular genetic pathology fellowship training at Harvard Medical School under the supervision of John Lafrate.

Stephen's clinical expertise is in brain tumour pathology, molecular pathology, and deployment of novel molecular diagnostic assays. His research interest is in the study of genetic and epigenetic progression of brain cancer and the molecular basis of treatment failure, using novel sequencing technology.



Kenneth Liu, Postdoctoral
Research Fellow, Vancouver
General Hospital

Dr. Liu is continuing his Neuroimmunology Research as Postdoctoral Fellow with Dr. Katerina Dorovini-Zis in the Neuropathology Research Laboratory, where he completed his PhD degree in Pathology and Laboratory Medicine, UBC in Oct 2009. His doctoral thesis investigated the role of chemokines in the adhesion and migration of monocytes and T lymphocytes across an in vitro model of the blood-brain barrier. He received his BSc in Microbiology and Immunology from UBC, and worked as project consultant for Xenon Pharmaceuticals (formerly Xenon Genetics). Dr. Liu is active in community services: he is a member of the Lions Clubs International and served as president of his club in 2009-2010; President of the Hung Hsing Choy Lai Fut Federation of Canada (2010-2011); and vice-chairperson of Lew Mao Way Tong in Vancouver (2010-2011). He enjoys teaching, photography and martial arts.



Rafi Chapanian, Postdoctoral
Research Fellow, Life Sciences
Centre

Dr. Rafi Chapanian received his PhD in Chemical Engineering at Queen's University of Ontario in 2009. His Ph.D. work involved the development and characterization of growth factor delivery vehicles for the in vivo angiogenesis induction. Dr. Chapanian joined the Faculty of Medicine in February of 2010 to pursue his postdoctoral studies under the supervision of Drs. Jayachandran Kizhakkedathu and Donald Brooks. His research at UBC aims to develop universal red blood cells and to investigate the potential of red blood cells for the therapeutic protein delivery applications. Other research interests include polymer synthesis and characterization, and diffusion of macromolecules in leaving systems. Dr. Chapanian is happily married to his lovely wife Meghriq and they have a baby girl, Aya. He enjoys swimming, biking, playing tennis, and traveling.

Dr. Kalloger emigrated from the United States to Canada in 1999, with no exposure to the clinical research environment whatsoever. "I was lucky enough to get my first taste working for Dr. Peter Paré at the iCAPTURE Centre at St. Paul's Hospital where I liaised with Dr's. John English & Julia Flint in Anatomical Pathology" said Dr. Kalloger. In 2003, he was recruited by Dr. Blake Gilks to run the Gynaecologic Tumour Bank at Vancouver General Hospital where he continued his professional development. To this end, I have been continuing my education by adding to my BSc in biology, a Certificate in Bioinformatics (2002) and an MSc in Clinical Research (projected completion September 2011). In addition to his research and academic activities, he enjoys reading, political / policy debate, and the occasional glass of Burgundy (red or white).

Born and raised in Austria, Dr. Schicher obtained his medical degree at the Medical University of Vienna. During his studies he started to work at the Department of Dermatology, Division of General Dermatology, and became interested in the field of cancer research. He is at the end of his residency training at the Dept of Dermatology in Vienna being involved in basic as well as clinical research. His main focus in research is to identify new targets and evaluate novel targeted drugs to overcome treatment resistance in advanced stages of malignant melanoma.

He joined the group of Professor Poul Sorensen at the Dept of Molecular Oncology for a six months fellowship in April 2010 who granted him an opportunity to work on a project involving synthetic lethality siRNA screenings.

Dr. Haffari received his PhD in Computer Science from Simon Fraser University (SFU) in December 2009, and his MSc and BSc from Sharif University of Technology in 2002 and 2000, respectively. His research interests span Statistical Machine Learning and its application to bioinformatics and natural language, where the focus of his PhD thesis has been on semi-supervised/active learning for statistical machine translation. He has published in the top ML and NLP conferences, such as: UAI, ICML, NIPS, ACL, NAACL, and Coling.

Dr. Syyong is a new Postdoctoral Fellow being mentored by Drs. Chun Seow and Peter Pare at the Heart and Lung Institute at St. Paul's Hospital. He received his PhD from the University of British Columbia in April 2010, where he investigated the mechanisms underlying agonist-induced Ca²⁺ oscillations in both healthy and disease states such as Marfan syndrome. He is currently investigating the biochemical basis by why human asthmatic airway smooth muscle is better able to resist mechanical perturbation compared to non-asthmatic airway smooth muscle. This will provide insights into the molecular basis of muscle characteristics and behavior, greatly enhancing our understanding of the basic mechanisms of contraction in smooth muscle. Dr. Syyong is excited to be working at the Heart and Lung Institute and is looking forward to meeting everyone.

Steve Kalloger, Clinical Instructor, St. Paul's Hospital



Nikolaus Schicher, Visiting Scientist, Child & Family Research Institute



Gholamreza Haffari, Postdoctoral Research Fellow, BC Cancer Research Centre



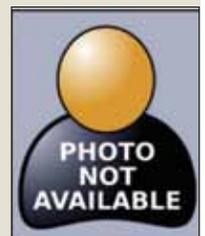
Harley Syyong Postdoctoral Research Fellow St. Paul's Hospital



Christopher Butt, Postdoctoral Research Fellow, BC Women's Hospital & Health Centre

Graham Slack, Clinical Assistant Professor, BC Cancer Agency

Syam Prakash Somasekharan Ramachandran Nair, Postdoctoral Research Fellow, BC Cancer Agency



BC BioLIBRARY (BCBL)

By: Peter Watson Co-lead BC BL



Dr. Peter Watson, Professor, UBC Department of Pathology and Laboratory Medicine; Director, Tumour Tissue Repository; BC Cancer Agency Staff Pathologist; Co-Lead, BC BioLibrary

01 Biobank Challenges

A major challenge for BC health research is access to human biospecimens. Within this term *access* are issues for science to do with quality, scale and capacity, and population representation and issues for participants and society to do with opportunity, governance, and oversight issues for participants and society. The response to these challenges has mostly focused on ‘top down’ solutions from above the level of individual biobanks. These approaches have served to identify and disseminate standards and link biobanks, through creation of networks, grids, associations and societies. What has largely been missing is the development of ‘bottom-up’ complimentary solutions to address the challenges at the level of entry of biospecimens to biobanks. What is needed are new frameworks to connect donors and clinical biospecimen sources and biobanks more effectively. These frameworks are called biolibraries to distinguish them from biobanks.

02 BioLibrary Solutions

The core business of a biobank is typically targeted accrual, processing, annotation, storage, and determination of release of biospecimens and data for research. The core business of a biolibrary is biospecimen collection to serve biobanks across health regions and overcome geographical, jurisdictional and other barriers to biobanking. Biolibraries are needed to focus on processes to collect biospecimens to potentially distribute to biobank users, to connect potential donors associated with these biospecimens with biobanks for consenting. An additional role is engagement of the public and patient donors around these processes to develop transparency of purpose and process, along with enhanced governance models. Biolibraries connect biobanks in a different way than networks. Ultimately both contribute to improved confidence in, and recognition and support for biobanking along with the increased recognition of the contribution of biobanks as ‘producers’ rather than static foundations of research advances. The end result is better health care for society.

03 The BC BioLibrary

The BC BioLibrary, funded by MSFHR since 2007, is a novel, province-wide strategy spanning hospital sites, health authorities, and major academic institutions and translational research groups.

The BC BioLibrary aims to establish:

- a biospecimen collection framework that could serve biobank users (internal and external to the sites and across a broad spectrum from single user to large studies)
- a common access mechanism to biospecimens (web-based inventory and access process)
- improved connection between potential donors and biobanks, initially to obtain approval through informed consent and later to permeate the biolibrary and its user biobanks with public opinion derived through deliberation, thus enhancing governance and confidence.

Progress to date and goals for this year:

The BCBL has focused initially on the creation of a working model that comprises tissue collection sites (Biospecimen Collection Units, BCUs) at VGH, C&W and SPH with local collection protocols, database inventories, and access processes. The BCBL concepts, operation and protocols, and catalogues and components, have undergone extensive REB review and public deliberation.

The next step is to fully operationalize the pilot BCUs to enable multiple biobank users to accrue biospecimens from the network and also to establish the referral processes at each site to enable expanded informed consent procedures.

This will complete the connections to demonstrate that the BCBL is capable of enabling a biobank user who is external to the sites to achieve multisite accrual of consented biospecimens. This will establish the BCBL as a new model worth expanding.

BC Biolibrary Executive Committee Members

Name	Affiliation
Dr. Peter Watson	Project co-lead, Director, Tumor Tissue Repository, BCCA Victoria
Dr. Ian McKenzie	Vancouver General Hospital Professor Dept. of Pathology and Laboratory Medicine, UBC
Dr. Anne Junker	Associate Director Clinical Research, Child & Family Research Institute Women & Children's Hospital
Dr. Blake Gilks	Vancouver General Hospital, Professor Faculty of Medicine
Janet Wilson-McManus	iCAPTURE/PROOF Center, St. Paul's Hospital, Dept of Pathology and Laboratory Medicine, UBC
Dr. Micheal Allard	Professor and Interim Head Dept. of Pathology and Laboratory Medicine, UBC
Dr. Micheal Burgess	Professor Centre for Applied Ethics, UBC



The BC BioLibrary Solution

For further information on the BC Biolibrary - <http://www.bcbiolibrary.icapture.ubc.ca>

or contact Sheila O'Donoghue, Project Manager

sodonoghue@providencehealth.bc.ca



RESIDENCY TRAINING PROGRAM

By: Grace Adrias

01 Pathology Residents Graduation 2010

On a sunny Friday afternoon, at the Royal Vancouver Yacht Club, pathologists, residents and staff gathered together to celebrate the graduation of our 9 residents.

The graduates for 2010 were:

Anatomical Pathology

Dr. Fahad Alghamdi



Dr. Anna Adamiak



Dr. Rola Ali



Dr. Jefferson Terry



General

Pathology

Dr. Karen Ung



Medical Microbiology

Dr. Miguel Imperial



Dr. Aleksandra Stefanovic



Neuropathology

Dr. Ali Assiri



Dr. Sadeq Al-Dandan



It was a fun-filled event of wine and dine and the traditional roasting of the graduates. A teaching award was also given to Dr. Richard Crawford and an MVP award went to Dr. Raeda Al-Bannai. This is the 2nd year that the Residency program has done a formal fete to recognize the success of our residents' hard work and years of training.

To the Graduates: Congratulations and we wish you all the best on your future endeavors!

02 New Residents

AP	PGY1	Ian Garber
AP	PGY1	Nouf Hijazi
AP	PGY1	Lien Hoang
AP	PGY1	Martin Hyrcza
MM	PGY1	Michael Payne
MB	PGY1	Ramesh Saeedi
NP	PGY1	Maxim Signaevski
GP	PGY1	Nicholas Sunderland
GP	PGY1	Peyman Tavasoli
MB	PGY1	Sophia Wong
NP	PGY2	Veronica Hirsch-Reinshagen
AP	PGY2	Tareq Mohammad

03 PMI Course – Negotiation and Conflict Management

The Pathology Residency Program recently held a CME accredited course on Negotiation and Conflict Management provided by the Physician's Management Institute (PMI). This was a 3-day course which is part of the residency program's approach to meet some of the non-medical expert CanMEDS competencies. The course was attended by staff and residents.

The speakers for the course were Mary Yates for Conflict Management and Dr. Janice Stein for Negotiation. Both speakers delivered captivating talks and shared useful information and tips with the residents and staff. It was a memorable and enjoyable training for both faculty and residents. Expect more sessions by PMI in the future.

Faculty Recognitions: 2010

Dr. Jennifer Grant:

We would like to acknowledge one of our colleagues, Jennifer Grant, who has been elected CHICA - Canada Director of Standards and Guidelines for a three year term commencing January 1, 2010.

Dr. William Schreiber:

Congratulations on the success of your application for funding from the TLEF 2010-2011. It is indeed a prestigious award! Dr. Schreiber is also a recipient of the Faculty of Medicine UBC, Distinguished Service Award in CME/CPD.

Dr. Rusung Tan:

Dr. Tan is a recipient of the CFRI Advanced Technology Platform Award and is in support of the Immunity in Health & Disease core in Flow Cytometry.

Dr. David Hardwick:

Congratulations on being the recipient of the 2010 Distinguished Service Award from the Association of Pathology Chairs. Dr. Hardwick also received the Faculty of Medicine, UBC, Bill & Marilyn Webber Lifetime Achievement Award.

Staff Recognitions: 2010

Mrs. Penny Woo:

Congratulations on being chosen as a recipient of the Faculty of Medicine Applegarth Staff Service Award for 2010.

FEATURED FELLOW: FAREWELL TO RAEDA!

By: Grace Adrias, Carolyn Mill & Michael Nimmo

At the end of July we said goodbye to a treasured colleague.

Dr. Raeda Al-Bannai – Obstetrics and Gynecological Pathology Fellow

Dr. Raeda Ahmed Al-Bannai was born on an island called Failaka in Kuwait. She completed her Degrees in Bachelor of Medicine, Bachelor of Surgery and Bachelor of Obstetrics at The National University of Ireland in 1998. She is a certified Licentiate in Medicine, Obstetrics and Surgery bestowed by the Royal College of Physicians of Ireland.

After completing her training, she joined the Medical Department in Farwaniya General Hospital in Kuwait as an Intern and later became the Official Senior House officer in Obstetrics and Gynecology. During this time she developed an interest in Pathology. To our good fortune, she decided to pursue Pathology training in Canada.

She was accepted to the Anatomical Pathology Residency Program at UBC in July 1, 2005. Her dedication, experience, intelligence and motivation are inspiring. She successfully completed her residency training and passed the Royal College

of Physicians and Surgeons examination in May 2009. Following this, she completed a year doing a fellowship in Obstetrics and Gynecological Pathology under the supervision of Dr. Blake Gilks.

During her training at UBC, Raeda has made many friends and deservedly earned “The Most Valuable Player” award given at the last Graduation Ceremony. An excellent mentor to junior residents and a great diagnostician, she was an integral part of the residency training program for 5 years.

She is well-liked and respected by her colleagues, and can always be counted on to provide a smile and friendly word. It was an absolute pleasure to have Raeda in the Program and she will be sorely missed. Raeda and her family have now returned to Kuwait to make good use of her extensive training and experience. Good luck, Raeda! Till we meet again!

“An excellent mentor to junior residents and a great diagnostician, she was an integral part of the residency training program for 5 years.”

Good Bye Raeda! We Will Miss You!!



GRADUATE STUDIES UPDATES



Haydn Pritchard, PhD, Program
Director and Graduate Advisor

Farrah Rooney, BA, BFA
Program Assistant

01 Update

Our Graduate Studies Program continues to thrive in many areas.

Highlights for the year have included:

- We have graduated 11 students with PhD degrees and 3 with MSc degrees (see table)
- We welcomed 16 new students in the 2009-2010 academic year. New applications for the 2010-2011 have been coming in steadily and we are planning on a similar number to join us next year.
- Our students have had outstanding success in seeking competitive scholarship funding. Of note, two of our students, Alon Hendel and Sophie Stukas, both received the prestigious Vanier award. A remarkable achievement for a single Department!
- Our students were well represented on pathology day with almost all students participating in either a poster or an oral presentation.

New Graduate Students



Naniye Cetinbas, PhD
Supervisor:
Dr. Poul Sorensen



Jennifer Choo, PhD
Supervisor:
Dr. Torsten Nielsen



Amal El-Naggar, PhD
Supervisor:
Dr. Poul Sorensen



Corinne Krentz, PhD
Supervisor:
Dr. Judith Isaac-Renton



Jasmine Hamilton, MSc
Supervisor:
Dr. Jay Kizhakkedathu



Chansonette Harvard,
PhD
Supervisor:
Dr. Evica Rajcan-Separovic



Zsuzsanna Hollander, PhD
Supervisor:
Dr. Bruce McManus



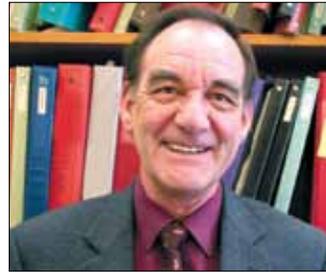
Dana Kyluik, MSc
Supervisor:
Dr. Mark Scott

Administrative successes:

- We have restructured our governance model for graduate studies to include a series of functional subcommittees responsible for admissions, awards, curriculum, student progress and student services. If you are a faculty member who is interested in getting involved please contact us.
- Everyone has made a tremendous effort to standardize our activities with respect to completion of annual supervisory committees and timely completion of comprehensive examinations. Thank you to all for supporting our students in this way.
- A comprehensive database of student and faculty activities has been established to help us better record and reward participation in our program.

“To the over 100 Departmental Faculty Members and the 74 students who are collectively involved in our Graduate Studies Program, please accept a huge “thank you” for another successful year”.

02 Retirement of Colin Fyfe



We would like to give a huge “thank you” to Colin Fyfe who retires this summer. Colin has been the longest standing member of the Graduate Studies Committee - he served every year for 25 years! During that time, he has acted as Chair of the supervisory committee for numerous students; he has also been a regular committee member, comprehensive examiner, thesis examiner, acting Graduate Advisor and, more recently, chair of the Admissions Subcommittee. We will miss Colin’s eagerness to help and his wisdom regarding graduate education. We will remember, and try to emulate, his pragmatic (and unquestionably Scottish) approach to problem solving! Without doubt, Colin has been a great asset to the Department and, most importantly, he has been an invaluable help to the students he has served. Colin – we have learned a lot from you. Enjoy your well-deserved retirement.



Vincent Montoya, MSc
Supervisor:
Dr. David Huntsman



Daven Tai, PhD
Supervisor:
Dr. John Hill



Clara Westwell-Roper,
MD/PhD
Supervisor:
Dr. Bruce Verchere



Melissa Glier, MSc
Supervisor:
Dr. Angela Devlin



Sophie Stukas, PhD
Supervisor:
Cheryl Wellington



Kevin Yang, MSc
Supervisor:
Dr. Marianne Sadar



Varun Saran, MSc
Supervisor:
Dr. Mike Allard



Hayley Spencer, MSc
Supervisors:
Dr. David Walker
and Dr. H el ene C ot e

03 Recent Graduates

Congratulations to our recent graduates.

We recognize your hard work and we are proud of your contributions to research in our Department.

Name	Program	Supervisor	Thesis Title
Salman Ali	MSc	Stuart Turvey	Functional characterization of human variants of NFKBIA: a key regulator of immune responsiveness implicated in susceptibility to infectious and inflammatory disease.
Audra Vair	MSc	Helene Cote	Differential gene expression of CD43 wild-type and knockout macrophages in response to mycobacterial stimulation.
Marissa Jitratkosol	MSc	Helene Cote	Somatic A [®] C/T [®] G Mitochondrial DNA mutations in HIV-Infected Pregnant Women and Their Infants Exposed to HIV antiretroviral therapy during pregnancy.
Dong Lin	PhD	Marianne Sadar	ASAP1, a Gene at 8q24, is Associated with Prostate Cancer Metastasis.
Natalie Prystajeky	PhD	Judith Isaac-Renton	Molecular Epidemiology of Giardia lamblia in British Columbia Water Supplies
Meredith Hutton	PhD	Bruce Verchere	The role of Toll-like receptors in islet allograft rejection and normal beta-cell function.
Zhen Liu	PhD	Decheng Yang	The Prosurvival Function of Interferon-gamma-inducible GTPase in CVB3 Infection.
Ivy Tsui	PhD	Wan Lam	Understanding the genetic evolution of oral cancer genomes.
Rajagopal Chari	PhD	Wan Lam	Development And Application Of An Integrative Genomics Approach To Lung Cancer.
Ian Wilson	PhD	Wan Lam	Concerted Genomic And Epigenomic Alterations In Non-Small Cell Lung Cancer.
Nathalie Johnson	PhD	Randy Gascoyne	Identification of Novel Prognostic Biomarkers in Diffuse Large B Cell Lymphoma in the Rituximab Era.
Leslie Chin	PhD	Chun Seow	Airway Smooth Muscle In Health And Disease
Jessica Kalra	PhD	Marcel Bally	Integrin linked Kinase as a therapeutic target for treating breast cancer: The value of using multiple endpoints to assess therapeutic effects of targeted drugs and drug combinations.
Angieszka Klimek	PhD	Bruce Verchere	Prohormone Processing in Pancreatic Islet Transplantation.



BACHELOR OF MEDICAL LABORATORY SCIENCE (BMLSc) PROGRAM

By: Carol Park and Joanne Wouterse

Class of 2010:

This year marked the twenty-ninth year the Department has graduated students from the BMLSc Program. Twenty four students received their BMLSc degrees in May, bringing the total number of program graduates to 414.

At the reception held in the West Atrium of the UBC Life Sciences Centre on May 26, the following students were recognized for their outstanding academic achievements:

- **Shiny Sachdeva** - Professor C.F.A. Culling Bachelor of Medical Laboratory Science Prize
- **Shiny Sachdeva** - Donald M. McLean Prize in Medical Microbiology
- **Sophia Lau** - B.J. Twaites Prize in Laboratory Administration
- **Megan O'Neill** - The Eugenie Phyllis and Philip Edward Reid Prize in Morphological Sciences
- **Christine Joseph** - William J. Godolphin Prize
- **Christine Joseph and Megan O'Neill** - Prize for Best Presentations in Path 405

Graduates' Choice for Teaching Excellence Awards:

The graduates recognized the following instructors, who each received a BMLSc Graduates' Choice for Teaching Excellence Award:

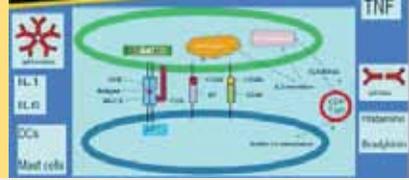
- Dr. Michael Nimmo
- Dr. Carol Park
- Dr. Morris Pudek

The Reid Memorial Cup:

This award recognizes a Faculty or Staff member who has made an outstanding contribution to the experience of the BMLSc students. This year's recipient is **Jennifer Xenakis**.

Graduates' Further Pursuits:

- **Campbell Bryson** is heading to Cornell University where he will be enrolled in the MD Program...
- **Betty Cai** has been accepted into the Masters of Health Administration at UBC...
- **Karl Li** has been accepted into the Masters of Food Science at UBC...
- **Jack Liu** will be entering the Graduate Program in Experimental Medicine at UBC...
- **Rachel Liu** will be entering the Graduate Program in Neuroscience at UBC...
- **Shiny Sachdeva** will be entering Dentistry at UBC...
- **Tammy Tai** has been accepted to the Bachelor of Science in Nursing at UBC.



USING TECHNOLOGY TO PROVIDE OPTIONS FOR STUDENTS WITH DIFFERENT LEVELS OF PRIOR KNOWLEDGE

By: Amanda Bradley

What do you do when half of your class has no prior knowledge of the discipline you are teaching and the other half of the class already has a background in the area? This was the question that I and fellow Pathology Department members, Drs Hanh Huynh and Peter van den Elzen, faced when teaching Immunology to first year Medical and Dental students.

One way to respect the different levels of background that students have is to harness educational technologies to provide flexibility. Using available tools, we created options and encouraged greater student control over when and how they learn, based on students' individual needs and preferences. Our adventures with technology included: recording lectures that were then posted in voice-over PowerPoint format to MEDICOL (Medical and Dental Integrated Curriculum On-line) and creating on-line self directed learning modules focused on the basics of Immunology. These resources were supplementary and supportive and did not take the place of problem based learning tutorials, lectures, and a lab.



*BMLSc Graduation Ceremony 2010
Amanda Bradley and Michael Nimmo*

Medicine's IT department recorded and posted nine lectures in Principals of Human Biology weeks 13 and 14. From the lecturer's perspective, knowing that we were being recorded did not impact the sessions, other than making us more inclined to follow good teaching practices (e.g. repeating student questions and comments before discussing answers). In surveys and focus groups, student perceptions of lecture recordings were positive; students stated video recorded lectures supported their learning. Students who did not view

“Lecture recording will be available as an option to all teachers providing lectures in year 1 and 2 MDUP core curriculum courses, starting in September 2010.”

the lectures said that they liked knowing the recordings were available, in case they needed to refer to them.

Lecture recording will be available as an option to all teachers providing lectures in year 1 and 2 MDUP core curriculum courses, starting in September 2010.

On-line modules were the products of two dedicated Medical summer student interns, Liz Willms and Simon Woo, who worked with me and Dr Huynh on this project. The ten modules, glossary, quizzes, and annotated resource list were posted to MEDICOL and were available to students at any time. Approximately half of our students used the modules and stated that they were helpful to consolidate learning. The module summaries and quizzes rated most highly.

If you are interested in using these or other teaching technologies, contact Marcelina Piotrowski, Technology Enabled Learning Liaison, at Marcelina.Piotrowski@ubc.ca and/or have a look at the Med IT website, <http://www.medit.med.ubc.ca/services/edtech.htm>. I would also be very happy to discuss our recent experiences.



TIPS FOR TEACHING



Dr. Hanh Huynh (right) winner of "Tips for Teaching" in the UBC Distributed Medical Education Program

"By selecting the basic concepts and eliminating advanced or detailed information, we will motivate the intrinsic learning in learners."

On June 10th, 2010, Dr. Hanh Huynh was awarded as 1 of the 12 contest winners of "Tips for Teaching in the UBC Distributed Medical Education Program". The contest was organized by Faculty Development, UBC Medicine, which solicited the submissions from Faculty and Residents for teaching tips in the distributed medical education program. A total of 45 submissions were received and reviewed anonymously by a Committee of Experts in Medical Education. Twelve contestants were selected and awarded with a Certificate and an iPod Nano for their contributions. These 12 tips have also resulted in a submission for publication to "Medical Teacher" journal.

Dr. Huynh's winning tip aims to promote the philosophy of "LESS IS MORE" in medical education. Many of us have witnessed lectures with over 100 slides full of information delivered in 50 minutes. Due to the excitement and enthusiasm about the subject that we teach, we tend to forget that the majority of our learners (especially junior medical students) have no experience or background knowledge of the subjects being presented. Judging by the learners' feedback, there is not much learning happening by the end of these rushed lectures, and this dissatisfaction is especially amplified in distributed education. It is important to stick with the philosophy of less is more (Sherbino J. Acad Emerg Med. 2006). By selecting the basic concepts and eliminating advanced or detailed information, we will motivate the intrinsic learning in learners. For instance, in a 50-minute lecture, a maximum of 25 slides (average 5 lines per slide) would be sufficient. With this amount of information, the teacher will have sufficient time to explain more clearly the prioritized concepts and principles to learners.

The Certificate and the gift were handed out at the Faculty Development Annual Retreat which took place on June 10th, 2010 at the Vancouver Coast Coal Harbour Hotel. In this photo, Dr. Huynh receives the Certificate and the iPod Nano from Dr. Roger Wong, Assistant Dean, Faculty Development, UBC Medicine. Dr. Hanh Huynh is an Instructor in the Vancouver Fraser Medical Undergraduate Program.

MEDICAL STUDENT EDUCATION IN PATHOLOGY AT UBC AND ACROSS CANADA

By: Jason Ford, MD, FRCPC
Medical Undergraduate Director, Dept. of Pathology & Laboratory Medicine, UBC



In the 1990s and the 2000s, the medical education “pendulum” seemed to swing far away from pathology. Here at UBC, as well as across the English speaking world, medical education began to focus more on communication skills and issues of social justice than on the so-called “basic” medical sciences. The amount of exposure to pathology dwindled, and pathology’s place in medical education was subsumed into interdisciplinary blocks.

We have surveyed pathology course directors at every medical school across Canada (the results of which are *in press* with the Canadian Journal of Pathology), and it is clear that the medical curriculum changes at UBC have been mirrored at most Canadian schools. Like at UBC, most Canadian schools now teach a fraction of the number of pathology hours that they used to teach: an average of 81 hours *total*, which is less than half the US average from the mid 1990s. (The current UBC total is approximately 160 hours.) Many Canadian schools have seen their pathology courses reshaped into integrated nondepartmental “themes”. Autopsies and real microscopy are now used only very rarely to teach medical students, having been replaced by gross and microscopic images and virtual microscopy. Pathology lectures have largely been superseded by small group instruction, which is arguably a significant improvement.

One of the defining characteristics of pendulums, of course, is that they swing back. Two recent reports (from the American Association of Medical Colleges and the Association of Faculties of Medicine of Canada) suggest a renewed binational emphasis on the importance of medical education in the basic sciences. At UBC, this pendulum swing has manifested so far in small ways:

- There is an increased appetite on the part of preclinical block chairs for pathology instruction. Dr. Torsten Neilsen and UBC medical student Kathryn Roston have recently created

a new small group Clinicopathologic Conference (CPC) session for the Musculoskeletal (MSK) Block in the fall, to add to the fourteen CPCs we teach in other blocks. We have already been asked to create more CPCs for the MSK block (to focus not only on bone disease but also arthritis and autoimmunity), which is a welcome invitation if not one which risks taxing our ability to find enough pathology instructors!

- The early discussions around “medical curriculum renewal” at UBC have included an emphasis on teaching pathology not only to preclinical medical students but also to senior clerks. These discussions are at a very preliminary stage, but pathology is clearly “at the table”, and the importance of pathology among other medical sciences is frequently voiced not only by pathologists but also other UBC medical educators.
- A group of second and third year medical students have approached our Department to help them create a medical student interest group in pathology. There is only one other student pathology group in Canada (at the University of Alberta) and certainly this may be one small step towards improving pathology recruitment. It is worth noting, of course, that UBC already has the best rate of medical student recruitment into pathology of any Canadian school, but a student club might help to make pathology even more attractive to our students.

One of the gratifying findings of our recent national survey was that, just like at UBC, pathology teaching across Canada is very highly rated by medical students. Faculties of Medicine may have spent years wandering away from Pathology, but Canadian medical students have not lost sight of the importance of what we teach them. Hopefully, curriculum planners at UBC and other Canadian schools will continue to rediscover pathology’s relevance.



CLEAR CELL CARCINOMA CHALLENGE & CHANGE

By: Blake Gilks

A one day symposium dedicated to clear-cell carcinoma of the ovary was held on the UBC campus on June 24, 2010. This was the first subtype-specific ovarian cancer symposium and was designed to allow members of the clinical and research community who are interested in clear-cell carcinoma of the ovary to focus on the major barriers to improving outcomes for this disease.

Ovarian carcinoma has been treated as a single disease, but there is an increasing appreciation that it is really a collection of different tumor types, that have different risk factors, inherited susceptibility syndromes, precursor lesions, biomarker expression profiles, patterns of spread, responses to chemotherapy, and outcomes.

This meeting was by invitation only, and featured participation by opinion leaders from around the world. The meeting was organized through OvCaRe, the Vancouver-based ovarian cancer research consortium, which was co-founded by Drs. David Huntsman (currently acting head of OvCaRe and lead organizer of the meeting), Blake Gilks and Dianne Miller. Drs. Huntsman and Gilks are professors in the Dept of Pathology and Laboratory Medicine. The work of OvCaRe in defining the molecular and pathological features of ovarian cancer subtypes and demonstrating their differences in natural history, and over the past 5 years, has been influential in leading to the change of focus in ovarian cancer research treatment and research to subtype specific strategies. The day's sessions were lively and challenging, with participants urged at the outset

to challenge dogma. The morning's presentations focussed on epidemiological and treatment aspects of clear-cell carcinoma. The former featured a presentation from Dr. Akiou Okamoto of Japan, as the Japanese have a leadership role in defining epidemiological associations with clear-cell carcinoma. Treatment by surgery, chemotherapy, and radiotherapy were discussed, highlighting a possible role for radiotherapy in the treatment of this ovarian cancer subtype. After a break, there were presentations by David Bowtell from Australia and David Huntsman on genomic aspects of clear-cell carcinoma. Dr. Ie-Ming Shih from John's Hopkins was scheduled to attend but was unfortunately unable to get to Vancouver because storms in the midwest led to the cancellation of his flight from Baltimore; he did send his presentation and his data were presented. The afternoon session focussed on clinical trials opportunities; prominent clinical trialists highlighted the problems in starting clinical trials for uncommon diseases, and presented some possible solutions. After a discussion period there was a strong feeling that a follow-up meeting to facilitate clinical trials of some of the treatment options that have shown great promise in pre-clinical models should take place. It was a very successful day, providing a future direction for research on sub-type specific management of ovarian carcinoma. Many thanks to the Dean, Gavin Stuart, for his support in making this happen, to the Foundations of BCCA and VGH, for funding support, and to Steve Kalloger and Sandy McNeil for on the ground organization.



MEET THE PEOPLE OF PATHOLOGY

Bruce M. McManus, MD, PhD, FRSC, FCAHS

Brief Life History

I was born a long time ago in the famous prairie town of Kindersley, Saskatchewan (named after CNR Shareholder, Lord Robert Molesworth Kindersley) and grew up in this rural community of farmers and ranchers. I had the same aspirations as Wayne Gretzky, the same height and weight, but no relevant skills.

Second youngest of six children with two brothers as engineers, one realtor, and one farmer....and our only sister as a health research administrator for the CIHR. Attended a one-room country school until grade 6, and attended a junior high and high school with no gymnasium or assembly hall. Graduated twice from the University of Saskatchewan, in Arts and in Medicine, and pursued graduate degrees at Penn State University and the University of Toledo. Also.... completed post-graduate fellowships in high altitude physiology (University of California – Santa Barbara) and cardiac and lung pathology (NHLBI, NIH).

In between, I completed a residency in Medicine and Pathology at the Peter Bent Brigham Hospital/Harvard Medical School with certification in Anatomic Pathology. I then, joined the faculty of the University of Nebraska Medical Centre in 1982, and remained there as a cardiopulmonary pathologist (with an NIH Senior Fogarty Fellowship for sabbatical at the Max Planck Institute for Biochemistry in 1989-90) until 1993, when I moved to UBC as Department Head of Pathology & Laboratory Medicine. [A most important development in Nebraska was meeting Janet Elaine Wilson, and then marrying her in Aspen in 1985.] Became the inaugural director of the Institute of Circulatory and Respiratory Health for the CIHR in 2000, and returned to fulltime activities in the

► ... Little known facts:

- **Is a fully addicted bus-rider who hasn't driven his car more than a dozen times during the past three years.**
- **Finds great tranquility in ironing clothes, despite the risks for everyone associated.**
- **Is team psychologist for the Vancouver Canucks....but doesn't work in the play-offs .**
- **Likes to golf whenever possible, despite a scary handicap (or many handicaps).**
- **Has worked with his wife, Janet, for 27 years, and she still smiles most of the time (especially when he is out of town).**
- **Wrote a soon to be published novel based on the fallibilities of testosterone-infested males in the human species.**
- **Could survive on a diet of fresh tomatoes, potatoes, beets, beer-battered halibut, shredded wheat, Oh Henry bars, and scotch.**
- **Has three very artistic and musical children who believe their father had a developmental arrest at age 7.**
- **Enjoys being in his office by 6 am with a good cup of coffee.**



UBC community as Director of the James Hogg iCAPTURE Centre in 2006. I was asked to serve as inaugural director of the Providence Heart + Lung Institute in the summer of 2007, and took on leadership of the NCE CECR Centre of Excellence for Prevention of Organ Failure in April 2008. My basic, and clinical, investigative program is focused on mechanisms, consequences, detection and prevention of injury and repair involved in inflammatory diseases of the heart and blood vessels, with particular emphasis on enteroviral infections of the heart and transplant vascular disease.

Was co-recipient of the Max Planck Research Award with Dr. Reinhard Kandolf in 1991. Was elected to the Royal Society of Canada as a Fellow of the Academy of Sciences in 2002, and received a UBC Killam Research Prize - Senior Scientist Category in 2003. In 2005, was elected as an inaugural Fellow of the Canadian Academy of Health Sciences and received the Research Achievement Award of the Canadian Cardiovascular Society.

In 2006, mainly because of great work of my colleagues, I received the BC Innovation Council's Lieutenant Governor's Technology Innovation Award. I was especially honored to receive the 2007 UBC Distinguished Medical Lecturer Award and 2008 David F. Hardwick Lifetime Achievement Award. Received the 2009 Scientific Excellence Award from the Canadian Society for Atherosclerosis, Thrombosis and Vascular Biology, the 2010 Distinguished Achievement Award from the Society for Cardiovascular Pathology, and the 2010 Research & Mission Award from Providence Health Care. My greatest professional pleasure is mentoring and training the next wave of life scientists. Especially love the days when I can walk home along English Bay with my dear wife.

... Just for fun:

How would you describe yourself in a few words?

A: Fortunate and thankful.

If I were auditioning for "American Idol", my song would be...

A: Sweet Baby James.

The person I'm most often mistaken for is...

A: Richard Gere.

Life would be better with....

A: More 25 degree days and more golf courses.

Life would be better without....

A: Cell phones, cigarettes and cars.

If you could trade places with any other person for a week, famous or not famous, living or dead, real or fictional, with whom would it be?

A: Winston Churchill during the Battle of Britain.

List 5 goals on your life's to do list...

A: Attend the PGA Masters Golf Tournament, play a shift during game 7 of the Stanley Cup Playoffs, live in Cinque Terre for 5 years, spend a year as special advisor to the US President, play a role in a Hollywood intrigue flick.

Name 1 thing not many people know about you?

A: I cannot control how loud I sneeze.

Who or what inspires you and why?

A: Wildly brilliant and energetic people – they make us think.

What's your favorite poem?

A: The Cremation of Sam McGee.

What makes you hopeful?

A: The goodness of people, especially when I find it in young children.

PATHOLOGY DAY 2010

The Annual Celebration of Pathology Day

Pathology Day is an annual event that features poster presentations by graduate students, residents, and other trainees. The day concludes with the annual departmental dinner.

Cocktails & Dinner were held at The Vancouver Art Gallery and Poster and Oral presentations at the Plaza 500 Hotel 500 West 12th Avenue, Vancouver, BC.

Several awards were given to best oral and poster presenters.

James Hogg Keynote Lecture:



Dr. Steven Narod, MD, FRCPC, Canada Research Chair in Breast Cancer, Women's College Research Institute, Dalla Lana School of Public Health.

Annual Recognition Awards

Dr. Deborah McFadden:

Most Valuable Player

Dr. James Hogg:

David Hardwick Lifetime Achievement

Dr. John Brunstein:

Award for Excellence in Research and Discovery

Dr. Amanda Bradley:

Award for Excellence in Education

Dr. Catherine Halstead:

Award for Excellence in Service

Ms. Jenny Tai:

Staff Service Award

Mrs. Florida Pelington:

Staff Service Award

Best resident oral presentations:

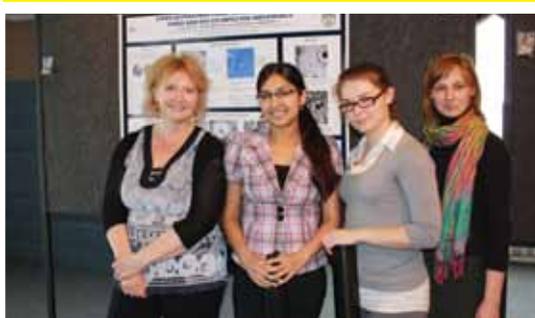
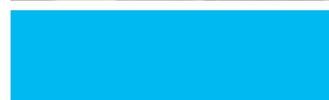
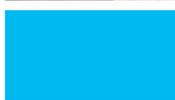
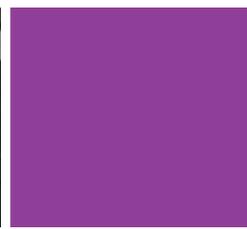
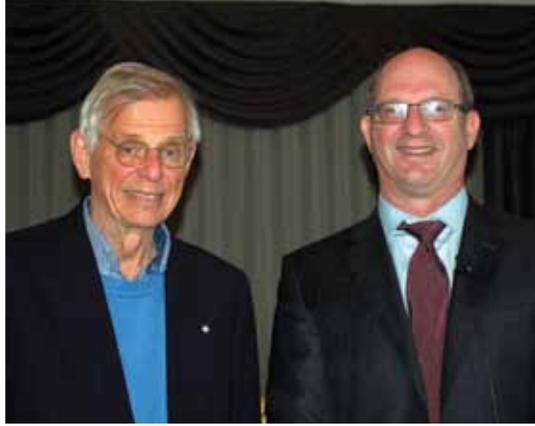
- 1st Place - Titus Wong
"Evaluation of real-time PCR tcdC gene detection assay for the diagnosis of Clostridium difficile infection"
- 2nd place - Arwa Al-Riyami
"Octaplex usage one year after implementation at a tertiary care hospital"
- 3rd place - David Schaeffer
"Absolute increase in endocrine cells in pediatric gastric biopsies following long-term proton pump inhibitor therapy"

Best graduate student oral presentations:

- 1st place - Lisa Ang
"Serpin A3N reduces abdominal aortic aneurysm rupture in mice by inhibition of extracellular granzyme B"
- 2nd place - Clara Westwell-Roper
"Macrophage recruitment and TNF-alpha release: a pro-inflammatory role for human islet amyloid polypeptide"
- 3rd place - Xin Ye
"microRNA(mir)-126 promotes coxsackievirus B3 replication by enhancing ERK signaling pathway"

Poster presentation award winners:

- 1st place - Sophie Stukas
"The role of brain high density lipoproteins in facilitating beta-amyloid degradation"
- 2nd place - Maite Verreault
"Lipid-based formulation of irinotecan (Irinophore C), vincristine and doxorubicin target tumor vasculature in glioblastoma multiforme"
- 3rd place - Amal El-Naggar and Jessica Kalra
Amal El-Naggar: "Y box binding protein-1 is a major contributor to sarcoma cells motility and aggressiveness"
Jessica Kalra: "Suppression of Her2/neu expression through ILK inhibition is regulated by a pathway involving TWIST and YB-1"



THE ART OF SCIENCE

By: Ashish Marwaha

This year's third annual Art of Science Pathology Department gala was another overwhelming success. With over 150 attendees the MSAC was once again filled to capacity as the evening began. Visual art exhibits were on display from both faculty (David Walker) and students (Agatha Jassem, Dian Sulis, Hayley Spencer, Jasmine Yang, Penny Slack & Varun Saran) and even some lab managers (Galina Soukhatcheva - Verchere lab & Xiaoxia Wang – Tan lab).

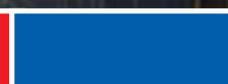
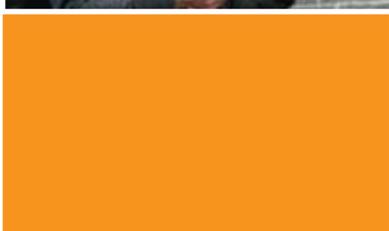
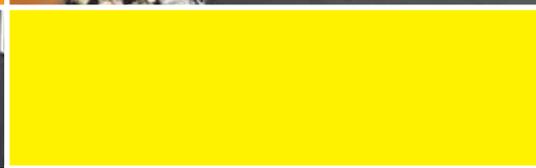
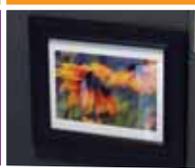
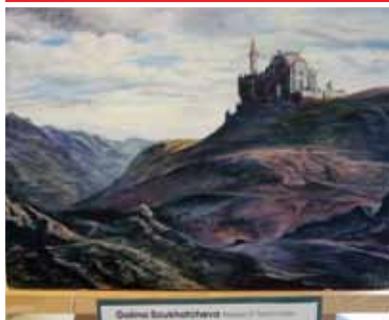
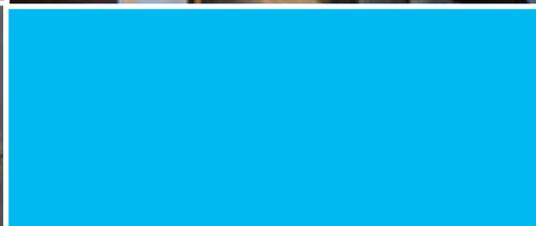
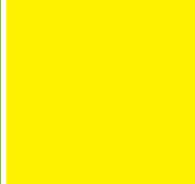
The performing artists' show featured some familiar faces from previous years. Ash Marwaha returned to belt out some Frank Sinatra classics accompanied by Amy Cheng on the piano. Lisa and Marie Ang also returned this year joined by Andi Bruniski to share with us their angelic voices. Susan Porter became the only performer to have taken part in all three gala years with her piano performance of Ash Grove by J. Martin.

Some new talent was also on display. David Ng had the audience in stitches with his particularly apt scientifically themed comedy reading. Collette Chu accompanied her friend Crishnaly Delieva to bring us another angelic rendition of the Disney classic 'Colors of the Wind' and Amy Cheng displayed her professional music talent on the piano. The show was closed by a group performance by the CFRI choir Vocal Chords (Ash Marwaha, Ashish Sharma, Bruce Verchere, Kate Potter, Lynn Huang and Clara Westwell-Roper) singing the popular classic 'Don't Stop Believing.' However, just before the curtains came down, once again we were treated to David Hardwick's impromptu performance on both the piano and banjo.

The evening was enjoyed by all and once again managed to raise over \$1000 for local children's charity Art's Club. A big thanks to committee members: Varun Saran, Melissa Grier, Colette Chiu, Lisa Ang, David Walker, Agatha Jassem, Alon Hendel and Emily Vucic. The Art of Science evening promises to uncover and expose the wealth of artistic talent in the Pathology Department for many years to come.

"The evening was enjoyed by all and once again managed to raise over \$1000 for local children's charity Art's Club."





MEDICAL SURVEILLANCE PROGRAM

By: Craig M. Smith
Associate Director, Health Safety Environment, UBC

UBC is committed to providing a healthy and safe work environment for research and teaching. In order to facilitate this goal, UBC has established a comprehensive Medical Surveillance Program.

Medical surveillance is the process of evaluating and supporting an individual's health status as it relates to their potential occupational exposure to hazardous agents in the workplace. It seeks to establish best practice activities related to those risks that require targeted prevention and/or intervention.

The outcomes are safe healthy employees that actively participate in a formal process of oversight and support when working in higher risk environments such as animal units or laboratories utilizing infectious agents.

The Medical Surveillance Program at UBC is a flexible program that is

designed to meet individuals' specific work process and health needs.

Staff and faculty enrolled in the program undergo a workplace risk assessment and a clinical office visit with the occupational health nurse to determine their health history and vaccination history.

Based on this evaluation, the nurse and the client initiate a plan for screenings, regular updates, vaccinations, and visits with the Program physician where necessary.

This plan is used to establish a client's baseline health status and to maintain their health as it relates to their potential

for occupational exposures or disease. All personal health information provided to the Program clinical staff is held in strict confidentiality as per regulatory and policy requirements. Vaccines that are recommended by the program are provided to the staff at no charge.

Please visit the <http://www.hse.ubc.ca/healthpromotion/medical.html> for more information or call:

Hollie Burrage, R.N.
Occupational Health Nurse
Clinical office location:
310-5950 University Blvd
604-827-3920

Hollie Burrage - Medical Surveillance Program Occupational Nurse on left
Kelly McIntosh - Medical Surveillance Program HSE Associate on right.



A CULTURE OF SAFETY

By: Jennifer Xenakis
Educational Services Manager
Department of Pathology & Lab Medicine, UBC

Safety might not be a word that's on your mind on a regular basis, but it should be.

Worksafe B.C. creates and enforces the regulatory mandates for the Province of B.C.

The onus is on the worker to be aware of the regulations and to comply. For information about your role and responsibilities please refer to the following link for more information: www.worksafebc.com

If you are unconcerned that you are mandated to comply with the safety regulations, then you should be aware that environmental factors play a large role in the disease process. Many health problems can be directly linked to unsafe work practices. Industrial Hygiene or "safety" aims to prevent disease before it happens. The correct definition is: "the anticipation, recognition, evaluation,



and control of workplace environmental factors that may affect the health, comfort, or productivity of the worker."

Knowing what you are working with and the relative risks involved can enable you to limit exposure to the point where your health will no longer be affected. Ergonomically designing your workstation to fit your body type can decrease the risk of eyestrain, headaches, backaches, shoulder and neck pain and

lower the amount of time loss claims due to repetitive strain injuries.

If you work in a lab you must have the biological and chemical safety certificates issued from UBC HSE (Health, Safety and Environment). To apply on-line for the Chemical or Biological safety training go to www.hse.ubc.ca

You will also find helpful information on our website: www.pathology.ubc.ca. Click on Admin & Finance, scroll down to safety and click on the link.

Our department is diverse and not all people will be performing the same type of work. Some individuals will have to be actively involved in their local safety committee while others will be more concerned with ergonomics. Whatever your concerns, please be aware that Safety is everybody's business. Safety should be a culture in all workplace environments, not just the responsibility of a few.



UNIVERSITY OF BRITISH COLUMBIA
Faculty of Medicine
Department of Pathology

G227 - 2211 Wesbrook Mall
Vancouver, BC V6T 2B5

Next Issue - January 2011



The Pathology Newsletter is published bi-annually. Suggestions from readers are both encouraged and welcome at any time.

Editors:
Maureen Barfoot
Debbie Bertanjoli

Publisher:
Debbie Bertanjoli

Email:
dbertanjoli@pathology.ubc.ca

Current and back issues of all Newsletters can be found on the
Departmental Website:
<http://www.pathology.ubc.ca>