integrated Laboratory Medicine
Médecine de laboratoire intégrée

EORLA -
Eastern Ontario Regional Laboratory Association

2013/2014 Annual Report

History

The Eastern Ontario Regional Laboratory Association (EORLA) is a member-owned, non-profit organization encompassing the operation of 19 licensed, acute-care, hospital-based clinical laboratories that service clinical programs across the Champlain Local Health Integration Network (CLHIN) of Eastern Ontario.

EORLA laboratories provide diagnostic testing to both hospital inpatients and registered outpatients, performing a total of approximately 13 million tests annually. Comprehensive testing in the disciplines of Anatomic Pathology, Biochemistry, Genetics, Transfusion Medicine, Hematopathology, and Microbiology/Virology is performed.

All EORLA laboratories are accredited by Ontario Laboratory Accreditation (OLA) and the Tissue Typing Laboratory at The Ottawa Hospital site is accredited by the American Society for Histocompatability and Immunogenetics (ASHI). In May 2013, EORLA received full Bone Bank accredition that is valid for a period of two years.

The EORLA Biochemistry Laboratory at The Ottawa Hospital is a designated facility under the Trillium Gift of Life Network Act.

Purpose

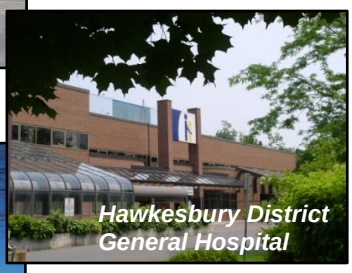
EORLA is a not-for-profit, charitable corporation created for the purpose of enhancing the quality, efficiency, sustainability and effectiveness of Laboratory Services provided to its Members.

To achieve its purpose, EORLA agrees to deliver high-quality, patient-focused, consistent and efficient Laboratory Services to its members on a cost-effective and cost-recovery basis and also agrees to support the academic mission of those Members who have an academic mandate.

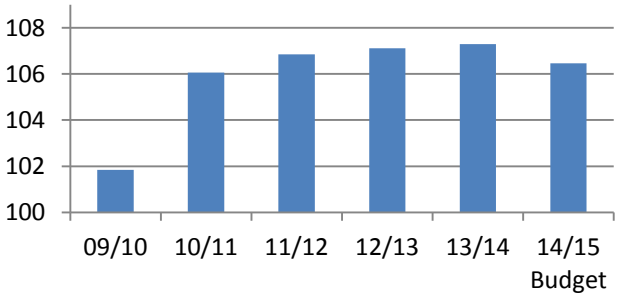
EORLA Member Hospital Sites

The Eastern Ontario Regional Laboratory is made up of the acute care hospitals within the Champlain LHIN. EORLA's 16 Member Hospitals are:

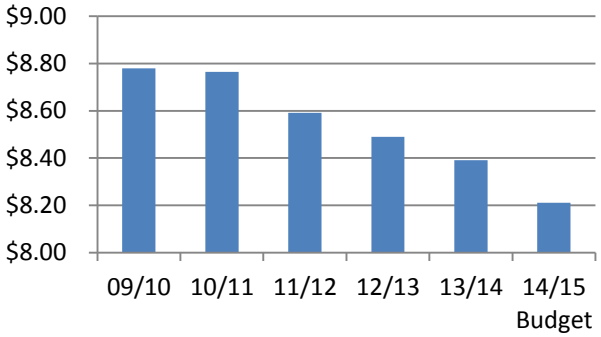
- Almonte General Hospital
- Arnprior Regional Health
- Carleton Place and District Memorial Hospital
- Children's Hospital of Eastern Ontario (CHEO)
- Cornwall Community Hospital
- Deep River District Hospital
- Glengarry Memorial Hospital
- Hawkesbury District General Hospital
- Kemptville District Hospital
- Montfort Hospital
- Pembroke Regional Hospital
- Queensway Carleton Hospital
- Renfrew Victoria Hospital
- St. Francis Memorial Hospital
- The Ottawa Hospital (TOH)
- Winchester District Memorial Hospital



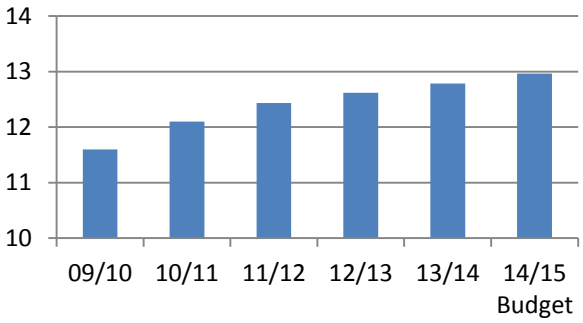
Lab Costs to Members[1] in $M



Avg Cost per Test[2]



Total Test Volumes in M

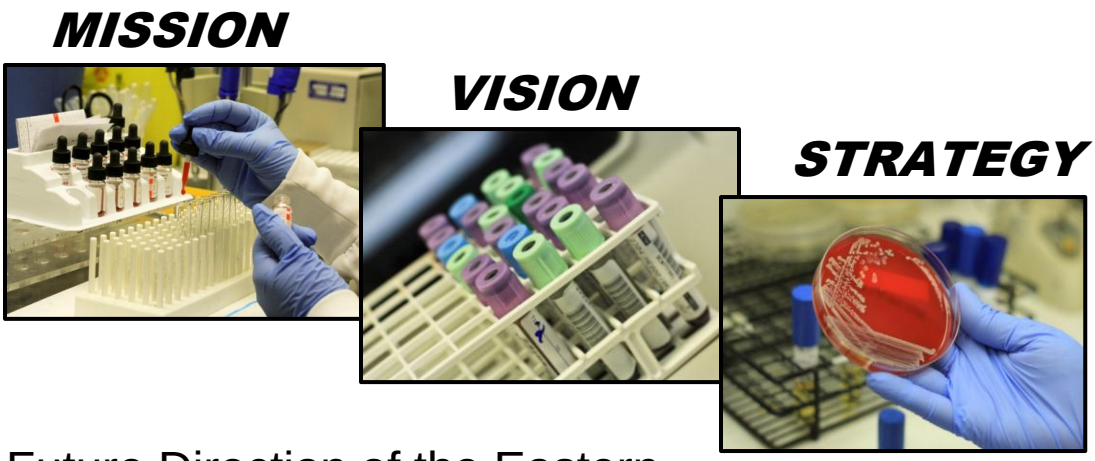


1 *- For 2009/10 to 2011/12 reflect hospital lab trial balance information. For 2012/13 on, reflect EORLA charges to members plus estimated member depreciation for lab assets*

2 *- Includes Medical and Scientific professional fees*

The selected financial data presented below is derived from the financial statements of EORLA, which have been audited by an independant registered public accounting firm.

	Fiscal Year Ended March 31				
In thousands	**2010**	**2011**	**2012**	**2013**	**2014**
Statement of Operations Data:					
Total Revenue	$1,924.4	$2,110.5	$3,706.4	$93,528.8	$109,402.8
Total Expense	$1,924.4	$2,110.5	$3,706.4	$90,696.0	$109,231.6
Net Surplus / (Deficit)	-	-	-	$2,832.8	$171.1
Balance Sheet Data:					
Cash	$7,202.4	$6,784.1	$6,139.3	$7,757.4	$10,988.2
Total Assets	$19,101.8	$18,881.7	$18,415.8	$33,542.9	$35,357.6
Net Working Capital	($7,247.1)	($7,051.2)	($6,855.3)	($5,867.5)	($6,008.7)
Total Net Assets	-	-	-	$2,832.8	$3,004.0



The Future Direction of the Eastern Ontario Regional Laboratory Association

Through the past fall and winter seasons, the EORLA Board of Directors committed to the development of our first strategic plan. The most critical part of the process was the engagement of internal and external key colleagues and stakeholders. We are proud to present an inaugural *Vision* Statement for the Eastern Ontario Regional Laboratory Association:

"Inspiring a culture of excellence in laboratory medicine"

Our pioneer *Vision* Statement reflects the hopes and aspirations of our entire team and states plainly our desire to earn our place as a recognized leader in regional laboratory medicine services. The *Vision* Statement will guide our daily endeavours.

Our *Mission* Statement illustrates clearly our intention, as a patient-focused service, to be a vital member of the team of care in each of our member organizations:

"Enhance care through unified, patient-focused laboratory medicine services, teaching and research"

The vocabulary, itself, mirrors the unique character of EORLA, with staff working as a unified team across the Champlain LHIN geography. We provide value to our members by completing our best work each and every day.

Complementary to the *Mission* and *Vision* Statements, our organizational *Values* have been determined:

Innovation Compassion Accountability Respect Excellence

These behaviours will guide us in how we work with each other, our members and the communities we serve. The *Values* we embrace provide the foundation by which we make decisions.

Over the next three years, we will focus on four *Strategic Results*:

- **Improving quality and performance of laboratory medicine**
- **Supporting and developing our people**
- **Leveraging capability of information systems and technology**
- **Strengthening relationships and recognition**

Generating a strategic direction is an important milestone in the EORLA journey. We can now move forward with a strong sense of purpose to chart a course for our future. The goals and objectives that we are currently building in these four domains will clearly enable the delivery of true benefits to our member organizations and bring us closer to our *Vision*.

Table of Contents

Welcome from the Chair of the Board of Directors, Dr. Bernard Leduc

This has been a busy year for The Eastern Ontario Regional Laboratory Association (EORLA), as we continued to pursue the excellence in the delivery of Medical Laboratory Services for our patients and clinicians and to operate in a fiscally responsible manner. The Board of Directors led the development of the first Strategic Plan for EORLA. The focus has been on engaging our broad base of stakeholders and constituents in conversations about the future of our organization and to incorporate the collective insight into our strategic directions. The plan is an essential tool that will enable us to guide our evolution and support our entire team to meet the challenges ahead.

A critical focus for the Board was to continue to enhance the governance model. The Board was expanded to include three new Community Board Members, Patrick Dion, Jeffrey Dale and Dr. Virginia Roth, each with their own particular areas of expertise. Their presence represents a strengthening of the Board's collective competencies and enhances decision-making, transparency, and accountability. This year included the creation of the Board Patient Safety and Quality Committee which will provide stewardship for these critical elements, with Eric Hanna - President and CEO of Arnprior Regional Health - appointed as Chair.

EORLA is also becoming recognized as an important contributor to the advancement of Laboratory Medicine, this report highlights the many accomplishments on a medical and scientific level. At the Board level we were pleased to contribute to the dialogue on the future of the Local Integrated Health Network model through a presentation to the Standing Committee on Social Policy.

Lastly, I want to thank all the EORLA medical and scientific staff, employees as well as the EORLA leadership team and my colleagues on the Board, who together have provided outstanding patient-centric medical laboratory services on behalf of our Member organizations.

Thank you,

Dr. Bernard Leduc

EORLA Board of Directors for 2013/2014

Board Member	Professional Title	EORLA Governance Appointments
Mr. Jeffrey Dale	CEO, Snowy Cloud Inc.	Finance and Audit Committee - Member, Community Board Member
Ms. Jeanette Despatie	President & CEO, Cornwall Community Hospital	Patient Safety and Quality Committee - Member, Board Member approved by the Eastern Regional Hospitals
Mr. Patrick Dion	Managing Partner, Greenbridge Consulting	Governance Committee - Member, Community Board Member
Mr. Eric Hanna	President & CEO, Arnprior Regional Health	Patient Safety and Quality Committee - Chair Board Member approved by the Western Regional Hospitals
Dr. Bernard Leduc	President & CEO, L'Hôpital Montfort	Board - Chair, Governance Committee - Chair, Board Member approved by L'Hôpital Montfort
Mr. Alex Munter	President & CEO, Children's Hospital of Eastern Ontario	Governance Committee - Member, Board Member approved by Children's Hospital of Eastern Ontario
Dr. Sherry Perkins	Head and Laboratory Director, Division of Biochemistry, The Ottawa Hospital, Acting Head, Division of Biochemistry, CHEO	EORLA Medical and Scientific Advisory Committee (EMSAC) - Member, Governance Committee - Member, Board Member approved by the University of Ottawa
Dr. Virginia Roth	Director, Medical Affairs and Patient Advocate, The University of Ottawa	Patient Safety and Quality Committee - Member, Community Board Member
Mr. Tom Schonberg	President & CEO, Queensway-Carleton Hospital	Board - Vice-Chair, Governance Committee - Member Board Member approved by Queensway-Carleton Hospital
Dr. John Veinot	Head, Department of Pathology and Laboratory Medicine, The Ottawa Hospital, CHEO and The University of Ottawa	EORLA Medical and Scientific Advisory Committee (EMSAC) – Chair Board Member appointed as EORLA Chief, Medical and Scientific Officer
Mr. Nicholas Vlacholias	Chief Financial Officer, Children's Hospital of Eastern Ontario	Board - Secretary-Treasurer, Finance and Audit Committee - Chair, Community Board Member
Mr. Richard Wilson	Executive Vice-President, Finance and Business Development, The Ottawa Hospital	Finance and Audit Committee - Member, Board Member approved by The Ottawa Hospital

A Word from the CEO, Craig Ivany

It is with great pleasure that we present the second annual report for EORLA and would like to begin by extending a heart-felt thank you to everyone associated with our organization for making this second full year an unqualified success. First to our team, the work of our 900 staff and 75 Medical and Scientific staff working tirelessly every day to ensure that patient care meets the needs of our Member organizations and their clinical staff are supported and enhanced through high-quality laboratory services. To the Member Hospitals, thank you for providing the support and guidance to ensure we were contribute in a meaningful way to meeting your strategic priorities. Finally, to the EORLA Board of Directors, thank you for your insight, perspective and commitment, your leadership provides EORLA with clear direction to achieve our shared vision.

Through the leadership of Liz Glover in Human Resources, we moved aggressively to stabilize our team across the region. We learned that it takes plenty of effort and time to move from 16 hospital-focused work environments to a regional model, where distance and unique cultures challenged us as we built a team with unity of purpose. While 2012-13 was a year of transition, 2013-14 was a year of building the infrastructure to support a vibrant team of close to 1000 staff across 19 sites. Emerging from this was work to build a strong relationship between OPSEU 475 and EORLA, the implementation of an ESP scheduling system designed to ensure fair and equitable scheduling for all staff, solidifying our capabilities in Occupational Health and Safety and commencing work on standardizing Human Resource polices.

This year we were pleased to welcome 75 Medical and Scientific staff to EORLA from 5 different Hospital environments. At the time of writing we are in the final stages of transferring the final groups. It is encouraging to witness the evolution of the Medical and Scientific teams as they embrace a regional perspective. Under the leadership of Dr. John Veinot, Chief Medical and Scientific Officer, the Regional Discipline Leads, Dr. Banerjee, Dr. Ramotar, Dr. Perkins and Dr. Giulivi and the Laboratory Directors, we are seeing efforts to improvement the quality of laboratory medicine and collaboration between the various teams to address similar issues.

We welcomed Greg Doiron as Vice President Laboratory Operations. His first assignment was to examine the organization design to enhance alignment between the member organizations, our Regional Discipline Leads, our Lab Directors and our Operations Team.

Through this effort we expect to see improved communication and clearer accountability, with better support to our front-line staff. This is vital in a time where we are faced with changing and challenging demands from our member organizations and the health care industry. We took the first steps towards building a continuous improvement culture throughout our organization. EORLA is committed to the ideals of continuous improvement and will be working in close collaboration with member organizations that have already embarked on this journey of cultural change and will be augmenting these initiatives with EORLA specific initiatives.

Laboratory Medicine is one of the most regulated environments within the health care sector and during the year we held 5 successful Ontario Laboratory Accreditation audits in Cornwall, Queensway Carleton Hospital, Carleton Place Hospital, Kemptville and Arnprior. There was also success in Tissue Typing Audit completed by the American Society for Histocompatibility and Immunogenetics (ASHI). The Ontario Regional Blood Conservation Program conducted reviews of all 16 transfusion medicine programs and reported that we demonstrated provincial leadership in Platelet, Red Cell and Intravenous Immunoglobulin (IVIG) utilization.

Laboratory Medicine is also extremely reliant on effective, validated Laboratory Information Systems (LIS) and this past year EORLA invested significant resources to support the implementation of EPIC and Beaker at CHEO (the first ever in Canada); Cerner Millennium at TOH and Meditech at Montfort and Glengarry. These systems are critical to the effective operations of electronic health records within our member hospitals. EORLA is developing a capability to work in many different LIS environments and this expertise is leading to innovative solutions that provide meaningful information to our member organization. Hal Tierney, Director of Information Systems, Jeff Letourneau, Vice President Corporate Services, Dr. Chris McCudden and Dr. Matt Henderson are developing sophisticated data analytic tools to build utilization reporting capabilities for all member organizations. This expertise resulted in EORLA gaining a $6.7M contract with eHealth to link all of the EOLRA laboratory results to the Ontario Laboratory Information System (OLIS).

The EORLA journey has only just begun; looking to the future there is much left to do before we can say that we have fully taken ownership of our future. We will be measured not only on the quality of our work and the service we provide but also by doing this in a cost-effective and sustainable manner. We must continue to strive for excellence in everything we do and bring value to our member organizations. We have started to build the foundation and yet there is much left to do: with unity of purpose and striving for excellence in laboratory medicine we can develop an outstanding regional laboratory system.

The CEO report highlights only a small sample of the achievements over the past year. The annual report is replete with remarkable accomplishments of many wonderful individuals and I encourage you to read on. I will close where I started by saying thank you to everyone who is a part of the EORLA journey; every contribution is appreciated and I am grateful to be a part of this team.

Dr. John Veinot, EORLA Chief Medical and Scientific Officer

This year went by quickly with all the continued activity in EORLA. If last year was a year of change, this year was recovery, repair, assessment and planning. After a brief time together we are discovering what works and what doesn't. These situations make interesting and sometimes difficult situations and conversations but they are essential to keep us growing and improving.

The teamwork between the medical and scientific staff and the operations staff is solid. I could list many examples where we all worked together to solve a challenge and ensure that we continued to deliver excellent patient care. I am often pleasantly surprised how well things go when we work together (of course realizing that we still have lots of work to do). Congratulations to all of the team. Together you are making a difference to our patients and their families.

This is also a year we saw the strength of EORLA to help each other when one of us is in need of assistance. I believe this positive aspect of our partnership is just beginning and our teamwork will increase. This mutual aid seems to be unusual between institutions. There is much interest from outside to learn how we work together. The fact that we have excellent staff may play a role - great job folks!

Strategic planning was important and I am happy that there was a real effort for consultation in the process. We are EORLA and our future must resonate with our values. Thank you for sharing your opinions and participating.

Our basic structure remains solid and strong. EORLA Pathology and Laboratory Medicine operate out of approximately 19 sites. Several of these are academically oriented, some are community hospital oriented, some deliver extensive regional care, and several serve our Francophone community. Every site is unique and all are important partners in EORLA. Each site is committed to and consistently delivering excellence in patient care through high quality test results. As a laboratory network we offer anatomic pathology, biochemistry, microbiology, virology, hematopathology, transfusion medicine, tissue typing, forensic pathology, and genetics services to our region and beyond.

This year was marked by changes on the operations organizational structure and the continued transfer of medical and scientific staff over to EORLA. I am delighted that the commitment to honour the most important aspects of our medical and scientific working conditions seems to have been met. Details persist and we are working on them.

Our Regional Discipline leads are finding their footing. They have worked with their groups on quality measures, trying to simplify the process and make the results more meaningful.

This was done in collaboration with our members and operations team so the result should be meaningful for ensuring quality care to our patients everywhere EORLA serves. Our Regional Discipline leads are:

- Anatomical Pathology - Dr. D. Banerjee
- Microbiology - Dr. K. Ramotar
- Biochemistry - Dr. S. Perkins
- Hematopathology -Transfusion Medicine and Tissue Typing - Dr. A. Giulivi

We had many academic achievements this year. We have participated in consensus conferences, developed provincial and national guidelines and presented papers and posters at provincial, national, and international meetings. Several of us have played leadership roles provincially, nationally, and internationally within our organizations. Several staff participated in leadership training and quality and patient safety training.

Educationally we make large contributions to the undergraduate medical teaching curriculum, residency training, training of fellows, and in the teaching in the Faculty of Science and Health Sciences. We have several residency programs in anatomic pathology - general pathology, medical microbiology, and hematopathology and transfusion medicine. We have participated in several internal reviews of these programs with much success.

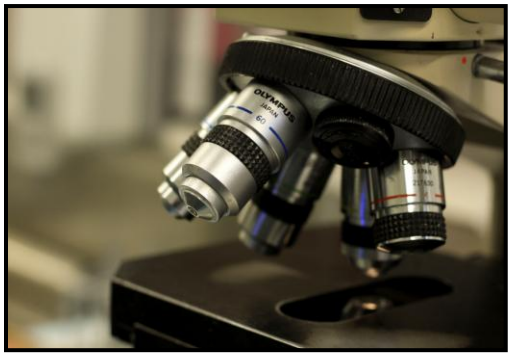


Photo: Lori Bates

EORLA Pathology Laboratory - The Ottawa Hospital (General Campus)

Pathology and Laboratory Medicine Grand Rounds is going well, now a combination of talks from medical and scientific staff as well as operations staff. Planning for next year is underway by Dr. Alfredo Walker and his team.

These accomplishments are only possible through the hard work of all of you. People are our most valuable resource. In the coming year we will try to focus on wellness, communication and accountability. Recent engagement surveys tell us that attention is needed to these things so we will do our best. Thank you again for your dedication and patience.

Also, thank you for the birthday party this year, as I passed another decade. It was a blast and I want a party every year.

Looking forward to the coming year when there will be further change. We will continue to provide excellent pathology and laboratory medicine services to our patients and their families.

JOHN P. VEINOT - MD, FRCPC

- Chief Medical and Scientific Officer, EORLA
- Department Head/Medical Director, Department of Pathology and Laboratory Medicine – The Ottawa Hospital
- Department Head/Medical Director, Department of Pathology and Laboratory Medicine – Children's Hospital of Eastern Ontario (CHEO)
- Chairman, Department of Pathology and Laboratory Medicine, University of Ottawa

Dr. Veinot is a Cardiovascular Pathologist at the Ottawa Hospital, CHEO, University of Ottawa and the University of Ottawa Heart Institute where he has worked since 1994. He is a Full Professor at the University of Ottawa and a Clinical Investigator at the Ottawa Hospital Research Institute. He is past - President of the International Society for Cardiovascular Pathology. He sits on the Physician Advisory Board of Accreditation Canada.

Dr. Veinot completed his undergraduate training at Acadia University, pursued Medical School at Dalhousie Medical School and completed a rotating internship at Victoria Hospital, London Ontario. He did a Residency in Anatomical Pathology at Queen's University, Kingston, Ontario. Dr. Veinot completed his Fellowship in Cardiovascular Pathology at the Mayo Clinic, Rochester MN.

In September 2010, Dr. Veinot took on the role of Chairman of the Department of Pathology and Laboratory Medicine at the University of Ottawa, Department Head at The Ottawa Hospital and the Children's Hospital of Eastern Ontario and the Medical Scientific lead of the Eastern Ontario Regional Laboratory Association (EORLA).

EORLA Laboratory Medical/Scientific Staff

Photo: Lori Bates

EORLA Hematology Labratory - The Ottawa Hospital (General Campus)

2013/2014 was an extremely busy year for EORLA's medical/scientific team as they guided or prepared to guide and support all 19 laboratory sites through Ontario Laboratory Accreditation (OLA) Peer Assessments. Under the combined requirements of OLA and the Ministry of Health and Long Term Care Laboratory Licensing and Specimen Collection Act, our dedicated team of individual hospital site laboratory medical/scientific directors are ultimately responsible for the quality and safety of laboratory services.

Our medical/scientific staff take pride in the clinical, analytical and administrative expertise and leadership they bring to EORLA's unique regional laboratory model. From the large urban academic sites to the rural hospital locations, our Biochemists, Hematopathologists, Microbiologists, Pathologists and Virologists strive to ensure that all patients and physicians within the Champlain LHIN hospital network receive timely and equal access to the same high quality laboratory medicine services. Sub-specialty 24x7 on-call support is now provided to the entire region. Physicians and other health care providers have full access to a large team of laboratory medical/scientific staff with an extensive breadth and depth of expertise in almost all areas of laboratory medicine.

Over the last year, under the leadership of the Regional Discipline Heads and Dr. Nathalie Lepage-Chair EORLA Quality Management Sub Committee, the medical/scientific teams have reviewed, revised and updated quality indicators to ensure EORLA is aligned with clinical program needs and current evidenced based standards.

An evolving area of activity and responsibility for our medical/scientific team is that of informatics. In 2013/2014 several EORLA member hospitals implemented new Laboratory Information Systems (LIS). Ensuring these new LIS's are configured appropriately to accurately communicate laboratory results has been a major undertaking, as has the post go live stabilization of these new systemsIn 2014/2015 the medical/scientific team will fully engage in EORLA's Ontario Laboratory Information System (OLIS) initiative to ensure the quality and integrity of laboratory result transmission to the OLIS provincial repository.

2013 marked the inaugural year for EORLA's formal regional discipline structure. The first year has focused on development of medical/scientific and operational structures to best support EORLA's mandate and complement the individual discipline needs. 2014/2015 will see continued evolution and maturation of EORLA's medical/scientific and operations dyad, attention on standardization and alignment of activities with EORLA's 3 year strategic plan.

Regional Discipline Heads

In 2012, Regional Discipline Heads were appointed in the four main areas of laboratory medicine. As leaders, they are responsible for ensuring that the region's services in their discipline are aligned, focused and delivering the high quality, patient focused care that defines EORLA. Their expertise and knowledge is supporting staff throughout EORLA's Member Hospitals.

Anatomical Pathology

Dr. Diponkar Banerjee MBChB, FRCPC, PhD Regional Discipline Head – Anatomical Pathology

Dr. Diponkar Banerjee is the Chief, Division of Anatomical Pathology, Eastern Ontario Laboratory Association and the Ottawa Hospital, Professor of Pathology and Laboratory Medicine at the University of Ottawa, and Cancer Care Ontario Regional Lead, Cancer Pathology, and a Clinical Investigator in the Ottawa Hospital Research Institute (OHRI) within the Cancer Therapeutics Program. His research interests are in the molecular biology of Hodgkin's Lymphoma, and translation of novel technologies for cancer diagnostics personalized therapy. His administrative interests are in quality assurance, and the use of Lean methodology in improving quality in cancer pathology.

Dr. Banerjee has more than 23 years of experience as the medical director of clinical laboratories in academic teaching hospitals in Ontario and British Columbia including 17 years of experience in planning, re-engineering, and restructuring of large scale hospital operations. Dr. Banerjee's has more than 181 publications, abstracts, books and book chapters, has presented as an invited lecturer and has secured more than $27.3 million in cumulative research funding as principal investigator or co-investigator.

What is Anatomical Pathology?

Anatomical pathology is a medical specialty that is concerned with the diagnosis of disease based on the gross, microscopic, chemical, immunologic and molecular examination of organs, tissues, and whole bodies (autopsy). Pathology is important because 70-80 per cent of health care decisions involving diagnosis or treatment are based on a pathology investigation. 100 per cent of cancer treatment plans require a pathologist's report.

Anatomical Pathology

The Division of Anatomical Pathology provides formal and informal medical and technical support to EORLA member hospitals, in the sense that it seeks to provide excellent, world class medical care for the patients within the Champlain LHIN. It also supports the teaching role of the University of Ottawa, with regards to undergraduate, graduate student and resident training, as well as supporting the EORLA technical and medical staff training. The division also supports and encourages research by staff members and residents.

The Division of Anatomical Pathology at the Ottawa Hospital and CHEO are the regional reference laboratories for adult and pediatric anatomical pathology and generates surgical reports for over 85,000 surgical specimens annually. The Division of Anatomical Pathology also performs over 650 Forensic autopsies and 150 hospital autopsy annually.

One of the other primary services provided by the division is consultations to colleagues in the region. There are some 1,500 consults done a year received from within the Ottawa region, within the province of Ontario and other provinces.

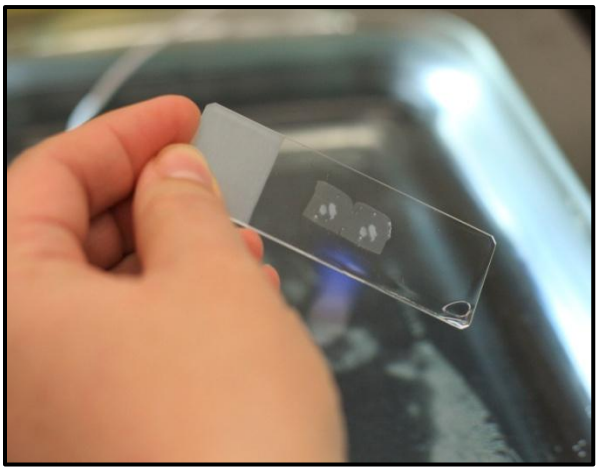


Photo: Lori Bates

EORLA Anatomical Pathology Laboratory – The Ottawa Hospital (General Campus)

Subspecialization

The Division of Anatomical Pathology is separated in the surgical pathology services and the forensic/autopsy services. Due to the uniqueness and licensing agreements, forensic pathology services are operated separately from the surgical pathology service. The anatomic surgical pathology service encompasses all surgical pathology subspecialties: Cytopathology, Neuropathology, Hospital autopsy and frozen section services. Within the surgical pathology service neuropathology is also separate, based on license requirements.

All other subspecialties are less strictly separated, and most pathologists in the remaining service cover 2 or 3 subspecialties. The subspecialties include:

- Neuropathology
- Cardiac Pathology
- Lung/Thoracic Pathology
- Breast pathology
- Cytopathology
- Gyne pathology
- GU pathology
- GI pathology
- Liver pathology
- Dermatopathology
- Lymph node pathology
- Renal pathology
- Bone/ soft tissue/musculoskeletal pathology
- Ear, eye, nose and throat pathology

EORLA Division of Anatomical Pathology

Cancer Care Ontario Synoptic Reporting Indicators

EORLA AP Division rate of issuing synoptic reports was 92.1% (The Provincial Average was 92.4%) as of December 2013, and the report completeness rate was 92.4% (The Provincial Average was 86.9%).

Teaching at the University of Ottawa

Over 450 hours of undergraduate teaching plus additional hours of graduate and postgraduate teaching were provided by members of the Division in 2013.

Research Funding, Abstracts and Publications

Despite the very high clinical service loads, members of the Division presented 68 abstracts at National and International Conferences, published 50 peer-reviewed articles in journals, edited 1 book and published 2 book chapters. Collectively, the Division brought in ***over half a million dollars*** in research funding as principal or co-investigators. Several were invited speakers at National and International Conferences, organised symposia and chaired scientific sessions.

Clinical Service

The Division of Anatomical Pathology, operating out of 5 sites, reported on over 94,000 surgical pathology cases, over 24,000 cytology specimens and performed over 260 hospital autopsies and over 600 forensic autopsies (Table 1).

TABLE 1

Site	Surgical Cases reported	Cytology Cases Reported	Hospital Autopsies	Forensic Autopsies
Children's Hospital of Eastern Ontario	4,291	N/A	125	18
Cornwall Community Hospital	4,650	374	N/A	N/A
Hôpital Montfort	14,307	0	5	N/A
The Ottawa Hospital	51,693	20,174	129	648
Queensway Carleton Hospital	19,393	3,699	8	N/A
Total	**94,334**	**24,247**	**267**	**666**

Awards

Dr. Bojana Djordjevic : F. Stephen Vogel Award – United States and Canadian Academy of Pathology

Dr. Scott Bradshaw *(Resident):* Virbala Acharya Award, Annual Research Day, Dept of Pathology and Laboratory Medicine, University of Ottawa

Media stories

"Cancer tests twice as fast" – Reported in August 2013 by the Ottawa Citizen, The Montreal Gazette and several other newspapers in Canada based on EORLA's success in reducing the average turnaround time for surgical pathology reports from 9 days to 4.5 days at the AP Reference Lab at TOH.

"Ottawa Pathology Laboratory Cuts Turnaround Time By More than 50%" - Published on October 21, 2013 in the Dark Report as the centrepiece. The Dark Report is publication read widely in North America.

"Hospital Lab Professional 'unseen champions' of patient care in eastern Ontario" – Published on April 24, 2014 in the Ottawa Citizen.

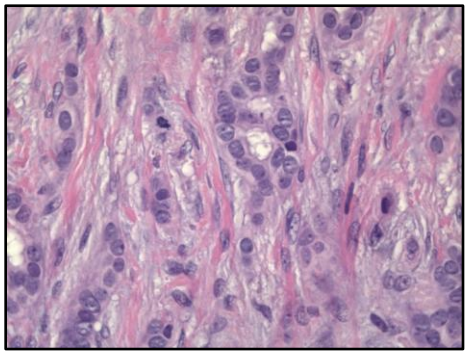


Image of Breast Cancer Tissue, provided by Dr. Diponkar Banerjee

Biochemistry

Dr. Sherry Perkins, PhD
Regional Discipline Head – Biochemistry

Dr. Sherry L. Perkins is currently the Head of the Division of Biochemistry, Medical/Scientific Director for LIS and Pre & Post Analytical Processes and Medical/Scientific Co-Director for Point of Care Testing at the Ottawa Hospital. In January 2014 she was appointed Acting Head of Biochemistry at The Children's Hospital of Eastern Ontario.

She is an Associate Professor in the Departments of Pathology and Laboratory Medicine and Obstetrics and Gynecology at the University of Ottawa. She is a past president of the Ontario Society of Clinical Chemists and of the Canadian Society of Clinical Chemists. She has received numerous awards and recognition for her administrative leadership at the local, provincial and national level.

Dr. Perkins has witnessed firsthand the evolution of the Champlain LHIN region laboratory system. She served as the last Chairman of the Laboratory Coordination Program (LCP), a voluntary regional laboratory system which had served Eastern Ontario for over 30 years. In 1998, the responsibility for coordination of regional laboratory services was transitioned from the LCP to EORLA and Dr. Perkins was appointed the EORLA Project Director and subsequently chair of the East 1 Regional Coordinating Committee (2001- 2006). She is currently a member of the EORLA Board, EORLA Governance Committee and EORLA Medical Scientific Advisory Committee (EMSAC) and served for over 10 years as the Chair of the EORLA Biochemistry Discipline Specific Working Group.

In addition to her experience within the Academic Health Sciences Centers, Dr. Perkins has developed a balanced perspective and understanding of the rural and community environments through her roles as Laboratory Medical/Scientific Director and/or Biochemistry Consultant at various hospitals throughout the Champlain Local Health Integration Network. Dr. Perkins also has an active research program in partnership with clinical colleagues in the Department of Obstetrics and Gynecology exploring the relationship of biochemical markers to maternal and fetal outcomes.

What is Biochemistry?

Biochemistry

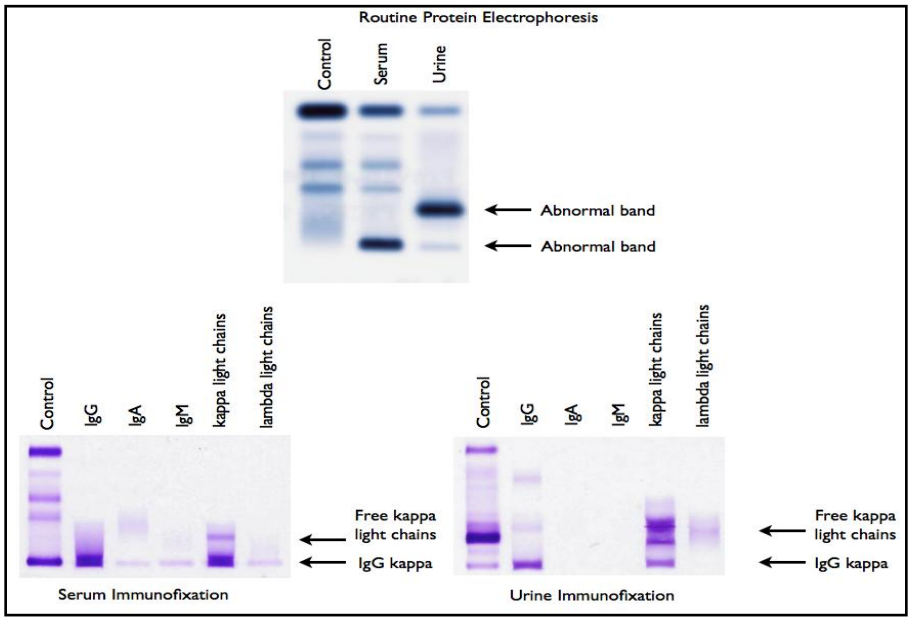
Biochemistry, or more specifically clinical biochemistry, is the analysis of biochemical compounds in body fluids, primarily blood serum and urine.

Why is Biochemistry important?

Biochemical analysis of body fluids helps physicians diagnose, monitor and manage many different diseases. For example, a physician may request a plasma glucose test to diagnose or monitor diabetes. Cholesterol testing is commonly done to assess a patient's risk for developing heart disease. Serum enzymes may be measured to diagnose and monitor liver diseases such as hepatitis. Measurement of thyroid hormones is used in the diagnosis of thyroid disorders. Therapeutic drug monitoring involves the measurement of the concentration of specific drugs in patient plasma to ensure the patient is receiving optimal drug dosage in areas such as anti rejection treatment post organ transplant and antibiotic treatment for infections.

Biochemistry is the largest of the Laboratory Medicine subspecialties in terms of menu and volume of tests performed accounting for over 50% of the total tests performed in the region. A vast array of STAT, routine, and highly specialized laboratory investigations are provided 24 hours a day, seven days a week. These include blood gases, electrolytes, enzymes, metabolites, lipids, cardiac markers, therapeutic drug monitoring, toxicology, hormones, tumour markers, immunology/autoimmune investigations, and markers of bone metabolism.

The Divisions of Biochemistry at the Ottawa Hospital and the Children's Hospital of Eastern Ontario are the regional biochemistry reference laboratories. They also serve as provincial and national reference laboratories. Functioning on a "hub and spoke" model, the Biochemists and technical staff from these two academic centers provide outreach support to the EORLA rural and community hospitals for both adult and pediatric Biochemistry services. This unique integrated model ensures patients and clinical staff at hospitals throughout the Champlain LHIN have access to comprehensive Biochemistry clinical and technical sub-specialty expertise.



Protein Electrophoresis used in the diagnosis and monitoring of Multiple Myeloma, provided by Dr. Ronald Booth

In addition to providing clinical interpretation and day to day direction of the analytical activities of the laboratories, the Biochemists provide clinical direction for Point of Care Testing, Pre and Post Analytical processes (phlebotomy, specimen receiving, accessioning) and laboratory information system at The Ottawa Hospital.

Over the last year, Biochemistry teams across the region have been focused on two major initiatives: implementation of new laboratory information systems (LIS) at several hospital sites and preparing for Ontario Laboratory Accreditation. These activities will continue through the next year along with reviews and re-engineering of specimen procurement and processing to leverage the enhanced functionality of the new LIS's to improve patient flow within the member hospitals.

Photo: Lori Bates

Urinalysis at EORLA Biochemistry Lab – Carleton-Place & District Memorial Hospital

Major advancements have been made in the development of an integrated Point of Care Testing (POCT) model at The Ottawa Hospital which will ultimately lead to the electronic transmission of most POCT results to the electronic health record with full quality management monitoring of POCT devices and operators.

Regional standardization of laboratory processes will continue as sites roll out a new patient correlation and cross over validation protocol for new reagent lots. Instrument specific pediatric reference intervals will be introduced at all sites under the direction of Drs. Nathlie Lepage & Julie Shaw, EORLA's representatives on the Canadian CALIPER pediatric reference interval project. Analytical priorities will include (supervising Biochemist): completion of the implementation of new state of the art autoimmune instrumentation (Dr. Ron Booth), replacement of High Performance Liquid Chromatography equipment and implementation of Mass Spectrometry analytical services at The Ottawa Hospital (Dr. Matthew Henderson) and repatriation of on site biochemistry testing at the Riverside Campus of The Ottawa Hospital to meet clinical program needs (Dr. Christopher McCudden).

Academic activities within the Division of Biochemistry have increased significantly over the last couple of years and now include formal and informal elective rotations for non-laboratory residency programs including Rheumatology, adult and pediatric Endocrinology, Hematology, Internal Medicine and Critical Care Medicine. Under the leadership of Dr. Julie Shaw, the biochemistry component of medical laboratory technologist training program has been enhanced. Undergraduate medical school electives will be developed over the next year.

Photo: Lori Bates

EORLA Biochemistry - Children's Hospital of Eastern Ontario

The EORLA program has become a popular elective destination for clinical biochemistry fellows from the McMaster and University of Toronto programs who enjoy the opportunity to visit and experience the day to day operations and witness the roles and responsibilities of a high functioning team of Biochemists. Other teaching enhancements have included regular "lunch and learn" rounds for biochemistry staff. The Division continues to actively participate in the Canadian Society of Clinical Chemistry's biweekly "Education Roundtables" providing staff with access to high quality national and international speakers on a wide variety of contemporary topics.

Hematopathology

Dr. Antonio Giulivi
MD, FRCP(C)
Regional Discipline Head – Hematopathology, Transfusion Medicine and Tissue Typing

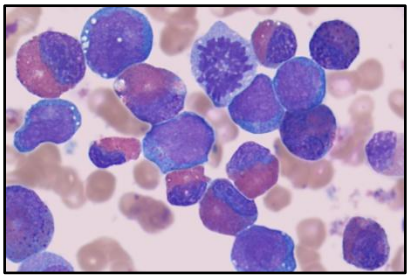
Dr. Antonio Giulivi is the Regional Discipline Head for Hematopathology, Transfusion Medicine and Tissue Typing at EORLA. He is also Associate Professor, Department of Pathology and Laboratory Medicine, Faculty of Medicine and Division Head, The Ottawa Hospital, General Campus, Hematology and Transfusion Medicine. Dr. Giulivi is also the Director Hemopoietic Stem Cell and Therapeutic Apheresis Division at Canadian Blood Services.

A licensed medical doctor in Canada and Italy, Dr. Giulivi has an extensive wealth of knowledge in Haematological Pathology, Oncology and Transfusion Medicine. As part of EORLA, he brings expertise in the fields of Hematopathology, Stem Cell Collection and Processing and Transfusion Medicine Stem Cells as well as Infectious Diseases related to blood transfusions. He is actively engaged in research related to Cyro Preservation and Fibrin Glue.

Prior to joining EORLA, Dr. Giulivi served extensively for the Center for Infectious Disease Prevention and Control and the Canadian Red Cross. He has been the Director for the Department of Haematology at both The Ottawa Hospital and the Queensway Carleton Hospital.

What is hematopathology?

Hematopathology is focused on the study, investigation, diagnosis and therapeutic monitoring of disorders of blood, blood-forming elements, hemostasis and immune function in adults and children.



An example of acute leukemia in a bone marrow aspirate, image provided by Dr. L. R. Shier

What does a Hematopathologist do?

Using components of immunology, biochemistry, molecular pathology, and genetics, hematopathologists to investigate and monitor clinical disorders. Their specialties are in the area of:

- blood elements
- blood forming organs
- hemostatic function
- transfusion therapy

Specialists in hematopathology have an important role to play in the development of standards and guidelines for optimal utilization of diagnostic laboratory investigations and blood or blood product transfusions.

Hematopathology, Transfusion Medicine and Tissue Typing

The Division of Hematopatology and Transfusion Medicine is distinct within the Department of Pathology and Laboratory Medicine, in that it provides both diagnostic services as well as therapies in the form of blood and blood products for transfusion. Hence, the team's aims are always dual - to provide accurate and timely diagnoses in hematologic testing and to provide safe and adequate transfusion therapies.
The Division of Hematopathology and Transfusion Medicine is made up of the following sections:

- Routine Hematology;
- Special Hematology;
- Flow Cytometry;
- DNA Lab;
- Tissue Typing; and
- Transfusion Medicine.

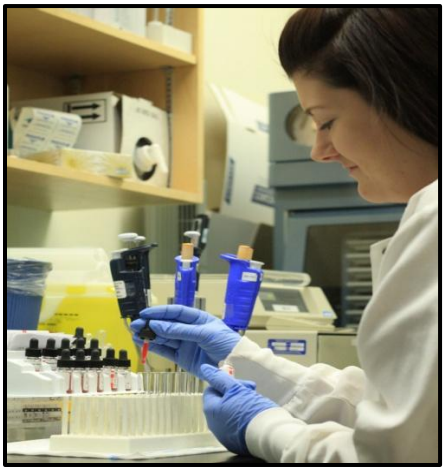


Photo: Lori Bates

EORLA Transfusion Medicine Laboratory - Children's Hospital of Eastern Ontario

The Division also is responsible for two (2) recognized Canadian University Programs; Hematopathology Residency Training Program and Transfusion Medicine Residency Training Program.

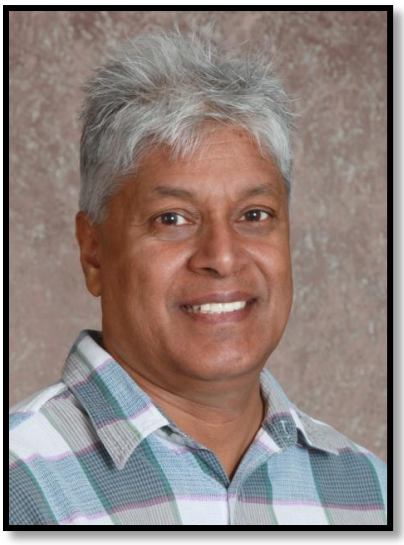
The Division is composed of five (5) Medical personnel and one (1) Scientist. Each medical staff has their own expertise and their own mandate for the region. For example, Dr. Elianna Saidenberg is responsible for Transfusion Medicine, Dr. Luke Shier handles all Morphology issues, Dr. Ruth Padmore handles teaching for the region, Dr. Zhaodong (Mike) Xu handles Quality Assurance and QMP-LS, Dr. Jain Ping Li is responsible for Tissue Typing and DNA and Dr. Giulivi is the Head of the Division with expertise in the areas of Transfusion Medicine and Stem Cells.

We are extremely proud of the diagnostic services we provide to the EORLA region. Each of our five Hematopathologists provides consultation services to a regional hospital's or hospitals' Hematology laboratories to help ensure quality reporting of routine Hematology testing such as complete blood counts and basic coagulation testing. This is done through regular visits to the labs and review of their internal quality control measures. Additionally, each Hematopathologist Consultant participates in the laboratories' external quality assessment programs such as QMPLS and CAP. Additionally, abnormal test results requiring Hematopathologist review such as abnormal blood films are reviewed at The Ottawa Hospital, General Campus each day. In this way, we ensure that serious morphologic diagnoses of blood problems are made quickly, to ensure patients receive appropriate therapy. All of our Hematopathologists also provide consultation services, interpreting bone marrow aspirates and biopsies performed in EORLA regional hospitals. This invaluable service enables expert diagnostic input on complex hematologic problems.

In addition to consultation to regional hospitals on routine hematologic testing, The Ottawa Hospital site of EORLA, also acts as a referral centre for multiple specialized hematology tests. Chief among these is flow immunophenotyping for hematologic malignancies. Samples of peripheral blood, bone marrows and tissues, are received from throughout the region for analysis for presence of leukemias, lymphomas and other malignant hematologic conditions. Testing for benign blood disorders such as hemoglobinopathies and hemostatic disorders, are also performed at The Ottawa Hospital site.

For many years, the expertise of The Ottawa Hospital (TOH), Transfusion Medicine Laboratory technologists in resolving serologic issues in transfusion medicine has been recognized throughout the region. Complex cases of allo-antibody identification are routinely referred to the TOH laboratories for expert assistance. This is an important diagnostic service provided to EORLA regional hospitals that assists in preventing serious transfusion complications. Each Hematopathologist in our Division also consults with an EORLA hospital or hospitals, to provide support for transfusion procedures and processes, as well as quality assessment.

Microbiology



Dr. Karam Ramotar, PhD Regional Discipline Head – Microbiology

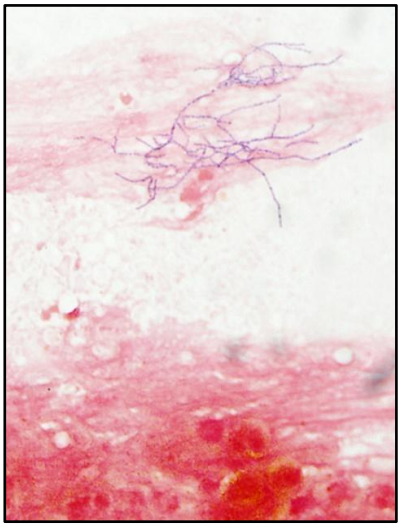
Dr. Ramotar is a Molecular Microbiologist at the Ottawa Hospital in the Division of Microbiology and also has an academic appointment at the University of Ottawa as an Associate Professor in the Department of Pathology and Laboratory Medicine. Since April 2012, he has been head of the Division of Microbiology and has been Regional Discipline Lead for EORLA Microbiology since January 2013.

Dr. Ramotar's primary function at the hospital is to direct the molecular diagnostic and genotyping service offered by the Division of Microbiology. He has extensive expertise in the field of clinical diagnostic microbiology both in terms of technical and operational knowledge. His expertise in this area was instrumental in assisting in the implementation of diagnostic testing for TB and sexually transmitted infections for a Canadian funded public health Program in Guyana, South America.

Dr. Ramotar is actively involved in a number of hospital and Regional committees. These include being co-Chair of the department of Pathology and Laboratory medicines Quality Committee, a member of the EORLA Quality committee and chair of the regional microbiology working group. Dr. Ramotar is an assessor for Ontario's Laboratory Accreditation Program (QMPLSA-OLA).

What is Microbiology?

The Division of Microbiology performs testing in routine bacteriology, mycology, mycobacteriology and virology. A microbiologist studies the characteristics of pathogens, their modes of transmission, mechanisms of infection and growth. Using this information a treatment can be devised. Microbiologists often serve as consultants for physicians, providing identification of pathogens and suggesting treatment options.



Gram stain of Nocardia species in a brain biopsy, provided by Dr. Karam Ramotar

What does EORLA's Microbiology program look like?

The microbiology reference laboratory provides service to The Ottawa Hospital as well as routine and referral service to the Children's Hospital of Eastern Ontario the EORLA community hospitals. It provides training to MLT students from St. Lawrence College, and supports the medical Microbiology, adult ID and pediatric ID resident training programs. Members of the academic staff actively participate in university of Ottawa undergraduate and postgraduate teaching and are actively involved in applied clinical microbiology research.

Microbiology

The Division of Microbiology is committed to establishing an environment that will better promote service the region, education and development of staff resources.Through collaboration and cooperation, the division of

microbiology will focus on quality and staying at the leading edge of technology in performance of diagnostic microbiology.

The Division of Microbiology:

- Provides cost-effective, quality tertiary-level microbiology services for the patients it serves.
- Ensures that specimen processing and results that are reported to users are clinically relevant.
- Utilizes a quality management program to monitor the proper handling, processing, and reporting of patient results.
- Provides consultative services in Clinical Microbiology, Infectious Diseases, and Infection Control Provides excellence in teaching to a broad range of health care
- professionals and allied health care workers, including laboratory technologists and technicians, residents in Medical Microbiology, and fellows in Infectious Diseases.
- Supports and engages in relevant clinical research and methods development.
- Provides an environment that encourages continued personal growth, education and development.

Photo: Lori Bates

EORLA Microbiology lab – Children's Hospital of Eastern Ontario

Microbiology Accomplishments

In the 2012/2013 year, the Microbiology team has been working to streamline processes and to promote standardization within the region. A focus on efficient, high quality test results is enhancing the care patients receive throughout the region. Over the past year, the Microbiology division has successfully:

- Supported the transfer of the microbiology services from Glengarry Memorial Hospital and Cornwall Community Hospital to the EORLA Microbiology Reference Lab
- Implemented and completed the first Lean initiative at the Reference Laboratories
- Engaged in the evaluation of newer technologies in microbiology – Mass Spectrometry based identification of microorganisms; newer molecular technologies for MRSA detection such as sequencing based identification of bacteria
- Begun the process of streamlining operations by updating the management structure of the Reference Lab
- Continued the robust training program for staff and mentoring of staff for supervisory and management positions installed PCs with double screens (monitors) at all work stations within the reference lab to support the work of staff
- Completed a full conversion to electronic manuals

While much progress has been made within the division of microbiology in the past year, there is still opportunity for growth. In the coming months, the division will be focused on:

- Test and report standardization for microbiology EORLA wide is ongoing - led through the DSWG
- Establishment of meaningful quality indicators to monitor ongoing performance EORLA wide
- Review of safety practices within microbiology EORLA wide is ongoing
- Increased medical/scientific support for microbiology labs within EORLA
- Continued support for vibrant microbiology residency program
- Continued support for MLT student training

Virology

Dr. Tim Karnauchow
Chief – Regional Virology Laboratory – Children's Hospital of Eastern Ontario

The Regional Virology Laboratory (RVL), situated at the Children's Hospital of Eastern Ontario (CHEO), provides diagnostic virology testing for pediatric, as well as adult patients, in eastern Ontario. RVL offers a comprehensive menu of viral testing, including: virus isolation, virus antigen detection, electron microscopy, serology, and molecular detection. During respiratory season, specimens are tested directly for both RSV and influenza. RSV and influenza are detected by rapid EIA (stat and after-hour requests) and by direct fluorescent antibody detection of viral particles (DFA). Specimens are set up for conventional cell culture in order to isolate influenza and other respiratory viruses present (parainfluenza, adenovirus, etc.).

Virus isolation

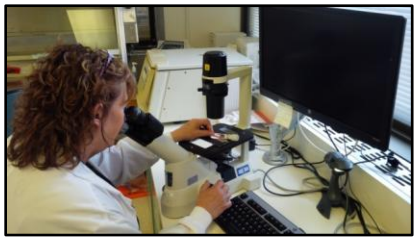
Conventional cell culture is used to recover common viruses from patient specimens. Cultures are set up and examined daily for 7 to 28 days, depending on specimen source and virus requested.

Antibody staining

Direct (DFA) and indirect antibody staining/microscopy are used to identify respiratory viruses in clinical specimens to confirm the identity of viruses isolated in cell culture, and also form the basis of certain serologic tests.

Electron microscopy

Electron microscopy (EM) allows the direct visualization of virus particles in patient specimens and of viruses isolated by cell culture. The principal use of EM is the identification of non-culturable or difficult to culture viruses (e.g. noroviruses, rotavirus, polyomaviruses, poxviruses).



EORLA Virology Laboratory – Children's Hospital of Eastern Ontario, photo provided by Dr. T. Karnauchow

Serology

Serologic diagnosis is based on the detection of an agent-specific immune response in the infected host. Serology is most often useful retrospectively, but in certain instances can be useful to identify acute infection. Antibody detection method varies depending on the agent in question, and includes IFA, latex agglutination, and manual or automated ELISA assays.

Molecular detection

Tests based on the amplification of nucleic acid (PCR and its derivatives; real-time PCR) have increasingly become utilized in the clinical virology laboratory. Both DNA and RNA-containing agents can be detected using this technology. Molecular assays allow the qualitative detection of most agents, as well as the quantitative detection (i.e. viral load determination) of select agents.

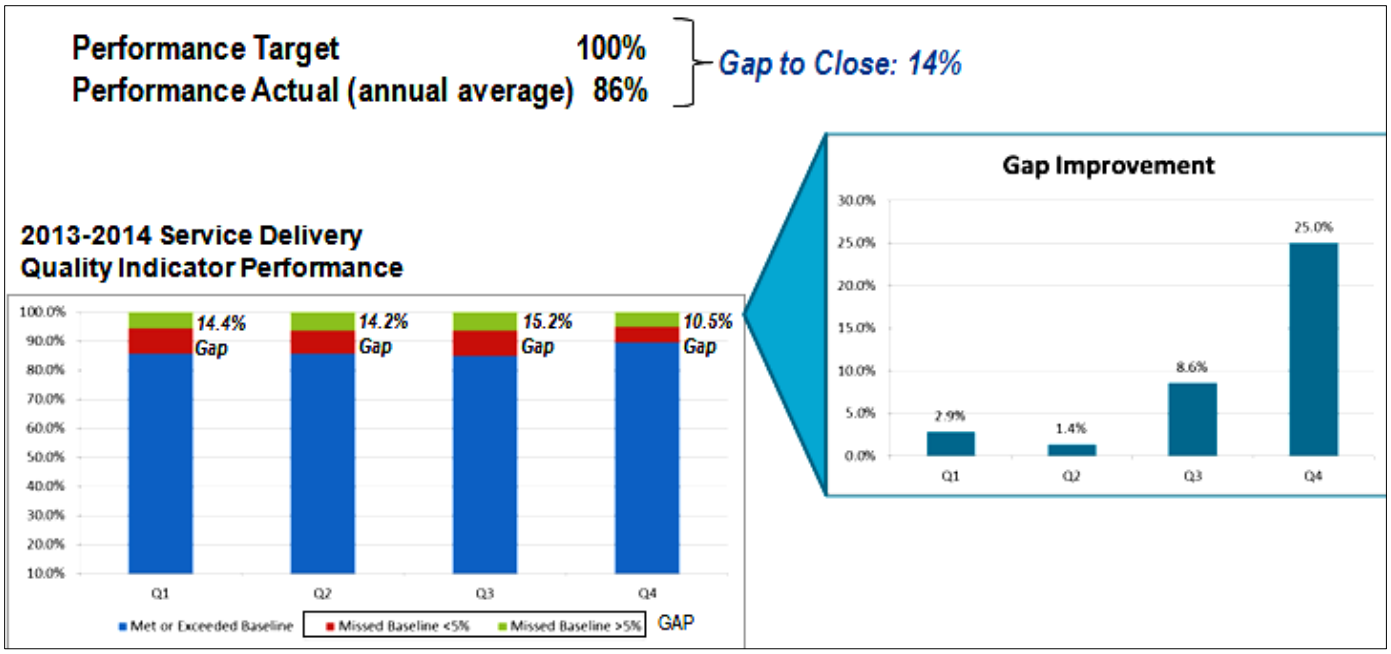
EORLA Quality

The Eastern Ontario Regional Laboratory Association has been committed to quality since inception. In fact, it was a commitment to higher quality and standardization that formed the roots of the integrated medical laboratory model that EORLA is delivering.

Quality is one of the foundations on which EORLA was established and continues to be a pillar in all decision making and best practice implementations. Each staff member and medical and scientific leader is accountable for ensuring that their work leads to high quality and safe patient care.

The Site Operations Managers work with staff and leadership to ensure that their laboratories are meeting or exceeding regional quality benchmarks. They work hand-in-hand with EORLA leadership to ensure that quality is never compromised in the decision making process.

In its first year, EORLA made a commitment to stabilization. With its Hospital partners, it was agreed that EORLA would focus its energies on maintaining a level of quality (through testing, service delivery and benchmarking) similar or better than the one that each Member Hospital had achieved prior to integration. EORLA currently reports and monitors more than 430 quality indicators quarterly; with a wide scope of performance including turnaround times for lab tests, as well as staff competency and performance proficiency testing. By measuring Quality Indicators, EORLA has been able to ensure service delivery baselines are met.



Service Level Delivery Attainment

Regularly, the results are presented to the Service Delivery Committee – a dedicated group of our Member Hospital partners who hold accountability for quality within their organization. Together they review the Indicators and are determining the most relevant areas in which EORLA needs to focus its energies and efforts for improvements.

Likewise, EORLA has several other committees dedicated to the delivery of high quality patient care. The EMSAC Quality Sub-Committee, and its two working groups (i.e. the Quality Working Group and the Standards2 Quality Committee) are focused entirely on quality at both the technical and medical levels. Regular meetings of the committees are held to review processes, to share best practices and to align all EORLA activities around quality.

The EORLA Board Patient Safety and Quality Committee has recently been created to ensure that there is appropriate oversight of quality and patient safety for the provision of high quality diagnostic testing that meets the clinical service requirements of our member organizations. This committee has the responsibility to advise on patient safety and quality issues to EORLA operations, review all accreditation assessments, review audits on critical events, review reports on continuous quality improvement initiatives, monitor quality metrics and approve quality improvement plans.

Because quality is so important to the work EORLA does, EORLA has completed many projects to assess and standardize processes to improve quality within all regions including:

- Point of care testing improvements
- Validation of transportation bags
- Regular reporting of Quality Indicators
- Increased access and use of the Champlain LHIN SharePoint Drive to facilitate the collection and storage of documents
- Efficient and effective couriering of patient specimens
- Regional Laboratory Information Systems (LIS) projects that will link results
- Supply procurement implementation to support purchasing procedures at all sites
- Equal access to all EORLA sites of CLSI standards
- Quality Management Reviews
- Internal audits and mock assessments in preparation for Ontario Laboratory Association (OLA) accreditation

All EORLA laboratories have had or will be undergoing OLA Accreditation. As one of the only integrated medical laboratory associations in Canada, EORLA has great potential to expand and enhance its reach – done by showing a commitment to quality both in clinical and technical areas. Assessments by EORLA's quality leads have helped individual hospitals to raise quality by identifying improvement opportunities.

An EORLA standardized internal audit program has been implemented including the training of 47 internal auditors within EORLA, using a standardized training course.

EORLA recently completed a review ot the quality indicators and will be adopting new more relevant and standardized patient related technical quality indicators for each discipline. The new indicators were developed by the regional discipline groups with input from all EORLA laboratories. These were discussed and approved by the EORLA Medical Scientific Quality Sub-Committee, the EORLA Medical Scientific Advisory Committee and the EORLA Board of Directors.New to these indicators is the addition of LIS, Pre and Post Analytical, and Outpatient Phlebotomy indicators to aid us in seeing performance from order to reporting. Another improvement has been the addition of Point of Care testing (POCT) indicators. POCT is quickly becoming a growing technology to get patients testing at the bedside with quick response to results.

As laboratory testing touches almost all patient interactions with hospitals it is important for EORLA to be able to continually improve the services we offer our clients and patients.

As continuous quality improvement is vital to progressing towards better laboratory testing, and reporting for all, EORLA has partnered with continuous improvement specialists to ensure we are working at maximum efficiency and effectiveness from receipt of specimen to report resulst while maintaining staff satisfaction. The Lean Process was only just beginning at the end of the 2012/2013 fiscal year, but will allow EORLA to build on a successful foundation to improve quality processes even more in the coming months and years.

Quality Improved through Communications

One of the best ways that EORLA has been able to facilitate and improve quality within laboratories is by sharing information. Regular team meetings that encompass leaders and managers from throughout the region are allowing for the sharing of information, challenges and solutions. By building on a shared expertise, EORLA has been able to implement best practices at sites from our smallest Members to our largest Member Hospitals.

In 2013/2014, improved communications due to the integrated laboratory medicine model has led to positive changes. Communication has been facilitated by the quality group for:

- Changes in testing and methodology between EORLA sites
- Quality indicator data to member hospitals and their boards

Photo: Lori Bates

EORLA Hemotoloty Laboratory – Almonte General Hospital

Education and Improved Quality

Education is recognized as an integral part of improving quality within the laboratories and facilities EORLA operates. Not only is EORLA working to ensure existing staff are well trained and knowledgeable about quality processes, but also that they are reaching out to our educational partners to ensure their curriculum and students are meeting the needs of a largely integrated medical laboratory. EORLA has expanded its reach of colleges, universities for training new leaders in the medical laboratory field. Standards for employment roles are being established and adhered to support the high quality delivery of patient care.

Our EORLA corporate quality leads are also sharing their expertise beyond the walls of our Member Hospitals. In 2013/2014 EORLA appointed a representative to the Algonquin College Digital Health Program Advisory Committee. EORLA along with other parties have had preliminary talks with Algonquin College concerning the need to re-institute the Medical Laboratory Technology Program.

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Education

The Department of Pathology and Laboratory Medicine at the University of Ottawa is comprised of over 50 academic staff who are located within the Faculty of Medicine at the University of Ottawa's Roger Guindon Hall campus, the Ottawa Hospital (General, Civic and Riverside campuses), as well as the Children's Hospital of Eastern Ontario(CHEO). Many staff members at the University of Ottawa Heart Institute are also members of the Department and a number of researchers at Health Canada maintain adjunct status in the Department.

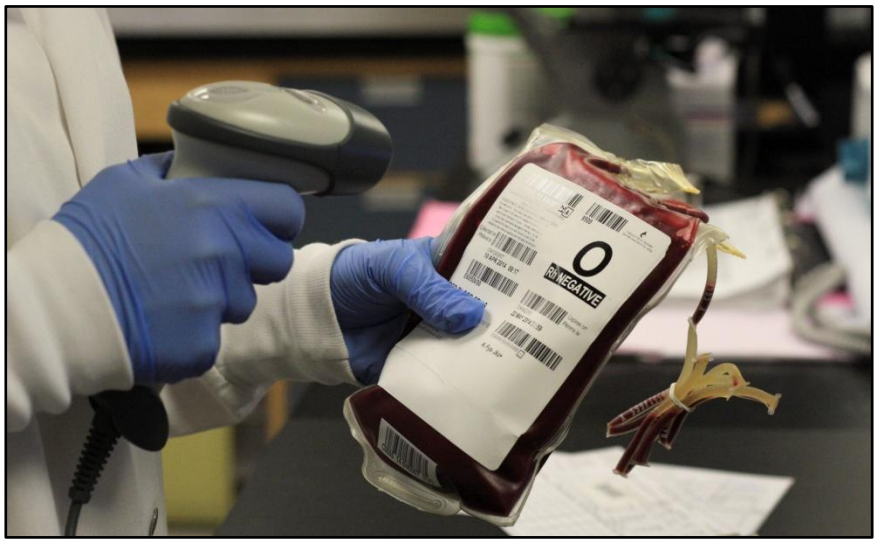


Photo: Lori Bates

EORLA's Transfusion Medicine Laboratory - Children's Hospital of Eastern Ontario

The Department contributes significantly to the new undergraduate curriculum in medical education both in lectures, laboratories, tutorials and electives. The Department administers five postgraduate residency training programs of the Royal College of Physicians and Surgeons of Canada in Anatomical and General Pathology, Hematological Pathology; Medical Biochemistry and Microbiology.

In 1994, a unique unit in forensic pathology was opened that in addition to performing medico-legal autopsies, brings together physicians, coroners, residents, police, law students and RCMP toxicologists in an educational environment. The Department hosts the national archives of the Canadian Reference Center for Cancer Pathology (CRCCP) one of the largest archives of tumour pathology in North America that holds tumour sections and information that date as far back as the end of the Second World War. In 1996 the Department opened a Tissue Plastination Facility (using silicon S-10 impregnation) which is now almost in full operation and prepares tissues and organs that are extensively used in medical teaching.

The Department also administers a collaborative graduate program in Pathology and Experimental Medicine. Many academic staff, by virtue of cross appointments to several Basic Science Departments, maintain membership in the School of Graduate Studies and Research. These department members supervise graduate students and postdoctoral fellows.

Education/Residency

Hematological Pathology Residency Training Program Report

The Hematological Pathology Residency Training Program is a four year program. There are currently four (4) residents in the program; one (1) in first year, two (2) in second year and one (1) in fourth year. Three residents/fellows are writing the Royal College exams this year, and commencing in January, weekly exam review sessions for the senior residents/fellow have been provided by the staff. The program has one (1) first year CaRMS match position and we are currently interviewing for potential resident candidates for next year. The residents actively participate in the On Call Schedule, always with staff back-up. With the supervision of the Staff Hematopathologists, the residents have good research productivity, with presentations at local, national and international meetings.

Transfusion Medicine Residency Training Program Report

The Transfusion Medicine Residency Training Program does not have any trainees enrolled for the 2013-2014 academic year. We are not presently accepting foreign applicants and have not received any applications from Canadian graduates.

Anatomical Pathology Residency Training Program Report

The University of Ottawa provides a 5-year comprehensive training in Anatomic Pathology (AP), leading to eligibility to write the Royal College specialty examinations and to practice as a competent pathologist. Following the PGY-1 year, which is designed to give broad-based clinical exposure, as well as 3 months in Lab Medicine, the residents start their 4 core years of AP training. Throughout the 5 years, there is a weekly academic day (whole day Monday with lunch provided) dedicated to sessions that may include formal lectures, CanMEDS roles presentations, unknown slide rounds, gross rounds, autopsy rounds, cytology teaching, journal clubs and research: this is protected time for residents, i.e. no service duties. The department annually sponsors an active visiting professor program attracting world-class pathologists and scientists. Residents attend a number of conferences throughout the year and are encouraged to make presentations at national and international meetings. The curriculum encompassing 4 years of core AP training has dedicated research time, electives and in-depth exposure to subspecialties. The program is based on a 13-block lunar calendar, the majority of the rotations being 1-3 blocks (each block is 4 weeks) in duration. The evaluations and programs are structured to conform to the Royal College training specialty requirements including the CanMEDS 2005 objectives. The residents' progress is closely monitored during the various rotations with graded responsibilities and teaching sessions, and by a formal practice written & oral examination, once a year in addition to end of rotation practice texts. Residents are required to write the ASCP In-Service exam each year.

General Pathology Residency Training Program Report

This is a five year program comprising one year of internship (PGY1) followed by two years in Anatomic Pathology, six months each in Hematopathology, Medical Biochemistry, and Medical Microbiology and a six month elective. The program provides opportunities to achieve the educational requirements of the Royal College of Physicians and Surgeons of Canada, and to acquire the diagnostic and interpretive skills required for the practice of General Pathology. The resident will be exposed to the diversity of approach, equipment and expertise in the various laboratories and will actively participate in both the routine work and academic activities to develop (a) a thorough knowledge of the laboratory operations, including management, (b) diagnostic and interpretive skills, and (c) skills as a consultant and a participant in continuing education programs in the hospital setting.

Medical Microbiology Residency Training Program Report

Medical Microbiology PGY-1

This year consists of 16 weeks of Medicine/Medical Specialties, 4 weeks of Surgery, 4 weeks of Pediatrics, 4 weeks of Emergency Medicine, 4 weeks of Obstetrics & Gynecology, 4 weeks of Family Medicine, 4 weeks of Psychiatry, and 12 weeks of Microbiology.

Photo: Lori Bates

EORLA Microbiology Laboratory – Children's Hospital of Eastern Ontario

Medical Microbiology PGY-2 to 4

Medical microbiology is a five year program with the first year structured for successful completion of MCCQE Part II. The second year is the first year of the core microbiology training, with rotations at all three laboratory sites. The third year includes 6 months of additional core microbiology training followed by 6 months of clinical training. This includes Infectious Diseases but may also include additional medical rotations of particular relevance to Microbiology. The clinical training will also include clinics in general Infectious Diseases, HIV, travel and tropical diseases, TB, Hepatitis, and STDs. The fourth year includes 6 months of core microbiology training and 6 months of clinical rotations. The core microbiology training will provide 48 weeks of bacteriology, 16 weeks of virology, 8 weeks of mycology, 8 weeks of mycobacteriology, 12 weeks of pediatric microbiology, 8 weeks of parasitology, and 4 weeks of infection control.

Medical Microbiology PGY-5

The final year of training is flexible and planned according to the needs and interests of the resident to provide further experience in microbiology and to provide the trainee with a greater level of responsibility. It may be consist of clinical, laboratory, or basic microbiology rotations. This may also consist of electives at other centres.

Medical Microbiology Research

The research interests of members of the Division of Microbiology and the Division of Infectious Diseases are diverse and include: molecular diagnostics, laboratory detection and molecular epidemiology of antimicrobial resistant bacteria, epidemiology of hospital-acquired infections, viral pathogenesis and vaccine development, hepatitis, basic and clinical aspects of HIV/AIDS, tropical diseases, etc. Residents are strongly encouraged to participate in research activities and to present and publish their results. Support is available for residents to attend meetings and present their research.

Pathology and Experimental Medicine (MNP) Collaborative Program

This is a collaborative program in Pathology and Experimental Medicine leading to an MSc or PhD degree in one of the primary programs (Biochemistry; Cellular and Molecular Medicine; Microbiology and Immunology or Neuroscience). The emphasis of this collaborative program is on the training of graduate students in the field of pathology and experimental medicine with the aim of providing them with the knowledge and skills to examine the basic mechanisms of disease pathology, and to develop new strategies for prevention and treatment.

Faculty members include basic and clinical scientists with interests in cancer, emerging pathogens, cardiovascular and neurodegenerative diseases.

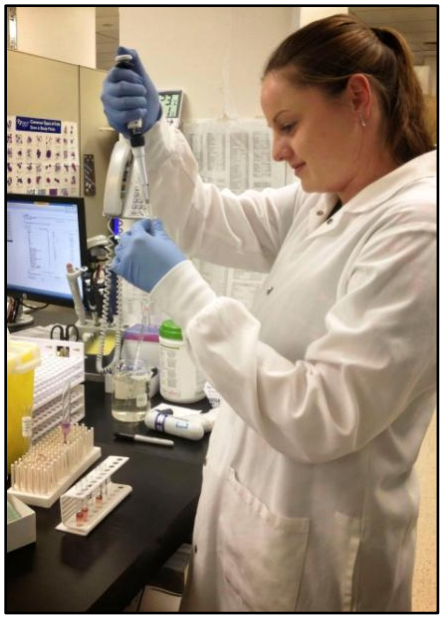


Photo: Lori Bates

EORLA Hematology Laboratory – Children's Hospital of Eastern Ontario

Undergraduate Medical Education

The Department of Pathology and Laboratory Medicine played a significant role in the development of the New Medical Curriculum. The department is still heavily involved in the teaching of Stage I (first and second year) at all levels including PBL, formal lectures and laboratory demonstrations. The Department is also involved in Stage II (third and fourth year) but to a lesser extent.

With the inception of the Faculty of Medicine's new "Electronic Curriculum" and laptop program in 2001, the Department remains at the forefront of this endeavor. A number of web-based teaching modules are available that will enable students to review both lectures and laboratory sessions remotely.

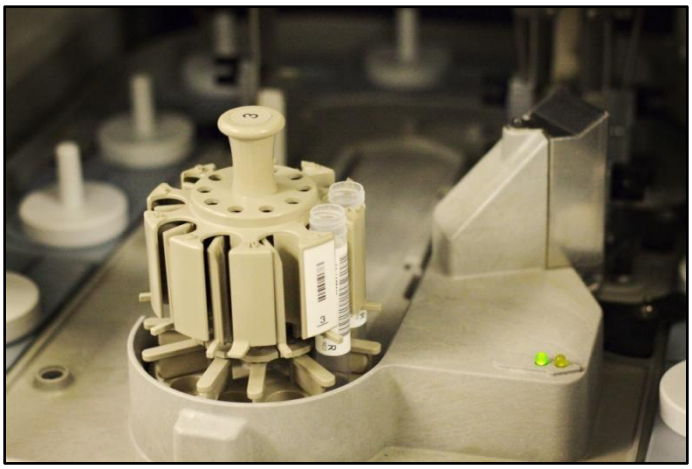


Photo: Lori Bates

EORLA Biochemistry Laboratory – Children's Hospital of Eastern Ontario

EORLA Graduate Programs

CMM 5001: The Pathological Basis of Disease. A Course for Graduate Students

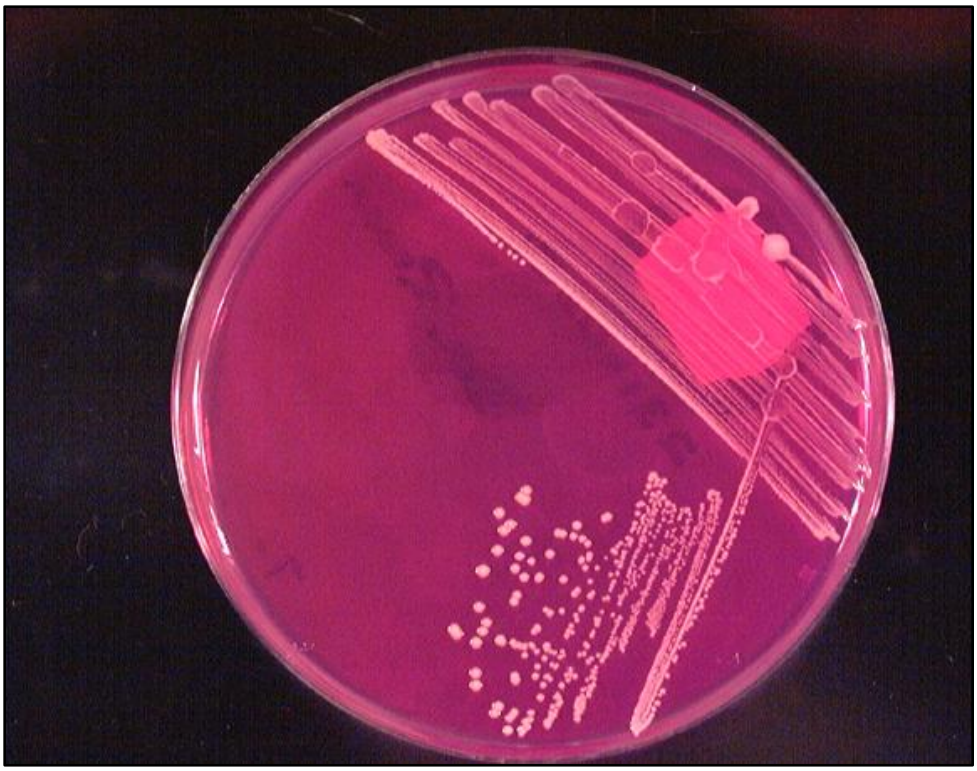
An introductory course to general pathology for graduate students in the life sciences. This course teaches fundamental concepts of the basis of disease as viewed from a general pathology perspective. It provides 3-hour weekly lectures during the winter term dealing with manifestation of disease at the macroscopic and microscopic levels. Background lectures are given on the morphology of normal tissues and organs and in investigative approaches used. General Pathology of the following topics is discussed in the different lectures: 1. Hypertrophy, atrophy, hyperplasia, aplasia, metaplasia, dysplasia, neoplasia. 2. Storage diseases. 3. Extracellular space pathologies. 4. Cell injury, necrosis and apoptosis. 5. Inflammation and edema. 6. Repair. 7. Immunopathology. 8. Neoplasia. Benign, malignant. 9. Blood vessels. Hemostasis, thrombosis and embolism. Atherosclerosis and arteriosclerosis. Heart disease. Heart failure, pathological hypertrophy, ischemic heart disease, infarction, myocarditis, cardiomyopathies, valvular disease. 10. Neuropathology. 11. Hematopathology. 12. Toxins/environmental injury. 13. Genetic Diseases.

Lecture	Date	Room	Topic	Professor
JANUARY				
1st Lecture	January 8	RGN 2111	Intro to General Path	Dr. Rudolf W. Mueller
2nd Lecture	January 15	RGN 2111	Methods in Pathology	Dr. Mercedes L. Kuroski/ Dr. Adolfo de Bold
3rd Lecture	January 22	RGN 2111	Cell and tissues	Dr. Safaa El-Bialy
4th lecture	January 29	RGN 2111	Organ Pathology	Dr. Rudolf W. Mueller
FEBRUARY				
5th Lecture	February 5	RGN 2111	Molecular Pathology	Dr. Olga Jarinova
6th Lecture	February 12	RGN 2111	Cardiovascular	Dr. John P. Veinot
7th Lecture	February 19	RGN 2111	Neoplasia	Dr. Trevor A. Flood
8th Lecture	February 26	RGN 2111	Genetic diseases	Dr. Joseph de Nanassy
MARCH				
9th Lecture	March 5	RGN 2111	Endocrine	Dr. Qiao Li
10th Lecture	March 12	RGN 2111	Gastrointestinal	Dr. Fawaz Halwany
11th Lecture	March 19	RGN 2111	Neuropathology I Neuropathology II	Dr. Jean Michaud
12th Lecture	March 26	RGN 2111	Hematopathology	Dr. Zhaodong (Mike) Xu
			APRIL	
13th Lecture	April 2	RGN 2111	Issues in Toxicological Pathology	Dr. Colin Rousseaux

EORLA Undergraduate courses

Course Name	Instructor
Introduction to Autopsy	Alfredo Walker
Genetic Alterations in Cancer	Bruce Burns
Cours: Anatomie et fonction des nœuds lymphatiques	Bruce Jamison
Cours: Lymphomes malins et myélomes plasmocytaires	Bruce Jamison
Microscopie: Myélome et lymphoma	Bruce Jamison
Microscopy: Cancer of the Lung and Airways	Chi Lai
UDA: Pathology of Interstitial Lung Disease	Chi Lai & Harman Sekhon
Introduction to Inflammation	David Grynspan
Pathologie de la monoarthrite	Denis Gravel
Pathology of Monoarthritis	Denis Gravel
Introduction à l'autopsie	Éric Bélanger
ASU : Discussion interactive : maladies glomérulaires, aspects cliniques et pathologiques	Éric Bélanger
Microscopie : Maladie rénale	Éric Bélanger
Normal Blood and Marrow and Red Cell Disorders	Hakan Buyukdere
White Cells Disorders (LAB)	Hakan Buyukdere and Manisha Lamba
Microscopy: Airflow Diseases of the Respiratory Tract	Harman Sekhon
Microscopic Lab: Respiratory Infections	Harman Sekhon and Chi Lai
Chronic Inflammation	Iris Teo
Pathology of Atherosclerosis	John Veinot
Pathology of Valvular Disease	John Veinot
Pathologie athérosclérose	Joseph de Nanassy
Pathologie de la valvulopathie	Joseph de Nanassy
Lecture: Lymphatic Function & Anatomy	Manisha Lamba
Lecture: Malignant Lymphomas and Plasma Cell Myeloma	Manisha Lamba
Troubles de la croissance	Marcio Gomes
Altérations génétiques du cance	Marcio Gomes
Maladie pulmonaire interstitielle	Marcio Gomes
Microscopie : Infections respiratoires	Marcio Gomes
Microscopie: Cancer du poumon et des voies aériennes	Marcio Gomes
Cours : Introduction à la néoplasie	Nicolas Roustan Delatour
Lab: Neoplasms	Nicolas Roustan Delatour
Lab Néoplasmes	Nicolas Roustan Delatour
Microscopie: Obstruction à la circulation de l'air dans les voies respiratoires	Nicolas Roustan Delatour
Introduction à l'inflammation	Nicolas Roustan-Delatour
Acute Inflammation	Nicolas Roustan-Delatour
Inflammation aiguë	Nicolas Roustan-Delatour
Inflammation chronique	Nicolas Roustan-Delatour
UDA : Clinical and Pathological Perspectives	Paula Blanco

Course Name	Instructor
Hematopoeisis II: Red Cells & Platelets	Ruth Padmore
Microscopy: Myeloma and lymphoma	Ruth Padmore and Philip Berardi Manisha Lamba
Lecture: Introduction to Neoplasia	Shahidul Islam
Microscopy : Renal Disease	Susan Robertson
Disorders of Growth	Trevor Flood
Diagnostic Tools in Hematology	Zhaodong Xu



Staphylococci growing on "Mannitol salt agar," image provided by Dr. Karam Ramotar

Annual Research Day

Each year, as part of the academic program supported by EORLA and the University of Ottawa, Residents are encouraged to participate in a learning day. During the day, they have the opportunity to share their work, to learn from peers and to recognize those who have excelled in their area.

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List Of Winners at the 2014 Department Of Pathology and Laboratory Medicine Annual Research Day

Nadia Mikhael Award for Best Paper presented by a Junior Resident
Soufiane El Hallani

"SEEING IS BELIEVING": DIRECT AUTOFLUORESCENCE VISUALIZATION TO GUIDE BREAST SPECIMEN GROSSING - A PROOF-OF-CONCEPT

Soufiane El Hallani[1], Catherine Poh[2], Shaheed Hakim[1], Pierre Lane2, Denis Gravel[1], Susan Robertson[1], Shahidul Islam[1]
[1]The Ottawa Hospital; [2]British Columbia Cancer Agency

2nd Best paper by a Junior Resident
Jason Wasserman

TUMOUR REGRESSION IN MAMMARY HIGH GRADE DUCTAL CARCINOMA IN SITU IS ASSOCIATED WITH HORMONE STATUS BUT NOT INVASION
Jason K Wasserman MD PhD and Carlos Parra-Herran MD

Virbala Acharya Award for Best Presentation by a Senior Resident or Fellow
Philip Berardi

RESOLUTION OF MATERNAL D TYPING USING SEROLOGY AND GENOTYPING
P Berardi[1], J Hannon[2], G Clarke, T Alport[2], G Growe[2], D Lane[2], R Fallis[2],J Cote[2], G Ochoa[3], M Goldman[2]
[1]The Ottawa Hospital, Department of Pathology and Laboratory Medicine, Ottawa, ON, Canada
[2]Canadian Blood Services Prinatal Testing Laboratories in Edmonton, AB; Regina, SK; Vancouver, BC; and Winnipeg, MB; National Immunohematology Reference Laboratory,Ottawa,ON, Canada
[3]R&D Department, Progenika Inc, Medford, MA, USA

2nd Best paper by a Senior Resident or Fellow
Phillip Williams

NUCLEAR H&E STAINING PATTERN IN FLAT EPITHELIAL ATYPIA OF THE BREAST PREDICTS PRESENCE OF CARCINOMA ON EXCISION: A DIGITAL IMAGE BASED HISTOPATHOLOGIC ANALYSIS
Phillip A. Williams MD, Bojana Djordjevic MD, Yasmine Ayroud MD, Shahidul Islam MD, Denis Gravel MD, Susan Robertson MD and Carlos E. Parra-Herran MD
Department of Pathology and Laboratory Medicine, University of Ottawa and Eastern Ontario Regional Laboratory Association (EORLA), Critical Care Wing, The Ottawa Hospital, 501 Smyth Road, Ottawa, ON, Canada K1H 8L6.

Best Poster Presentation by a Graduate Student
Munerah Hamed

MOLECULAR MECHANISM OF P300 ACTIVITY DURING EARLY MYOGENESIS
Munerah Hamed and Qiao Li
Departments of Pathology and Laboratory Medicine, and of Cellular and Molecular Medicine, Faculty of Medicine, University of Ottawa.

2nd Best Poster Presentation by a Graduate Student
Hamood Alsudais

MOLECULAR REGULATION OF EARLY MYOGENESIS
Hamood Alsudais and Qiao Li

and

Yuka Sai

CHARACTERIZATION OF IMPAIRED INSULIN SIGNALLING IN ALZHEIMER'S DISEASE
Yuka Sai, Wandong Zhang, and Qiao Li
Department of Pathology and Laboratory Medicine, and Department of Cellular and Molecular Medicine, University of Ottawa

Best Poster Presentation by a Resident
Dr. Shaheed Hakim

TUMOR INFILTRATING LYMPHOCYTES ARE CORRELATED WITH RCBI AND KI67 IN POST NEOADJUVANT BREAST CANCER
Shaheed W. Hakim MD[1], Nina Chang MD[1], Mark Clemons MD FRCP(UK)[2], Angel Arnaout MD FRCSC[1], Denis H. Gravel MD FRCPC[1], Susan J Robertson MD FRCPC[1]
[1]Department of Pathology and Department of Surgery, University of Ottawa, Ottawa, ON, Canada
[2]The Ottawa Hospital Cancer Centre, Ottawa ON, Canada

2nd Best Poster Presentation by a Resident
Dr. Nadia Sant

PSEUDO-OUTBREAK OF *MYCOBACTERIUM FORTUITUM* DUE TO CONTAMINATED ICE MACHINES
N. Sant[1-3]*, M. Desjardins[1-3], V. Chirip[1], R. Ettinger[1], I. Gorn[1], V. Roth[2-3]
[1]Eastern Ontario Regional Laboratories, Ottawa, ON, [2]The Ottawa Hospital, Ottawa ON, [3]The University of Ottawa, Ottawa, ON

Dr. M. Orizaga Award for Best Teacher
Dr. Susan Robertson

EORLA Academic Staff

EORLA's partnership with the University of Ottawa has been well-established and most of the Medical and Scientific Staff that support EORLA hold appointments with the University of Ottawa. EORLA's Academic Staff, by site:

Children's Hospital of Eastern Ontario

Melanie	Beaulieu-Bergeron	Assistant Professor
Nancy	Carson	Assistant Professor
Pranesh	Chakraborty	Assistant Professor
Francis	Chan	Assistant Professor
Joseph	de Nanassy	Associate Professor
Dina	El Demellawy	Associate Professor
Michael	Geraghty	Full Professor
Yanping	Gong	Assistant Professor
David	Grynspan	Assistant Professor
Tim	Karnauchow	Assistant Professor
Ashok	Kumar	Full Professor
Nathalie	Lepage	Associate Professor
Elaine	Leung	Assistant Professor
Brian	Luke	Adjunct Professor
Jean	McGowan-Jordan	Assistant Professor
Jean	Michaud	Full Professor
Elizabeth	Nizalik	Assistant Professor
Robert	Slinger	Assistant Professor

Health Canada

Syed	Aziz	Adjunct Professor
Harpal	Buttar	Adjunct Professor
Susie	Elsaadany	Adjunct Professor
Santokh	Gill	Adjunct Professor
Rudolf	Mueller	Adjunct Professor
Olga	Pulido	Adjunct Professor
Collin	Rousseaux	Adjunct Professor

The Montfort Hospital

Maggy	Kyrollos	Assistant Professor
Nicolas	Roustan-Delatour	Assistant Professor

National Research Council

Wandong	Zhang	Adjunct Professor

Ottawa Regional Cancer Centre

Manijeh	Daneshmand	Assistant Professor

Queensway Carleton Hospital

Vivien	Frenkel	Assistant Professor
Garth	Perkins	Assistant Professor

The Ottawa Hospital

Virbala	Acharya	Assistant Professor
Yasmine	Ayroud	Assistant Professor
Diponkar	Banerjee	Full Professor
Paul	Beaulé	Full Professor
Eric	Bélanger	Assistant Professor
Paula	Blanco	Assistant Professor
Ronald	Booth	Assistant Professor
Janis	Bormanis	Full Professor
Seymour	Brownstein	Full Professor
Bruce	Burns	Full Professor
Marc	Desjardins	Assistant Professor
Bojana	Djordjevic	Assistant Professor
James	Farmer	Assistant Professor
Trevor	Flood	Assistant Professor
Antonio	Giulivi	Associate Professor
Marcio	Gomes	Assistant Professor
Denis	Gravel	Assistant Professor
Donald	Greenway	Assistant Professor
Fawaz	Halwani	Assistant Professor
Matthew	Henderson	Assistant Professor
Cherif	Ibrahim	Assistant Professor
Shahidul	Islam	Associate Professor
Bruce	Jamison	Assistant Professor
Gerard	Jansen	Associate Professor
Peter	Jessamine	Assistant Professor
Charis	Kepron	Assistant Professor
Thomas	Lagacé	Assistant Professor
Chi	Lai	Assistant Professor
Manisha	Lamba	Assistant Professor
Jianping	Li	Assistant Professor
Kien	Mai	Full Professor
Esmeralda Celia	Marginean	Associate Professor
Christopher	McCudden	Assistant Professor
Christopher	Milroy	Full Professor
Terence	Moyana	Full Professor
Bernhard	Olberg	Assistant Professor
Ruth Frances	Padmore	Associate Professor
Carlos	Parra-Herran	Assistant Professor
Jacqueline	Parai	Assistant Professor
Sherry	Perkins	Associate Professor
Robert	Prokopetz	Assistant Professor
Bibianna	Purgina	Assistant Professor
Karamchand	Ramotar	Associate Professor
Susan	Robertson	Assistant Professor
Erling	Rud	Adjunct Professor
Elianna	Saidenberg	Assistant Professor
Harman	Sekhon	Assistant Professor

Mary	Senterman	Full Professor
Julie	Shaw	Assistant Professor
Luke	Shier	Associate Professor
Iris	Teo	Assistant Professor
Alan	Tinmouth	Assistant Professor
John	Veinot	Full Professor
Alfredo	Walker	Assistant Professor
Don	Wang	Assistant Professor
John	Woulfe	Associate Professor

University of Ottawa

Alireza	Jalali	Assistant Professor
Marilyn Ann	Keaney	Associate Professor
Marc-André	Langlois	Assistant Professor
Qiao	Li	Assistant Professor
Mary Jane	Thomas	Assistant Professor

University of Ottawa Heart Institute

Adolfo	De Bold	Emeritus Professor
Mercedes	De Bold	Assistant Professor
Thomas	Legace	Assistant Professor
Yves	Marcel	Adjunct Professor
Ross	Milne	Full Professor
Katie	Rayner	Assistant Professor
Daniel	Sparks	Associate Professor

Photo: Lori Bates

EORLA Hematology Laboratory - The Ottawa Hospital (General Campus)

EORLA is also made up of medical laboratory professionals who work throughout the region to ensure high quality, patient focused care. The following tables indicate EORLA's member sites and the number of laboratory staff working in each of EORLA's four zones:

ZONE 1

Hospital Site	Laboratory Staff
Arnprior Regional Health	7
Almonte General Hospital	4
Carleton Place District & Memorial Hospital	5
Deep River District Hospital	15
Glengarry Memorial Hospital	7
Kemptville District Hospital	7
Renfrew Victoria Hospital	19
St. Francis Memorial Hospital (Barry's Bay)	6
Winchester District Memorial Hospital	14
Total	**84**

ZONE 2

Hospital Site	Laboratory Staff
Cornwall Community Hospital	52
Pembroke Regional Hospital	40
Queensway-Carleton Hospital	76
Total	**168**

ZONE 3

Hospital Site	Laboratory Staff
Children's Hospital of Eastern Ontario	95
Hawkesbury General Hospital	20
Montfort Hospital	67
Total	**182**

ZONE 4

Hospital Site	Laboratory Staff
The Ottawa Hospital	548
Total	**548**

Grand Total of Laboratory Staff	**982**

Pathology and Laboratory Medicine Research Committee

The Pathology and Laboratory Medicine (PALM) Research Committee, a joint TOH CHEO committee, was established several years ago to administer the academic funds the Department of Pathology and Laboratory medicine receives and to ensure that those resources are available to all Medical/Scientific staff.

Specifically the purpose of the Committee is to support academic and departmental activities including clinical research, to share information about our activities and what resources are available elsewhere, to improve departmental academic resources and capabilities and to build bridges and links within our department and outside of it.

The committee membership includes a chair, representatives from each division and CHEO, the Chief Medical and Scientific Officer of EORLA and the Departmental Coordinator of Research Operations. At least once per year, the committee sends out a call for research proposals to Medical/Scientific staff members.

Photo: Lori Bates

EORLA's Pathology Laboratory - The Ottawa Hospital – (General Campus)

Academic activities which are funded through the PALM funds include clinical research, academic research or educational enhancements including equipment, research infrastructure needs, epidemiology-statistical support and laboratory tests or procedure access and supplies. The committee reviews each proposal on the basis of its scientific merit, feasibility, and ensures that the objectives of the proposal conform to the terms of reference. Since 2010, the PALM Academic research committee has funded 45 projects and disbursed more than $337,027.12.

Proposals were accepted from Microbiology, Genetics and Anatomical Pathology departments from the Children's Hospital of Eastern Ontario and The Ottawa Hospital. This year's competition saw our highest number of proposals submitted, EORLA received 25 submissions in comparison to less than 10 proposals last year. This increase reflects a growing interest in developing internal research and academic activities that will benefit EORLA by increasing our exposure among our peers.

In the past, a number of approved projects have been published or presented at national and international conferences. The increased interest in soliciting for funding through PALM is encouraging and we hope to be in a position to continue supporting the academic activities of our members.

Pathology and Laboratory Medicine PALM Grand Rounds

The bi-weekly schedule of the Grand Rounds of the Department of Pathology and Laboratory Medicine (PGR) was introduced in the 2013/14 academic year as yet another building block of the rejuvenated PGR sessions from the former bi-monthly format that existed prior to the 2011/12 academic year. This has doubled the annual number of sessions to 20 and now includes equal numbers of presentations from both medical and technology staff. The new format was introduced in direct response to a request from the technology staff for an increased number of credited contact hours. Participation in the PGR presentations is available at all EORLA sites through TOH video conferencing and the Ontario Telemedicine Network (OTN).

The present schedule also includes talks delivered by two (2) speakers who are external to EORLA. The aim is to have three (3) non-EORLA external speakers per academic schedule so that all the EORLA laboratory disciplines can benefit from the experience of other professionals in a three (3) year cycle. Because of the overwhelming response by in-house EORLA scientific staff to present in the 2013/14 schedule, there are only two (2) external speakers this year. The first external speaker was Dr Carol Cheung of the University Health Network, Toronto who delivered "The Simplicity of Complexity in Pathologist Workload Measurement" to a packed house on September 24, 2013. Dr Stephen Morley of the Department of Clinical Chemistry and Toxicology, Sheffield Teaching Hospitals NHS Trust, Sheffield England will deliver a talk on Insulin measurement on June 17, 2014.

Image of an x-ray taken of a knee surrounded by air gun pellets, provided by Dr. C.M. Milroy, Director of Forensic Pathology Unit – The Ottawa Hospital

The 2013/14 PGR Committee consisted of the following individuals by divisional/sub-divisional representation:

- Dr. Alfredo E Walker (Forensic Pathology) – Chairperson
- Dr. Julie Shaw (Biochemistry) – Committee Secretary
- Dr. Bojana Djordjevic (Anatomical Pathology) – Attendance/CME Recording Secretary
- Ms. Lorraine Hart (Laboratory Technology)
- Dr. Tim Karnauchow (Virology)
- Dr. Charis Kepron (Forensic Pathology)
- Dr. Elaine Leung (Hematology)
- Dr. Harman Sekhon (Anatomical Pathology)
- Dr Ruth Padmore (ex-officio)

Corporate Clinical Research Program

Clinical Research is an integral part of EORLA's corporate operations and its mandate of delivering world class patient-focused integrated laboratory services.

The Clinical Research Program was established to improve the laboratory's ability to facilitate and support research conducted by clinical researchers. EORLA provides researchers with dedicated laboratory services in Biochemistry, Hematopathology, Microbiology, Surgical and Anatomical Pathology. The Clinical Research Program office provides assistance with study methodology consultation, project planning, financial analysis, reporting of research client activity, and support for study coordination ranging from ethics applications to study management.

Clinical Research support is provided for both internal and external clients. Internal clients include the three campuses of The Ottawa Hospital (TOH), Ottawa Hospital Research Institute (OHRI), and the University of Ottawa Heart Institute (UOHI). External clients include the University of Ottawa, Ontario Tumour Bank (OTB), Princess Margaret Hospital (PMH), Mount Sinai Hospital, Sunnybrook Hospital, Ontario Familial Colorectal Cancer Registry, and the Juravinski Cancer Center.

Photo: Lori Bates

EORLA's Biology Laboratory - Children's Hospital of Eastern Ontario

For 2013-2014:

The EORLA Clinical Research Program provided ongoing support to 350 active clinical research clients. In addition to this work, significant work is ongoing with our members to broaden the scope of clinical research.

Photo: Lori Bates

EORLA Pathology Laboratory – The Ottawa Hospital (General Campus)

EORLA Laboratory staff processed a total of 25,000 laboratory service requests from internal and external clinical research clients.

An EORLA milestone was the opening of the first regional site industry-sponsored clinical trial at the Cornwall Community Hospital.

Our robust and active research program continues to be refined to ensure that EORLA provides world-class clinical research services and support.

Information Services & Technology

Information Technology Overview

EORLA's Laboratory Staff utilize 21 different Laboratory Information Systems across our 16 member hospital sites and 19 Laboratories.

EORLA's Information Technology initiatives are fully aligned with the strategic plan and will focus on transforming and enabling the delivery of Laboratory services through:

- Automation
- Innovation and Benefits Realization
- Standardization, and;
- Connectivity

The primary stakeholders that will be impacted by our information technology initiatives are identified to be:

- Our Members
- Our Medical & Scientific Group, and;
- Laboratory Operations and Administration.

Highlights and Accomplishments for 2013-2014

EORLA's Information Services & Technology program included the following highlights and major accomplishments for 2013/2014:

Member Hospital LIS Upgrades

EORLA laboratory resources were integral to the implementation to the following Member Hospital LIS upgrades and transitions:

Member Hospital	Category	From LIS	To LIS	Completion Date
Glengarry	Transition	PowerLab	Meditech v6.0	April 2014
The Ottawa Hospital	Ugrade	Cerner Classic 306	Cerner Millenuim	March 2014
Montfort	Transition	Technidata	Meditech v6.0	February 2014
CHEO	Transition	LabVision	Beaker	November 2013
Queensway Carleton, Arnprior, Carleton Place, Kemptville	Upgrade	Meditech Magic v5.63	Meditech v6.0	December 2012

Ontario Laboratory Information System (OLIS)

EORLA successfully completed the Discovery Phase for this project, and with the endorsement across EORLA's governance, including EORLA Medical Scientific Advisory Committee (EMSAC), Finance and Audit Committee, and the Board of Directors, EORLA's request for funding to OLIS for the Data-In implementation phase of OLIS was submitted and approved by eHealth Ontario. The implementation of the Data-In phase has commenced and is scheduled for completion in March 2015.

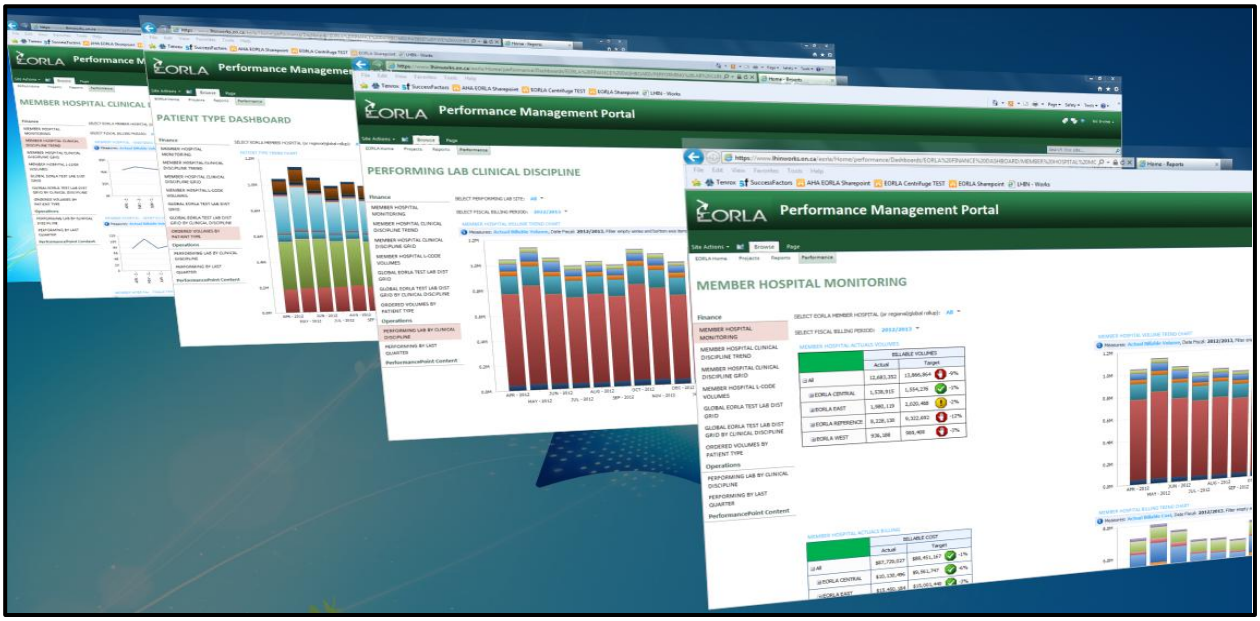
Evolution of EORLA's Business Intelligence Data Warehouse – "Centrifuge"

EORLA had developed a data warehouse known as "Centrifuge" to provide operations and billing/level data in support of our launch in April 2012.

EORLA is aggressively expanding its business intelligence capabilities by adding scheduling, payroll and financial data combined with expanded operational and clinical information to the data warehouse.

The goal is to become an information and reporting leader providing managers, executives and members with timely, relevant and accurate tools to better manage operational and clinical service delivery.

The following diagram shows EORLA operational reports currently available in Centrifuge:



Other Key Projects:

Photo: Lori Bates

EORLA Pathology Laboratory – The Ottawa Hospital (General Campus)

EORLA has several other key projects underway aimed at improving communication, connectivity and automation.

The noteworthy projects are:

A document management system that will enable centralization and management of all corporate documents, ranging from forms to policies & procedures to Ontario Laboratory Accreditation (OLA) required documentation, along with workflow efficiencies.

A website re-design project that will transform EORLA.ca from an information only-brochure website, to an interactive enabled website supporting the following business functions:

- Internal Facing
  - Support employee communications and access to services and documents
  - Introduction of clinical user experience, involving Immuno-Histo-Chemistry Slide viewing capability.
  - Introduction and support of operational and clinical reporting capability

- External Public Facing
  - Enhancements to Information on services provided and ability to further interact with EORLA through enhanced user experience.
  - Create infrastructure for Business-to-Business (B2B) and Business-to-Consumer (B2C) capability.

Independant Auditor's Report

To the Members of the Eastern Ontario Regional Laboratory Association Inc.

We have audited the accompanying financial statements of the Eastern Ontario Regional Laboratory Association Inc., which comprise the statement of financial position as at March 31, 2014, and the statements of operations, changes in net assets and cash flow for the year then ended, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian public sector accounting standards for government not-for-profit-organizations, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of the Eastern Ontario Regional Laboratory Association Inc. as at March 31, 2014, and the results of its operations and its cash flows for the year then ended in accordance with Canadian public sector accounting standards for government not-for-profit-organizations.

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June 11, 2014

Statement of financial position

as at March 31, 2014

	2014	2013
	$	$
Assets		
Current assets		
Cash	**10,988,155**	7,757,434
Due from member hospitals	**1,828,460**	6,383,132
Taxes recoverable	**2,430,823**	1,374,290
Other receivables	**82,587**	75,085
Prepaid expenses	**295,234**	438,078
	15,625,259	16,028,019
Due from member hospitals	**2,412,461**	2,211,261
Prepaid occupancy (Note 3)	**6,463,520**	6,659,420
Capital assets (Note 4)	**10,856,402**	8,644,208
	35,357,642	33,542,908
Liabilities		
Current liabilities		
Accounts payable and accrued liabilities	**5,683,628**	9,040,731
Due to The Ottawa Hospital - operations	**7,749,649**	4,798,003
Deferred revenue (Note 5)	**366,879**	222,985
Due to The Ottawa Hospital - capital (Note 3)	**7,833,777**	7,833,777
	21,633,933	21,895,496
Employee future benefits (Note 6)	**3,205,300**	2,694,900
Deferred capital contributions (Note 7)	**7,514,432**	6,119,682
	10,719,732	8,814,582
Net assets		
Unrestricted (deficiency)	**(337,993)**	308,304
Invested in capital assets	**3,341,970**	2,524,526
	3,003,977	2,832,830
	35,357,642	33,542,908

On behalf of the Board

Chairman

Director

Statement of operations

year ended March 31, 2014

	2014	2013
	$	$
Revenue		
Medical laboratory services	**105,795,866**	89,718,272
Amortization of Government of Ontario contributions	**300,000**	1,540,537
Other income	**2,720,923**	1,718,235
Amortization of deferred capital contributions	**585,968**	551,738
	109,402,757	93,528,782
Expenses		
Salary and wages	**64,027,250**	61,793,245
Medical and scientific remuneration	**14,911,132**	-
Supplies	**25,460,549**	23,377,406
Consulting and purchased services	**1,849,296**	2,776,735
Amortization of capital assets	**1,073,668**	801,284
Courier and delivery	**869,976**	712,695
Professional services	**825,999**	515,030
Legal fees	**17,840**	523,657
Amortization of prepaid occupancy costs	**195,900**	195,900
	109,231,610	90,695,952
Excess of revenue over expenses	**171,147**	2,832,830

Statement of changes in net assets

year ended March 31, 2014

	Invested in capital assets	Unrestricted (deficiency)	Total **2014**	2013
	$	**$**	**$**	$
Balance, beginning of year	**2,524,526**	**308,304**	**2,832,830**	-
Excess of revenue over expenses		**171,147**	**171,147**	2,832,830
Purchase of capital assets	**3,285,862**	**(3,285,862)**	**-**	-
Amortization of capital assets	**(1,073,668)**	**1,073,668**	**-**	-
Amortization of deferred capital contributions	**585,968**	**(585,968)**	**-**	-
Deferred capital contributions received (Note 7)	**(1,980,718)**	**1,980,718**	**-**	-
Balance, end of year	**3,341,970**	**(337,993)**	**3,003,977**	2,832,830

Statement of cash flow

Year ended March 31, 2014

	2014	2013
	$	$
Operating activities		
Excess of revenue over expenses	**171,147**	2,832,830
Items not affecting cash		
Amortization of capital assets	**1,073,668**	801,284
Amortization of deferred capital contributions (Note 7)	**(585,968)**	(551,738)
Amortization of prepaid occupancy costs	**195,900**	195,900
Increase in employee future benefits liability	**510,400**	483,639
	1,365,147	3,761,915
Changes in non-cash operating working capital items:		
Decrease (increase) in due from member hospitals	**4,353,472**	(6,259,329)
Increase in taxes recoverable	**(1,056,533)**	(943,732)
Increase in other receivables	**(7,502)**	(68,647)
Decrease (increase) in prepaid expenses	**142,844**	(210,746)
Increase (decrease) in accounts payable and accrued liabilities	**(3,357,103)**	8,043,197
Increase in due to The Ottawa Hospital - operations	**2,951,646**	3,679,209
Increase (decrease) in deferred revenue	**143,894**	(3,609,705)
	4,535,865	4,392,162
Capital activities		
Purchase of capital assets	**(3,285,862)**	(4,812,525)
Financing activities		
Deferred capital contributions received (note 7)	**1,980,718**	2,038,453
Net cash inflow	**3,230,721**	1,618,090
Cash, beginning of year	**7,757,434**	6,139,344
Cash, end of year	**10,988,155**	7,757,434

Notes to the Financial Statements

March 31, 2014

1. Nature of activities

The Eastern Ontario Regional Laboratory Association Inc. ("EORLA") was incorporated on April 15, 2003, as a shared services corporation without share capital. The member hospitals voluntarily joined EORLA to foster continued and increased cooperation between members and to support the integration of laboratory service in the region. EORLA is an integrated hospital laboratory network with sixteen acute care hospital facilities having on-site laboratories configured to meet program needs while referring specialized services to regional laboratory sites. EORLA began active operations as of April 1, 2012 and was previously considered a development stage enterprise.

These financial statements reflect the assets and liabilities and results of operations of EORLA. It does not include the assets, liabilities or operations of its member hospitals, which, although associated, are separately managed, and report to separate Boards of Directors. Note 8 provides details on related party transactions.

2. Significant accounting policies

The financial statements have been prepared in accordance with the Canadian public sector accounting standards for government not-for-profit organizations (PSAS) and include the following significant accounting policies:

Revenue recognition

EORLA follows the deferral method of accounting for contributions.

Operating grants are recorded as revenue in the period to which they relate. Where a portion of a grant relates to a future period, it is deferred and recognized in that subsequent period.

Unrestricted contributions are recognized as revenue when received or receivable if the amount to be received can be reasonably estimated and collection is reasonably assured.

Externally restricted contributions are recognized as revenue in the year in which the related expenses are incurred. Contributions restricted for the purchase of capital assets are deferred and amortized into revenue on a straight-line basis, at rates corresponding with the amortization rates for the related capital assets.

Revenue derived from laboratory services are recognized when services are rendered.

Classification of financial instruments

Financial instruments reported on the statement of financial position are classified as follows:

Cash	Fair value
Due from member hospitals	Amortized cost
Taxes recoverable	Amortized cost
Other receivables	Amortized cost
Accounts payable and accrued liabilities	Amortized cost
Due to The Ottawa Hospital - operation	Amortized cost
Due to The Ottawa Hospital - capital	Amortized cost

Prepaid occupancy costs

Prepaid occupancy costs are amortized on a straight-line basis over 40 years.

2. Significant accounting policies (continued)

Capital assets

Purchased capital assets, other than minor equipment, are recorded at cost. Minor equipment replacements are expensed in the year of replacement. Equipment is amortized on a straight-line basis over its expected useful life at rates varying from 10% to 20% per annum.

Computer hardware and software under development and construction in progress are capitalized until placed in service, at which point they will be amortized.

Employee future benefits

EORLA accrues its obligations for employee benefit plans. The cost of non-pension post-retirement and post-employment benefits earned by employees is actuarially determined using the projected benefit method pro-rated on service and management's best estimate of retirement ages of employees and expected heath care costs.

Adjustments arising from plan amendments, including past service costs, are recognized in the year that the plan amendments occur. Actuarial gains or losses are amortized over the average remaining service period of active employees.

EORLA is an employer member of the Healthcare of Ontario Pension Plan, which is a multi-employer, defined benefit pension plan. EORLA has adopted defined contribution plan accounting principles for this Plan because insufficient information is available to apply defined benefit plan accounting principles.

Use of estimates

The preparation of these financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the period. Actual results could differ from these estimates. These estimates are reviewed annually and, as adjustments become necessary, they are reported in the periods in which they become known. The most significant estimates used in preparing these financial statements include the estimated useful lives of capital assets, the amount of accrued liabilities and the assumptions underlying the employee future benefit liability calculation.

3. Prepaid occupancy costs

The Ottawa Hospital entered into an agreement with the Ministry of Health and Long-Term Care of Ontario to construct a regional laboratory, including investment in capital equipment. The Ottawa Hospital completed the project in September 2006 at a total cost of $25,375,812. The original amount of $7,833,777 represents EORLA's share of the project and is accounted for as prepaid occupancy costs. In return for this capital investment, EORLA will be permitted to occupy the premises at The Ottawa Hospital, General Campus, under the provisions set out in the related agreements. The accumulated amortization as at March 31, 2014 is $1,370,257 (2013 - $1,174,357).

The amount due to The Ottawa Hospital - capital, bears interest at prime and is payable on demand.

4. Capital assets

	Cost	Accumulated amortization	2014 Net book value
	$	$	$
Computer hardware and software under development	**8,151,323**	**-**	**8,151,323**
Equipment	**6,873,943**	**4,641,576**	**2,232,367**
Construction in progress	**472,712**	**-**	**472,712**
	15,497,978	**4,641,576**	**10,856,402**

	Cost	Accumulated amortization	2013 Net book value
	$	$	$
Computer hardware and software under development	6,157,843	-	6,157,843
Equipment	5,651,390	3,567,908	2,083,482
Construction in progress	402,883	-	402,883
	12,212,116	3,567,908	8,644,208

The computer hardware and software under development relate to costs incurred for the following laboratory integration projects: LIS Integration and Connectivity; Front End Automation, Enabling Equipment and Telepathology.

5. Deferred revenue

	2013 Balance beginning of year	Funds/ interest received	Funds used	Funds returned	2014 Balance end of year
	$	$	$	$	$
Ontario buys projects					
Continued administrative support	71,860	-	61,923	-	**9,937**
Front end automation	6,299	-	6,299	-	**-**
Telepathology	66,750	61,923	128,673	-	**-**
Regional integration initiative	32,657	300,000	300,000	-	**32,657**
Education funds	-	278,866	-	-	**278,866**
Members payroll advance	45,419	-	-		**45,419**
	222,985	640,789	496,895	-	**366,879**

5. Deferred revenue (continued)

	2012				2013
	Balance beginning of year	Funds/ interest received	Funds used	Funds returned	Balance end of year
	$	$	$	$	$
Ontario buys projects					
Continued administrative support	-	190,948	119,088	-	71,860
LIS Integration and Connectivity	1,517,704	-	417,704	1,100,000	-
Front end automation	438,794	-	432,495	-	6,299
Enabling equipment	99,978	-	99,978	-	-
Telepathology	112,109	-	45,359	-	66,750
Contingency funds	763,065	-	763,065	-	-
Ministry of Health and Long-Term Care					
Start-up funding	901,040	-	901,040	-	-
Regional integration initiative	-	600,000	567,343	-	32,657
Members payroll advance	-	45,419	-		45,419
	3,832,690	836,367	3,346,072	1,100,000	222,985

6. Employee future benefits

Non-pension benefits

EORLA offers a defined benefit plan which provides extended health care and dental insurance benefits to certain of its employees and extends this coverage to the post-retirement period. The most recent actuarial valuation of employee future benefits was completed as at March 31, 2013 and extrapolated to March 31, 2014. The next actuarial valuation is expected to take place as at March 31, 2016.

At March 31, the EORLA's liability associated with the benefit plan is as follows:

	2014	2013
	$	$
Accrued benefit obligation	**3,048,700**	2,837,600
Unamortized experience losses (gains)	**156,600**	(142,700)
Employee future benefit liability	**3,205,300**	2,694,900

EORLA's defined benefit plan is not funded, resulting in a plan deficit equal to the accrued benefit obligation. The significant actuarial assumptions adopted in estimating EORLA's accrued benefit obligation are as follows:

	2014	2013
Discount rate to determine accrued benefit obligation	**4.36%**	3.94%
Dental cost increases	**3.50%**	3.50%
Extended healthcare cost escalations, decreasing by 1.5% per annum to an ultimate rate of 4.5% thereafter	**7.50%**	7.50%
Expected average remaining service life of employees	**15 years**	15 years

6. Employee future benefits (continued)

The employee future benefit liability change for the year ended March 31, 2014 is $510,400 (2013 - $2,694,900) regarding employee future benefits. This amount is comprised of:

	2014	2013
	$	$
Transfer of liability from member hospitals	**201,200**	2,211,261
Past service cost	**-**	186,739
Current service cost	**203,000**	180,200
Experience amortization expense	**9,500**	-
Benefit payments	**(26,500)**	-
Interest on accrued benefit obligation	**123,200**	116,700
	510,400	2,694,900

Pension

Substantially all of the employees of EORLA are members of the Healthcare of Ontario Pension Plan (the "Plan"), which is a multi-employer defined benefit pension plan available to all eligible employees of the participating members of the Ontario Hospital Association. Contributions to the Plan made during the year by EORLA on behalf of its employees amounted to $4,979,844 (2013 - $4,473,969) and are included in the statement of operations.

In consultation with its actuaries, pension expense is based on Plan management's best estimates, of the amount required to provide a high level of assurance that benefits will be fully represented by fund assets at retirement, as provided by the Plan. The funding objective is for employer contributions to the Plan to remain a constant percentage of employees' contributions.

Variances between actuarial funding estimates and actual experience may be material and any differences are generally to be funded by the participating members. The most recent triennial actuarial valuation of the Plan as at December 31, 2012 indicates the plan is fully funded.

7. Deferred capital contributions

	2013				**2014**
	Balance beginning of year	Contributions received	Amortization	Funds refunded	Balance end of year
	$	$	$	$	**$**
Ontario buys projects					
LIS integration and connectivity	2,821,417	-	-	-	**2,821,417**
Front end automation	1,551,201	6,299	-	-	**1,557,500**
Enabling equipment	676,722	-	-	-	**676,722**
Telepathology	730,401	128,672	585,968	-	**273,105**
Ministry of Health and Long-Term Care of Ontario					
Start-up funding	39,690	-	-	-	**39,690**
Contingency fund foundation	33,136				**33,136**
Autoimmune analyzer	87,115	-	-	-	**87,115**
eHealth - OLIS funding	180,000	1,842,329	-	-	**2,022,329**
Diamond diagnostics	-	3,418	-	-	**3,418**
	6,119,682	1,980,718	585,968	-	**7,514,432**

	2012				2013
	Balance beginning of year	Contributions received	Amortization	Funds refunded	Balance end of year
	$	$	$	$	$
Ontario buys projects					
LIS integration and connectivity	1,651,949	1,169,468	-	-	2,821,417
Front end automation	1,118,706	432,495	-	-	1,551,201
Enabling equipment	1,115,746	99,978	539,002	-	676,722
Telepathology	706,876	23,525	-	-	730,401
Ministry of Health and Long-Term Care of Ontario					
Start-up funding	39,690	901,040	-	901,040	39,690
Contingency fund foundation	-	33,136	-	-	33,136
Autoimmune analyzer	-	99,851	12,736	-	87,115
eHealth - OLIS funding	-	180,000	-	-	180,000
	4,632,967	2,939,493	551,738	901,040	6,119,682

8. Related entities

EORLA is related to all member hospitals due to the composition of its Board of Directors. Unless otherwise stated, transactions occur in the normal course of operations and are recorded at fair value.

Medical laboratory services are invoiced to member hospitals at pre-established rates agreed upon with each individual member hospital.

8. Related entities (continued)

As at April 1, 2012, EORLA entered into agreements with member hospitals to transfer all laboratory operations to EORLA. As a result, a numbers of employees were transferred from member hospitals to EORLA. The related liability associated with the post-retirement and post-employment plans for these was transferred to EORLA, along with a corresponding receivable from each hospital to be paid over a pre-determined period. For employees who previously were not entitled to new benefits provided by EORLA, EORLA has assumed responsibility over the financing of these benefits. The resulting additional liability assumed by EORLA on April 1, 2012 is $2,398,000 and on April 1, 2013 is $201,200.

9. Financial instruments

Establishing fair value

The carrying values of due from member hospitals, taxes recoverable, other receivables, accounts payable and accrued liabilities and due to The Ottawa Hospital approximate their fair values due to the relatively short term to maturity of these financial instruments. The long-term receivable from members is non-interest bearing with no fixed terms of repayment. The due to The Ottawa Hospitals - Operating bears interest at a rate of 3.10% with no fixed term of repayment.

Unless otherwise noted, it is management's opinion that EORLA is not exposed to significant interest, currency or credit risk arising from these financial instruments.

Fair value hierarchy

The following table provides an analysis of financial instruments that are measured subsequent to initial recognition at fair value, grouped into Levels 1 to 3 based on the degree to which the fair value is observable:

- Level 1 fair value measurements are those derived from quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2 fair value measurements are those derived from inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e., as prices) or indirectly (i.e., derived from prices); and,
- Level 3 fair value measurements are those derived from valuation techniques that include inputs for the asset or liability that are not based on observable market data (unobservable inputs).

The fair value hierarchy requires the use of observable market inputs whenever such inputs exist. A financial instrument is classified to the lowest level of the hierarchy for which a significant input has been considered in measuring fair value.

Cash is a Level 1 hierarchy. There have been no movements between levels during the year.

Credit risk

Credit risk relates to the potential that one party to a financial instrument will fail to discharge an obligation and incur a financial loss. EORLA is exposed to credit risk on its accounts receivable. Management does not believe it is exposed to any significant credit risk due to the nature of the counterparties of its receivables.

Due from member hospitals are receivable within 30 days. Management has recorded its best estimate of taxes recoverable as EORLA is awaiting a ruling on its tax status by the Canada Revenue Agency for reimbursement of taxes recoverable.

Liquidity risk

Accounts payable and accrued liabilities and due to The Ottawa Hospital - operations are payable in the next fiscal. Terms of repayment of the Due to The Ottawa Hospital - capital is disclosed in note 3.

10. Comparative information

Certain comparative figures have been reclassified to conform to the current year's presentation.

EORLA's medical and scientific staff are very accomplished in their research and publications, along with their excellence in presenting. Following is a list of their publications and presentations in 2013/14.

2013/14 Academic Presentations by EORLA Medical and Scientific Staff

2013

1. Aslan B, Raby A, Bourner G, **Padmore R**. Critical values in hematology: determination and reporting pattern. XXVIth International Symposium on Technological Innovations in Laboratory Hematology/ISLH, Toronto, May 2013.

2. Internal Quality Control (QC) Practices in Ontario Hematology Laboratories. Aslan B, Raby R, Bourner G, **Padmore R**. XXVIth International Symposium on Technological Innovations in Laboratory Hematology/ISLH, Toronto, May 2013.

3. Sanci V, **Padmore R**. Mean platelet volume and immature granulocyte count in ICU sepsis patients and disposition at 30 days. XXVIth International Symposium on Technological Innovations in Laboratory Hematology/ISLH, Toronto, May 2013.

4. Scalia P, **Padmore R,** Wells PS, Giulivi A. Age adjusted D-dimer for exclusion of venous thromboembolism: Results from a hospital emergency department. eposter presentation. XXIV congress of the International Society on Thrombosis and Haemostasis, ISTH, Amsterdam, July 2013.

5. Yoshimoto M, Clifford B, Sinclair-Bourque, L, Beaulieu Bergeron M**, Padmore R,** Tay J, McGowan-Jordan J. Implementation of multiple myeloma high risk FISH panel using CD138 plasma cell selection. Clinical Innovation Day, Genetics Department, Children's Hospital of Eastern Ontario (CHEO) 2013.

6. Berardi P, Van der Jagt R, Ayroud Y, **Padmore R.** Blastic Plasmacytoid Dendritic Cell neoplasm: A Case Report. Canadian Association of Pathologist Annual Meeting, Quebec City, July 2013. Dr. Berardi was winner of the Poster Award for excellence in a Hematological Pathology poster presentation by a resident.

7. Aslan B, Raby A, Moffat K, Selby R, **Padmore R**. Quality Control Practices in Ontario Coagulation Laboratories. American Association of Clinical Chemistry Annual Meeting July, 2013.

8. **Saidenberg E.** Poster, Cardiac Tamponade as initial manifestation of acute leukemia: Canadian Association of Pathologists Annual Meeting, Quebec City, June 2013

9. **Saidenberg, Elianna**. Speaker, Blood Product utilization in Obstetrics: Queensway Carleton Hospital Obstetrics and Gynecology Grand Rounds, Ottawa, Ontario, October 9, 2013

10. **Saidenberg, Elianna**. Speaker, Thrombotic Thrombocytopenic Purpura: Ottawa Hospital Hematology Rounds, Ottawa, Ontario, May 17, 2013

11. **Saidenberg, Elianna.** Speaker, Equity, Gender and Diversity Issues in the PALM department: PALM Grand Rounds, Ottawa, Ontario May 2013

12. **Saidenberg, Elianna.** Speaker, Transfusion Considerations in Obstetrics: CBS/ORBCON 8th Annual Transfusion Medicine Symposium, April 9, 2013

13. Ibrahim Ghemlas, Robert Klaassen, Nick Barrowman, **Elaine Leung.** Characterization of the Immature Platelet Fraction (IPF) Parameters in Children with Immune Thrombocytopenia. American Society of Hematology (ASH) 55th Annual Meeting, New Orleans, LA. December 2013. Poster presentation.

14. Ibrahim Ghemlas, Robert Klaassen, Nick Barrowman, **Elaine Leung**. Utility of the Immature Platelet Fraction (IPF) in Predicting Recovery with or without treatment in Pediatric Immune Thrombocytopenia. American Society of Hematology (ASH) 55th Annual Meeting, New Orleans, LA. December 2013. Poster presentation.

15. R. Labelle, B. Caldwell, J. Grant, L. Hart, C. Pitters, K. Murto, **E. Leung**: The development of an on-line learning program for transfusion medicine at a tertiary care pediatric hospital. 23rd Regional Congress of the International Society of Blood Transfusion (ISBT), Amsterdam, NL. June 2013. Poster presentation.

16. Todd Ogilby, Margaret Roebuck, **Elaine Leung:** The ability to detect peripheral blasts in children with newly diagnosed or relapsed leukemia using the Sysmex 2100/5000 CBC Analyzers. International Society for Laboratory Hematology (ISLH) Annual Meeting, Toronto, Canada. May 2013. Poster presentation.

17. Eileen McBride, **Elaine Leung**, David Dix, Jason Ford: DEVELOPMENT OF ANNUAL NATIONAL EDUCATIONAL SESSIONS IN RESPONSE TO LEARNING NEEDS IDENTIFIED IN THE CANADIAN PHOELIX IN-TRAINING EXAMINATION. 26th Annual Meeting of The American Society of Pediatric Hematology/Oncology (ASPHO), Miami, FL, USA. April 2013. Poster presentation.

18. Roxane Labelle and **Elaine Leung**: IVIG Utilization in a tertiary care pediatric centre: evidence-based clinical ordering practices account for the majority of IVIG use. 26th Annual Meeting of The American Society of Pediatric Hematology/Oncology (ASPHO), Miami, FL, USA. April 2013. Poster presentation.

19. Gasbarrino K, Doonan R, Mantzoros C, Lai C, **Veinot J,** Daskalopoulou. Total plasma adionectin concentrations and ADIPOR1 and ADIPOR2 gene expression are associated with features of plaque instability in patients with carotic atherosclerosis. Canadian Cardiovascular Congress Montreal 2013. Can J Cardiology. Abstract # 346. 2013; 29: S230.

20. Warman Chardon J, Smith A, Huang L, Farooq F, Bourque P, Woulfe J, **Veinot J,** MacKenzie A, Bulman D, Boycott K. An evolving ataxia syndrome- autosomal dominant cerebellar ataxia with deafness and narcolepsy (ADCA-DN) caused by DNMT1 mutations Canadian Neurological Sciences Federation conference. Montreal, QC, Canada. June 2013. C. J. Neurological Sciences. Abstract # P-018 2013; 40(3) Suppl 1: S34-35.

21. Honeywell C, **Veinot J,** Gow R. RYR2 abnormalities in two children with histological evidence of ARVC. Cardiff Cardiovascular genetics Symposium 2013.

22. **Veinot J**. Cardiac Anatomy. Cardiac operating room nursing day. Collin's day. University of Ottawa Heart Institute. 2013.

23. **Veinot J.** Cardiovascular Anatomy and Pathology. University of Ottawa Heart Institute, Nursing conference. 2013.

24. **Veinot J.** A. James French Visiting Professor. University of Michigan. Department of Pathology. Ann Arbor, MI, USA. Sept 2013
    a) Workshop – gross cardiac pathology
    b) Grand rounds – Pathology of cardiac valve disease
    c) Slide Seminar – Cardiovascular pathology cases

25. A rare case of IgG4-related hypertrophic pachymeningitis involving the spine with spinal cord compression (EE-75)bPetro, S., Torres, C**., Michaud, J**., Zwicker, J. C.
    Meeting of the American Society of Neuroradiology, San Diego, May 20-23, 2013

26. A Rare Intradural Extramedullary Spine Tumor in a Child
    Al-Karawi, S., Lee, H., **Michaud, J**., Vassilyadi, M.
    Department of Surgery Research Symposium, CHEO, Ottawa, June 19, 2013

27. LRRK2 expression in innate immune cells during microbe-induced inflammation of nervous system structures (Poster P01.09) Hakimi, M., Hayley, S., Selvanantham, T., Abdel-Messih, E., Park, D., Lavoie, M.J., Philpott, D., **Michaud, J.,** Woulfe, J., Schlossmacher, M.
    Third World Parkinson Congress, Montréal, October 1-4, 2013.

28. Dysplasie spondylométaphysaire de type Sedaghatian : une première description neuropathologique **Michaud, J**., Moledina, I., Ferretti, E., Graham, G., Mason-Ward, M., Udjus, K., McMillan, H., Nizalik, E.
    Journée scientifique de la Société française de Neuropathologie, Paris, 6 Décembre 2013

29. Intraepidermal small nerve fiber density in a patient with erythromelalgia **Michaud, J.,** Bourque, P., Walker, J.D.53rd Annual Meeting of the Canadian Association of Neuropathologists, Ottawa, October 16-18, 2013 Can J Neurol Sc 41: 119-127, 2014

30. Neuropathology of Type 6 Pontocerebellar Hypoplasia Innes, A.M., Boycott, K., **Michaud, J.,** Joseph, J.T. 53rd Annual Meeting of the Canadian Association of Neuropathologists, Ottawa, October 16-18, 2013 Can J Neurol Sc 41: 119-127, 2014

31. Chao Wu Xiao , Carla M, Wood ,Dorcas Weber, **Syed A. Aziz** , Rekha Mehta , Philip Griffin , Kevin A. Cockell. Dietary supplementation with soy isoflavones or replacement with soy proteins prevents hepatic lipid droplet accumulation and alters expression of genes involved in lipid metabolism in rats. Genes Nutr 2014 Jan;9(1):373. Epub 2013 Nov 30.

32. **Syed Aziz,** Alisar Alhajj, Ivan Curran, Virginia Liston, Susan Gurofsky, Rudi Mueller, Kamla Kapal, Rekha Mehta. Hexabromocyclododecane (HBCD) induced alterations in Enzyme Histochemistry of Rat Calf Muscle. Annual Research Day, 2013, University of Ottawa, Canada.

33. **Gomes, M.** Aerogenous Metastases: An Under Recognized Game-changer in Diagnosis and Management of Primary Lung Adenocarcinoma. University of Nagasaki, Nagasaki, Japan, December 03rd, 2013.

34. **Gomes, M.** The Basis and Theory of Medical Education in North America – Competency-Based Learning. University of Nagasaki, Nagasaki, Japan, December 05th, 2013.

35. **Gomes, M.** Pathology of Lung Cancer and Genetic Markers. International Multidisciplinary Lung Cancer Day, Ottawa, Ontario, Canada, October 19th, 2013.

36. **Gomes, M.** Epidemiology of lung cancer: new trends and risk factors. 1st Champlain Interprofessional Update on Lung Cancer, Ottawa, Ontario, Canada, October 18th, 2013.

37. **Gomes, M.** Small Lung Cancers. Canadian Surgery Forum, Ottawa, Ontario, September 20th, 2013

38. **Gomes, M**. Communication in Pathology and Patient Safety (workshop). University of Montreal, Montreal, Quebec, Canada, September 13th, 2013.

39. **Gomes, M.** Lung Pathology (Slides Seminar). University of Montreal, Montreal, Quebec, Canada, September 13th, 2013.

40. University of Ottawa Department of Laboratory Medicine (Pathology) Annual Research Day, Ottawa, Ontario, April 2013. Jiang K, **Brownstein S,** Lam K, Jastrzebski A, Burns BF, Farmer JK. Immunohistochemical and histochemical analysis of conjunctival melanocytic lesions (Awarded second prize for a R1-3 Resident).

41. Association for Research in Vision and Ophthalmology, Seattle, WA, May 2013 (also, Moderator of ocular oncology and pathology session).
Brownstein S, Jiang K, Lam K, Jastrzebski A, Burns BF, Farmer JK.
Immunohistochemical and histochemical analysis of conjunctival melanocytic lesions.

42. University of Ottawa Department of Ophthalmology Annual Research Day, Ottawa, ON, May 2013.
Jiang K, **Brownstein S**, Lam K, Jastrzebski A, Burns BF, Farmer JK.
Immunohistochemical and histochemical analysis of conjunctival melanocytic lesions. (Awarded first prize for a Resident or Fellow).

43. American Society of Oculo-Plastic and Reconstructive Surgeons, Newport, RI, June 2013.
Mehta S, Oestreicher JH, **Brownstein S**, Jiang, Nijhawan N. Regression of sebaceous carcinoma of the orbit after small incisional biopsy.

44. Canadian Ophthalmic Pathology Society, Montreal, QC, June 2013 (also, Moderator of orbital and lacrimal system session III: 10 papers).
1. **Brownstein S**, Jiang K: Anterior segment mystery case (Corneal parasite).
2. **Brownstein S**, Jastrzebski A, Jordan DR, Burns BK. Bilateral intraconal orbital fat prolapse.
3. Jiang K, **Brownstein S**, Sekhon H, Britton W, Laurie S, Gilberg S: Lung adenocarcinoma in a non-smoker presenting as an intraocular neoplasm.
4. Jastrzebski A, **Brownstein S**, Jordan DR. Upper eyelid and anterior orbital vascular anomaly.
5. Mehta S, Oestreicher JH, **Brownstein S**, Jiang, Nijhawan N. Regression of sebaceous carcinoma of the orbit after small incisional biopsy.

45. Canadian Ophthalmological Society, Montreal, QC, June 2013.
1. **Brownstein S**. Sebaceous carcinoma (by invitation by the COS).
2. Jiang K, **Brownstein S,** Mintsioulis G, Lam K: Fungal keratitis in Canada.
3. Manusow J, **Brownstein S,** Lam K, Jastrzebski A, Mintsioulis G, Gilberg S, Sassani J, Jackson, WB. Traumatic secondary corneal secondary amyloidosis.

46. Hadassah University Medical Center Department of Ophthalmology Visiting Professor, Jerusalem, Israel, July 2013.
1. **Brownstein S.** Grand Rounds. Interactive CPCs.
2. **Brownstein S.** Normal anatomy and histology of the cornea.
3. **Brownstein S.** Pathology of corneal inflammation
4. **Brownstein S.** Pathology of corneal degeneration.
5. **Brownstein S.** Pathology of corneal dystrophies

47. Eastern Ophthalmic Pathology Society, NYC, NY, Oct. 2013.
Brownstein S, Jiang K, Toye B, Baig K, Mintsioulis G. Fungal keratitis in Canada: 3 cases.

48. American Association of Ocular Oncologists and Pathologists (AAOOP, Satellite meeting of American Academy of Ophthalmology [AAO]), New Orleans, LA, Nov. 2013.
Brownstein S, Jiang K, Lam K, Jastrzebski A, Burns BF, Farmer JK.
Immunohistochemical and histochemical analysis of conjunctival melanocytic lesions.

49. Slinger R, Hyde L, Moldovan I, **Chan F,** Barrowman N, Pernica J. Direct real-time PCR detection of Streptococcus pneumoniae serotypes from predominantly culture-negative pediatric pleural empyemas suggest 13-valent conjugated pneumococcal vaccine may prevent empyema in children. American Society for Microbiology General Meeting, Denver, Colorado, May 2013.

50. **Kien T Mai**, Distribution of Papillary Thyroid Carcinoma by Mapping in Coronal Sections of 125Consecutive Thyroidectomy Specimens. USCAP meeting, Baltimore, USA March 2013 .

51. **Kien T Mai,** Zuzana Kos, Eric C Belanger, Harmon Sekhon, Hassan Muhannad,Shahidul Islam. Three - Dimensional Cell Groups with Disordered Nuclei and Cellular Discohesivity (3DDD) are Associated with High Sensitivity and Specificity for Cytoscopic Urine Cytopathological Diagnosis of Low Grade Urothelial Neoplasia. Diagnostic Cytopathology. USCAP meeting, Baltimore, USA March 2013 .

52. Bradshaws\SH, Belanger E, Lamba M, **Mai KT** Robertson SJ, Sekhon H Validation of whole slide scanning for use in real time clinical frozen section consultation. USCAP meeting, Baltimore, USA March 2013 .

53. Williams PA, **Mai KT**. Primary carcinoma of renal calyx. : Can Ass Pathol Meeting, Quebec City, 2013

54. **Mai KT,** Flood TA, Williams P, Kos Z, Belanger EC. Mixed low- and high-gradepapillary urothelial carcinoma: histopathogenetic and clinical significance. Can Ass Pathol Meeting, Quebec City, 2013

55. Aleksandra Paliga, **Kien T. Mai**. Squamous Cell Carcinomas of the Anterior Oral Cavity are Commonly Associated with Simplex (or Differentiated) Oral Intraepithelial Neoplasia. Clinical and Pathological Significance. Can Ass Pathol Meeting, Quebec City, 2013

56. **Kien T Mai,** Muhannad Hassan. Histopathogenesis of Squamous Intraepithelial Neoplasia of External Genitalia and Oral Cavity. Can the Lesions be Graded ? Can Ass Pathol Meeting, Quebec City, 2013

57. Bradshaws\SH, Belanger E, Lamba M, **Mai KT** Robertson SJ, Sekhon H Validation of whole slide scanning for use in real time clinical frozen section consultation. USCAP meeting, Baltimore, USA March 2013

58. **Mai KT** Proposed technique of Coronal sectionong of Thyroidectomy specimen for Microscopic examination Can Ass Pathol Meeting, Quebec City, 2013

59. Validation of the Sysmex CS2000i Coagulation Analyzer for Special Coagulation in EORLA; Marisa Freedman, Kim Varas, Philip Berardi, **Antonio Giulivi;** International Society for Laboratory Hematology (ISLH), May 10th - 12th, 2013, Toronto, ON

60. Transfusion protocol to Support Massively Bleeding Patients: Descriptive Outcomes Based on Blood Components Transfused; Doris Neurath, Ayman Kafal, Melanie Tokessy, Nancy Cober, Shauna Love, **Antonio Giulivi**; Canadian Society of Transfusion Medicine (CSTM) Conference, June 7-9, 2013, Edmonton, AB

61. Geotyping Using the Polymerase Chain Reaction Methodology - Bioarray Hea Beadchip Assay; Neurath, Doris, Pilon, Marc, Tokessy, Melanie, Love, Shauna, Cober, Nancy, **Antonio, Giulivi;** Canadian Society of Transfusion Medicine (CSTM) Conference, June 7-9, 2013, Edmonton, AB

62. Konarski, Y, Kozlowski, M and **Kumar, A.** 2013. SHP-1/Src signalosome is a master regulator of the pro/anti-inflammatory cytokine axis in TLR4-activated signaling pathways in human macrophages. Macrophage Inflammation and Immunity, Dr. Jekyll and Mr. Hyde EMBO conference,Marseilles, France Jan. 2013.

63. Danylo Sirsky, Jay Majithia, Ali Azizi, **Ashok Kumar** . 2013. Differential involvement of TLR Signaling in the generation of cellular and humoral immune responses following oral and parenteral immunization with Dukoral® vaccine. May 2013 Posters – The American Association of Immunology (AAI) Meeting, Hawaii, USA

64. M. Saxena, A. Busca, **A. Kumar** 2013. The anti-apoptotic c-IAP-2 gene protects human monocytic cells against HIV-Vpr-mediated mitochondrial membrane depolarization and apoptosis: Involvement of TRAF 1/2 via sequential inhibition of pro-apoptotic Caspase 8, Bid and Bax Conference: 7th IAS Conference on HIV Pathogenesis, Treatment and Prevention (IAS 2013) held at Kualalumpur June 30 to July 3, 2013

65. **Sekhon, H**. Speaker, Workshop: Finding the target-Molecular testing and personalized medicine within NSCLC (non-small cell lung cancer). Canadian Association of Radiation Oncology and Canadian Organization of Medical Physicists Joint Scientific Meeting (CARO-COMP). Montreal, Quebec. Canada (September 21, 2013)

66. **Sekhon, H.** Speaker, Postgraduate course: Pathology of Lung Cancer; Personalized treatment of lung cancer. Canadian Association of Thoracic Surgeons Annual Conference. Ottawa, ON. Canada (September 19, 2013)

67. **Sekhon, H.** Speaker: "The New Adenocarcinoma: What we once called BAC". 8th Ontario Thoracic Cancer Conference, Niagara, ON, Canada. (April 14, 2013)

68. Expert Member: Discussion Penal: Difficult lung cancer cases-What to do with GGO's. (Panel Discussion / Tumour Board). Dr. Yaron Shargall, Dr. Conrad B. Falkson, Dr. Demetrios Patsios, **Dr. Harman Sekhon** and Dr. Rosalyn Juergens. 8th Ontario Thoracic Cancer Conference, Niagara, ON, Canada (April 14, 2013)

69. **Sekhon, H.** Speaker: Integration of targeted therapies in the management of non-small cell lung cancer-A multi-disciplinary approach, Ottawa, ON (CME event) (September 2013)
70. Speaker, PALM Grand Rounds: Overview of the Ontario Tumour Bank Program, Ottawa, ON. (November 2013)
71. Speaker, PALM Grand Rounds: Cervical pathology update: Prevention and early detection of cervical cancer. Where are we going? Ottawa, ON. (October 2013)

72. Burkett A., **H.S. Sekhon** and K. Amjadi. Diagnostic yield of Endobronchial/Esophageal ultrasound when conventional transbronchial needle aspiration is negative or non-diagnostic. CHEST 2013

73. **Sekhon H.S**., A. Arnaout, S. Gilbert, C.A. Jodouin, E. Pitre, M. Sienkiewicz, B. Bartlett and S. Kodeeswaran. Ontario tumour bank intitiative at the Ottawa Hospital. Ottawa Hospital Research Institute Annual Meeting, 2013, Ottawa, ON.

74. Petkiewicz S., **H.S. Sekhon** and M.M. Gomes. Histology: A reliable tool to classify NSCLC. Pulmonary Pathology Society (PPS) Biennial Meeting, Grenoble, France, June 2013.

75. Ming-Sound Tsao, Ken Craddock, Guillerme Brandao, Zhao-lin Xu, Wenda Greer, Yasushi Yatabe, Sung-Mi Jung, Anna Bojarski, Ronald F. Carter, Diana Ionescu, Aly Karsan, Gilbert Bigras, Jean Deschenes**, Harman Sekhon,** Danh Tran-Thanh, Roula Albadine, Melania Pintilie, Jean-Claude Cutz, Emina Torlakovic, Christian Couture. Canadian ALK (CALK): A pan-Canadian multicentre study to optimize and standardize ALK immunohistochemistry (IHC) and fluorescence in situ hybridization (FISH) for ALK gene rearrangements. American Society of Clinical Oncology (ASCO) Annual Meeting, Chicago, IL, USA. 2013

76. Kos Z., V. Acharya, T. Le and **H.S. Sekhon**. A unique case of uterine carcinosarcoma with prominent divergent differentiation. 64th Canadian Association of Pathologist (CAP-ACP) Annual Meeting and 27th World Congress of the World Association of Societies of Pathology and Laboratory Medicine, Quebec City, QC, Canada. 2013.

77. El Hallani S., **H.S. Sekhon**, B. Djordjevic and M. Lamba. Metastatic adenocarcinoma of the uterus with heterologous differentiation case report and review of literature. 64th Canadian Association of Pathologist (CAP-ACP) Annual Meeting and 27th World Congress of the World Association of Societies of Pathology and Laboratory Medicine, Quebec City, QC, Canada. June 2013

78. Gulavita P., V. Acharya, M. Lamba and **H.S. Sekhon.** A rare case of mammary-like gland adenocarcinoma of the vulva. 64th Canadian Association of Pathologist (CAP-ACP) Annual Meeting and 27th World Congress of the World Association of Societies of Pathology and Laboratory Medicine, Quebec City, QC, Canada. June 2013

79. Scott H Bradshaw S.H., E. Belanger, M. Lamba, K.T. Mai, S.J. Robertson and **H.S. Sekhon.** Validation of Whole Slide Scanning for Use in Real-Time Clinical Frozen Section Consultation (platform). 2013 United States & Canadian Academy of Pathology 102nd Annual Meeting and 2013 Society for Pediatric Pathology Spring Meeting, Baltimore, MD, USA. Also 64th Canadian Association of Pathologist (CAP-ACP) Annual Meeting and 27th World Congress of the World Association of Societies of Pathology and Laboratory Medicine, Quebec City, QC, Canada

80. Clancy A., C. Ma, **H.S. Sekhon,** J. Dimitroulakos, J. Weberpals. Rationalizing targeted therapy in vulvovaginal carcinoma: an exploratory analysis of epidermal growth factor receptor (EGFR) and oncogenic human papilloma virus (HPV). 2013 Harry Oxorn Postgraduate Research Day, Department of Obstetrics, Gynecology and Newborn Care, The Ottawa Hospital, ON. (Award for best Junior Resident Research)

81. Williams K., S. Islam**, H.S. Sekhon,** D. Wang and K.T. Mai. Three Dimensional Cell Groups with Disordered Nuclei and Cellular Discohesion Are Associated with High Sensitivity and Specificity in the Cystoscopic Urine Diagnosis of Low Grade Urothelial Neoplasia. 2013 United States & Canadian Academy of Pathology 102nd Annual Meeting or 2013 Society for Pediatric Pathology Spring Meeting, Baltimore, MD, USA

82. Gaikwad A., J. Inacio, A. Gupta, C. Souza, M. Gomes, **H.S. Sekhon** and C. Dennie Primary mucinous adenocarcinoma of lung: Analysis of imaging features on CT scan and significance of aerogenous spread. 2013 ARRS annual meeting. Chicago, IL, USA

83. Gaikwad A., J. Inacio, C. Souza, J. Seely, A. Gupta, **H.S. Sekhon**, M. Gomes, J. Seely and C. Dennie. Aerogenous metastases: An under recognized game-changer in management of lung cancer. 2013 ARRS annual meeting. Chicago, IL, USA

84. **Marginean, C.** Invited speaker - "Cytology of bile duct and pancreatic lesions"
OAP Annual meeting, Blue Mountain, ON (Sept 18, 2013)

85. **Marginean, C.** Invited speaker – GI regional semiannual meeting "Current issues in CRC in the region"
Oncology nurses, medical and radiation oncologists, surgeons, radiologists (May 7, 201

86. **Marginean, C.** Invited speaker - NET symposium, "Review of GI NET"
Sponsored by Novartis
Surgeons, medical and radiation oncologists (Jan 29, 2013)

87. **Marginean, C.** Invited speaker - GI oncology retreat, Perth ON
"MSI testing in CRC"
Oncology nurses, medical and radiation oncologists (Jan 2013)

88. **Marginean, C.** Invited speaker – GI CRC Journal club
"Current issues in CRC in the region"
Oncology nurses, medical and radiation oncologists, surgeons, radiologists (May 7, 2013)

89. Williams K,Willimas P, Islam S, **Marginean EC,** Sekhon H, Belanger E, Mai KT. Three Dimensional Cell Groups With Disordered Nuclei and Cellular Discohesion are Associated with High Sensitivity and Specificity of Cytoscopic Urine Diagnosis of Low Grade Urothelial Neoplasia USCAP Annual Meeting, Baltimore, March 2013

90. Allison Osmond1, Hector Li-Chang2, Dimitrios Divaris3, Vincent Falck4, Richard Kirsch2, Dong Feng Liu5, **Celia Marginean6**, Ken Newell7, Jeremy Parfitt1, Brian Rudrick7, Heidi Sapp8, Sharyn Smith9, Joanna Walsh1, Fasahat Wasty10, and David Driman1
Interobserver Variability in Assessing High-Grade Dysplasia and Architecture in Colorectal Adenomas: a Multi-Centre Canadian Study
USCAP Annual Meeting, Baltimore, March 2013

91. Scott H Bradshaw. Dale Pidutti. Denis H Gravel, 4. **E C Marginean**,. Xinni Song,. Susan J Robertson F Predicting OncoDx Recurrence Score with Immunohistochemical Markers Including Stromelysin USCAP Annual Meeting, Baltimore, March 2013

92. Bradshaw S, Nguyen B, Streutker C, Driman D, Kirsch R, Dupré MP, Meliti A, Owen D, Rahemtulla A, Riddell RH, Sapp H, Falck VG, Soucy G, **Marginean EC** Inter- and Intra-Observer Agreement in Diagnosing Dysplasia in Barrett's Esophagus - Comparison of Routine Glass Slide vs. Digital Image Examination USCAP Annual Meeting, Baltimore, March 2013

93. A practical diagnostic panel for distinguishing between hepatocellular lesions Siadat F, Williams, P, **Marginean EC.** USCAP Annual Meeting, Baltimore, March 2013

94. **Syed Aziz,** Alisar Alhajj, Ivan Curran, Virginia Liston, Susan Gurofsky, Rudi Mueller, Kamla Kapal, Rekha Mehta. Hexabromocyclododecane (HBCD) induced alterations in Enzyme Histochemistry of Rat Calf Muscle. Annual Research Day, 2013, University of Ottawa, Canada.

95. **Syed Aziz,** Victoria Hui, Saad Ulhaq, Emily Chomyshyn, Rudolf Mueller, Kamla Kapal, Rekha Mehta. Variation in the telomere signals in benign and malignant lesions from a rat mammary gland cancer initiation – promotion model. Annual Research Day, 2013, University of Ottawa, Canada.

96. **Lepage N.** Prenatal screening for Down syndrome. BioConference Live Clinical Diagnostics- webinar, May 29, 2013.

97. Plaut D, **Lepage N,** Myers K. Method validation using patient samples. Colorado Association for continuing Medical Laboratory Education (CACMLE). Webinar November 7, 2013.

98. Plaut D, Davis D, **Lepage N,** Myers K. Assessing linearity. Colorado Association for continuing Medical Laboratory Education (CACMLE). Webinar October 31, 2013

99. Plaut D, Davis D, **Lepage N,** Myers K. Teaching quality control revisited- Part 2. Colorado Association for continuing Medical Laboratory Education (CACMLE). Webinar October 24, 2013.

100. Plaut D, Davis D, **Lepage N**, Myers K. Teaching quality control revisited. Colorado Association for continuing Medical Laboratory Education (CACMLE). Webinar October 17, 2013.

101. Plaut D, Davis D, **Lepage N,** Perry C, Taylor T. Making sense of laboratory statistics. Advance for Medical Laboratory Professionals. Webinar February 28, 2013.

102. **El Demellawy D,** Monga S, Ranganathan S Society of pediatric pathology 2013,:
Role of WNT/Beta-Catenin Pathway in TPN-Induced Liver Injury: Does IHC Have a Role in Assessing the Need for Transplant?

103. COG meeting in 2013, Co-author, Small cell variant of Pediatric Anaplastic Large Cell Lymphoma: An aggressive disease. Jessica Lelinski MD, Anna Vinitski MD, **Dina El Demellawy**, Xiayuan Liang MD, Gabriela Gheorghe, MD

104. **Dina El Demellawy.** Innovation Fund Showcase 2013: HER2/neu testing in Gastric cancer in Northern Ontario population.

105. American Society of Pediatric otolaryngology Spring meeting 2013, co-author,Idiopathic Intervertebral Disc Calcification In Childhood: An Uncommon Entity For Pediatric Pathologists. Robinson J, **El Demellawy D,** Pollack IF, Green MD, Alper CM, Reyes-Múgica American Society of Pediatric otolaryngology Spring meeting 2013

106. Children's Hospital of Pittsburgh Symposium platform presentation in The International Congress of Inborn Errors of Metabolism(ICIEM)/ The Society for Inherited Metabolic Disorders Conference (SIMD) Joint Conference. 5 September 2013 and The American Society of Human Genetics (ASHG) Conference. 22-26 October 2013., co-author, Characterization of an ACAD10 Deficient mouse model: Pathological and Biochemical Analyses. Kormanik, K; **El Demellawy, D;** Mohsen, AW; Karunanidhi, A; Reyes-Mugica, M; Vockley, J (2013)

107. K. William, H. Sekhon, **S. Islam** and K. Mai. Topographic Distribution of PTC by Mapping in Coronal Sections of Thyroidectomy Specimens", United States &Canadian Academy of Pathology's 102nd Annual Meeting, March 2-8, 2013 in Baltimore, MD.

108. Residents as Teachers; Self-assessment of non medical CanMEDS roles as part of epportfolio development. Strickland, S and **Islam, S.** Academy of Innovation of Medical Education, AIME medical Education Day University of Ottawa, May 2013, Ottawa, Ontario

109. Pathology residents as mentors within a CanMEDS Framework: Teaching Medical Students in a Clinical Environment. Strickland, S and Islam, S. Academy of Innovation of Medical Education, AIME medical Education Day University of Ottawa, May 2013, Ottawa, Ontario

110. Hassan M, Amin MS, Robertson SJ, **Islam S.** Multifocal Flat Epithelial Atypia: Possible Precursor Of Breast Carcinoma USCAP, March, 2013

111. Amin MS, Al-Mutairi N, Pelletier L, Weberpals J, **Islam S.** Aberrant Expression Of Cadherin And Catenin Proteins In Ovarian Carcinoma, USCAP, March, 2013.

112. **de Bold, AJ.** Master lecture. Evolution of the functional paradigm of the heart. Faculty of Medicine, Hospital Nacional de Clinicas, Cordoba, Argentina,October 22, 2013.

113. **de Bold, AJ.** Master Lecture. Biology of the natriuretic peptides. II Department of medicine, Graduate Studies Auditorium, Faculty of Medicine, National University of Cordoba, Argentina, October 23, 2013.

114. **de Bold, AJ.** Natriuretic peptides: from its discovery to their present therapeutic use. Sanatorio Allende, Cordoba, Argentina, October 23, 2013.

115. **de Bold, AJ.** Natriuretic peptides and inflammation. National Academy of Sciences, Cordoba, Argentina, October 24, 2013.

116. **de Bold, AJ.** New aspects of natriuretic peptides in cardiology. Cardiology Society of Cordoba, Sheraton Hotel, Argentina, October 25th, 2013.

117. Schieda N, Kielar AZ, **Flood TA.** 10 Uncommon and unusual imaging variants of renal angiomyolipoma (AML): Radiologic-Pathologic correlation. Radiological Society of North America; 99th Scientific assembly and annual meeting. December1-6 2013, Chicago, IL USA. (Formal Poster Presentation)

118. Schieda N, Kielar AZ, **Flood TA**, McInnes M, Siegelman ES. Pitfalls of adrenal imaging with chemical shift (In and Opposed Phase) gradient echo MRI. Radiological Society of North America; 99th Scientific assembly and annual meeting. December1-6 2013, Chicago, IL USA. (Formal Poster Presentation)

119. Al Dandan O, Shabana W, **Flood TA,** Schieda N. (2013) Computed tomographic evaluation of prostate cancer: Looking beyond lymph nodes and bone. Canadian Association of Radiology; 76th Annual Scientific Meeting. April 25-28 2013, Montreal QC Canada. (Electronic Exhibit)

120. Schieda N, Kielar AZ, **Flood TA.** 10 Uncommon and unusual imaging variants of renal angiomyolipoma (AML): Radiologic-Pathologic correlation. Radiological Society of North America; 99th Scientific assembly and annual meeting. December1-6 2013, Chicago, IL USA. (Formal Poster Presentation)

121. Schieda N, Kielar AZ, **Flood TA,** McInnes M, Siegelman ES. Pitfalls of adrenal imaging with chemical shift (In and Opposed Phase) gradient echo MRI. Radiological Society of North America; 99th Scientific assembly and annual meeting. December1-6 2013, Chicago, IL USA. (Formal Poster Presentation)

122. Al Dandan O, Shabana W, **Flood TA,** Schieda N. (2013) Computed tomographic evaluation of prostate cancer: Looking beyond lymph nodes and bone. Canadian Association of Radiology; 76th Annual Scientific Meeting. April 25-28 2013, Montreal QC Canada. (Electronic Exhibit)

123. Gont A, Hanson J, Soucie M, Kassam A, DaSilva V, **Woulfe J,** Nicolas G, Lavictoire S, Parolin D, Restall I, Daneshmand M, Lorimer I. Inactivation of the tumor suppressor Lgl via PTEN loss promotes the invasiveness of glioblastoma multiforme. American Association for Cancer Research Annual Meeting, April 6-10, 2013, Washington DC.

124. Gray M, Munoz DA, Gray DG, Woulfe J. Alpha-synuclein in the mucosa of the human vermiform appendix. United States and Canadian Association of Pathologists Annual Meeting, 2013, Baltimore MD.

125. El Hallani S, Milman P, Zhang M, **Woulfe J.** Depletion of pancreatic intranuclear rodlets in patients with type 2 diabetes. United States and Canadian Association of Pathologists Annual Meeting, 2013, Baltimore MD.

126. Warman Chardon J, Smith A, Farooq F, Huang L, Sawyer S, Dyment D, Bourque P, **Woulfe J,** Veinot J, Mackenzie A, Bulman D, Boycott K. Autosomal Dominant Cerebellar Ataxia with Deafness and Narcolepsy (ADCA-DN). June 2013. Canadian Neurological Sciences Federation Conference, Montreal, Quebec.

127. Gray M, Munoz DA, Gray DG, **Woulfe J.** α-Synuclein in the Mucosa of the Human Vermiform Appendix". American Academy of Neurology Meeting, 2013, San Diego, CA. (This poster was selected to be presented at the Movement Disorders Section Highlights in the Field).

128. Gont A, Hanson JEL, Lavictoire SJ, Soucie M, Parolin DA, Nicholas G, **Woulfe J,** Kassam A, DaSilva V, Lorimer IAJ. Inactivation of the tumour suppressor Lg1 in glioblastoma by PTEN loss : effects on tumour-initiating cell differentiation. 2013. Montreal International Symposium on Angiogenesis and Metastasis Conference, Montreal, Quebec.

129. Warman Chardon J, Smith A,**Woulfe J,** Rakhra K, Dennie C, Schwartzenruber J, Beaulieu C, FORGE Canada Consortium, Majewski J, Bulman D, Boycott K, Dyment, D. Exome sequencing identifies PINCH2 mutations associated with early-onset autosomal recessive LGMD with severe cardiomyopathy and triangular tongue. American Society for Human Genetics, October, 2013.

130. Gray M, **Woulfe J.** Striatal blood-brain barrier permeability in PD: re-evaluating the spread of Lewy pathology.

131. Gray M, Tsang JJ, Munoz DG, **Woulfe J.** Exploring the biological significance of molecular mimicry between EBV and alpha-synuclein. Canadian Association of Neuropathologists, October, 2013, Ottawa, Ontario, Canada.

132. Hakimi M, Hayley S, Selvanantham T, Abdel-Messih E, Park D, Lavoie MJ, Philpott D, Michaud J, **Woulfe J,** Schlossmacher M. LRRK2 expressionin innate immune cells during microbe-induced inflammation of nervous system structures (Poster P01.09). Third World Parkinson Congress, Montréal, October 1-4, 2013.

133. Hamed M and **Li Q.** Role of p300 HAT activity in the activation of MyoD. 2013. PML Research Day (2nd best poster award).

134. Farmer J, Bence-Bruckler I, **Lamba M.** Occular Adnexal Lymphoma in a Canadian center-A clinicopathologic analysis of 60 cases. Canadian Opthalmic Society Annual Meeting, June 14-17, 201. Montreal, PQ

135. Gulavita P, Acharya V, **Lamba M,** Sekhon H. A rare case of mammary-like gland adenocarcinoma of the Vulva. Canadian Association of Pathologists Annual Meeting (CAP), June, 201. Quebec City, PQ

136. Gulavita P, **Lamba M,** Acharya V, Senterman, M. Osseous metaplasia of the endometrium: A case series. Canadian Association of Pathologists Annual Meeting (CAP), June, 2013. Quebec City, PQ

137. Paliga A, Faught C, Burns B, **Lamba M.** Hairy Cell Leukemia involving bilateral femora and mediastinal and paravertebral soft tissue: An unusual manifestation. Canadian Association of Pathologists Annual Meeting (CAP), June, 2013. Quebec City, PQ

138. Poutanen, SM., Rennie, R., Roscoe, D., **Toye, B.,** Lee, C., Loo, V., Hoban, D., Grimard, D., Jutras, P., Blondeau, J., Pitout, J., Galarneau, A., Gilchrist, S.E., Pouliot, J-F. Alarming Increase in Extended-Spectrum Beta-Lactamase (ESBL) producing Gram-Negative Bacilli from Intra-Abdominal Infections in Canada. AMMI Canada – CACMID 2013 Annual Conference, Quebec City, QC. April 6-8, 2013.

139. Ellis, C., Robinson, R., Desjardins, M., **Toye, B.** Antimicrobial Resistance and Serotype Distribution of Streptococcus pneumoniae in Eastern Ontario. AMMI Canada – CACMID 2013 Annual Conference, Quebec City, QC. April 6-8, 2013.

140. Poutanen, SM., Rennie, R., Roscoe, D., **Toye, B.,** Lee, C., Loo, V., Hoban, D., Grimard, D., Jutras, P., Blondeau, J., Pitout, J., Galarneau, A., Pouliot, J-F. Increase in Prevalence of Extended-Spectrum Beta-Lactamase (ESBL) producing Escherichia coli Isolated From Canadian Patients with Intra-Abdominal Infections. 23rd European Congress of Clinical Microbiology & Infectious Diseases, Berlin, Germany. April 27-30-, 2013.

141. Weir, C., Bissonnette, J., Bruce, N., Suh, K., Knoll, G., Leeder, C., Mulpuru, S., Fairhead, T., **Toye, B**., Twolan, C., Roth, V. An Investigation of Pneumocystis Pneumonia in the Renal Transplant Population. CHICA-Canada 2013 Education Conference. Ottawa, ON June 1-5, 2013.

142. McCudden CR, Henderson MP, Gong Y, Bookalam S, **Perkins SL.** Design of experiments for determination of HDL-Cholesterol stability. Presented at the 2013 American Association for Clinical Chemistry and Canadian Society for Clinical Chemistry Annual Conference. Houston Tx. July 2013.

143. Shaw JL, Henderson MPA, Oliveras L, Seguin C, Moran T, **Perkins SL.** Clinical and Analytical evaluation of Three POCT Glucose Meters. Presented at the 2013 American Association for Clinical Chemistry and Canadian Society for Clinical Chemistry Annual Conference. Houston Tx. July 2013

144. Henderson MPA, Shaw JL, McCudden CR, **Perkins SL.** Chart review and Statistical Analysis of Patient Values Demonstrating that Sample pH can Contribute to Discrepancies Between Total Carbon Dioxide Measurements and Calculated Bicarbonate Values. Presented at the 2013 American Association for Clinical Chemistry and Canadian Society for Clinical Chemistry Annual Conference. Houston Tx. July 2013

145. Peterson W, Sprague A, Reszel J, Walker M, Fell D, **Perkins SL,** Dunn S, Johnson M. Women's perspectives of the fetal fibronectin testing process. Presetned at the 3rd National Canadian Association of Perinatal and Women's Health Nurses (CAPWHN) Conference. Niagara Falls November 2013.

2014

1. Beaulieu Bergeron M, Yoshimoto M, Clifford B, Sinclair-Bourque E, **Padmore R**, McGowan-Jordan J, Tay J. Implementation of a Multiple Myeloma High Risk Mini-FISH Panel: Implications for Treatment Management of Patients in Eastern Ontario. 43rd Biennial American Cytogenetics Conference in Asheville, North Carolina, May, 2014.

2. Johnston A, McFarlane A, Bourner G, Martin T, **Padmore R.** Challenges faced by Laboratories in Differentiating between Reactive (non-neoplastic) Lymphocytes and Neoplastic Lymphocytes in a Blood Smear. XXVIIth International Symposium on Technological Innovations in Laboratory Hematology/ISLH, The Hague, The Netherlands, May 2014.

3. McFarlane A, Johnston A, Bourner G, Martin T, **Padmore R.** Introducing immature granulocytes (IG) in a proficiency testing program as a new parameter of automated Hematology analyzers. XXVIIth International Symposium on Technological Innovations in Laboratory Hematology/ISLH, The Hague, The Netherlands, May 2014.

4. **Saidenberg, Elianna.** Speaker, Transfusion in the Outpatient Setting, Riverside MDCU Nurses Lunch and Learn, Ottawa, Ontario. March 12, 2014

5. Ibrahim Ghemlas and **Elaine Leung.** LABORATORY ORDERING PATTERNS FOR COAGULATION TESTING IN A PEDIATRIC TEACHING HOSPITAL. 27th Annual Meeting of The American Society of Pediatric Hematology/Oncology (ASPHO), Chicago,IL, USA. May 2014. Poster presentation.

6. **Elaine Leung,** Mylene Bassel, Luke Shier. CHALLENGES IN THE DIAGNOSIS OF THE ALEUKEMIC PRODROME OF PEDIATRIC ACUTE LYMPHOBLASTIC LEUKEMIA. 27th Annual Meeting of The American Society of Pediatric Hematology/Oncology (ASPHO), Chicago,IL, USA. May 2014. Poster presentation.

7. H. AL Moaigel, N. Barrowman, **E. Leung,** J. Feber, A. Tsampalieros "Reticulocyte Hemoglobin Levels in Pediatric Chronic Kidney Disease". 2014 Pediatric Academic Societies and Asian Society for Pediatric Research Joint Meeting in Vancouver, BC, Canada and/or the 2014 Eastern SPR Annual Meeting, March 21-23, in Philadelphia, PA. Poster presentation.

8. Robillard J, Pena E, Dennie C, **Veinot JP.** Case presentation- cardiac lymphangioma. SCMR annual meeting. New Orleans, LA, USA, Jan 2014

9. USCAP Short course faculty – Heart and lung transplant pathology. D Miller, **JP Veinot,** HD Tazelaar, G. Berry.. San Diego, CA, USA, 2014

10. World Congress of Ophthalmology (WOC), Tokyo, Japan, April 2014 (Committed). **Brownstein S.** Ocular pathology: The final word. (In a symposium on innovative technologies in ophthalmology by 6 Canadian ophthalmologists, by invitation by the WOC).

11. Association for Research in Vision and Ophthalmology, Orlando, FL, May 2014. (Abstract accepted; Committed). Ali-Ridha, A, **Brownstein S,** Milman T, Jiang K, Burns BF, Blanco P, Farmer JK. Immunohistochemical and histochemical analysis of sebaceous carcinoma of the eyelid.

12. University of Ottawa Department of Ophthalmology Annual Research Day, Ottawa, ON, May 2014. (Committed). Ali-Ridha, A, **Brownstein S,** Jiang K, Burns BF, Farmer JK. Immunohistochemical and histochemical analysis of sebaceous carcinoma of the eyelid.

13. Canadian Ophthalmic Pathology Society, Halifax, NS, June 2014. (Committed).
Brownstein S, Jiang K, Ali-Ridha, Toye B, Mintsioulis G: Mycobacterium chelonae keratitis in a 3-decade-old graft.

14. Hadassah University Medical Center Department of Ophthalmology Visiting Professor, Jerusalem, Israel, July 2014. (Committed).
    1. **Brownstein S.** Grand Rounds. Interactive CPCs.
    2. **Brownstein S.** Pathology of ocular suppurative inflammation
    3. **Brownstein S**. Pathology of nongranulomatous inflammation.
    4. **Brownstein S**. Pathology of granulomatous inflammation.
    5. **Brownstein S**. Pathology of ocular parasitic disorders.

15. Eastern Ophthalmic Pathology Society, Baltimore, MD, Oct. 2014. (Committed)
Brownstein S, Ali-Ridha A, O'Connor M. Conjunctival benign xanthomatous histiocytoma in an infant.

16. American Association of Ocular Oncologists and Pathologists (AAOOP, Satellite meeting of American Academy of Ophthalmology [AAO]), Chicago, IL. Oct. 2014. (Offering Abstract).
Brownstein S, Ali-Ridha, A, Jiang K, Burns BF, Blanco P, Farmer JK. Immunohistochemical and histochemical analysis of sebaceous carcinoma of the eyelid.

17. Shaheed W. Hakim, Christopher G. Bal. T Flood. E Belanger **Kien T. Mai** Nested and Microcystic Variants of Urothelial Carcinoma Displaying Immunohistochemical Features of Basal-like Urothelial Cells: An Immunohistochemical and Histogenetic Study of Rare Variants of Urothelial Carcinoma including Large Nested Variant, Plasmacytoid Variant and Inverted Papilloma. USCAP meeting, San Diego, USA March 2014.

18. Christopher G. Bal T Flood, EC Belanger, **Kien T. Mai** Basal-like Variant of Non-invasive Urothelial Carcinoma: A Variant of Urothelial Carcinomas with Immunohistochemical Features of Basal-like Urothelial Cell associated with High Rate of Recurrence and Invasion. USCAP meeting, San Diego, USA March 2014

19. Christopher Ball, Joanne Swift, Trevor Flood, Eric C Belanger , **Mai Kien T** Novel Technique of Sampling the Urinary Bladder in for Urothelial Carcinoma Specimens USCAP meeting, San Diego, USA March 2014

20. Assisting Nursing Competency in Blood Transfusion Using an Electronic Format; Donna Touchie, Irene Oliveira, **Antonio Giulivi,** CSTM Quebec 2014, May 1st - 4th, 2013, Quebec City, QC

21. **Sekhon, H.** Speaker: Eastern Ontario Respirology Meeting (Pneumo Club). Targeted therapies in non-small cell lung cancer. Gatineau, QC (January 2014)

22. **Sekhon, H.** Speaker, OHRI Beer and Biology Meeting: The Ontario Tumor Bank- What researchers want to know about accessing tumor sample and long term clinical data. Ottawa, ON. (January 2014)

23. Zer A., J.C. Cutz, **H.S. Sekhon,** D. Hwang, C. Sit, M. Binnie, A. Brade, T.B. Chung, S. Kamel-Reid, N. Paul, M.S. Tsao, G. Santos, M. Patel, R. Carter and N.B. Leighl. A targeted intervention to improve molecular testing in NSCLC. American Society of Clinical Oncology (ASCO) Annual Meeting, Chicago, IL, USA. 2014

24. Petkiewicz S., **H.S. Sekhon,** C. Lai and M.M. Gomes. Histology: A reliable tool to classify NSCLC. 2014 United States & Canadian Academy of Pathology 103nd Annual Meeting, San Diego, CA, USA (accepted)

25. El Hallani S, H. El Attar, D. Garner, B. Palcic, E.C. Marginean, S. Islam and **H. S. Sekhon**. Pathologist goes to work: Affordable automation of cervical cancer screening in developing countries. 2014 United States & Canadian Academy of Pathology 103nd Annual Meeting, San Diego, CA, USA (accepted)

26. **Marginean, C.** Invited speaker – "Her 2 testing in gastric cancer-update". GI annual retreat, Perth, ON. Gastroenterologists, surgeons, oncologists, registered nurses (Jan 10, 2014)

27. Pathologist Goes to Work: Affordable Automation of Cervical Cancer Screening in Developing Countries Soufiane El Hallani, Hicham El Attar, David Garner, **Celia E Marginean,** Shahidul Islam, Harman Sekhon Proffered Papers, USCAP Annual meeting, San Diego, March 2014

28. Rates of HER2 Positivity at the Gastroesophageal Junction vs Distal Stomach: Are the Differences Solely Due to Histology? Andrea Grin, Eugene Hsieh, Wedad Hanna, Pauline Henry, Sara Hafezi-Bahktiari, Hala El-Zimaity, Christopher Howlett, Jeremy Parfitt, **E Celia Marginean,** Min Y Ngae, Jennifer Ramsay, Tariq Aziz, Catherine J Streutker. Proffered Papers, USCAP Annual meeting, San Diego, March 2014

29. The Prognostic Significance of C-Met and EGFR Overexpression in Gastric Carcinomas. Aleksandra Paliga, Horia Marginean, Bibianna Purgina, Basile Tessier, Derek Jonker, **Esmeralda C Marginean** Poster Session, USCAP Annual meeting, San Diego, March 2014

30. Chiu T, Richer J, **Nathalie Lepage.** Outcomes of Pregnancies Screened Positive for Both Down Syndrome and Trisomy 18 Using Integrated Prenatal Screening (IPS). Annual meeting of the American College of Medical Genetics Annual Clinical Genetics, Nashville, USA, March 25-29, 2014.

31. Society of Pediatric Pathology Meeting 2014, presenter and first author:Congenital mesoblastic nephroma, is it truly a nephroma? A study of 19 cases with focus on the cell of origin and differentiation between its variants using immunohistochemical stains. **Dina El Demellawy,** Ahmed Nasr, Shelley A. Caltharp, Caitlin A Cundiff, Bahig M. Shehata

32. **Ronald A Booth,** Marjetka Sawchyn and Sherry L. Perkins. Analytical And Clinical Validation Of The Bioflash Vasculitis (Anti-MPO & Anti-PR3) And GBM Assays. Oral Presentation at Autoimmunity 2014, Nice France, March 26-30, 2014

33. **Ronald A Booth,** Marjetka Sawchyn and Sherry L. Perkins. Analytical And Clinical Validation Of The Bioflash Anti-Cardiolipin Andibody (IgG And IgG) Assays. Autoimmunity 2014, Nice France, March 26-30, 2014

34. **P.L. Blanco**, S. Husain, B. Sis. Endothelial electron microscopy scoring and endothelial gene expression are biomarkers of poor kidney transplant survival in patients with transplant glomerulopathy. San Diego, USA. March 3, 2014. Platform presentation at the 103rd United States and Canadian Academy of Pathology (USCAP) Annual Meeting.

35. P. William and **S. Islam.** Evaluation of GATA3 Expression in Invasive Breast Carcinomas Status Pre and Post Neo-Adjuvant Systemic Chemotherapy. United States &Canadian Academy of Pathology's 103rd Annual Meeting, March 1-7, 2014 in San Diego, CA.

36. P. Williams, B.Djordjevic, Y, Ayroud, **S. Islam,** D.Gravel, S. J. Robertson and C. E. Parra-Herran. Nuclear morphology in flat epithelial atypia (flat ductal intraepithelial neoplasia) of the breast as a predictor of malignancy: a digital image based histopathologic analysis

37. S. El Halani, **S. Islam,** C. Marginean and H. Sekhon. Pathologist Goes to Work: Affordable Automation of Cervical Cancer Screening in Developing Countries", abstract confirmation # 1506, to the United States & Canadian Academy of Pathology's 103rd Annual Meeting, March 1-7, 2014 in San Diego, CA.

38. Novel Technique of Sampling the Urinary Bladder in Radical Cystectomy Specimens for Urothelial Cacinoma Authors: Christopher G Ball, Joanne Swift, **Trevor A Flood,** Eric Belanger, Kien T Mai 2014 USCAP Meeting, San Diego CA (Poster presentation)

39. Basal-like Variant of Non-Invasive Urothelial Carcinoma: A variant of Urothelial Carcinoma with Immunohistochemical Features of Basal-Like Urothelial Cells Associated with High Rate of Recurrence and Invasion Authors: Christopher G Ball, **Trevor A Flood,** Eric C Belanger, Kien T Mai
2014 USCAP Meeting, San Diego CA (poster presentation)

40. Nested and Microcystic Variants of Urothelial Carcinoma Displaying Immunohistochemical Features of Basal-Like Urothelial Cells: An Immunohistochemical and Histopathogenetic Study of Rare Variants of Urothelial Carcinoma Including Large Nested Variant, Plasmacytoid Variant and Inverted Papilloma Authors: Shaheed W Hakim, Previn Y Gulavita, Christopher G Ball, Bojana Djordjevic, Susan J Robertson, Zuzana Kos, **Trevor A Flood,** Eric C belanger, Kien T Mai
2014 USCAP Meeting, San Diego CA (Poster presentation)

41. Novel Technique of Sampling the Urinary Bladder in Radical Cystectomy Specimens for Urothelial Cacinoma Authors: Christopher G Ball, Joanne Swift, **Trevor A Flood,** Eric Belanger, Kien T Mai
2014 USCAP Meeting, San Diego CA (Poster presentation)

42. Basal-like Variant of Non-Invasive Urothelial Carcinoma: A variant of Urothelial Carcinoma with Immunohistochemical Features of Basal-Like Urothelial Cells Associated with High Rate of Recurrence and Invasion. Christopher G Ball, **Trevor A Flood,** Eric C Belanger, Kien T Mai
2014 USCAP Meeting, San Diego CA (poster presentation)

43. Nested and Microcystic Variants of Urothelial Carcinoma Displaying Immunohistochemical Features of Basal-Like Urothelial Cells: An Immunohistochemical and Histopathogenetic Study of Rare Variants of Urothelial Carcinoma Including Large Nested Variant, Plasmacytoid Variant and Inverted Papilloma. Shaheed W Hakim, Previn Y Gulavita, Christopher G Ball, Bojana Djordjevic, Susan J Robertson, Zuzana Kos, **Trevor A Flood,** Eric C Belanger, Kien T Mai. 2014 USCAP Meeting, San Diego CA (Poster presentation)

44. Wasserman JK, Jansen G, Yaworski R, **Woulfe J.** IDH1 mutation is associated with decreased proliferative activity in newly diagnosed anaplastic gliomas. United States and Canadian Association of Pathologists, San Diego, CA, 2014.

45. Warman Chardon J, Smith A, **Woulfe J,** Pena E, Rakhra K, Beaulieu C, Schwartzentruber J, Hawkins C, Harms MB, Zheng M, and FORGE Canada, Majewski , Bulman D, Boycott KM, Dyment DA. Exome sequencing identifies PINCH2 mutations in early onset autosomal recessive LGMD with severe cardiomyopathy and triangular tongues. American Academy of Neurology, Philadelphia, PA, 2014.

46. Poutanen, SM., Rennie, R., Roscoe, D., **Toye, B.,** Lee, C., Loo, V., Hoban, D., Grimard, D., Jutras, P., Blondeau, J., Pitout, J., Gilchrist, S.E., Pouliot, J-F. Increase in Prevalence of Extended-Spectrum Beta-Lactamase (ESBL) producing Gram Negative Bacilli isolated From Patients with Intra-Abdominal Infections in Canada Between 2008-2012. AMMI Canada – CACMID 2014 Annual Conference, Victoria, B.C. April 4-6, 2014.

47. Williams PA, Djordjevic B, Ayroud Y, Islam S, Gravel D and **Parra-Herran CE.** Nuclear H&E staining patter in Flat Epithelial Atypia of the Breast predicts presence of carcinoma on excision: A digital image based histopathologic analysis. Poster presentation, 103rd UNTED STATES AND CANADIAN ACADEMY OF PATHOLOGY meeting, San Diego CA. March 3rd, 2014.

48. **Parra-Herran CE** and Djordjevic B. Endometrial versus Endocervical Adenocarcinoma on Biopsy: Quantitative Image Analysis as a Useful Diagnostic Tool. Poster presentation, 103rd UNTED STATES AND CANADIAN ACADEMY OF PATHOLOGY meeting, San Diego CA. March 4th, 2014.

2013/14 Academic Publications by EORLA Medical and Scientific Staff

2013

1. **Padmore RF,** The Digital Laboratory. (Guest Editorial) Canadian Journal of Pathology 2013;5(2):44 – 47. Padmore RF, Raby A. The Use of Digital Imaging for Hematology Proficiency Testing Canadian Journal of Pathology 2013;5(2):48 – 50.

2. Mansoor A. **Padmore R,** Pournazari P, Kosari F, Scalia P, Rad M, Bosch M, Stewart DA. Nuclear PARP-1 protein overexpression correlate with cytosolic Bcl2 protein and complex karyotypes in B-lymphoblastic leukemia/ lymphoma patients. (accepted for publication in Human Pathology)

3. McFarlane A, Aslan B, Raby A, Bourner G, **Padmore R**. Critical Values in Hematology. (accepted for publication in International Journal of Laboratory Hematology)

4. **Saidenberg E** and Pugh D. Use of an OSCE examination to assess internal medicine residents' transfusion knowledge. Transfusion. Accepted for publication

5. Sheppard D, Tay J, Bryant A, McDiarmid S, Huebsch L, Tokessy M, Hamelin L, **Saidenberg E,** Bredeson C. Major ABO-incompatible BMT: isohemagglutinin reduction with plasma exchange is safe and avoids graft manipulation. Bone Marrow Transplantation, 2013; 48: 953–957

6. Christou G, Kekre N, Petrich W, Tokessy M, Neurath D, Giulivi A, **Saidenberg E**, McDiarmid S, Atkins H, Bence-Bruckler I, Bredeson C, Huebsch L, Sabloff M, Tay J, Tinmouth A, Allan DS. Impact of Platelet Transfusion on HSCT-Related Toxicity and Mortality. Presented at the Canadian Blood and Marrow Transplant Group Annual Conference, Winnipeg, April 2013 [poster] and European Blood and Marrow Transplant Scientific Congress, April 2013 [poster], Bone Marrow Transplant, 2013; 48: S357. [abstract]

7. Chan JYS, Tokessy M, **Saidenberg E,** Giulivi A, Tay J, Allan DS. Rh D alloimmunization in HSCT. Bone Marrow Transplant, 2013; 48:459-60.

8. Scalia, A., **Saidenberg, E.,** Giulivi, A.Clinical Prediction Tool to Estimate the Number of Red blood Cells Units Needed in Primary Elective Coronary Artery Bypass Surgery http://transfusion.ca/en/featured_articles

9. Amid, A. and **Leung E**. Evan's Syndrome Secondary to HIV Infection. Journal of Pediatric Hematology/Oncology. 2013; 35(6);490.

10. Labrosse MR, Gerson E, **Veinot JP**, Beller CJ. Mechanical characterization of human aortas from pressurization testing and a paradigm shift for circumferential residual stress. Journal of Mechanical Behaviour of Biomedical Materials. 2013 17:44-55.

11. Wang Y, Gao Z, Maleszewski JJ, **Veinot JP**, Wright JR, Maitland A. Mesothelial monocytic incidental cardiac excrescences: a new theory of pathogenesis. Internet Journal of Pathology 2013 15(1). http://ispub.com/IJPA/15/1/1515.

12. Thiene G, Bruneval P, **Veinot J**, Leone O. Diagnostic use of the endomyocardial biopsy: a consensus statement. Virchow Archives. 2013 463(1):1-5.

13. Mitoff PR, Mesana TG, Mielniczuk LM, Grenon J, **Veinot JP**, Cooper LT, Davies RA. Giant cell myocarditis in a patient with a spondyloarthropathy after a drug hypersensitivity reaction. Can J Cardiol. 2013 29:e1138e7-1138e8.

14. Caravaggio JW, Hasu M, MacLaren R, Thabet M, Raizman JE, **Veinot JP**, Marcel YL, Milne RW, Whitman SC. Insulin degrading enzyme deficiency in bone marrow derived cells increases atherosclerosis in LDL receptor deficient mice. Cardiovascular Pathology. 2013 22:458-464.

15. Jetty P, Jayaram S, **Veinot J,** Pratt M. Superficial femoral artery nitinol stent in a patient with nickel allergy. J. Vasc Surgery. 2013; 58:1388-90.

16. Rao RV, Walsh S, Chan V, Stadnick E, Sohmer B, **Veinot JP**, Chan KL. Unusual cause of an ejection murmur: myxoma in the left ventricle outflow tract. Canadian J Cardiology. 2013 29:1742e13-1742e15.

17. Hippocampal Hypoplasia in Smith-Lemli-Opitz Syndrome. Grynspan, D.**, Michaud, J**., Nikkel, S.M., Creede, E., Staines, W.A. Pediatr Dev Pathol 16: 318-320, 2013

18. Central Nervous System Venulitis Presenting as Migraine. Orr, S.L., dos Santos, M.P., Jurencak, R., **Michaud, J.,** Miller, E., Doja, A. Headache (Epub ahead of print: doi:10.1111/head.12188) Inflammatory Changes in Limb Girdle Muscular Dystrophy Type 2I. McMillan, H.J., Michaud, J. Can. J. Neurol. Sci. 40 : 875-877, 2013

19. Obituary: John Kaufman (1924-2013). Auer, R.N. with the assistance of Ang, L.C., Farrell M., Hammond, R., Lach B., Mackenzie I., **Michaud J.** and Vinters H. Brain Pathol 23: 489-491, 2013

20. **Zhang W,** Xiong H, Callaghan D, Jones A, Pei K, Stanimirovic D. 2013. Blood-brain barrier transport of amyloid beta peptides in efflux pump knock-out animals evaluated by in vivo optical imaging. Fluids Barriers CNS 10: 13. (Corresponding author)

21. Bamji-Mirza M, **Zhang W**. 2013. Functional analysis of ABCA7 SNPs, rs3764650 and rs3752246, that strongly associate with the risk of late-onset Alzheimer's disease. Alzheimer's & Dementia. 9(4 suppl 2): P853-854.

22. Westwick HJ, **Jansen GH**, Da SilvaVF: Neurosurgical Management of Intracranial Metastatic Mesothelioma. Canadian J Neurol Sc 2013; 40: 878-880.

23. Klug GMJA, Wand H, Simpson M, Boyd A, Law M, Masters CL, Matěj R, Howley R, Farrell M, Breithaupt M, Zerr I, van Duijn C, Ibrahim-Verbaas C, Mackenzie J, Will RG, Brandel JP, Alperovitch A, Budka H, Kovacs GG, **Jansen GH**, Coulthart M, Collins SJ: Intensity of human prion disease surveillance predicts observed disease incidence. JNNP 2013; 84: 1372-1377.

24. Plate A, Benninghoff J, **Jansen GH,** Wlasich E, Eigenbrod S, Drzezga A, Jansen NL, Kretzschmar HA, Bötzel K, Rujescu D, Danek A: Parkinsonism due to a D202N Gerstmann-Sträussler-Scheinker prion protein mutation - first in vivo diagnosed case. Movement Disorders 2013, 28: 241-244.

25. Paul Wheatley-Price, Hannah Jonker, **Marcio Gomes,** Farid Shamji. Thymic Epithelial Neoplasms: A A 12-year Canadian Regional Cancer Program Experience. Clin Lung Cancer. 2013 Dec 27. pii: S1525-7304(13)00260-X. doi: 10.1016/j.cllc.2013.12.003. [Epub ahead of print]. -Pena E, Dennie C, Gomes MM, Souza C. Spectrum of Non-infectious Pulmonary Complications after Hematopoietic Stem Cell Transplantation: A Practical Approach to Imaging Diagnosis. RadioGraphics (accepted for publication).

26. Zuzana Kos, Bruce F. Burns, **Marcio M. Gomes**, and Harman S. Sekhon. A Rare Case of Anaplastic Variant of Diffuse Large B-Cell Lymphoma Presenting as a Lung Primary. Int J Surg Pathol. 2013 Jun 17. [Epub ahead of print].

27. Harman Sekhon, Carolina Souza and **Marcio Gomes.** Advances in Cytopathology for Lung Cancer: The Impact and Challenges of New Technologies. Thorac Surg Clin. 2013 May;23(2):163-78.

28. Milne R, **Brownstein S.** Advanced glycation products and diabetic retinopathy. Amino Acids. (June) 2013; 44: 1397-1407.

29. Lam K, **Brownstein S,** Jordan DR, van der Jagt R, Jastrzebski A, Dionne MA. Bilateral necrobiotic xanthogranuloma of the eyelids followed by a diagnosis of multiple myeloma 20 years later. Ophthal Plast Reconstr Surg. (September) 2013: 29: e 119-120.

30. Lam K, **Brownstein S,** Jordan DR, Jastrzebski A. Dacryops: A series of 5 cases and a proposed pathogenesis. JAMA Ophthalmol. (July) 2013; 131:929-932.

31. Jiang K, **Brownstein S,** Sekhon HS, Laurie SA, Lam K, Gilberg S, Britton W: Ocular metastasis of lung adenocarcinoma with ELM4-ALK translocation: A case report with a review of the literature. Saudi J Ophthalmol. (July) 2013: 27, 187–192.

32. Jiang K, **Brownstein S**, Lam K, Baig K, Toye B. Clinicopathological case reports of Alternaria and Fusarium keratitis in Canada, Can J Ophthalmol (Dec) 2013: 48: e 151-154.

33. Jiang K, **Brownstein S,** Lam K, Burns BF, Farmer J. Utility of a Red Chromagen in the Diagnosis of Melanocytic Lesions of the Conjunctiva. JAMA Ophthalmology. 2014 Mar 13. doi: 10.1001/jamaophthalmol.2013.8216. [Epub ahead of print].

34. Jiang K, **Brownstein S**, Lam K, Chow D, Jackson WB. Posterior Amorphous Amyloid Degeneration. JAMA Ophthalmol. In press.

35. Jiang K, **Brownstein S,** Toye B, Ali-Ridha A, Mintsioulis G. Mycobacterium chelonae keratitis in a 3-decade old corneal graft. JAMA Ophthalmol. In press.

36. **Aziz S** (2013) Breast Cancer Prognostic Markers: Are They Really Addressing the Issues? Biosafety 2: e133. doi:10.4172/2167-0331.1000e133.

37. Raju J, Roberts J, Sondagar C, Kapal K**, Aziz SA**, Caldwell, Mehta R, (2013) Negligible Colon Cancer Risk from Food-Borne Acrylamide Exposure in Male F344 Rats and Nude (nu/nu) Mice-Bearing Human Colon Tumor Xenografts. PLoS ONE 8(9): e73916. doi:10.1371/journal.pone.0073916.

38. Bondy GS, Lefebvre DE, **Aziz S,** Cherry W, Coady L, Maclellan E, Armstrong C, Barker M, Cooke G, Gaertner D, Arnold DL, Mehta R, Rowsell PR. Toxicologic and immunologic effects of perinatal exposure to the brominated diphenyl ether (BDE) mixture DE-71 in the Sprague-Dawley rat. Environ Toxicol. 2013 Apr;28(4):215-28. doi: 10.1002/tox.20713.

39. **Syed Aziz,** Victoria Hui, Saad Ulhaq, Emily Chomyshyn, Rudolf Mueller, Kamla Kapal, Rekha Mehta. Variation in the telomere signals in benign and malignant lesions from a rat mammary gland cancer initiation – promotion model. Annual Research Day, 2013, University of Ottawa, Canada.

40. **Sekhon H.S.** C. Souza, and M. Gomes. Advances in cytopathology of lung cancer. Lung Cancer, Part 1. Thoracic Surgery Clinics. Edited by J. Deslauriers, F. Shamji and FG Pearson. 2013; 23: 163-78.

41. Mai K.T, Z. Kos, E.C Belanger, S. Islam**, H.S. Sekhon.** Three-Dimensional Cell Groups with Disordered Nuclei and Cellular Discohesion (3DDD) are Associated with High Sensitivity and Specificity for Cytoscopic Urine Cytopathological Diagnosis of Low-Grade Urothelial Neoplasia. Diag Cytopathol. 2013 (in press)

42. Jiang K., S. Brownstein, **H.S. Sekhon**, S.A. Laurie, K. Lam, S. Gilberg and W. Britton. Ocular metastasis of lung adenocarcinoma with EML4-ALK translocation. A case report with a review of the literature. Ocular Oncology Update. S J Ophthalmol. 2013; 27: 187-192.

43. McGuire A.L., D.E. Maziak and **H.S. Sekhon**. Diffuse intrapulmonary neuroendocrine cell hyperplasia. Can Respir J. 2013; 20: 15619. [Epub ahead of print]

44. Kos Z., B.F. Burns, M.M. Gomes and **H.S. Sekhon. A** rare case of anaplastic variant of diffuse large B-cell lymphoma presenting as a lung primary. Int J Surg Pathol. June 2013; (e-pub).

45. Song P., S.S. Rekow, C.A. Singleton, **H. S. Sekhon,** G.A. Dissen, M. Zhou, B. Campling, J. Lindstrom and E. R. Spindel. Choline transport like protein 4 (CTL4) is a choline transporter that links to non-neuronal acetylcholine systhesis. J. Neurochemistry, 2013; 126: 451-61.

46. Sulpher J.A., S.P. Owen, K. Tobros, F.A. Shepherd, E. Sabri, M. Gomes, **H. S. Sekhon,** G. Liu, C.M. Canil and P. Wheatley-Price. Factors influencing a specific pathologic diagnosis of non-small cell lung carcinoma. Clinical Lung Cancer. 2013; 14: 238-44.

47. Curtis McCloskey, Reuben Goldberg, Lauren Carter, **Manijeh Daneshmand**, Lisa F. Gamwel, Olga Collins, Elizabeth Macdonald, Euridice Carmona, and Barbara C. Vanderhyden, (2013), Characterization of a stem cell-like population in a spontaneously transformed syngenetic model of high-grade serous ovarian cancer. Frontier in Oncology (in press)

48. Gont A, Hanson JE, Lavictoire SJ, Parolin DA, **Daneshmand M,** Restall IJ, Soucie M, Nicholas G, Woulfe J, Kassam A, Da Silva VF, Lorimer IA.,(2013) PTEN loss represses glioblastoma tumor initiating cell differentiation via inactivation of LgL1. Oncotarget, 4, 1266-1279

49. Heo J, Reid T, Ruo L, Breitbach CJ, Rose S, Bloomston M, Cho M, Lim HY, Chung HC, Kim CW, Burke J, Lencioni R, Hickman T, Moon A, Lee YS,Kim MK, **Daneshmand M,** Dubois K, Longpre L, Ngo M, Rooney C, Bell JC, Rhee BG, Patt R, Hwang TH, Kirn DH., (2013), Randomized dose-finding clinical trial of oncolytic immunotherapeutic Vaccinia JX-594 in liver cancer, Nature Medicine,19: 329-36

50. Breitbach CJ, Arulanandam R, De Silva N, Thorne SH, Patt R, **Daneshmand M**, Moon A, Ilkow C, Burke J, Hwang TH, Heo J, Cho M, Chen H, Angarita FA, Addison C, McCart JA, Bell JC, Kirn DH.(2013), Oncolytic vaccinia virus disrupts tumor-associated vasculature in humans. Cancer Research.15; 73:1265-75

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36. Wong, H., Watt, C., Elsayed, S., John, M., Johnson, G., Katz, K., Krafden, S., Lee, C., Mazzulli, T., Ostrowska, K., Richardson, D., **Toye, B.,** Vermeiren, C., Yamamura, D., Simor., A.E. Characterization of Methicillin-Resistant Staphylococcus aureus Isolates from Patients with Persistent or Recurrent bacteremia. Can J Infect Dis Med Microbiol 2014; 25:83-86.

37. Fell DB, Sprague AE, Grimshaw JM, Yasseen III AS, Coye D, Dunn SI, **Perkins SL**, Peterson WE, Johnson M, Bunting PS, Walker MC. Evaluation of the Impact of Fetal Fibronectin Test Implementation on Hospital Admissions for Preterm Labour in Ontario: a Multiple Baseline Time-series Design. British Journal of Obstetrics & Gynecology 121 (4): 438-446 (2014).

38. Sun X , Lemyre B, Nan Xi, Harrold J, **Perkins SL**, Lawrence SE, Barrowman N. Free thyroxine and thyroid-stimulating hormone reference intervals in very low birth weight infants at 3-6weeks of life with the Beckman Coulter Unicel DxI 800. Clin Biochem 47 (1-2): 16-18 (2014).

EORLA's residents are well on their way to becoming accomplished physicians. In addition to completing their regular studies, they are actively involved in research. The following is a list of presentations and publications by our residents in 2013/14.

2013/14 Academic Presentations by EORLA Residents

2013

1. **P. Williams**. Canadian Association of Pathologists Annual Meeting: Quebec City, Canada 2013" Mixed High and Low Grade Urothelial Carcinoma"

2. **P. Williams.** Canadian Association of Pathologists Annual Meeting: Quebec City, Canada 2013 "Primary Carcinoma of the Renal Calyx"

3. **P. Williams.** United States and Canada Academy of Pathology Annual Meeting: Baltimore, USA 2013: "A Practical Diagnostic Panel for Distinguishing Between Hepatocellular Lesions"

4. **Strickland S.,** Walker, AE. (2013). Fatal occlusive foreign-body granulomatous pulmonary embolization due to crystalline precipitation in total parenteral nutrition: a case report and review of the literature. Presented at the National Association of Medical Examiners (NAME) conference, Milwaukee, WI 2013.

5. **A.Paliga,** Mini medical School Series "Defeating Cancer: Progress in the Management of Cancer in 2013" -> Co-presented with fellow resident a one hour lecture for the public regarding the role of pathologists in cancer staging.

6. **A.Paliga**, C.Faught, B.Burns, M.Lamba. Hairy Cell Leukemia Involving Femora, Mediastinal and Paravertebral Soft Tissue: An Unusual Manifestation. Abstract accepted for poster presentation at the Canadian Association of Pathologists (CAP) Annual General Meeting in Quebec, Canada, June 2013.

7. **A.Paliga**, P.Gulavita, B.Purgina, B.Olberg, C.Lai, B.Burns, K.T.Mai. Squamous Cell Carcinomas of the Anterior Oral Cavity are Commonly Associated with Differentiated Intraepithelial Neoplasia. Abstract accepted for poster presentation at the Canadian Association of Pathologists (CAP) Annual General Meeting in Quebec, Canada, June 2013.

8. **Paliga,** S.Strickland, and M.Gomes. Resident-lead Autopsy Teaching and Autopsy Quality Improvement at The Ottawa Hospital. Abstract accepted for poster presentation at the Academy for Innovation in Medical Education (AIME) Conference in Ottawa, Canada, April 2013.

9. A.Yarascavitch, J. Jaswal, T. Ezzat, J. Pasternak, **A. Paliga**. An Evaluation of the Official Transfer Policies in Canadian Residency Education. Abstract accepted for oral presentation at the Canadian Conference of Medical Education (CCME) in Quebec City, Canada, April 2013.

10. **S. Petkiewicz**, "Accuracy of Morphological Diagnoses of Lung Cancer Without the Use of Immunohistochemistry" (Lecture delivered at the University of Ottawa Department of Pathology Research Day, Ottawa, Ontario, April 2013)

    S. Petkiewicz, "Histology: A Reliable Tool to Classify NSCLC", (Poster presented at the Pulmonary Pathology Society Biennial Meeting, Grenoble, France, June 25-28 2013)

11. **Ball, C.G**. Utero-placental blood flow. Chairman Rounds, Department of Pathology and Laboratory Medicine, University of Ottawa, Ottawa, Ontario, Canada, November 25, 2013.

12. **Ball, C.G.** Two cases: Big blue bag; Unknown primary. Autopsy Rounds, Department of Pathology and Laboratory Medicine, University of Ottawa, Ottawa, Ontario, Canada, November 18, 2013.

13. **Ball, C.G.** CanMeds: Manager, managing a team. Academic Symposia, Department of Pathology and Laboratory Medicine, University of Ottawa, Ottawa, Ontario, Canada, September 23, 2013.

14. **Ball, C.G.** Does this child have appendicitis? A systematic review of clinical prediction rules for children with acute abdominal pain." Journal Club, Pediatric Emergency Department, Children's Hospital of Eastern Ontario, Ottawa, Ontario, Canada. January 30, 2013.

15. "Pathologist goes to work: Affordable automated cervical cancer screening for Africa" **Soufiane El Hallani, Guest Speaker** 7th Stop Cervical Cancer in Africa, July 2013, Maputo, Mozambique African First Ladies against Breast and Cervical Cancer, Princess Nikky Breast Cancer Foundation and Africa-America Cancer Consortium

16. **M. Hassan,** Md S. Amin, S. Robertson, S. Islam. Multifocal Flat Epithelial Atypia: Possible Precursor of Breast Carcinoma. 102nd annual meeting of the United States and Canadian Academy of Pathology, 2013.

17. **M. Hassan**, Md S. Amin, S. Robertson, S. Islam. Multifocal Flat Epithelial Atypia: Possible Precursor of Breast Carcinoma. April, 2013.

18. **M. Hassan,** K. Williams, P. Williams, S. Islam, EC. Marginean, H. Sekhon, E. Belanger, K.T. Mai. The Value of Three Dimensional Cell Groups with Disordered Nuclei and Cellular Discohesion (3D-DD) in Cystoscopic Urine Diagnosis of Low Grade Urothelial Neoplasia. April, 2013.

2014

1. **Williams PA**, Bourns LE, Tomiak E, Halwani F. Evaluation of Histological Criteria in Detecting Lynch Syndrome/Hereditary Non-Polyposis Colorectal Cancer (HNPCC) at The Ottawa Hospital. (Submitted to CAP 2014)

2. **Williams PA**, Djordjevic B, Ayroud Y, Islam S, Gravel D, Parra-Herran CE. Nuclear H&E Staining Pattern in Flat Epithelial Atypia of the Breast Predicts Presence of Carcinoma on Excision: A Digital Image Based Histopathologic Analysis. (Poster presentation USCAP 2014)

3. **Williams PA**, Islam S. GATA3 Expression Profile in Invasive Breast Carcinoma Post Neo-Adjuvant Systemic Chemotherapy. (Poster presentation USCAP 2014, nominated for Stowell-Orbison award)

4. Kos Z, **Williams PA**, Parks W, Robertson JS. Effects of Prolonged Fixation Time on Ki67 in Breast Carcinoma. (Poster presentation USCAP 2014)

5. **Strickland S.,** Graham, G., Gilpin, C., Belanger, E., Teo, I. Djordjevic, B. (2013). Pathological Phenotyping of Uterine Leiomyomas from Patients with Hereditary Leiomyomatosis and Renal Cell Cancer (HLRCC) Syndrome. Presented at the United States and Canadian Association of Pathology (USCAP) meeting March 2014

6. **Strickland S.,** Paliga, A. Gomes, M. (2013). Improving the Autopsy Service Through A Pathology Resident-Led Educational Initiative for Clinical Residents. Presented at the United States and Canadian Association of Pathology (USCAP) meeting March 2014

7. **Strickland S.** Presenter at The University of Ottawa Mini Medical School October 2013 and April 2014 (upcoming)

8. Hakim S, **Gulavita P**, Kos Z, Ball C, Flood T, Belanger E, Robertson SJ, Djordjevic B, Mai KT. Nested and microcystic variants of urothelial carcinoma displaying immunohistochemical features of basal-like urothelial cells: an immunohistochemical and histopathogenetic study of rare variants of urothelial carcinoma including large nested variant, plasmacytoid variants, and inverted papilloma for basal cell markers. United States and Canadian Association of Pathologists, accepted for presentation Nov 2013. San Diego, USA. March 2014.

9. **A.Paliga**, H.Marginean, B. Purgina, B.Tessier, D. Jonker, and EC. Marginean. The prognostic significance of c-met and EGFR overexpression in gastric carcinomas. Presented as a poster at USCAP, San Diego, March 2014.

10. S.Strickland**, A. Paliga,** and M.Gomes. Resident-lead Autopsy Teaching and Autopsy Quality Improvement at The Ottawa Hospital. Presented as a poster at USCAP, San Diego, March 2014.

11. **S. Petkiewicz**,"Morphology Outperforms Immunohistochemistry on Subtyping of NSCLC in Biopsies", (Poster presented at USCAP, San Diego, CA, March 2-8, 2014)

12. **Ball, C.G.,** Michaud, J. CanMeds: Manager, managing a team. Academic Symposia, Department of Pathology and Laboratory Medicine, University of Ottawa, Ottawa, Ontario, Canada, March 17, 2014.

13. **Wasserman JK,** Jansen G, Yaworski R, Woulfe J. IDH1 mutation is associated with decreased proliferative activity in newly diagnosed anaplastic gliomas. Modern Pathology. 2014; 27 (S2): 433-444 (USCAP 2014 platform presentation)

14. Understanding Health Advocacy through Actions: cervical cancer screening in developing countries **Soufiane El Hallani,** Guest Speaker Canada Association of Pathologists, July 2014, Toronto

15. **S. El Hallani,** H. El Attar, D. Garner, C.E. Marginean, S. Islam, H. Sekhon
Pathologist goes to work: Affordable automation of cervical cancer screening in developing countries. United States and Canada Academy of Pathology, San Diego 2014

16. **S. El Hallani,** C. Poh, S. Hakim, P. Lane, D. Gravel, S. Roberston, S. Islam
Direct Autofluorescence Visualization to direct Breast specimen grossing: A Proof-Of-Concept. United States and Canada Academy of Pathology, San Diego 2014

17. **N Chang**, SW Hakim, Z Kos, DH Gravel, A Arnaout, SJ Robertson. Tumour-Infiltrating Lymphocytes as a Predictor of Response in Neoadjuvant Endocrine Therapy in Breast Cancer. Presented at the 103rd United States and Canadian Academy of Pathology Annual Meeting. San Diego, California, USA. March 1-7, 2014.

18. SW Hakim, **N Chang**, MH Clemons, A Arnaout, DH Gravel, SJ Robertson. Tumor Infiltrating Lymphocytes Are Correlated with RCBI and Ki67 in Post Neoadjuvant Breast Cancer. Presented at the 103rd United States and Canadian Academy of Pathology Annual Meeting. San Diego, California, USA. March 1-7, 2014.

19. **M. Hassan**, Dina El Demellawy, De Nanassy J. Refining pediatric fibroblastic/myofibroblastic tumors – a detailed immunohistochemical study (submitted to CAP 2014).

20. **M. Hassan**, Dina El Demellawy. Infantile Bilateral Renal Cell Carcinoma: First Case Report and Review of Literature (submitted for SPP 2014).

21. **M. Hassan**, Bibianna M. Purgina, Chi K. Lai, Aleksandra Paliga, Kien T. Mai Histopathogenesis of Non-HPV-related Differentiated Squamous Intraepithelial Neoplasia of the Oral Cavity (submitted for USCAP 2014).

2013/14 Academic Publications by EORLA Residents

2013

1. Kos, Z, **Williams PA**, Belanger EC, Mai KT. Fluorescence In Situ Hybridization (FISH) as an Adjunct Tool in the Diagnosis of Primary and Metastatic Renal Cell Carcinoma in Fine Needle Aspiration Specimens. (Accepted to Diagnostic Cytopathology)

2. **Williams PA**, Mai KT. Primary Carcinoma of Renal Calyx. Pathology - Research and Practice 2013; 209: 654-661

3. Mai KT, Flood TA, **Williams P,** Kos Z, Belanger EC. Mixed Low and High Grade Papillary Urothelial Carcinoma; Histopathogenetic and Clinical Significance. Virchows Archiv 2013; 463: 575-581

4. Williams K, **Williams P,** Islam S, Marginean C, Sekhon H, Belanger EC, Mai KT. Three Dimensional Cell Groups with Disordered Nuclei and Cellular Discohesion Are Associated with High Sensitivity and Specificity in the Cystoscopic Urine Diagnosis of Low Grade Urothelial Neoplasia Laboratory Investigation 2013; 93: 528-542

5. Mai KT, **Gulavita P**, Lai CK, Swift J, Levac J, Olberg B, Purgina B. Topographic distribution of papillary thyroid carcinoma by mapping in coronal sections of 125 consecutive thyroidectomy specimens. Int J of Surg Path, Sept 2013.

6. **Gulavita P** and KT Mai. Urothelial Bladder carcinoma metastasizing to the scrotum mimicking primary extra-mammary paget's disease. Pathology, accepted for publication, Sept 2013.

7. **A.Paliga** and K.T.Mai. Squamous Cell Carcinomas of the Anterior Oral Cavity Are Commonly Associated With Simplex (or Differentiated) Oral Intraepithelial Neoplasia: Clinical and Pathologic Significance. Int J Surg Path. December 2013 [Epub ahead of print].

8. **A.Paliga,** J.Farmer, I.Bence-Bruckler, and M.Lamba. Salivary Gland Lymphoproliferative Disorders: A Canadian Experience. Head Neck Pathol. 2013 Jul [Epub ahead of print]

9. **A. Paliga**, A.Yarascavitch, J. Jaswal, T. Ezzat, and J. Pasternak. CAIR Principles on Resident Transfers June 2013. Policy paper available online at http://www.cair.ca/u/elibrary/CAIR%20Principles%20on%20Resident%20Transfers_June%202013_en.pdf

10. Mai, K.T., **Ball, C.G.,** Kos, Z., Belanger, E.C., Islam, S., Sekhon, H. (2013) Three-dimensional cell groups with disordered nuclei and specificity for cystoscopic urine cytopathological diagnosis of low-grade urothelial neoplasia. Diagnostic Cytopathology. doi: 10.1002/dc.23069.

11. **Ball, C.G.,** Grynspan, D., Gruslin, A. Boundary conditions for three placental flow fields that may predict and cause intra-uterine growth retardation. Annual Meeting of the Ontario Association of Pathologists. Blue Mountain, Ontario, Canada. September 19–22, 2013.

12. **Ball, C.G.,** Grynspan, D., Gruslin, A. Porous media flow models for maternal placental circulation. Annual Meeting of the International Federation of Placenta Associations. Whistler, British Columbia Canada. September 11–14, 2013.

13. Grynspan, D., Desrochers, B., Gruslin, A., McDonell, L., Yockell-Lelievre, J., **Ball, C.G**., All-Abbad, N. Development of online teaching modules for understanding placenta pathology. Annual Meeting of the International Federation of Placenta Associations. Whistler, British Columbia, Canada. September 11–14, 2013.

14. Dowlatshahi D, **Wasserman JK**, Butcher KS, Bernbaum ML, Cwinn AA, Giulivi A, Lang E, Poon M, Tomchishen-Pope J, Sharma M, Coutts SB. Stroke pre-notification is associated with shorter treatment times for warfarin-associated intracerebral hemorrhage. Cerebrovascular Diseases. 2013; 36 (5-6); 383-387

15. **El Hallani S**, Poh CF, Macaulay CE, Follen M, Guillaud M, Lane P.
Ex vivo confocal imaging with contrast agents for the detection of oral potentially malignant lesions. Oral Oncol. 2013 Jun;49(6):582-90.

16. P. Moretto, V.J. Nair**, S. El Hallani**, S. Malone, E.C. Belanger, C. Morash, C. Canil.
Management of penoscrotal extramammary Paget's disease: case-series and review of literature. Current Oncology 2013; 20(4).

17. Kien T Mai, **Christopher G Ball**, Zuzana Kos, Eric C Belanger, Shahidul Islam, Harman Sekhon. Three-dimensional cell groups with disordered nuclei and cellular discohesion (3DDD) are associated with high sensitivity and specificity for cystoscopic urine cytopathological diagnosis of low-grade urothelial neoplasia. Diagn Cytopathol 2013 Nov 23. Epub 2013 Nov 23.

2014

1. **Strickland S.,** Islam S. (2014). Teaching the CanMEDS roles to laboratory medicine residents: residents as teachers and development of ePortolios. To be published in the Canadian Journal of Pathology

2. Schieda N, Coffee N, **Gulavita P**, Shabana WM, AL-Dandan O, Flood TA. Prostatic ductal adenocarcinoma: An aggressive tumor variant that may be unrecognized with T2 weighted magnetic resonance imaging (MRI). European Radiology, accepted for publication, March 2014.

3. Truong LD, **Gulavita P**, Ball CG, Hakim SW, Busca A, Levac J, Kos Z, Flood TA, Belanger EC. Non-papillary and basal-like variant of urothelial Carcinoma: A variant of urothelial carcinoma with immunohistochemical features of basal urothelial cells associated with unfavorable clinical outcome. Urologic Oncology, submitted for publication, Feb 2014.

4. Purgina, B.M., **Ball, C.G.,** Lai, C.K., Olberg, B., Mai, K.T. (2014) Cancerization of lymphatic endothelium in papillary thyroid carcinoma: Hidden evidence of lymphatic invasion and histopathogenesis of cystic metastasis in cervical lymph nodes. In preparation.

5. **Ball, C.G.,** Djorjevic B., Mai, K.T. (2014) Non-invasive basal-like variant of urothelial carcinoma (with immunohistochemical features of basal-like urothelial cells) is associated with a high rate of recurrance and progression. In preparation.

6. Mai, K.T., Truong, L.D., Gulavita, P., **Ball, C.G.,** Hakim, S.W., Busca, A., Levac, J., Kos, Z., Flood, T.A., Belanger, E.C. (2014) Non-papillary and basal-like variant of urothelial carcinoma: A variant of urothelial carcinoma with immunohistochemical features of basal urothelial cells associated with unfavorable clinical outcome. Urologic Oncology: Seminars and Original Investigations. Submitted for publication.

7. Mai, K.T., Hakim, S.W., **Ball, C.G.,** Djordjevic, B., Robertson, S.J., Koz, Z., Flood, T.A., Belanger, E.C. (2013) Nested and microcystic variants of urothelial carcinoma displaying immunohistochemical features of basal-like urothelial cells: An immunohistochemical and histogenetic study of rare variants of urothelial carcinoma including large nested variant, plasmacytoid variant, and inverted papilloma. International Journal of Surgical Pathology. Submitted for publication.

8. **Ball, C.G.,** Grynspan, D.,Redline, R.W., Djordjevic, B., Yockell-Lelievre, J., Gruslin, A., de Nanassy, J. An explanation for pathological utero-placental blood flow in placenta creta. Society for Pediatric Pathology 2014 Spring Meeting. San Diego, California, U.S.A. March 1–2, 2014.

9. **Ball, C.G.,** Flood, T.A., Belanger, E.C., Mai, K.T. Basal-like variant of non-invasive urothelial carcinoma: A variant of urothelial carcinoma with immunohistochemical features of basal-like urothelial cells associated with high rate of recurrence and invasion. 103rd Annual Meeting of the United States and Canadian Academy of Pathology. San Diego, California, U.S.A. March 1–7, 2014.

10. Hakim, S.W., Gulavita, P.Y., **Ball, C.G.,** Djordjevic, B., Robertson, S.J., Koz, Z., Flood, T.A., Belanger, E.C., Mai, K.T. Nested and microcystic variants of urothelial carcinoma displaying immunohistochemical features of basal-like urothelial cells: An immunohistochemical and histopathogenetic study of rare variants of urothelial carcinoma including large nested variant, plasmacytoid variant, and inverted papilloma. 103rd Annual Meeting of the United States and Canadian Academy of Pathology. San Diego, California, U.S.A. March 1–7, 2014.

11. **Ball, C.G.,** Swift, J., Flood, T.A., Belanger, E.C., Mai, K.T. Novel technique of sampling the urinary bladder in radical cystectomy specimens for urothelial carcinoma. 103rd Annual Meeting of the United States and Canadian Academy of Pathology. San Diego, California, U.S.A. March 1–7, 2014.

12. Chakraborty S, Alhazzaa M**, Wasserman JK**, Sun K, Stotts G, Hogan MJ, Demchuk A, Aviv RI, Dowlatshahi D; on behalf of the Ottawa Stroke Research Group. Dynamic characterization of CT angiographic 'spot sign'. PLoS ONE. 2014; 9(3): e90431

13. Dowlatshahi D, **Wasserman JK**, Momoli F, Petrcich W, Stotts G, Hogan M, Sharma M, Aviv RI, Demchuk AM, Chakraborty S; on behalf of the Ottawa Stroke Research Group. Evolution of computed tomography angiography spot sign is consistent with a site of active hemorrhage in acute intracerebral hemorrhage. Stroke. 2014; (45)

14. D Najem, M Bamji-Mirza, **N Chang**, QY Liu, W Zhang. Insulin resistance, neuroinflammation, and Alzheimer's disease. Rev Neurosci. Mar. 13, 2014. pii: /j/revneuro-ahead-of-print/revneuro-2013-0050/revneuro-2013-0050.xml. doi: 10.1515/revneuro-2013-0050. [Epub ahead of print]

15. Bibianna Purgina, **M. Hassan**, Chi K. Lai, Aleksandra Paliga, Kien T. Mai Histopathogenesis of Non-HPV-related Differentiated Oral Squamous Intraepithelial Neoplasia. Accepted in Applied immunohistochemistry & molecular morphology, 2014.

16. **M. Hassan**, Dina El Demellawy, De Nanassy J. Refining pediatric fibroblastic/myofibroblastic tumors – a detailed immunohistochemical study (In print).

17. Md S. Amin, **M. Hassan,** S. Islam. The new IASLC/ATS/ETS classification of lung adenocarcinomas and our institutional experience (In print).