

Comments from the Chair



Doing Well by Doing Good

I trust that you are enjoying an exciting and productive year. Of the many changes under way of interest to the Department, one of particular importance is that Professor L. Trevor Young assumed the position of Dean of the Faculty of Medicine on January 1. Dean Young has indicated that the Faculty of Medicine will be undertaking a “refresh, as opposed to an overhaul” of its strategic plan and priorities. We have conducted our own

Departmental strategic planning process with this understanding in mind. In this process, we have had tremendous success in getting to the core of our Departmental identity, and defining our unique position, expertise and role in the academic medical enterprise.

The updated LMP Strategic Plan 2015–2020 includes a “Positioning Statement” that articulates a compelling value proposition for LMP. The four high-level strategic directions identified in the plan will be further refined into practical actions. To accomplish this, the Department is forming a number of working groups, each with a defined leader, to determine and prioritize specific activities that align with developments in the Faculty of Medicine, at the University of Toronto, and with our partners.

Consequently, this year will be characterized by finalizing the details of our Departmental priorities. Achieving success in this absolutely crucial endeavour will require the ongoing engagement of faculty, staff, students and trainees. Let’s create a future that will make us all proud!

Professor Meric Gertler, President of the University of Toronto, has emphasized the importance of having engaged citizens to support the mission of the University. I am pleased to see how our fantastic undergraduate student union, LMPSU, has embraced this concept through its leadership in organizing an annual conference on a topic of contemporary interest.

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Laboratory Medicine & Pathobiology
UNIVERSITY OF TORONTO

LMP News

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LMP News is a communication of the Department of Laboratory Medicine and Pathobiology, Faculty of Medicine, University of Toronto.

Please send your submissions to:

Katie Babcock, Newsletter Editor &
Web & Communications Coordinator
1 King's College Circle, Rm 6221
Toronto, ON M5S 1A8
Tel: 416-946-7707
Email: katie.babcock@utoronto.ca

This year's conference, "Healing and the Heart," held on January 17 at the MacLeod Auditorium, focused on cardiovascular regenerative medicine. The program appealed to a wide audience, and featured excellent speakers who conveyed the excitement about the spectacular progress made in stem cell and developmental biology — progress that translates new discoveries into breakthroughs for the management of patients with chronic heart failure and related conditions. The annual LMPSU-sponsored conference is an example of how LMP engages with the broader community, leverages our location in a world-renowned city, and is committed to enhancing the student experience. Well done!

The next few months promise to be particularly eventful. I look forward to working with you as LMP continues on its journey of ongoing improvement and increasing impact.

*Richard G. Hegele, MD, FRCPC, PhD
Professor and Chair*

AT THE CENTRE OF THE FORENSIC SCIENCES UNIVERSE



Professor Michael Pollanen (centre-right) with former IAFS Presidents

Professor Pollanen to host International Association of Forensic Sciences 21st World Congress

With a world-renowned facility and a global vision, Professor Michael Pollanen has set the stage to further revolutionize forensics as the host of the world's largest forensic sciences conference.

Pollanen, Chief Forensic Pathologist for Ontario, was recently elected President of the International Association of Forensic Sciences (IAFS). At the end of his three-year term, as host of the organization's 21st World Congress, he will welcome more than 1,500 delegates to Toronto.

The conference will focus on interprofessional approaches to forensic science — from the management of physical exhibits at crime and death scenes to analytical laboratory tests.

“We want to encourage forensic scientists and legal and law enforcement professionals across the globe to work together to develop new ways of thinking about the practice,” says Pollanen. “We want to create new technology that will be the foundation of our practice in the future.”

In August 2014 Pollanen, along with representatives from Tourism Toronto, the Ministry of Community Safety and Correctional Services, and the University of Toronto, attended the 20th IAFS World Congress in Seoul to bid on hosting the next conference.

The competition was tight, with Brazil, Denmark and Turkey as tough opponents. At the end of the day, the selection committee was impressed with the city of Toronto, Toronto's forensics facilities and Pollanen's platform.

“The most memorable moment of the Twentieth Congress was when they announced that Toronto had won the bid to host the next conference. It was amazing,” says Sue Sarju Balaga, LMP

Undergraduate Medical Coordinator, who was part of the team in Korea present for the announcement. “Dr. Chung, the previous IAFS President, was teasing the audience. When she finally said ‘Toronto,’ I jumped out of my seat and we were all ecstatic.”

Beyond promoting interdisciplinary approaches, the 21st Congress will also give Pollanen the chance to strengthen his

proposal for improving forensic science in low- and middle-income countries. He has already created an international forensic training program that brings pathologists from developing countries to train in Toronto.

In the future, he plans to provide in-country training to Ethiopian pathologists through the Toronto Addis Ababa Academic Collaboration.

Along with this global vision, the scope of the conference is truly international. “Walking down the hallway, you'll see a forensic practitioner from Kazakhstan, Fiji and the United States and they're all in the same space,” says Pollanen. “That can lead to some interesting opportunities for collaborations.”

The 21st Congress will be held at the Sheraton Centre from August 21 to 25, 2017. Delegates will enjoy exploring Toronto and will attend pre-conference workshops at the Forensic Services and Coroner's Complex, already known as the most modern and technologically advanced facility of its kind.

“There are a lot of people working together with a shared vision to improve forensic science and forensic medicine, and U of T is the leader in this area,” says Pollanen. “Toronto is really at the centre of the forensics universe.” ■

“THERE ARE A LOT OF PEOPLE WORKING TOGETHER WITH A SHARED VISION TO IMPROVE FORENSIC SCIENCE AND FORENSIC MEDICINE, AND U OF T IS THE LEADER IN THIS AREA.”

FROM RESEARCH TO REMARKABLE LEADERSHIP

Medical Microbiologist
Alumna Vanessa Allen



How are test protocols for infectious diseases developed? When should these tests be ordered and how are they interpreted? What happens to patient samples, and how does Public Health Ontario track and prevent future outbreaks?

These are all important questions that Professor Vanessa Allen deals with on a daily basis.

Allen graduated from LMP's Medical Microbiology program in 2008 and joined LMP as a faculty member in 2010. Since then she has become a formidable clinician, researcher and leader, and in 2014 she became Chief, Medical Microbiology at Public Health Ontario.

Allen became interested in infectious diseases and microbiology in 2003, when she was working as an internal medicine specialist during the SARS outbreak in Toronto. Influenced by Professor Andrew Simor, Allen decided to change her career path.

"Originally, I was thinking about going into respirology, but with the SARS outbreak, I thought that there were some interesting issues surrounding emerging pathogens," says Allen. "Infectious diseases and microbiology fit my personality and interests in translating discoveries from the bench to the global level."

There is never a dull day for Allen. She's responsible for part of the lab that tests for bacterial sexually transmitted infections and food-borne illnesses. She also oversees the medical and scientific functions of the lab, and she plays a key support role to the lab's portfolios including virology, HIV and hepatitis, tuberculosis, streptococci, antimicrobial resistance and pathogen discovery.

At the same time, research is one of Allen's primary interests, leading to a major publication on drug-resistant gonorrhea in 2013. Her drive for research was inspired by her close work with Professor Donald Low. "Part of Don's legacy is to see how we can develop science to be at the forefront of detection and response to infectious diseases and prepare for future outbreaks. I'm lucky to have the chance to push his

ideas forward and to be one of many to build on his legacy."

Allen remains passionate about medical microbiology, and thinks the way we diagnose diseases will completely change in the future. For example, Allen works with Professor Samir Patel who is leading a pathogen discovery project. By taking a sample of a patient's cerebrospinal fluid, he plans to amplify its DNA and RNA to identify specific pathogens.

"Using genomics and metagenomics, clinicians won't have to pre-order tests. They'll find out what's wrong with the patient. These tests can either pick up pathogens that you didn't think to order tests for, or it can pick up new and emerging pathogens."

Reflecting on her broad range of interests, Allen looks forward to future collaborations with clinicians and scientists. "It's really exciting to work with clinicians and public health workers and the focus in upcoming years is to further strengthen those links. Our move to the MaRS building will help us realize that goal."

When asked for advice for medical students interested in pursuing medical microbiology, Allen says, "It's an amazing field, and it's perfect if you're interested in being challenged by new things every day." ■

**"IT'S AN AMAZING FIELD,
AND IT'S PERFECT IF
YOU'RE INTERESTED IN
BEING CHALLENGED BY
NEW THINGS EVERY DAY."**



Severa Bunda and Professor Michael Ohh

A FRESH LOOK AT OLD IDEAS

LMP researchers discover effective molecular switch for most notorious cancer-causing gene

For more than thirty years, scientists and pharmaceutical companies have struggled to target one of the most well-known cancer-causing proteins. Mutations in this oncoprotein are responsible for more than 30 percent of all cancers, and if you include the pathways they govern, they could be involved in virtually all cancers.

In a remarkable breakthrough, researchers from the University of Toronto have discovered a missing link that could target this oncoprotein and provide more effective treatment.

Professor Michael Ohh and Postdoctoral Fellow Severa Bunda published their findings in the *Proceedings of the National Academy of Sciences of the United States of America*.

In this study, they revealed a critical process that inactivates the Ras oncoprotein. The Ras oncoprotein is like a switch. When it's involved in normal cell proliferation, it switches on and off in a well-regulated manner. But when it mutates, its switch is permanently turned "on," leading to uncontrollable cell growth and cancer.

"We found that there is a critical modification on Ras that has not been identified before," says Ohh. "This Ras protein has been around for decades and is involved in many cancers including prostate, breast, pancreas and brain cancer. The significance of this modification is that it seems to govern the Ras oncoprotein's major function as an on/off switch for cancer."

They discovered that Ras is switched off by another oncoprotein called Src. Scientists previously knew that the two were connected and had been trying to inactivate one or

the other. But Ras is difficult to target, and inactivating Src is not necessarily beneficial because it can make cancers more aggressive in certain settings.

"THIS DISCOVERY REALLY SHOWS THAT WE NEED TO TAKE A FRESH LOOK AT OLD IDEAS."

"People always thought that we should turn both genes off, but if you turn Src off, you allow Ras to become even more aggressive," says Bunda. "The idea is not to turn the switch off completely but to balance it."

Instead of completely turning these oncogenes off, Ohh and Bunda have discovered that Src can also act as a dimmer switch. With this knowledge, they can stop the growth of cancerous cells.

Scientists had thought that they already knew everything about these oncoproteins that were the first to be discovered.

"This discovery really shows that we need to take a fresh look at old ideas," says Ohh. "We asked some of the most basic questions — questions that everyone thought had been answered. But this research shows that when you re-examine the basic science, there is an opportunity to discover things that could have a major impact on how we treat thousands of patients."

The team is now testing inhibitors in glioblastoma, one of the most aggressive brain tumours. Their hope is that these inhibitors can be combined with chemotherapy to provide more effective treatment. ■



Professor Avrum Gotlieb



Stephanie Poon, Jelena Tanic, Ashley Zhang, Alena Zelinka, Professor Avrum Gotlieb, Charles Lee, Maya Deeb and Andrew Rajkumar

FINDING THE RIGHT PATH TO RESEARCH

BY JELENA TANIC

The University of Toronto offers students boundless opportunities to work with some of the most accomplished researchers in the world. Yet incoming students sometimes have difficulty identifying these research opportunities.

On November 6, 2014, LMP Professor Avrum Gotlieb addressed this challenge and presented an invaluable seminar to LMP undergraduate students interested in pursuing research and graduate studies. During the two-hour session, hosted by the undergraduate student association, he presented a systematic way for students to interact with the research community and to find and secure opportunities.

One of these important steps is to have a written plan. “Your plan is not set in stone. As opportunities arise your plan will change, but at least you will have a guide which lists what you should accomplish and identifies milestones,” says Gotlieb.

Beyond the basic principles of demonstrating responsibility and the capacity to do research, he explained that students also need to approach

research positions with a genuine and vested interest. They should appreciate that they are joining a community of biomedical and life sciences researchers.

With more than 40 students attending the seminar, participation

“DR. GOTLIEB’S REMARKS SHOWED ME THAT RESEARCH OPPORTUNITIES ARE AVAILABLE AND ARE IN FACT ABUNDANT.”

in Gotlieb’s talk highlighted the importance of the topic. The presentation showed students how to develop their interest and how to channel their eagerness to get involved in their local research community.

“Dr. Gotlieb’s remarks showed me that research opportunities are available and are in fact abundant,” says third-year undergraduate attendee Anna Cotic. “His approach to obtaining research positions was very applicable to my own research interests and he outlined an easy way for students

to pursue research while not feeling overwhelmed.” Cotic’s comments accurately reflect the concerns of many university students who want to pursue research but do not know where to begin.

The undergraduate student association would like to thank Professor Gotlieb for taking the time to inform students not only about where they can look for research opportunities, but also how to make a meaningful contribution to the University. ■

Interested in summer student research? Check out LMP’s website to learn more about the LMP Summer Student Research Program at www.lmp.utoronto.ca



Professor Harry Elsholtz, Jonathan Cook, Robyn Elphinstone, Richard You Wu, Felix Leung, Sowmya Shivanna, Ivette Valencia-Sama, Zhichang Peter Zhou, and Professor and Chair Richard Hegele

GRADUATE AWARDS 2014 — WHAT A YEAR!



Stephen Mack with his Governor General's Gold Medal

It's not often that a department has a student who wins a Vanier Canada Graduate Scholarship, known as one of the most prestigious national graduate scholarships. But when students in one University of Toronto department win four out of the total twelve awarded to the entire University, you know that department is recruiting some exceptional students and conducting remarkable research.

In 2014, that's just what students from LMP did. Jonathan Cook, Robyn Elphinstone, Felix Leung and Richard You Wu were all recipients of the Vanier award, valued at \$50,000 per year for three years. Awarded in the Canadian Institutes for Health Research category, their research spans virology; immunology-transplantation; genomics, proteomics and bioinformatics; and cell biology.

Not only did LMP students thrive in the Vanier competition, but three new international doctoral students won entrance scholarships for their outstanding academic records and research ability. Zhichang Peter Zhou won the Ontario Trillium Scholarship, valued at \$40,000 per year for four years, and Sowmya Shivanna and Ivette Valencia-Sama won Connaught International Scholarships, an award valued at \$35,000 per year.

To top it off, LMP alumnus Stephen Mack won the Governor General's Gold Medal — presented to three U of T graduate students who achieve the highest academic standing. Mack is currently at the Cleveland Clinic/Lerner Research Institute, one of the top medical research centres in the United States. His postdoctoral work examines tumour cell heterogeneity and hierarchies in glioblastoma, the most common malignant brain tumour in adults. In January 2015, Mack was awarded a highly competitive CIHR Banting Postdoctoral Fellowship, valued at \$70,000 per year for two years. His application was ranked 6 out of 228.

"I am delighted with the outstanding students we attract to our graduate program, and very pleased with how well they performed in award competitions last year," says Professor and Graduate Coordinator Harry Elsholtz. "I believe this is a good indicator of their potential and future success in biomedical research. What's equally impressive about our awardees this past year, beyond their academic achievements, is the leadership they have demonstrated in a range of activities on campus and outside the university community." ■



Eric Morgen



Joerg Schwock

ROYAL COLLEGE EXAM SURVIVAL TIPS

For some, it's a mainly nerve-racking experience. For others, the specialty examination in Anatomical Pathology is more the highly anticipated culmination of five years of residency training. In early April, the Royal College of Physicians and Surgeons of Canada administers the three-hour written exam in Toronto. The two-day practical exam follows in Ottawa at the end of May.

Anatomical pathology residency program alumni Eric Morgen and Joerg Schwock describe their exam experiences. Morgen is currently a clinical fellow in perinatal pathology and research fellow in molecular pathology at Mount Sinai Hospital and University Health Network. Schwock is a clinical fellow in cytopathology at Sunnybrook Health Sciences Centre and University Health Network.

What was the exam process like?

EM: Very organized. You show up well before the exam, nothing feels rushed, and most things have been thought of ahead of time. For example, during the written test they had earplugs they would pass out if you were bothered by noise.

JS: For the written exam, we got a stack of booklets — each with slightly different numbers of questions. Time management is important. You have to work at a steady, fairly fast pace. The oral exam emphasizes quality and patient safety. A good differential diagnosis is likely

more important than a definite diagnosis in the oral component. Also, you have to know how to resolve your differential diagnosis using the appropriate ancillary tests.

What methods did you find most useful for studying?

EM: Looking at slides is essential — as many cases as possible. We had a small group that started a year ahead just going through slides from various cases. It helps you get broad exposure to things that you otherwise might not have seen in a long time.

JS: I think that the day-to-day work and the in-house exams, as part of U of T's residency program, prepared me well. For me, continuous preparation throughout the entire residency was key.

Do you have any tips or tricks leading up to the exam?

EM: I found flash cards very helpful for information that was dense or otherwise hard for me to remember. I used a free flash card program called Anki, which is helpful and searchable. So it's great for looking things up that you have already made a flash card about. Flash cards also helped me think about things in terms of questions — like what kinds of topics would make good questions and how they would be asked.



JS: Because the exam questions vary from year to year, you really need to acquire a broad knowledge base. Robbins and Cotran (or similar textbook) is a good foundation. Closer to the exam I found *Pathology Review* by Zu-hua Gao helpful due to its Q & A style, which allowed me to test my knowledge.

How did you manage the stress between the written exam in April and the oral exam in May?

EM: By forgetting about the test I had just written and focusing on studying for the next one! Actually, I think I gave myself a short break first to relax. Then I started studying hard for topics I thought would be more important for the oral.

JS: Between the written and oral exam, I focused on clinical service, which helped me to stop thinking about the test. We also met in a group and reviewed slides from different sources including the CAP Performance Improvement Program.

Do you have any advice for the day of the exam?

EM: Figure out ahead of time where you are going, at what time, and exactly how you are going to get there. For the oral in Ottawa, choosing a good hotel is helpful — either one that is comfortable or close to the exam centre, or both. Hotels tended to get booked up closer to the exam, so figuring this out early is helpful.

JS: I thought it was good for me to take a trip to the exam site a day before. Especially in Ottawa it is important to find out about the location for the practical exam in advance.

The Royal College recommends that you bring an extra microscope bulb. It is also a good idea to bring a hex key and a test slide so you can adjust your microscope if needed. Bring a little nutritional support such as a chocolate bar. Be familiar with your microscope and avoid complicated equipment.

Do you have anything to add?

EM: One thing that is very difficult with studying is knowing which areas are important, and in how much detail you should be studying them. It is easy to under- or over-study in different areas, or to think you have over- or under-studied. I think having a study group that meets regularly is very helpful for this, since you can gauge yourself against others and get a feel for what others think is reasonable.

JS: It's normal to be nervous. Schedule breaks and try to get sufficient sleep. Going out for a movie night before the written exam worked well for me. If you've gone through the program at U of T, you're well prepared for the task. ■

SHARING THE WARMTH AT OUT OF THE COLD

BY MENA ABDEL-NOUR

Sunday, December 14, 2014, marked the second annual LMP Out of the Cold volunteering event at St. Patrick's church. Out of the Cold is a program that seeks to give back to the community during the holidays, by preparing a hot meal for impoverished or homeless individuals. Thanks to the support of the graduate student union (CLAMPS) and LMP graduate students, over \$220 was raised to help subsidize a meal for approximately 100 individuals.



Graduate students were also recruited to help prepare and serve the meal at the church. "One of the great things about Out of the Cold is that it's a different kind of volunteering event," says Jessica Tsalikis, Vice-President Social of CLAMPS. "When we volunteer, we actually get to see those we are helping, which I feel helps us truly appreciate what we have at this time of year when some people have so little."

Volunteer Jennifer Taher, PhD candidate, agreed. "If you are interested in meeting new friends, learning to improve your kitchen skills and also giving back to the community, then you should definitely sign up for OOTC. I had a ton of fun with the staff and volunteers who created a warm and welcoming environment for everyone." ■



AWARDS & HONOURS

FACULTY

Professor Daniel Drucker received the world's most valuable award for diabetes research, the 2014 Manpei Suzuki International Prize. The award, presented by the Manpei Suzuki Diabetes Foundation in Tokyo, recognized Drucker's research on how gut hormones control glucose and body weight. As a result of research discoveries in Drucker's lab, two new drugs have been developed to help diabetes patients control their blood glucose and insulin secretion — without weight gain or hypoglycemia, which are common side effects of other treatments for diabetes. Drucker is the first Canadian diabetes researcher to be presented with the prize's Certificate of Honor, USD \$150,000 and a Japanese objet d'art. He received the award at a ceremony hosted by the Manpei Suzuki Diabetes Foundation in Tokyo on February 10, 2015.

Professor Michael Pollanen, and his team at the Ontario Forensic Pathology Service (OFPS), received a certificate of appreciation from the Princess Patricia's Canadian Light Infantry. The Regiment suffered heavy casualties during the Afghanistan War, and many of its members underwent post-mortem exams performed by the OFPS staff. These examinations were performed in partnership with the CASPEAN program of the Department of National Defense, and the data that OFPS staff produced helped save the lives of other Canadian soldiers. The Regiment command, including their Colonel and the former Governor General of Canada Adrienne Clarkson, thanked the OFPS for their services at the Regiment's 100th anniversary on September 6, 2014.

Pollanen was also elected President of the International Association of Forensic Sciences (IAFS). He was selected for this prestigious position at the 20th World Congress of the IAFS. *See feature article for more details.*

STUDENTS & TRAINEES

GRADUATE

External Awards

Canadian Blood Services Scholarship

Tik Nga Cindy Tong (Professor Donald Branch)

Chinese National Scholarship Award, Graduate

Xiaohong (Ruby) Xu (Professor Heyu Ni)

Hospital for Sick Children Foundation Fellowship

(Restrcomp) Christopher Rowan (Professor Norman Rosenblum)

U of T Awards

Queen Elizabeth II Graduate Scholarship in Science & Technology

Kyung Ha Kay Ku (Professor Philip Marsden)

Michael Sugiyama (Professor Jeffrey Lee)

Paul Turgeon (Professor Philip Marsden)

POSTGRADUATE

Hubert Tsui, hematological pathology resident, has won the 2014 Top Poster Designation from the American Association of Blood Banks. Tsui's poster was titled, "Flow Cytometric Analysis of an Atypical Case of Transfusion Associated Leukocytosis." He received the award at the Association's Annual Meeting in Philadelphia in October 2014.

Tsui also won the 2014 American Society of Hematology Abstract Achievement Award for "Sensory Neuropeptides Prime the Splenic Marginal Zone for Optimal Humoral Immunity." He accepted this award at the Society's 56th Annual Meeting in San Francisco in December 2014. He was also recognized for the same abstract by the Canadian Hematology Society. He received the John H. Crookston Award during the Society's Annual Gala evening at the American Society of Hematology's Annual Meeting.

ANNOUNCEMENTS

GRADUATE

NEW STUDENTS

We would like to welcome our incoming graduate students.

MSc

- Huiyuan Teresa Liang (Professor Shelley Boyd)
- Rola Saleeb (Professor George Yousef)
- Andrea Weckman (Professor Kevin Kain)

PhD

- Marwan Althagafi
(Professors Myron Cybulsky and Clinton Robbins)
- Rickvinder Besla (Professor Clinton Robbins)
- Helal Endisha (Professor Mohit Kapoor)
- Stella Vasiliou (Professor Eleftherios Diamandis)

THESIS DEFENSES FALL 2014 — MSC

Yevgen Chornenkyy (Professor Cynthia Hawkins)
Poly-ADP-Ribose-Polymerase as a therapeutic target in paediatric diffuse intrinsic pontine glioma and paediatric high-grade astrocytoma.

Thuy Linh Ho (Professor Bharati Bapat)
Genome-wide distribution and regulation of DNA methylation and hydroxymethylation by TET proteins in prostate cancer.

Tarek Ibrahim (Professor JoAnne McLaurin)
The effect of scyllo-inositol on the neurodegeneration induced by alpha-synuclein fibril transmission in mice.

Chao (Mark) Jen (Professor Alan Lazarus)
Anemia mediated by an anti-erythrocyte antibody is not closely linked to the amelioration of murine ITP.

Qi Jiang (Professor Jeremy Sivak)
Signalling through the PGC-1 α pathway mediates an inducible stress response in retinal astrocytes to resist oxidative and metabolic insults.

Alexander Munteanu (Professor Irene Andrulis)
Characterizing the role of podocalyxin in breast carcinoma.

Mona Sobhani (Professor Hong Chang)
PRIMA-1met promotes anti-tumorigenic effects in Waldenstrom cells via a P73-dependent mechanism independent of P53.

Aaliya Tamachi (Professor Paul Hamel)
Patched-1 intracellular domains interact with E3 Ubiquitin Ligases Smurf2 and Itch.

Zhixing (Samuel) Tan (Professor Ming-Sound Tsao)
Non-genetic resistant mechanism to EGFR tyrosine kinase inhibitory therapy.

Matthew Vincent (Professor Aleksander Hinek)
Ligands of the elastin receptor stimulate elastogenesis through activation of the IGF-1 pathway.

THESIS DEFENSES FALL 2014 — PhD

Tiffany Chan (Professor Annie Huang)
Characterization of the Myc-JPO2 transforming network in medulloblastoma.

Pardeep Heir (Professor Michael Ohh)
Regulation of cellular oxygen sensing pathways by VHL.

Sarah Higgins (Professor Kevin Kain)
Host response to plasmodium infection: implications for pathogenesis and management of cerebral malaria.

Simon Lam (Professor Jim Hu)
Development of helper-dependent adenoviral vectors for gene therapy for inherited retinal diseases.

Haoran Li (Professors Burton Yang and Tianru Jin)
MicroRNA-17 in the regulation of cellular stress responses.

Jayesh Salvi (Professor Karim Mekhail)
Perinuclear chromosome tethers and RNA-DNA hybrid suppressors maintain genome stability and cellular lifespan.

Tara Spence (Professor Annie Huang)
Characterization and modelling of C19MC Amplified/LIN28 immunopositive pediatric CNS primitive neuroectodermal brain tumours.

POSTGRADUATE

Welcome to our new Chief Residents:

Anatomical Pathology	– Clarissa Cassol
Hematopathology	– Larissa Liontos
Medical Microbiology	– Aaron Campigotto
Neuropathology	– Maxime Richer

We would like to thank the previous Chief Residents for their work over the past year and wish them all the best in their future endeavours.

Anatomical Pathology	– Carlo Hojilla
Hematopathology	– Hubert Tsui
Medical Microbiology	– Yan Chen
Neuropathology	– Simin Laiq

FACULTY

The Division of Microbiology at the Hospital for Sick Children hosted the 8th Annual National Molecular Microbiology Users Group Meeting at the Peter Gilgan Centre for Research and Learning from November 19 to 20, 2014. Professor and Chair Richard Hegele opened the meeting, which provided 195 participants from across Canada an opportunity to learn about new technologies and share their experiences with molecular diagnostics in clinical microbiology. The event included exhibits, industry-sponsored workshops and presentations from users. Highlights included comparisons of molecular platforms, applications of DNA sequencing in microbiology, troubleshooting and strategies for assay development and validation.

APPOINTMENTS

FACULTY

NEW LMP STAFF APPOINTMENTS

Kenneth Aldape, University Health Network
Rank: Professor | Effective: September 15, 2014

Davor Brinc, University Health Network/Mount Sinai Hospital/Toronto East General Hospital
Rank: Assistant Professor | Effective: January 1, 2015

Susanne Chan, Southlake Regional Health Centre
Rank: Lecturer | Effective: November 1, 2014

Andrei Drabovich, University Health Network
Rank: Assistant Professor | Effective: November 1, 2014

Kiran Jakate, St. Michael's Hospital
Rank: Assistant Professor | January 1, 2015

Meagan Kennedy, University Health Network
Rank: Assistant Professor | October 1, 2014

Adriana Krizova, St. Michael's Hospital
Rank: Assistant Professor | July 7, 2014

Janet Malowany, St. Joseph's Health Centre Toronto
Rank: Assistant Professor | November 1, 2014

Christian Marshall, The Hospital for Sick Children
Rank: Assistant Professor | February 1, 2015

Hoon-Ki Sung, The Hospital for Sick Children
Rank: Assistant Professor | January 1, 2015

OTHER APPOINTMENTS

Professor Jeannie Callum was re-elected to the American Association of Blood Banks' Board of Directors.

Professor Ozgur Mete has been invited by the United States and Canadian Academy of Pathology to serve a three-year term as scientific abstract reviewer for the Academy's Endocrine Pathology section.

Mete has also been invited by Cancer Care Ontario to join Thyroid Surgery Quality Based Procedure Working Group (Cancer Surgery), and to also join the Thyroid Carcinoma Guidelines Expert Panel Review Committee.

Professor Clinton Robbins has been appointed as the Peter Munk Chair in Complex Aortic Therapy at University Health Network.

Professor George Yousef has been appointed Division Head, Molecular Diagnostics, Department of Laboratory Medicine, St. Michael's Hospital.

Yousef has also been appointed Vice-President of the International Society for Enzymology.

EVENTS

2015 USCAP Annual Meeting

March 21–27, 2015
Hynes Convention Center, Boston, Massachusetts, USA

LMP Specialist Program in Pathobiology Annual Reception

Tuesday, March 31, 2015
5:00 p.m. – 7:00 p.m.
Faculty Club
41 Willcocks Street, University of Toronto

LMP Graduate Research Conference

Wednesday, April 8, 2015
9:00 a.m. – 5:00 p.m.
Chestnut Conference Centre
89 Chestnut Street, University of Toronto

LMP Postgraduate Research Day

Wednesday, May 6, 2015
8:00 a.m. – 4:00 p.m.
Hart House, Great Hall
7 Hart House Circle, University of Toronto

50th Annual Pritzker Day

Monday, June 1, 2015
2:30 p.m. – 6:00 p.m.
Professor Bridgette Ronnett, MD
Professor, Departments of Pathology and Gynecology & Obstetrics
The Johns Hopkins University School of Medicine and Hospital
Baltimore, Maryland, USA
Ben Sadowski Auditorium, 18th Floor, Mount Sinai Hospital,
600 University Avenue, Toronto

Laurence Becker Symposium

Wednesday, June 3, 2015
8:45 a.m. – 3:00 p.m.
“Advances in Paediatric Laboratory Medicine”
19th Annual DPLM Symposium & 13th Laurence Becker Symposium
The Hospital for Sick Children
555 University Avenue, Toronto

LMP Annual Reunion and Banquet

Thursday, June 11, 2015
Doubletree by Hilton
108 Chestnut Street, Toronto
Visit our website in April for more details.

FUNDING

GRANTS AWARDED

Connelly PW. Investigating the role of red blood cells in oxidative stress and thrombogenesis — from 4-hydroxynonenal chemistry to mouse to man. Canadian Institutes of Health Research. \$451,101 (4 years)

Connelly PW. (Co-PI) Role of soluble CD163, a marker of adipose tissue macrophage infiltration, in the etiology of type 2 diabetes. Canadian Diabetes Association. \$240,000 (3 years)

Girardin SE. The role of NLRX1 in the prevention of diet-induced obesity and insulin resistance. Sun Life Financial Pilot And Feasibility Grants. \$70,000 (1 year)

Ni H. Apolipoprotein A-IV and platelet function: Novel links with thrombosis, inflammation, and atherosclerosis. Heart and Stroke Foundation of Canada. \$70,000 (1 year)

Wallace V. Functional analysis of norrie disease protein signaling in progression of medulloblastoma. Cancer Research Society. \$120,000 (2 years)

Seth A. miRNA signatures predictive of prostate cancer recurrence and metastasis. Cancer Research Society. \$60,000 (2 years)



Olena Bolonna

*Pathobiology Specialist Program student
with brother Lyubomyr Bolonny*

As a dedicated fourth-year student in the LMP Pathobiology Specialist Program, Olena Bolonna still finds time to pursue a wide range of performing arts activities. She began performing at age 13 and has continued to sing, act and dance. At U of T she is a member of the Victoria College Choir and the Hart House Chorus. She also sings with the Ukrainian Youth Association in Canada and has danced with the Desna Ukrainian Dance Company. Bolonna explains why she has such passion for performing and how it enhances her life inside and outside of the classroom.

Why are you interested in the performing arts?

What I like most about these activities is the learning experience and the process of self-expression. When I undertake a task, I know which part will be easier based on past practice and which is a new challenge, and it's most exciting to work through the challenge. Regardless of what is happening onstage, there is always a story; I like this process of storytelling and I am most happy when people understand the narrative.

What is one of your most memorable performances?

One very interesting event was a choir tour to Munich, Germany. This was my first performing trip outside of Ontario, as well as a great opportunity to meet with Ukrainians from many parts of the world who came to commemorate the 50-year anniversary of the death of a prominent Ukrainian leader. It was one of those moments when horizons widen and you become anxious to explore them.

How have these activities influenced your undergraduate experience and research?

My extracurricular involvement gives me energy and satisfaction that improve my success in academic and daily life. I love my studies, but they require a certain degree of focus and isolation which have to be diluted with other engagements. I found that the stage is one of the ways I can reach out to people, a way of communication that works for me.

What do you plan to do in the future?

My future career preferences are in clinical practice and research, which is where I am currently heading. I was in the LMP summer research program in 2013. The program is fantastic for undergraduates to get first exposure to practical research and an amazing experience for doing things on your own. I am very grateful to my supervisor Dr. Butany, who was very supportive and confident in my work. I also like what I do outside of my studies and I will definitely continue. There is always room for improvement and new experiments!

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