Letter from the Chair

Dear Friends & Colleagues!

Welcome to the Fall 2017 Chair’s report!

The provincial Lab Services Transition and Lab Hub Projects are continuing their planning activities. The second round of functional programming is underway, and many of you are contributing to the programming and planning activities. A decision has been made to implement EPIC as the new provincial electronic health record ‘Connecting Care’ across all disciplines and the hospital and ambulatory care. Thank you to all of you who invest significant time and effort into these large-scale projects - this is important work occupying us for the coming years but shaping our future!

Please join me in welcoming our new faculty members and students (page 4) and in celebrating all our colleagues, students, and faculty members in their major academic and scholarly achievements reported in this issue of the Chair’s report. A very impressive list of presentations across the world and impactful publications can be found on page 9-14, including manuscripts in Nature Communications (Dr. Chris Le and his team) and Nature Biotechnology (our Cryobiology team with Dr. Jason Acker, Dr. Locksley McGann, and Dr. Janet Elliot). Again I’m impressed by the scholarly output our academic and clinical faculty produces on a regular basis moving our field forward and attesting for an innovative environment for translational research in laboratory medicine and diagnostics.

Please review our Spotlight on Education. In this issue the Hematological Pathology Residency Programs is introduced to you. Our program is one of five in Canada and has trained workforce for numerous prestigious institutions across the country. All residency programs will undergo accreditation review this November and prepare themselves for transition to Competency Based Learning. Furthermore, in this issue we can celebrate two major milestones in Education – the graduation of our first two Master Pathology Assistant students (Nikhita Arora, Brittney Loney) and our first Clinical Chemistry Fellow (Dr. Albert Tsui) from the recently successfully accredited Clinical Chemistry program. I would like to thank all Program Directors (especially Dr. Monika Keelan (PA program) and Drs. Kareena Schnabel and Anna Füzery (Clinical Chemistry) and all members of our department for your tremendous efforts and ongoing support of our training programs. We have outstanding trainees and programs with graduates becoming future leaders in the field. This would not be possible without the countless hours all of you contribute to teaching!

Mark your calendar for the 2018 DRIvE Days scheduled for April 13 & 14, 2018 and also the 2018 Banff Pathology Course which we again plan and organize together with our colleagues from the University of Calgary and in partnership with the Canadian Association of Pathologists and to be held on September 05 - 02, 2018 – topic will be Thoracic Pathology!

Sincerely,

Dr. Michael Mengel, MD
Professor and Chair
Department of Laboratory Medicine and Pathology
University of Alberta
Interim Zone Clinical Department Head
AHS Laboratory Services, Edmonton Zone

Get ready for Winter!

Don’t worry about failures,
Worry about the chances you miss when you don’t even try ... 

Jack Canfield
Spotlight on Education

Hematological Pathology Residency Program

Dr. Kathleen Wong - Program Director

Hematological Pathology (HP) is one of the most clinical of the laboratory medicine specialties! It integrates clinical consultation and diagnosis with quality laboratory management and practice. We enjoy the daily variety (and surprises) of our in-person or on-the-phone consultations with clinicians and lab technologists, the challenge and visual beauty of diagnostic morphology, the intellectual rewards and problem-solving detective work in coagulation and transfusion medicine, and integrating and applying cutting edge techniques such as flow cytometry, cytogenetics and molecular pathology to arrive at the appropriate diagnosis and management plan for clinicians and patients. In other words, we don’t just look at glass slides under the microscope! The resulting breadth and depth of hematopathology practice is the most attractive and exciting aspect of our daily work and specialty.

There are five HP residency programs in Canada and the University of Alberta HP program is accredited by the Royal College of Physicians and Surgeons of Canada (RCPSC). Medical students apply to our program through a national resident matching system known as the Canadian Resident Matching Service (CaRMS) during their final year of medical school. Each year, up to 2 HP residents are accepted into residency training through this route. Currently, we have 4 HP residents in various stages of postgraduate training. Upon completion of the 4-year residency program and following successful completion of the RCPSC certification exam the graduate is licensed to practice independently as a hematopathologist. Our program has graduated many hematopathologists over the years and we now enjoy a community of practice with alumni in Vancouver, Victoria, Edmonton, Ottawa, Kingston and Halifax!

HP residents rotate through the University of Alberta Hospital, Cross Cancer Institute, Royal Alexandra Hospital, Misericordia Hospital, DynaLife Dx Laboratory and Canadian Blood Services during the course of their 4-year residency. Most of the 1st year is spent on clinical rotations comprising internal medicine, adult and pediatric hematology and oncology, and a 3-week rotation in bone marrow/stem cell transplant at Calgary’s Foothills Hospital/Tom Baker Cancer Centre. After completing the clinical rotations, the HP resident is oriented to and is immersed in the practice of laboratory hematology during the last 3 months of the PGY1 year and into the PGY2 year. During the PGY3 year, residents have up to 6 blocks of rotation time to complete a scholarly/research project and are provided opportunities and support to share their work at local, national or international meetings and conferences. Residents spend the remainder of their third year and the fourth year developing core specialty skills and knowledge, as well as fine tuning and strengthening consultant level expertise in all areas of hematological pathology.

Hematological Pathology, like other areas of medicine, is not a 9 to 5 job! On most days residents and staff begin the workday at around 8 to 9 am. If we are not performing bone marrow biopsies in the morning, then we start reviewing peripheral smears and bone marrows or other tissue specimens. We incorporate cytogenetics and molecular testing results into our diagnostic morphology reports to provide prognostic information and guide patient management. Throughout the day, we also review and sign out coagulation and transfusion medicine test results and offer advice to clinicians, technologists, or other pathologists in-person or on the phone to facilitate patient care. During the day, residents and staff would also attend working rounds in morphology, coagulation and transfusion to discuss...
ongoing and emerging issues with technologists, lab managers and scientists. Residents and staff often meet in the afternoons to review and sign out morphology and coagulation cases together. The experiential learning gained on clinical and laboratory rotations is complemented and supported by our Joint Academic Halfday program on Tuesday afternoons, where the HP residents and Adult and Pediatric Hematology residents are sometimes jointed by the General Pathology residents during teaching sessions. Teaching of junior residents and medical or medical lab science students is also an integral component of residency training.

As mentioned above, over the years our program has successfully trained many hematopathologists who now practice throughout Edmonton and across the country, making valuable contributions to patient care and their respective fields of expertise. We look forward to continue graduating and working with excellent hematopathologists who can seamlessly combine the scientific know how of the specialty with the interpersonal, communication and teamwork skills inherent for success and productivity in this field. Like all other Canadian residency training programs, Hematological Pathology is looking forward to some exciting changes in the field of medical education as we move toward competency based learning in the next few years!
New Appointments

The Department welcomes the following new members:

- **Dr. Adrian Box** - Clinical Lecturer
- **Dr. Matthew Croxen** - Assistant Professor
- **Dr. Laura Schmitt** - Clinical Lecturer
- **Dr. Lori West** - Adjunct Professor, cross appointed with Department of Pediatrics

Dr. Jason Acker has been appointed:
- Advisory Board Member, America Society for Transplantation Community of Practice in Organ Preservation
- University of Alberta, General Faculty Council’s Academic Planning Committee (July 1, 2017 - June 30, 2020).
- Technical Advisory Committee member, New Organ Alliance, September 1, 2017.

Dr. Patricia Campbell has been elected as the new President-Elect of the American Society of Histocompatibility and Immunogenetics (ASHI). ASHI is an international society of professionals dedicated to advancing the science, education and application of immunogenetics and transplant immunology. Dr. Campbell, a Professor in the Division of Nephrology and cross appointed in the Department of Laboratory Medicine & Pathology in the UofA Faculty of Medicine and Dentistry and ATI Investigator, previously served as an AHSI board member from 2013-2016 and hopes to use this new position to build on ASHI’s progress to increase its profile and relationships with national and international societies in the fields of transplantation and immunogenetics.

Mr. Geoff Granville was re-appointed for a 3-year appointment to membership of the Federal Government’s Chemicals Management Plan Science Committee (Health Canada provides the secretariat).

Ms. Anne Halpin was elected as a member to the American Society of Histocompatibility and Immunogenetics (ASHI) Board of Directors for a 3 year term.

Dr. X. Chris Le:
- was appointed a member of Editorial Board of Metallomics, a journal published by the Royal Society for Chemistry (UK).

Dr. Michael Mengel has been elected President of Canadian Society of Transplantation.

Dr. Lori West has been appointed as Chair, Standing Committee on Ethics, Canadian Institutes of Health Research, effective July 2017.
Awards & Honours

Ms. Anne Halpin received the Canadian Society of Transplantation (CST) Pediatrics Allied Health Travel Bursary ($1000) for the 2017 CST annual meeting.

Dr. Anna Füzéry received the AACC Rocky Mountain Local Section Annual National AACC Meeting Educational Scholarship ($1,000 USD to attend the 69th AACC Annual Scientific Meeting in San Diego, CA, U.S.A.).

Dr. Chris Le was invited to serve on the Advisory Board of Overseas Chinese Scientific Experts Panel, Overseas Chinese Office of the State Council of China. Dr. Le attended the inaugural Advisory Board celebration and meeting, held in the Great Hall of People, Beijing, on August 22, 2017.

Dr. Locksley McGann has received an Alumni of Honour Award from the Faculty of Science, University of Waterloo. This award recognizes individual alumni who have differentiated themselves as exceptional professionals and personal achievers.

Dr. Locksley McGann is among the world’s leading researchers in cryobiology - the freezing of biological systems. This was his PhD research topic at the University of Waterloo and he maintained this focus at the University of Alberta as a faculty member. His research successes include the development of one of Canada’s first clinical stem cell transplant laboratories where he served as Laboratory Director for 26 years. He developed Edmonton’s clinical tissue bank—the Comprehen- sive Tissue Centre—and served as Director for five years.

For the Canadian Blood Services, Dr. McGann was a Scientific Advisor on the development of Canada’s National Umbilical Cord Blood Bank that cryopreserves stem cells for transplantation. In addition, he served as President of the International Society for Cryobiology, and is currently among the most cited authors in that scientific discipline.

His diverse contributions have been recognized with a QE II Diamond Jubilee Medal (Canada), Alberta Centennial Medal (Alberta), Excellence in Innovation (City of Spruce Grove), and Excellence in Mentoring (University of Alberta) where PhD students under his supervision have subsequently developed leadership roles nationally and internationally.

We would also like to offer congratulations to Dr. Lori West, Director of the ATI, who was recently named a Fellow of the Royal Society of Canada, in the Life Sciences Division. Dr. West is one of six faculty members at the UofA elected to the Royal Society of Canada this year, and one of 89 new Fellows elected in Canada’s 150th Anniversary year. The RSC brings together the top Canadian scholars, humanists, scientists and artists to promote learning and research in the arts, the humanities and the sciences. The RSC is Canada’s National Academy and exists to promote Canadian research and scholarly accomplishment in both official languages, to recognize academic and artistic excellence, and to advise governments, non-governmental organizations and Canadians on matters of public interest. Dr. West’s induction into the RSC recognizes the huge impact her research had on the international stage, when Dr. West demonstrated that ABO incompatible heart transplantation could be carried out safely in young babies, without risk of hyper-acute rejection.

Dr. West is also a finalist for the ASTech Award, Alberta Science & Technology Leadership (ASTech) Foundation, Calgary, Alberta, 2017. The ASTech Awards showcases the highest-achievers working in science and technology in Alberta.

"Don't tell me the sky's the limit when there are footprints on the moon."
Promotions

Please join us in congratulating the following on their promotions effective July 1st:

- **Dr. Fiona Bamforth** is appointed as Emeritus Clinical Professor
- **Dr. Robert Rennie** is appointed as Emeritus Professor
- **Dr. Carol Ewanovich** to Clinical Associate Professor
- **Dr. Anna Füzéry** to Clinical Associate Professor
- **Dr. Cristina Ispas** to Clinical Associate Professor
- **Dr. Anna Füzéry** to Clinical Associate Professor
- **Dr. Shobhana Kulkarni** to Clinical Associate Professor
- **Dr. Mark Lee** to Clinical Associate Professor
- **Dr. Prakash Makara** to Clinical Associate Professor
- **Dr. Karina Rodriguez-Capote** to Clinical Associate Professor
- **Dr. Jack Slatnik** to Clinical Associate Professor
- **Dr. Kathleen Wong** to Clinical Associate Professor
- **Dr. Medhi Agoumi** to Clinical Assistant Professor
- **Ms. Anne Halpin** to Clinical Assistant Professor
- **Dr. Jingyang Huang** to Clinical Assistant Professor
- **Dr. Josh Raizman** to Clinical Assistant Professor
- **Dr. Farshid Siadat** to Clinical Assistant Professor
- **Dr. Dylan Thomas** to Clinical Assistant Professor

Grants

**Dr. Jason Acker** has received the following grants:


**Dr. X. Chris Le** received a CIHR grant ($500,000) titled “Chemical contaminants in traditional foods from Fort McKay and Fort Chipewyan: Before and after the Alberta wildfires”. The project is designed to study the effects of wildfires on the quality of traditional foods with respect to arsenic species, metals, and priority organic compounds.

**Dr. Lori West** received funding of $125,000 Total Funding ($25,000 per year); for the “Development and significance of the plasma cell niche in the human infant thymus” from the National Institutes of Health (NIH). Zorn E (Principal Investigator), West LJ (Co-Investigator – Subaward U01AI131339). August 2017 – July 2022
Grad Students & Post-Docs

Milestones

We are proud to announce that the following students have completed their programs:

**Doctoral:**

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<td>Habib Al Yousef</td>
<td>Dr Roger Leng, Dr Michael Weinfeld (supervisors)</td>
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<tr>
<td>Jinhua Li</td>
<td>Dr Xing-Fang Li, supervisor</td>
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- Photo not available for Habib Al Yousef
- Photo not available for Jinhua Li

- Habib Al Yousef (Dr Roger Leng, Dr Michael Weinfeld, supervisors). His thesis is titled *Investigation of the role of UBE-4B ubiquitin ligase in p53 regulation in response to DNA damage in ATM-proficient and ATM-deficient cells.*
- Jinhua Li (Dr Xing-Fang Li, supervisor). Her thesis is titled *Mechanisms of cytotoxicity induced by halobenzquinone water disinfection byproducts.*

**Master’s:**

- Faisal Hirji (Dr Gregory Tyrrell, supervisor). His thesis is titled *Group A Streptococcus (GAS): its surface phosphoglycerate kinase (PGK) and recent epidemiology in Alberta.*

- Photo not available for Faisal Hirji

- Nikhita Arora and Brittney Loney have completed the MSc Pathologists’ Assistant program.

**Graduate Students**

We welcomed 10 students to our programs this summer and fall:

* Meaad Almowaled (PhD student; Raymond Lai, supervisor)
* Abdulrahman Alshalani (PhD student; Jason Acker, supervisor)
* Richelle Edwards (MSc Pathologists’ Assistant program)
* Wei (Claire) Feng (PhD student; Chris Le, supervisor)
* Sara Fontes (MSc Pathologists’ Assistant program)
* Anusha Sajja (MSc student; Jason Acker, supervisor)
* Nahla Toshani (MSc student; Jason Acker, supervisor)
* Jagdeesh Uppal (MSc student; Chris Le, supervisor)
* Jing Yang Xu (MSc student; Hongquan Zhang, supervisor)
* Janet Zhou (MSc student; Lori West, Jelena Holovati, supervisors)

**Awards**

A number of students received awards that acknowledge their research/support their graduate programs:

* **Mead Almowaled** has received a *King Saud bin Abdulaziz University Scholarship.*
* **Wei (Claire) Feng** received a *University of Alberta Doctoral Recruitment Scholarship as well as a China Scholarship Council Scholarship.*
* **Nahla Toshani** has received a *scholarship from the Libyan Ministry of Education.*
* **Angela Ma** and **Gurnit Kaur** each received a *Queen Elizabeth II Scholarship – Doctoral.*
* **Ian Gault** and **Jeffrey Tao** each received a *Queen Elizabeth II Scholarship – Master’s.*
* **Lacey Haddon** received the *CIHR Silver award for Women’s Health* (Canadian Student Health Research Forum: 2017).

Photos courtesy of Mr. Tom Turner
Postdoctoral Clinical Biochemistry Fellowship Program Update

Prepared by: Dr. Anna Füzéry, Acting Program Director

Our program has been successfully up and running for a little over two years now. Until recently, our program held a provisional, 2-year accreditation from the Canadian Academy of Clinical Biochemistry (CACB). After a successful site visit in March of this year, the CACB has extended this accreditation to December 7, 2020. This accreditation serves to acknowledge that our program meets all requirements set forth by the CACB for clinical biochemistry training programs in Canada. It also ensures that we have all of the infrastructure and resources in place to assist trainees in developing into knowledgeable, competent and effective clinical biochemists.

Our first trainee, Dr. Albert Tsui, will complete his fellowship at the end of October 2017. He will join the Department of Laboratory Medicine & Pathology as a permanent, full-time clinical biochemist on November 14th of this year. Dr. Tsui has also been approved to sit the written exam of the CACB in the beginning of the same month. This exam is the first component of CACB certification and is then followed by an oral exam in the summer of 2018. Currently CACB certification is not mandatory to practice clinical biochemistry in Canada but it is considered highly desirable both by institutions employing clinical biochemists and by the clinical biochemistry profession.

Our second trainee, Dr. Miranda Brun, started in our program on July 1st of this year. She has already completed rotations in safety and preanalytics. She is currently completing her high volume general biochemistry rotation under the mentorship of Dr. Tsui, Dr. Josh Raizman and myself.

Dr. Albert Tsui and his mentor, Dr. George Cembrowski, standing by their poster at the 16th Annual Diabetes Technology Meeting in Washington DC
Presentations

Dr. Jason Acker:
1. Acker, J.P. “Are all red cell products equivalent? Exploring the impact of donor characteristics and manufacturing on red cell quality and transfusion outcomes.” Department of Laboratory Medicine and Pathology Grand Rounds, University of Alberta, June 8, 2017.
2. CRYO2017. The World Cryobiology and Biobanking Conference, Hefei, PR China, July 20-22, 2017:
   - Acker, J.P. “Impact of cryopreservation and the interconnectedness of advances in cryobiology”. Invited Keynote
   - Acker, J.P. “Transfusion Medicine Education in Canada. 3rd Seminar on Higher Education and Discipline Construction of Transfusion Medicine”. Invited oral
   - Almizraq, R.J., Holovati, J., Acker, J.P. “Whole blood manufacturing methods affect the quality of stored red cell concentrates”. poster
   - Almizraq, R.J., Holovati, J., Acker, J.P. “Manufacturing methods impact extracellular vesicle characteristics in stored red blood cell products”. poster

Dr. Penny Colbourne:

Dr. Steven Drews:
Abstracts:

Drs. Janet Elliott & Locksley McGann:
1. The Summit on Organ Banking through Converging Technologies, Harvard Medical School and Hyatt Regency Hotel, Boston MA, USA, Aug 3-6, 2017.
   - J. A. W. Elliott (Invited Speaker), “Ice formation and cryoprotectant toxicity in tissue cryopreservation”.
   - J. A. W. Elliott (Invited Speaker), A. B. Sultani, L. A. Marquez-Curtis, Nasim Eskandari and L. E. McGann “Cryopreservation of endothelial cells”.
3. 54th Annual meeting of the Society for Cryobiology, CRYO 2017, Hefei, China, July 20-24, 2017:
   - K. Wu (Presenter), L. Laouar, R. Dong, J. A. W. Elliott, L. E. McGann, N.M. Jomha, “Optimization of additives to mitigate chondrocyte toxicity during exposure to cryoprotective agents”. Abstract to be published in Cryobiology. ABSTRACT WON BEST STUDENT POSTER PRESENTATION.
Presentations (cont’d)

Dr. Anna Füzéry:
Poster presentation

Ms. Anne Halpin:
1. American Society of Histocompatibility and Immunogenetics Annual Meeting, San Francisco, CA, September 14th, 2017
2. Canadian Society of Transplantation Annual Meeting, Halifax, NS, September 27th, 2017

Dr. Jelena Holovati:
Annual Meeting of the International Society for Cryobiology, Hefei, China (July 2017)

Dr. Judith Hugh:

Dr. X. Chris Le:
Was invited to present the following lectures:
3. Le XC. “DNA-protein binding assays for biosensing and molecular interaction studies”. Department of Chemistry, University of Toronto, August 8, 2017.

Dr. Nausherwan Mahmood:
1. Oral Case Presentation:  
2. Poster Presentation:  
Dr. Naushernan Mahmood (cont’d):
   - "Dermatopathology Session 3: Melanoma of the Skin: American Joint Committee on Cancer (AJCC) Staging – 8th Edition. An update on new changes to melanoma staging".
   - "Patient referred for surgical correction of ptosis. Usual presentation of an unusual cutaneous neoplasm".

Dr. Michael Mengel:
Invited lectures:

Dr. Iveta Sosova:

Dr. Lori West:
   - Dijke E, Hoeppli R, Larsen I, Rebeyka I, Ross D, Levings M, West LJ: “Thymic regulatory T cells express low class I HLA levels and remain HLA-DR negative after expansion: Potential for ‘off the shelf’ tolerogenic therapy”. Oral Abstract Speaker.

3. Pediatric Heart Transplant Summit 2017: Contemporary Challenges and Future Directions, Seattle, WA, September 18, 2017
   – Invited Speaker, Session: Breakout workshop II. Title: “Everything you always wanted to ask about immunology, ABO incompatible transplant, and the HLA testing but were afraid to ask”
   – Keynote Address, Invited Keynote Speaker, Title: “B lymphocytes: the lesser known evil of the immune system and what the clinicians can incorporate into their practice”.

4. 7th World Congress of Pediatric Cardiology and Cardiac Surgery (WCPCCS), Barcelona, Spain, July 16-21, 2017
   – Invited Speaker: “The past, present, and future of heart transplantation: 50 years beyond Barnard. Title: The Future – Tolerance and Regeneration – Will we need transplantation 50 years from now?”
Presentations (cont’d)

Dr. Lori West (cont’d):

5. Canadian Blood and Marrow Transplant Group (CBMTG) Research Retreat, Invited Speaker, Calgary, AB, June 8, 2017. Title: “What can the Canadian National Transplantation Research Group (CNTRP) do for you?”

6. Faculty of Medicine and Dentistry, Festival of Health, Invited Speaker, Edmonton, Alberta, June 3, 2017. Title: “Transplants transforming lives”.

Recent Publications

Dr. Jason Acker:


Dr. Steven Drews:
Peer reviewed


Drs. Janet Elliott & Locksley McGann:


Dr. Anna Füzéry:
Peer-reviewed papers

Recent Publications (Cont’d)

Dr. Anna Füzéry (cont’d):

Dr. Luis Hidalgo:

Dr. Michael Mengel:

Dr. Joshua Raizman:

Dr. Consolato Sergi:
Recent Publications (Cont’d)

Dr. Farshid Siadat:

Dr. Lori West:
Peer-reviewed publications:

Dr. Liena Zhao:

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