The continuing journey from excellence to impact

LMP will be undergoing an academic five-year cyclical review on September 16 and 17, 2013. A team of external reviewers will be evaluating the activity and performance of LMP, culminating in the production of a report that contains recommendations for future directions. In preparation for this major event, LMP is undergoing an extensive self-study done in broad consultation with our key stakeholders.

Among many notable successes, this self-study has clearly identified our department’s sustained record of obtaining highly competitive awards in research, education, service, social responsibility and professionalism. These awards provide important validation that our diverse and talented faculty, students, trainees and staff uphold LMP’s standard of excellence. We are recognized for exhibiting the knowledge, skills, attitudes and behaviours of engaged citizens living in a progressive society: an important feature of a major national and international academic department is excellence in each of these areas.

As the 2012-2013 academic year comes to a close, let us reflect on our successes in a multitude of educational programs:

• The second year course, Mechanisms, Manifestations, and Management of Disease (affectionately known as “Triple M-D”), was taught at the Mississauga Academy of Medicine for the first time this year. Newly recruited local, community-based faculty participating in problem-based learning marks a new era for LMP in integrated medical education. Increased involvement of part-time faculty at community-affiliated sites across the GTA presents exciting new opportunities in LMP’s education mandate.

(Cont’d on next page)
• The Royal College of Physicians and Surgeons of Canada carried out its accreditation review of U of T residency programs, a process that occurs every six years. LMP’s programs fared very well, thus setting the stage for a leading role in shaping the future of the profession.

• LMP Graduate Studies carefully balances the demands of carrying out and publishing high-calibre research, with particular attention paid to achieving acceptable times to degree completion. Curricular revision is an important ongoing endeavour to ensure our graduates are well prepared to pursue diverse options for further career growth and development.

• The outcomes of the undergraduate Pathobiology Specialist Program in the Faculty of Arts and Science continue to speak for themselves. This unique program attracts and develops exceptional students who go on to pursue further studies in medicine and research.

• The post-PhD training programs in Clinical Chemistry and Clinical Microbiology are thriving, with ever-increasing numbers of strong applicants and a solid job market.

• Clinical and research fellowships are becoming increasingly robust. With the advent of “AFCs” (Areas of Focused Competence), instituted by the Royal College, LMP is working proactively in several areas and is “raising the bar” for standards in fellowship training.

The road to high impact begins with a foundation of excellence. Through our departmental lens (“Investigating Disease. Impacting Health.”), LMP is well positioned to make contributions of a practical and wide-ranging impact. I ask that you take time to reflect on what “Investigating Disease. Impacting Health.” means to you in your own departmental context, and I invite you to share your thoughts for us to increase our collective understanding of what we do, and why we do it.

In closing, I hope you enjoy the new format of “LMP News.” Feel free to contact the LMP Web and Communications Coordinator, Ms. Katie Babcock (katie.babcock@utoronto.ca) with your input.

Finally, I hope to see you at the Annual Banquet on June 6th. It promises to be a fun and memorable evening!

Richard G. Hegele, MD, FRCPC, PhD
Professor and Chair
IT’S IN THE BLOOD

Professor Tsao inspires the next generation of clinician-scientists

BY KATIE BABCOCK

“Innovative research today demands the intercommunication of a wide-spectrum of expertise, with the end goal of translational science depending on the contributions of scientists at every imaginable level,” explains Desmond She, fourth-year LMP undergraduate Pathobiology Specialist student.

Inspired by his supervisor, LMP Professor Ming-Sound Tsao (MD, FRCP), She clearly understands the complexity of translating basic science into a clinical setting. The passion and dedication of pathologist and scientist Prof. Tsao drive him to develop a personalized approach for the diagnosis of two of the most deadly cancers: lung and pancreatic cancer.

“My passion for research is in the blood. Research is often unpredictable so you have to be persistent, imaginative and innovative, and that takes a lot of time. It’s commitment,” Prof. Tsao explains.

Prof. Tsao is researching genetic aberrations in lung and pancreatic cancer to discover what kinds of mutations cause cancer cells to multiply and survive. Once these mutations are defined, they may serve as biomarkers allowing clinicians to identify them for earlier and more accurate diagnosis and thus providing more selective treatment for patients.

Prof. Tsao states, “With molecular testing, you can select patients for more effective treatments. It’s equally important not to give ineffective therapy to patients who would not benefit.”

The statistics are sobering. If you are diagnosed with lung cancer, your expected survival rate in five years is 15 per cent and with pancreatic cancer, it is less than five per cent.

Selective and more specific treatments based on their biomarkers may improve the survival rates and quality of life of the patients.

As a clinician-scientist, Prof. Tsao offers a unique perspective on translating his basic research into clinical practice. “Molecular biomarkers of treatment were not a traditional part of pathology but now they’re necessary for diagnosis. I think it’s important that pathologists are involved in the treatment decision of patients so that patients can be offered more specific and effective therapies. It’s very rewarding.”

Fostering the next generation of clinician-scientists, Prof. Tsao has been involved in the innovative Terry Fox Foundation Strategic Health Research Training Program in Molecular Oncologic Pathology at the Canadian Institutes of Health Research. Created approximately ten years ago, this program was designed to train the next generation of pathologists who are competent in translational research methods and clinical delivery or molecular pathology.

Emphasizing the importance of mentoring, Prof. Tsao says, “When you get to a certain stage of your career, you owe the next generation and hopefully you can pass on all you’ve learned. I’m not necessarily referring to knowledge because students can learn this from textbooks. I think it’s important to teach them how to become clinician-scientists and how to have a successful academic career. It’s all about inspiration.”

Over his impressive 25 year career, Prof. Tsao has inspired many students from undergraduates, graduates, trainees and the next generation of clinician-scientists. With a promising future and a passion for cancer research, She says, “Dr. Tsao was the catalyst who evolved my juvenile passion in cell signalling into a portfolio of real, unanswered questions about lung cancer – about how it begins, how it grows, and how it changes – and who helped me understand challenges that I hope to overcome with my new skills and abilities.”

Professor Ming-Sound Tsao.
MAKING THE CONNECTION
LMP alumnus uses bioinformatics in the fight against cancer
BY KATIE BABCOCK

Every day, thousands of statisticians work to find patterns that could raise profits for corporations. What if the same resources were dedicated to finding patterns of disease? In the fight against cancer, Runjun Kumar, LMP alumnus and MD/PhD candidate at Washington University School of Medicine in St. Louis, Missouri, is using the power of statistics to translate a massive 60 terabytes of data into meaningful information.

“I’m aspiring to be like a corporate statistician, only I’m interested in patterns that say something about different cancers,” explains Kumar. “What mutations and genes drive different cancers? What mutations can help with prognostication? What genes are causing cancer and could be immediately treatable? And to tackle these questions, I’m trying to gain insights by using some incredibly interesting whole genome and transcriptome datasets.”

There aren’t many people who can say they have a passion for statistics. “All of my friends will tell you that when I started statistics I clearly had found a topic that spoke to me,” says Kumar. “On a conceptual level, the practice of statistics is quite simple and elegant, and once you start to see the world through that lens a lot of things start to make more sense.”

As an alumnus of the LMP undergraduate Pathobiology Specialist Program, and as past President of the Laboratory Medicine and Pathobiology Student Union (LMPSU), Kumar recognizes the importance of understanding the biology behind the complex data. “In the Pathobiology Specialist Program, you’re exposed to biochemistry, biology, genetics and so many other things and you really end up gaining a uniquely broad understanding of biology.”

During his summers, Kumar broadened this understanding even more by conducting research at the University of Toronto, Harvard Medical School and the European Molecular Biology Laboratories in Heidelberg, Germany.

Heading into his third year of the MD/PhD program, Kumar concedes that this intensive eight-year commitment isn’t for everyone. “I tend to be a very process-oriented person and I enjoy the variety of the program. I like that every four years or so my job completely changes and I get to try something completely different. It’s not for everybody but it’s definitely for me.”

While the program is intense, he still makes time to enjoy St. Louis. He’s participated in the school musical three times, and recently earned his first named role this year as the “bellhop” in the musical farce Lucky Stiff. He’s also an avid furniture builder and is looking forward to volunteer opportunities and playing ultimate frisbee.

Making the most of his past and present experience, Kumar concludes, “I’m a biologist first, and my pathobiology and medical training are well used. You can ask many questions of a big dataset—but you need to know the biology in order to ask good questions, and make sense of the answers.”
What do University of Toronto faculty members from the Departments of LMP, Dentistry and Medicine, and the Institute of Biomaterials and Biomedical Engineering (IBBME) have in common? Their interest in what causes the thickening of artery walls, known as atherosclerosis, and the way this condition affects the function of the cardiovascular system.

On March 25, 2013, eight of Toronto’s top cardiovascular researchers presented their cutting-edge research at LMP’s first Cardiovascular Research Day. Held at the University of Toronto’s intimate George Ignatieff Theatre, approximately fifty faculty members and students participated in active discussions about the most pressing issues in the field.

Atherosclerosis was the focus of the first part of the day and LMP Professor Phil Marsden (MD) set the stage by discussing how a toxin produced by the bacteria *E. coli* damages blood and artery cells. Next, LMP Prof. Heyu Ni (MD, PhD) described his search for new molecules that create blood clots. LMP Prof. Clinton Robbins (BSc, PhD) explained a new mechanism for how inflammatory cells, called macrophages, accumulate in diseased arteries.

Concluding this session was a fascinating presentation on the precise mapping of patterns of blood flow in the carotid artery by Prof. David Steinman (PhD) from IBBME.

Second-year MSc candidate Allan Siu commented, “I thought the first session was very diverse. One presentation was on platelets, one was on macrophages and one on hemodynamics; all of these are major contributors to the disease.”

The second part of the day delved into the importance of the matrix, a complex network of extracellular proteins that surrounds the cells providing a structural scaffold and signaling changes in cell behaviour in disease. Department of Medicine Prof. Ren-Ke Li (MD, PhD) has found that a novel miRNA is important in stimulating the production of enzymes which degrade the matrix and compromise heart function. LMP Prof. Fred Keeley (PhD) discussed the role of elastin proteins in building arteries, and explained how mutations in elastin genes may lead to vascular disease. Faculty of Dentistry Prof. Borris Hinz (PhD) described his research on mechanisms leading to tissue fibrosis, which refers to the accumulation of collagen, and contributes to heart, blood vessel and heart valve disease. Finally, translational research on matrix-degrading enzymes injected to soften previously untreatable artery blockages was presented by LMP Prof. Bradley Strauss (MD, PhD).

“I really enjoyed learning about the wide range of research that’s being conducted within the department,” said Bunty Singh, third-year PhD candidate. He continued, “Inviting speakers from the Faculty of Dentistry as well as IBBME also gave us exposure to very exciting work being done by other departments, which we may not have a chance to see on a daily basis.”

Asked why this type of day is important, LMP Prof. and Research Day organizer Michelle Bendeck said, “The reason why I wanted to host this research day was to provide an opportunity for cardiovascular researchers within the city to come together to speak about their latest and most exciting research.” She elaborated, “We want to foster collaborations within our department and, at the same time, we want to reach out to the larger cardiovascular community and work with researchers in other departments and Faculties who are doing very relevant work.”

This inspiring day is only the beginning. Prof. Bendeck explained, “I see this as the first of many research days. Our department has identified nine research areas and we look forward to hosting other days to get people interacting with one another.”

---

**RESONATING RESEARCH**

LMP hosts the first Cardiovascular Research Day

**BY KATIE BABCOCK**

---

*Organizer, Professor Michelle Bendeck, with speakers.*
FOCUSED ON THE FUTURE
LMP students host the first Undergraduate Conference on Cancer

BY KATIE BABCOCK

On Saturday, January 12, 2013, enthusiastic students from across the University of Toronto gathered at the Medical Sciences Building for the first Undergraduate Conference on Cancer. From engaging seminars and panel discussions to non-profit networking opportunities and exciting keynote presentations, attendees were inspired by leading-edge cancer researchers, clinicians and non-profit organizations.

This ambitious event was organized by fourth-year LMP undergraduate students Jasmine Song and Desmond She, and fellow members of the LMP Undergraduate Student Union (LMPSU). The inspiration for the conference came from an LMP course on neoplasia: the pathophysiological process that results in the formation and growth of a tumour. Song explained, “All of our life science courses touch upon cancer, but this is the only course that offers a comprehensive perspective on this complex disease. It was really inspiring.”

Beyond an academic interest, Song also recognized the impact that cancer has on society. “Cancer has touched almost everyone. One in four Canadians will have cancer in their lifetime and, as the next generation, we really need to address this serious disease and provide a platform for discussion.”

Opening keynote speaker Gurmit Singh (PhD), Professor of Pathology and Molecular Medicine at McMaster University and Senior Scientist at Hamilton Health Sciences, discussed the mechanisms associated with cancer-induced pain and depression. Singh also acknowledged the value of involving young people in the fight against cancer. “We are always trying to advance research by increments and focus on the knowledge that is already out there. But sometimes we need to step outside and ask what is really going on. And this is where young minds like yourselves are much more capable of doing this.”

There were many highlights during the day, including seminars, a panel discussion with Sylvia Asa (MD, PhD), Sally Bean (JD, MA) and David Uehling (PhD), and a presentation led by cancer survivors from Ovarian Cancer Canada: Survivors Teaching Students. Over lunch, students networked with researchers, clinicians, graduate students and non-profit organizations including the Canadian Breast Cancer Foundation, Colorectal Cancer Association of Canada, Lymphoma Canada and Myeloma Canada.

At the end of this successful day, final keynote speaker David Malkin (MD, FRCPC, FAAP), Senior Staff Oncologist at the Hospital for Sick Children, explained how clinicians can leverage innovative research to create more personalized treatment for patients. He discussed the explosion of new technologies that have accelerated the translation of discoveries in the lab into diagnostic and treatment applications in the clinic.

He also explained the importance of monitoring patients with an increased risk of developing certain types of cancer. “If you institute surveillance you can prevent cancers from becoming so large and you can treat them while they’re still small and curable.” He continued, “This cannot be done if you’re working in the lab on your own or if you’re working in the clinic on your own. It can only be done when you bring teams together. Ultimately, you can end up with survival rates that every oncologist would like to see.”

Recognizing the accomplishments of the conference organizers, LMP Prof. Douglas Templeton (PhD, MD), stated, “The resounding success of this one-day event, conceived of by the students, then managed and staged with minimal input from faculty, speaks volumes towards their potential for future leadership roles in the medical scientific community.”
With 190 attendees and a record 105 poster presenters, the 16th Annual LMP Graduate Student Research Day was a resounding success. On Tuesday, March 12, 2013, excited LMP students gathered at the University of Toronto’s Chestnut Residence Conference Centre to present their work and exchange ideas. In his opening address, Department Chair Professor Richard Hegele emphasized LMP’s unique breadth and depth, which acts as a catalyst for innovation. Diversity and innovation were clearly present during the day with cutting-edge poster presentations, engaging seminars and a memorable keynote speech.

This inspiring event was organized by LMP’s student association the Confederation of Laboratory Medicine and Pathobiology Students (CLAMPS). It was spearheaded by fourth-year PhD candidate Stephen McCarthy, the President of CLAMPS, and third-year PhD candidate Eric Shikitani, Vice President Academic.

Asked why the day was so important, McCarthy said, “Students work tirelessly and I feel that they really put great ideas into action. I think it’s important to highlight their research, engage students from all levels and provide them with a sense of accomplishment.”

Participants presented their research to a small group of judges—each consisting of a faculty member, postdoctoral fellow, and senior PhD student—allowing for immediate feedback and one-on-one interaction. They attended focused seminars divided into themes such as Cancer and Neoplasia, Developmental and Cell Biology, and Hematology and Immunology. First-year graduate students also participated in a workshop on how to make an effective poster.

Bunty Singh, third-year PhD candidate explained the value of the event, “This day offers all LMP students an opportunity to present their work. Personally, it gives me a chance to see if I can network with someone or if there’s an assay that will work for my research.” He continued, “I’ll give you an example. My poster is beside someone who is doing research in the same area. I’m excited because this gives me the opportunity to network with her and expand my knowledge.”

Graduate Coordinator Prof. Harry Elsholtz described the role of the Research Day for career development. “Most of our students expect to develop a career in science and it’s important for them to learn how to communicate effectively and to field a range of questions. It’s important to prepare them for future positions in research, medicine, education and other areas.”

As a new addition to the event, students also enjoyed a keynote presentation by Dr. Freda Miller, Senior Scientist, Developmental and Stem Cell Biology at the Hospital for Sick Children Institute and Professor, Department of Molecular Genetics, University of Toronto. Dr. Miller spoke about stem cells and their role in building and rebuilding the nervous system. She discussed the identification of drugs, in particular metformin, that stimulate stem cells leading to improved cognition. She also described a population of stem cells from the skin that gives rise to peripheral nerve cells with therapeutic potential for spinal cord injury. Dr. Miller provided inspiring advice to the young scientists: “Don’t be afraid. And I’m not just talking about in your career; I’m talking about in your science.” She continued, “The important thing is to ask the question, ‘What is your science contributing to the human race?’”

BREADTH AND DEPTH
Successful 16th Annual LMP Graduate Student Research Day
BY KATIE BABCOCK

PHOTOS: PAUL HAMEL

2013 Poster Presentation Winners.
See page 10 for the list of award winners.

MSc candidates Samantha Wala and Emily Mathieu.

MSc candidate Carl Figueiredo.

Organizers Eric Shikitani and Stephen McCarthy.

GRADUATE
“It is our belief, in the Department of Laboratory Medicine and Pathobiology, that research should not be a single-day event per year but rather an integral component of our training program,” says Professor George Yousef (MD, MSc, PhD FRCPC), Director of Postgraduate Research for LMP.

This year’s Research Day featured dynamic interactions between residents, fellows and faculty judges allowing participants to exchange ideas and develop research collaborations. It was also an opportunity for residents and fellows not only to present their research activity, but also to learn how to efficiently communicate their ideas and respond to criticism. The breadth and depth of research were impressive with 30 poster and six oral presentations. Each presentation encouraged a lively discussion.

The highlight of the event was a remarkable presentation by keynote speaker Dr. John Eble (MD) on “The Art and Science of Pathology Publication: Lessons Learned from Fifteen Years in the Editorial Office.” This journey through the mind of the editor-in-chief of Modern Pathology, one of the most prestigious pathology journals, provided key insights into the review process and the criteria for accepting a manuscript for publication.

“In my opinion, the single most important factor for getting published is to inspire confidence in the reviewers and editors,” said Dr. Eble. “Because, when you think about it, you distill all of your detailed research into a manuscript and a lot of that research is not directly included. Reviewers and editors have to rely on faith. If you don’t inspire confidence then they are not going to take things on faith.”

How do researchers inspire confidence in reviewers and editors? Dr. Eble described several key factors such as targeting specific journals and then following their specifications with data presented in an understandable format. He also emphasized the role of integrity in obtaining and publishing data, avoiding grammatical and linguistic mistakes, accurately citing references and properly organizing tables and figures.

Prof. Yousef said, “The elaborate discussion after the keynote speaker’s presentation showed the immense enthusiasm of our residents and fellows for research and academic activities, and is an incentive for the department to strive to make the Research Day better every year.”

Anatomical Pathology resident Eric Morgen found the day very useful. “For me, the highlights of the day were getting to present my research to colleagues and friends and hearing from the guest speaker Dr. Eble, who gave some extremely candid and helpful advice about the peer review and editorial process of academic journals.”

Postgraduate research opportunities are expanding beyond this one-day event, as LMP has established dedicated and longitudinal research electives for residents and fellows.

The winners of this year’s research day are:

Oral Presentation:
Nicole White

First place – Hala Faragalla
First place – Phedias Diamandis
Second place – Brett Danielson
Third place – Tao Wang
RAISING MONEY, DODGING BALLS

BY DESMOND SHE

For the second year in a row, the undergraduate Laboratory Medicine and Pathobiology Student Union (LMPSU), led by executive Anastasia Bosc, hosted the Annual University of Toronto Life Sciences Charity Dodgeball Tournament on February 14, 2013. Featuring 11 teams from across campus, both undergraduate and graduate students competed to win the $165 prize for their team’s sponsored organization. The championed causes ranged from well-known groups, like the Heart and Stroke Foundation, to the more diverse, like Let’s Talk Science and Meagan’s Walk.

Three hours into the intense competition, the HOX played against the Ram-Rods in the tournament finals for the night. With all eyes on the HOX team, undefeated throughout the entire evening, participants Alex Protomanni, Anthony Rizzo, Francis Ayling, Matt Zanardo, and Michael Naccarato stayed true to their impressive performance and arose as the grand champions, winning the prize for Prostate Cancer Canada.

The LMPSU would like to congratulate all participants for coming to our second tournament; it is always a great pleasure to collaborate with many other student groups across campus that lend us their support and turn the evening into the fantastic event that it has become. We hope to see you all again next year, and congratulations to the HOX and to Prostate Cancer Canada!

SMASHING SUCCESS

BY STEPHEN MCCARTHY

The LMP Graduate Student Union (CLAMPS) is happy to announce that our co-ed intramural volleyball team has won the first team event for our graduate department!

With regular practice on Tuesday and Thursday nights, it was the dedication of the team that led to our success. Although we began as underdogs in the fall season, by the winter we had qualified for the semi-finals and finals. We managed to beat such high-ranking teams as the School of Graduate Studies, which has players from all graduate departments! Our championship match was against the Engineering team Skule C, and we defeated them in two of the three sets.

Our highly competitive volleyball league is composed of undergraduate and graduate student teams at the St. George campus. In our division, eight competitive teams represented departments and undergraduate colleges.

This success for LMP and CLAMPS was particularly gratifying because, last fall, we acquired a sponsorship from the local student bar O’Grady’s on College St. They provided free CLAMPS T-shirts for all of our sports. It was satisfying to live up to our team slogan on our bright green shirts: CLAMPS, an “H” away from CHAMPS.

CLAMPS is now planning to have two volleyball teams next year. We’re also looking forward to having similar success with softball this summer. Email Stephen McCarthy at s.mccarthy@mail.utoronto.ca if you are interested in participating. All LMP students are invited!
FACULTY

**Blaise Clarke** has won the Robert E. Scully Young Investigator Award for his paper “Prevalence of Loss of Expression of DNA Mismatch Repair Proteins in Primary Epithelial Ovarian Tumors.” (Int J Gynecol Pathol 2012;31;524-531). The award was presented at the International Society of Gynecological Pathologists (ISGyP) symposium during USCAP.

**Eleftherios Diamandis** has received the Faculty of Medicine’s Senior Sustained Excellence in Graduate Teaching Award. This award recognizes Prof. Diamandis’s exceptional contributions to graduate teaching over the past 25 years, contributions which include outstanding student supervision, mentoring and curriculum development.

**Avrum Gotlieb** has won the highly prestigious Distinguished Service Award from the Association of Pathology Chairs. As the North American group’s highest honour, this award has been presented annually since 1986 to an individual who has made substantial contributions to academic pathology in research, in education or in advancing the discipline of pathology in the medical community and to the public.

**Eleanor Latta** has received the 2013 W.T. Aikins Award in Course/Program Development and Coordination. The W.T. Aikins Award is the Faculty of Medicine’s most prestigious award for sustained commitment to and excellence in undergraduate teaching. As LMP’s Director of Undergraduate Medical Education, she has been a leader in developing LMP’s Mechanisms, Manifestation and Management of Disease. Beginning in 2004, Prof. Latta has been an integral force in coordinating and designing courses that relate the causes and mechanisms of disease with approaches to management.

**Don Low** received the 2013 John G. Fitzgerald Award from the Canadian Association for Clinical Microbiology and Infectious Diseases. This award recognizes Canadian microbiologists who have significantly advanced the field of medical microbiology through their contributions to clinical, academic and/or educational pillars.

**Heyu Ni** has been awarded the Graduate Student Mentorship Award. Prof. Ni was recognized for making a major contribution to graduate student learning during his 11 years of working at LMP. His intense interest in seeing his students succeed and his enthusiasm for his research make him an exceptional mentor.

**Simon Raphael** has been awarded the Faculty of Medicine’s 2013 Sarita Verma Award for Advocacy and Mentorship in Postgraduate Medicine. This award celebrates Prof. Raphael’s commitment to mentorship, social responsibility and resident advocacy. A faculty member of LMP since 2007, and LMP Program Director of Anatomic Pathology since 2008, Prof. Raphael has made a profound impact on the Anatomic Pathology Program and its residents.

**Kathryn Tinckam** received the 2013 American Society of Transplantation Clinical Science Career Development Award.

STUDENTS & TRAINEES

**UNDERGRADUATE**

**Jasmine Song**, fourth-year Pathobiology Specialist Program student, has won the 2013 Gordon Cressy Student Leadership Award. Presented by the University of Toronto Alumni Association and the Division of University Advancement, this award recognizes students who have made an outstanding extracurricular contribution to their college, Faculty or school or to the University as a whole.

**Graduate Student Mentorship Award.** Presented by the University of Toronto Alumni Association and the Division of University Advancement, this award recognizes students who have made an outstanding extracurricular contribution to their college, Faculty or school or to the University as a whole.

**Alzheimer Society of Canada Doctoral Award**

**Bank of Montreal Fellowships in Medical Research**

**Department of Medicine Graduate Student Award**

**Kristi Piia Callum Memorial Fellowship in Ovarian Cancer Research**

**LMP Graduate Student Research Day Poster Presentation Prizes**

**MSc**

Mark Barsczcyk (Prof. Cynthia Hawkins)  
Grace Choong (Prof. Doug Templeton)  
June Li (Prof. Heyu Ni)  
Reuben Thomas (Prof. Bradley Strauss)  
Lily Yip (Prof. Nades Palaniyar)

**PhD**

Halil Aydin (Prof. Jeffrey Lee)  
Roberto Diaz (Prof. James Rutka)  
Sonam Dolma (Prof. Peter Dirks)  
Justin Parreno (Prof. Rita Kandel)  
Punit Saraon (Prof. Eleftherios Diamandis)  
Eric Shikatani (Prof. Mansoor Husain)  
Lynsie Thomason (Prof. JoAnne McLaurin)  
Jonathan Torchia (Prof. Annie Huang)
Lap-Chee Tsui Publication Award Finalist
Paul Northcott* and David Shih (Prof. Michael Taylor)
*LMP Alumnus

NSERC CGS Master’s
Daniel Ka-Chun Chung (Prof. Karim Mekhail)

Mildred Scheel Cancer Foundation Fellowship
Marc Remke (Prof. Michael Taylor)

Queen Elizabeth II Graduate Scholarship in Science and Technology – Heart and Stroke Foundation of Ontario
Henry Cheng (Prof. Jason Fish)
Paul Turgeon (Prof. Phil Marsden)

University of Toronto Fellowship
• Pedram Akbari (Prof. Herman Yeger)
• Ilijana Begecic (Prof. Eleftherios Diamandis)
• Victoria Bevilacqua (Prof. Khosrow Adeli)
• Hisham Ibrahim (Prof. Myron Cybulsky)
• Tarek Ibrahim (Prof. Joanne McLaurin)
• Mona Sobhani (Prof. Hong Chang)
• Kirk Szafinski (Prof. Karim Mekhail)
• Lampros Dimitrakopoulos (Prof. Eleftherios Diamandis)
• Sofia Farkona (Prof. Eleftherios Diamandis)
• Andrew Fleet (Prof. Paul Hamel)
• Christina Schiza (Prof. Eleftherios Diamandis)

Vision Science Research Program OSOTF
Rachel Exler (Prof. Jeremy Sivak)

Yow-Kam-Yuen Graduate Scholarship in Diabetes Research
Jennifer Sacco (Prof. Khosrow Adeli)

POSTGRADUATE
Clarissa Cassol (MD) has received the Stowel-Orbison Award at the 102nd United States and Canadian Academy of Pathology Annual Meeting. Out of 422 trainees, this prestigious award was given to four trainees who presented outstanding pathology research.

LMP Postgraduate Research Day Presentation Prizes
Oral Presentation:
Nicole White

Poster Presentation:
First place – Hala Faragalla
First place – Phedias Diamandis
Second place – Brett Danielson
Third place – Tao Wang

Co- Presidents: Darren Benedict and Anastasia Bosc
Vice President of Financial Affairs: Alena Zelinka
Vice President of Academic Affairs: Ariel Gershon
Vice President of Social Affairs: Robert Jie Guo
Events Committee Member: Qingda Hu
External Communications Director: Maya Deeb
Internal Communications Director: Thomas Lu

NEW LMP STAFF APPOINTMENTS

Faisal Al-Mohammedi, Sunnybrook Health Sciences Centre
Rank: Lecturer | Effective: December 1, 2012

Michael D’Agostino, Sault Area Hospitals
Rank: Lecturer | Effective: February 1, 2013

William Dubinski, Humber River Regional Hospital
Rank: Lecturer | Effective: March 15, 2013

Sandra Farrell, Credit Valley Hospital
Rank: Assistant Professor | Effective: November 1, 2012

Nahuel Fittipaldi, Public Health Ontario Laboratories
Rank: Assistant Professor | Effective: November 1, 2012

Elaine Goh, Credit Valley Hospital
Rank: Lecturer | Effective: December 1, 2012

Jayantha Herath, Ontario Forensic Pathology Service
Rank: Assistant Professor | Effective: January 1, 2013

Elizabeth Hyjek, University Health Network
Rank: Associate Professor | Effective: November 23, 2012

Navid Liaghati, Credit Valley Hospital
Rank: Lecturer | Effective: December 1, 2012

Rumina Musani, University Health Network
Rank: Lecturer | Effective: March 15, 2013

Maria Pasic, St. Joseph’s Health Centre Toronto
Rank: Assistant Professor | Effective: March 1, 2013

Dragana Pilavdzic, University Health Network
Rank: Assistant Professor | Effective: December 31, 2012

Clinton Robbins, University Health Network
Rank: Assistant Professor | Effective: March 1, 2013
NEW LMP STAFF APPOINTMENTS CONT’D

Joyce So, Credit Valley Hospital  
Rank: Lecturer | Effective: November 1, 2012

Deborah Terspolsky, Credit Valley Hospital  
Rank: Lecturer | Effective: December 1, 2012

Julia Wang, University Health Network  
Rank: Associate Professor | Effective: December 1, 2012

SENIOR ACADEMIC PROMOTIONS 2013

Richard G. Hegele, MD, FRCP, PhD
It is with great pride that we congratulate the nine individuals (four Professors and five Associate Professors) who received approval from the Provost for promotion effective July 1, 2013. These esteemed colleagues have demonstrated excellence in scholarship, teaching and service that has been recognized by peers within the University, nationally and internationally.

This year’s group of promoted faculty is an excellent representation of the wide range of expertise in our department. It is also noteworthy that seven of the promoted faculty were recognized for excellence in Creative Professional Activity, the highest number promoted under this platform in a given year for LMP.

My gratitude goes to the LMP Promotions Committee chaired by Ingrid Zbieranowski and to Patricia Cayetano, LMP Human Resources Coordinator. They have worked tirelessly in ensuring that we provide valuable feedback and guidance to our colleagues. Members of the committee include: Harry Elsholtz, Fran Jamieson, Sarah Keating, Michael Pollanen, Margaret Rand, Alex Romaschin, Theo van der Kwast, Herman Yeger and Li Zhang.

On behalf of Dean Catharine Whiteside and myself, please join me in congratulating the following LMP faculty members on their promotions:

Faculty promoted to the rank of Professor

Hala El-Zimaity, University Health Network  
An internationally acclaimed leader in gastrointestinal pathology, Prof. El-Zimaity has made original and important contributions to our understanding of gastritis and the development of gastric cancer. She has developed an international reputation through faculty development efforts aimed at the education of pathologists in gastrointestinal pathology with a focus on esophageal and gastric disorders. In addition, Prof. El-Zimaity has had international impact in pathology education through her contributions to key textbooks in the field.

Cynthia Hawkins, The Hospital for Sick Children  
Prof. Hawkins has made groundbreaking discoveries in unravelling the pathogenesis of certain types of paediatric brain tumours, and these have stimulated the development of new therapeutic strategies. In particular, Prof. Hawkins’s paradigm-shifting work on the genomic analysis of paediatric diffuse intrinsic pontine glioma, an aggressive brainstem astrocytic tumour that arises in children, has gained international acclaim.

Heyu Ni, St. Michael's Hospital  
Prof. Ni is internationally renowned for his research on platelet biology and immunology and related human diseases. He has advanced our understanding of both platelet physiology and the pathophysiology of thrombosis and immune-mediated thrombocytopenias, in which his research accomplishments have significant scientific and clinical implications.

Susan Richardson, The Hospital for Sick Children  
Prof. Richardson is internationally recognized for her work in the areas of fungal and viral molecular diagnostics, respiratory pathogens and paediatric microbiology. Her work has resulted in pivotal advances in the early diagnosis and management of infectious diseases with subsequent improvement in patient care.

Faculty promoted to the rank of Associate Professor

Bhushan Kapur, Sunnybrook Health Sciences Centre  
Prof. Kapur has attained national and international recognition as an expert in clinical chemistry and toxicology. His numerous contributions in the field have been recognized by several societies including Fellowships from the Royal Society of Chemistry, National Academy of Clinical Biochemistry and Canadian Academy of Clinical Biochemistry. He was named an Honorary Member of the Canadian Society of Addiction Medicine. Prof. Kapur has represented these academies with distinction, and his research studies have advanced clinical diagnosis and practice.

Anna Marie Mulligan, University Health Network  
Prof. Mulligan has established herself as a prominent national expert and leading educator in breast pathology. She has accomplished this through her education, research and administrative endeavours which have advanced our understanding of breast cancer and resulted in changes in clinical practice and patient management.

Sharon Nofech-Mozes, Sunnybrook Health Sciences Centre  
Prof. Nofech-Mozes has developed important evidence-based guidelines that have had significant impact in the diagnosis and management of breast and endometrial cancers. She is a recognized national expert in the area of predictive marker testing in breast cancer.
from other pathologists. He’ll leave some big shoes to fill!”

also an excellent colleague and he was constantly fielding questions

for

Best

education, he won the LMP Teaching Award for Undergraduate

Hematology-Oncology for the interpretation of histological

lectures

Pathology

in

section on Neoplasia. At the Postgraduate level, he presented

Committee

of

Recent

2001

to

1993, and in this capacity, she initiated a project that was

presented through Telemedicine Canada. This endeavour involved

mailing out slides to pathologists across North America and

organizing conference calls with guest speakers. In recognition of

her contributions to Continuing Medical Education, she received

the Colin R. Woolf Award from the Faculty of Medicine in 1993.

Prof. Kahn enjoyed her diverse experience during her 32

years with the department. “My interactions with the University

have been excellent from a research, teaching and clinical

service point of view. It’s been a wonderful experience and I

can’t believe how the years have flown by,” she says.

Still passionate about her research, she plans to be involved

in ongoing projects and to continue her service on the editorial

board of Modern Pathology.

Joan Boggs, The Hospital for Sick Children

Retirement: April 30, 2013

A biochemist, cell biologist and biophysicist, Prof. Joan Boggs joined the Department of Clinical Biochemistry in 1980 and was also a member of the merger committee of the Departments of Clinical Biochemistry, Medical Microbiology and Pathology—forming our current department, LMP.

“The merger greatly expanded the department and created a diverse and multidisciplinary environment,” says Boggs.

Beyond shaping the future of the department, she also found her role as Graduate Coordinator of the Department of Clinical Biochemistry from 1988 to 1991 extremely fulfilling. She enjoyed interviewing and admitting students to the department and fostering the next generation of clinical biochemists.

Her research focused on understanding the roles of the lipids and proteins in the myelin layer surrounding nerve axons and their role in diseases such as multiple sclerosis. This research will aid in developing treatments and drugs for these diseases.

Asked what advice she would give to LMP students, Boggs says, “You should follow your interests, work really hard and pursue any opportunities that present themselves.”

Harriette Kahn, Sunnybrook Health Sciences Centre

Retirement: March 31, 2013

Involved in research, teaching and clinical practice, Prof. Harriette Kahn joined LMP in 1981 as part of the Department of Pathology. While working at Women’s College Hospital, she also conducted research at The Hospital for Sick Children and became interested in immunohistochemistry: the study of biological tissues and pathological diseases using antibodies.

Working closely with other researchers, Prof. Kahn discovered that the antibody S100 protein identified melanomas. Her research on keratins resulted in many publications, numerous presentations and resulted in the utilization of these antibodies in diagnostic services. She later discovered that the D2-40 antibody, produced by Dr. A. Marks from the Banting and Best Institute of Medical Research, identified lymphatic vessels; this insight has resulted in over 900 citations.

Along with research, Prof. Kahn was the Coordinator of Continuing Medical Education at the Faculty of Medicine from 1990 to 1993, and in this capacity, she initiated a project that was presented through Telemedicine Canada. This endeavor involved mailing out slides to pathologists across North America and organizing conference calls with guest speakers. In recognition of her contributions to Continuing Medical Education, she received the Colin R. Woolf Award from the Faculty of Medicine in 1993.

Prof. Kahn enjoyed her diverse experience during her 32

years with the department. “My interactions with the University

have been excellent from a research, teaching and a clinical

service point of view. It’s been a wonderful experience and I

can’t believe how the years have flown by,” she says.

Still passionate about her research, she plans to be involved

in ongoing projects and to continue her service on the editorial

board of Modern Pathology.
ANNOUNCEMENTS

UNDERGRADUATE

LMP would like to welcome our incoming undergraduate students to the LMP Summer Student Research Program!

GRADUATE

THESIS DEFENSES – MSc

Ghassan Allo (Prof. Ming-Sound Tsao), Genomic characterization of pleural solitary fibrous tumours.

Steve Balgobin (Prof. Maria Rozakis), Investigating the role of PHIP1 in hepatic gluconeogenesis.

Cassandra Belo (Prof. Joan Boggs), The effect of 17β- and 17α-estradiol on myelination and remyelination in cerebellar slices.

John Martirosyan (Prof. Norm Rosenblum), Active hedgehog signaling regulates renal capsule morphogenesis.

Tyler Robinson (Prof. Eldad Zackenhaus), Identification of disulfiram as a potential therapeutic for RB-1 proficient and deficient triple negative breast cancer.

Mark Wan (Prof. Michelle Bendeck), The mechanism of discordin domain receptor 1 - mediated vascular calcification.

Compiled by Ferzeen Sammy

POSTGRADUATE

ACCREDITATION

LMP is proud to announce that all of our residency programs have been accredited by the Royal College of Physicians and Surgeons of Canada. The process of accreditation ensures the highest-quality medical education. Accredited programs include: Anatomical Pathology, Hematological Pathology, Medical Microbiology, Neuropathology, Forensic Pathology and General Pathology.

USCAP

LMP would like to congratulate those who presented at the United States and Canadian Academy of Pathology (USCAP) 2013 Annual Meeting.

Posters: Joerg Schwock

Clarissa Cassol

Ghassan Allo

Tao Wang

Dominque Trudel (fellow)

Ann Treacy (fellow)

Proffered Paper: Gillian Bethune (fellow)

Ghassan Allo

Hector Li Chang (fellow)

Carlos Parra-Herran (fellow)

Herman Chui

Compiled by Paula Nixon

CHIEF ANATOMICAL PATHOLOGY RESIDENT

On behalf of Prof. Simon Raphael, the Anatomical Pathology Residency Program would like to congratulate and welcome Ghassan Allo as the new Anatomical Pathology Chief Resident. We would like to thank Will Chen for his hard work over the past year and wish him the best in his future endeavours.

NEW TRAINEES

LMP would like to extend a warm welcome to our new trainees starting on July 1, 2013:

Anatomical Pathology: Elena Diana Diaconescu, Konstantinos (Gus) Sidiropoulos, Catherine Forse, Howard Yang, Tiffany Shao

Medical Microbiology: Nancy Matic

Hematopathology: Mohamed Bahmanyar

Forensic Pathology: Magdaleni (Maggie) Bellis

Clinical Chemistry: Dylan Thomas, Dan Lin, Mohamed El-Hassan

Clinical Microbiology: Ramzi Fattouh


Research Fellow: Carolina Lopez-Uran

GRADUATING TRAINEES

We would also like to extend our congratulations to our graduating trainees:


General Pathology: Jordan Radigan

Transfusion Medicine: Lani Lieberman

Forensic Pathology: Angela Guenther, Ashwyn Rajagopalan

Medical Microbiology: Chris Lowe, Manal Tadros

Clinical Chemistry: Mathew Estey, Jennifer Shea, Dana Nyholt

Clinical Microbiology: Julianne Kus

Compiled by Paula Nixon
FACULTY

Blaise Clarke has been invited to participate in the College of American Pathologists Gynecological Cancer Protocol Review Panel.

Department of Anatomic Pathology at Sunnybrook Health Sciences Centre has received a Canada Health Infoway Momentum Award related to the early adoption and increasing use of clinical synoptic reporting. The award was presented to Dr. Mahmoud Khalifa by John Carmichael, MP for Don Valley West.

The American Association for Cancer Research (AACR) has named Prof. Emmanuel Farber a Fellow of the AACR Academy. The AACR Academy recognizes scientists whose major scientific contributions have propelled significant innovation and progress against cancer. Fellows are selected through a rigorous peer-reviewed process that evaluates individuals for their scientific achievements in cancer research.

Zeina Ghorab is now a member of the Population Health Advocacy Group of the Canadian Partnership Against Cancer and a member of the QMP-LS Cytopathology Committee.

Glenn Taylor was appointed President of the Society for Pediatric Pathology 2013-2014 at the Annual Meeting of the Society in Baltimore on March 2, 2013.

Kathryn Tinckam was elected to the executive Board at the Canadian Society of Transplantation.
FUNDING

GRANTS AWARDED

Aubert I. MRI-guided focused ultrasound IVIg immunotherapy for Alzheimer’s disease. The W. Garfield Weston Foundation. ($150,000)

Fish JE. Control of vascular inflammation by microRNA. Operating Grant – PA: ICRH New investigators – Bridge Funding. ($100,000)

Keith J. The National Neuropathology Lecture Series: collaborative interprofessional E-learning for a very small specialty. ($8,448)

Somers G. Institution of a Molecular Translational Laboratory for Paediatric Oncology. Garron Family Cancer Centre Fund, Hospital for Sick Children. ($123,270)

Zhang L. (PI). Dick J. Schuh A. (Co-PI’s). Preventing AML relapse by targeting stem cells with double-negative T cells. Leukemia & Lymphoma Society. (US$600,000)

CANADIAN CANCER SOCIETY IMPACT, QUALITY OF LIFE RESEARCH AND INNOVATION GRANTS

Ohh M. Role of VHL in DNA damage response. ($200,000)

McPherson JD. (Co-PI). Accelerated identification and validation of novel molecular signatures to improve treatment and survival in early stage non-small cell lung cancer patients. ($1,248,401)

Tsao MS. Accelerated identification and validation of novel molecular signatures to improve treatment and survival in early stage non-small cell lung cancer patients. ($1,248,401)

Tsao MS. Epigenetic mechanism of resistance to epidermal growth factor receptor (EGFR) inhibitor therapy in lung adenocarcinoma. ($193,000)

CIHR RESULTS

Ezzat S., Asa SL. (co-PI): Fibroblast Growth Factor Receptor 4 in Endocrine Homeostasis. ($714,515)

Bendeck MP. Defining the Role of Type VIII Collagen in Atherosclerotic Plaque Stabilization. ($522,179)

Diamandis EP. Integrated Approach to Discover Prostate Cancer Biomarkers in Seminal Plasma. ($417,240)

Kandel R. Regulation of articular cartilage homeostasis. ($790,786)

NSERC 2013 DISCOVERY GRANT RESULTS

Adeli K. Discovery Grant Natural Sciences and Engineering Research Council of Canada (NSERC). ($200,000)

Lee J. Characterization of a glycoprotein entry complex from a novel orthomyxovirus. ($63,000)

Palaniyar N. Generating Innate Immune Diversity to Recognize Newly Emerging Pathogens. ($30,000)

EVENTS

FORENSIC PATHOLOGY

Advancements in the Modern Autopsy
Thursday, May 23, 2013
Medical Sciences Building, MacLeod Auditorium
University of Toronto
1 King’s College Circle, Toronto
Information and registration:
www.cepd.utoronto.ca/forensics

Compiled by Sue Sarju Balaga

RESERVE THE DATE

48th Annual Pritzker Day
Professor J. Coindre: Use of Immunohistochemistry in Sarcomas
Monday, June 3, 2013
Ben Sadowski Auditorium, 18th floor
Mount Sinai Hospital
600 University Avenue, Toronto

Laurence Becker Symposium
17th Annual DPLM Symposium and 11th Laurence Becker Symposium: Molecular Approaches to Diagnosis and Targeted Therapy of Cancer
Wednesday, June 5, 2013
Registration: 1st Floor, Black Wing
Presentations: Daniels Hollywood Theatre, 1246 Elm Wing
The Hospital for Sick Children
555 University Avenue, Toronto

Visit www.lmp.utoronto.ca to see a full list of departmental publications.
LMP ANNUAL REUNION & BANQUET

What a year! Connect, reconnect and celebrate at LMP’s Annual Reunion & Banquet.

Thursday, June 6, 2013
The Metropolitan Hotel
108 Chestnut Street

5:30 p.m. – Reception
Mezzanine Café

6:30 p.m. – Awards Presentation & Dinner
Toronto Ballroom, 2nd Floor

LMP Faculty, Administrative Staff, Students, Residents, Research Associates, Clinical and Postdoctoral Fellows and their Guests are welcome. Register at events at www.lmp.utoronto.ca
Interested in participating?
Registration required.
Students contact: Stephen McCarthy at s.mccarthy@mail.utoronto.ca | Faculty contact: Dr. Vathany Kulasingam at vathany.kulasingam@uhn.ca
Spectators contact: Katie Babcock at katie.babcock@utoronto.ca (limited passes available).


Di Maio M, Leigh NB, Gallo C, et al, Tsao MS, Signoriello S, Perrone F, Gridelli C; TORCHInvestigators. Quality of life analysis of TORCH, a randomized trial testing first-line erlotinib followed by second-line cisplatin/gemcitabine chemo-


Lu F-I, Giri D. Radiological and Pathological extent of columnar cell changes with atypia (CCC-A) diagnosed on core needle biopsy (CNB) correlates with carcinoma upgrade on surgical excision (SE). Mod Pathol. 26:55A (Suppl 2, abstr 221).


Martinez-Morillo E, Diamandis A, Diamandis EP. Reference intervals and biological variation for kallikrein 6: Influence of


Nofech-Mozes S, Parra-Herran C, Dent R, Villarreal C,


AMP-activated protein kinase and ATP-citrate lyase are two overexpressing the vesicular acetylcholine transporter exhibit spontaneous hypoactivity and enhanced exploration in novel environments. Brain and Behavior. Article first published online: 17 APR. 2013, DOI: 10.1002/brb3.139

Paul M. Nagy and Isabelle Aubert. B6eGFPChAT mice retesting breast cancer metastases for HER2 and hormone receptor status. Breast 2013 [Epub ahead of print]


Rakovitch E, Nofech-Mozes S, Narod SA, Hanna W. Thiruchel-


Vernau KM, Runstadler JA, Brown EA, Cameron JM, Huson


The main purpose of his art is to communicate science in an interesting way. He explains, “We really need to engage people and get them interested in science and pathology. What good is science if it goes unnoticed by the public? We have reached dangerous levels of public non-understanding of science. Sooner or later, this will start to cripple science.”

Favourite Quote:
“Any sufficiently advanced technology is indistinguishable from magic.”
- Arthur C. Clarke

Favourite Artist:
Johannes Vermeer

The Great Wave of Wet Keratin (2008)
Among the diagnostic features of the adamantinomatous subtype of craniopharyngioma, a type of brain tumour that occurs in the sellar region of the pituitary gland, are: 1) “wet” keratin, 2) basaloid palisading epithelium and a 3) “stellate reticulum” matrix. Pathology residents should know these for the Royal College examinations. This work was modelled after “The Great Wave of Kanagawa” by Katsushika Hokusai, Japan (1760-1849), created around 1831.

Polarized Bear (2011)
The polar bear is an iconic inhabitant of Canada’s North. It is also an important icon of climate change, which unfortunately has become a highly politically polarized issue. This kind of polarization, also present in other topics such as evolution, is terrible for science and for informed policy.

In pathology, however, polarization is a very useful thing. When a Congo red stain is viewed under polarized light, it can help us detect the presence of amyloid: A hard waxy deposit consisting of protein and polysaccharides that results from the degeneration of tissue. The source images for this picture were taken from a patient with cerebral amyloid angiopathy (CAA) in which amyloid accumulates in blood vessels, making them brittle and prone to catastrophic events.

Immuna Lisa (2007)
Interested in learning more about LMP?

See our:
- Latest stories featuring faculty, students and alumni
- Research areas
- Faculty database
- Student profiles
- Upcoming events
- Photo and video galleries

Visit www.lmp.utoronto.ca