

# Annual Report 2015-16 Eastern Ontario Regional Laboratory Association

# **DRAFT**



## History

Operational for four years, The Eastern Ontario Regional Laboratory Association (EORLA) is a member-based, non-profit organization encompassing the operation of 18 licensed, acute-care, hospital-based clinical laboratories that service clinical programs across the Champlain Local Health Integration Network (CLHIN) of Eastern Ontario.

At EORLA over 800 medical, scientific and technical staff provides 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, Molecular Diagnostics, Transfusion Medicine, Hematopathology, and Microbiology/Virology is performed.

All EORLA laboratories are accredited by the Institute for Quality Management in Healthcare (IQMH) 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.

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

On behalf of the EORLA Board of Governors, it is my pleasure to welcome readers to the 4th edition of the EORLA Annual Report.

As a Board of Governors, our accountability is to provide governance oversight of EORLA on behalf of our members. Our mandate is to ensure that EORLA meets its commitment, as part of the Champlain LHIN acute care health system, to provide high quality, cost effective and sustainable laboratory services to its members and its members' clinicians. The Board also ensures that EORLA is a progressive and effective employer for its staff and an organization that works within an ethical framework.

Over the past year the EORLA Board strengthened its governance processes. It established an Executive Committee and participated in its second Board Effectiveness Survey. The results were favourable and we continue to enhance the quality of our governance model. The Board also welcomed some new members:



Linda Morrow, CEO of Hopital Glengarry Memorial Hospital as a hospital member representative replacing Jeanette Despatie; Dr. Ali Abdulla as an independent Community Board member; and Dr. Jeremy Grimshaw as the University of Ottawa representative, replacing Dr. Sherry Perkins.

The strength of our Board was tested in the fall of 2015 with the emergence of a funding rate error that placed significant stress on our Members, our Board and Management. This report provides a full accounting of the impact. As a Board, our first duty was to guide EORLA through this turbulence in a manner that sustained the trust of our Members. The funding rate error underscored the importance of trust, transparency and open communication. I wish to thank the Chief Financial Officers of our membership for the time and energy that each devoted to resolving these matters. I believe it was through the commitment of our members and the strength of our governance model that we successfully navigated this challenge.

Remarkably as well, it is important to note that the EORLA team was able to deliver on its quality and performance objectives and I want to thank the 925 employees and medical & scientific staff for their dedication. Notwithstanding the stresses that were faced, we see a strong future for the EORLA model in the delivery of a shared laboratory service. I also want to thank the Board for their commitment and acknowledge their sage advice as we navigated difficult issues during the past year. Finally, thank you to Leigh Fenton for her tireless and professional support to the Board of Governors.

I trust you will find the report informative.

Sincerely,

Dr. Bernard Leduc Chair, Eastern Ontario Regional Laboratory Association

# **EORLA Board of Directors for 2015/2016**

Board Member	Professional Title	EORLA Governance Appointments
	D	Board - Chair,
Dr. Bernard Leduc	President & CEO, L'Hôpital Montfort	Governance Committee - Chair, Board Member approved by L'Hôpital Montfort
Dr. Bernard Leddc	Montion	Board - Vice-Chair,
		Governance Committee - Member
	President & CEO, Queensway-	Board Member approved by Queensway-Carleton
Mr. Tom Schonberg	Carleton Hospital	Hospital
	Bracidant & CEO Arphriar	Patient Safety and Quality Committee - Chair
Mr. Eric Hanna	President & CEO, Arnprior Regional Health	Board Member approved by the Western Regional Hospitals
Wii. Liic Haima	Regional Fleatur	Board - Secretary-Treasurer,
	Chief Financial Officer,	Finance and Audit Committee – Vice Chair, Member,
	Children's Hospital of Eastern	Board Member approved by Children's Hospital of
Mr. Nicholas Vlacholias	Ontario	Eastern Ontario
		Finance and Audit Committee, Chair - Member,
Mr. Jeffrey Dale	CEO, Snowy Cloud Inc.	Community Board Member
	Director, Medical Affairs and	
	Patient Advocate, The	Patient Safety and Quality Committee, Vice Chair,
Dr. Virginia Roth	University of Ottawa	Community Board Member
	050 01 14 11	Governance Committee - Member,
Ms. Linda Morrow	CEO, Glengarry Memorial Hospital	Board Member approved by the Eastern Regional Hospitals
Wis. Linua Wolfow	Tiospitai	Ποσμιαίο
	Managing Partner, Greenbridge	Governance Committee - Member,
Mr. Patrick Dion	Consulting	Community Board Member
Du Abalahan Al-Jalla	Medical Director, Kingsway	Governance Committee - Member,
Dr. Alykhan Abdulla	Health Centre	Community Board Member
	Head, Department of Pathology	EORLA Medical and Scientific Advisory Committee
	and Laboratory Medicine, The	(EMSAC) – Chair
	Ottawa Hospital, CHEO and The	Board Member appointed as EORLA Chief, Medical
Dr. John Veinot	University of Ottawa	and Scientific Officer
	Executive Vice-President, Chief	
Mr. Comoron Louis	Operating Officer, The Ottawa	Finance and Audit Committee - Member,
Mr. Cameron Love	Hospital Senior Scientist, Ottawa	Board Member approved by The Ottawa Hospital
	Research Institute (OHRI)	
	Professor, Department of	
	Medicine, The University of	Patient Safety and Quality Committee - Member,
Dr. Jeremy Grimshaw	Ottawa	Board Member approved by the University of Ottawa

# A Word from the CEO, Craig Ivany

It is my pleasure to provide this message to accompany the 2015 – 2016 EORLA Annual Report. As highlighted in previous reports, EORLA is not a typical laboratory integration model and we exist in an era where Hospital funding is under extreme pressure as our health system evolves toward a patient centric delivery model. EORLA must continue to evolve to support and contribute to the successful delivery of the health care services by our 16 member hospitals.

The challenge we face places enormous stress on all facets of our business and I want to open by acknowledging the work and effort of every member of the EORLA team. EORLA has 832 committed employees and medical & scientific staff who are all advocates of high quality laboratory services and stewards of our operations and fiscal resources. The team did a great job managing this delicate balance.



EORLA responded to the changing and challenging environment through two core business objectives this year: improve our efficiency and improve our quality. The coming pages illustrate the success on both fronts with improvements in our quality and the delivery of significant annual operations savings.

To be successful, EORLA must also be viewed as a trusted partner with our members. Our first Member survey completed last year, highlighted that the entire EORLA team needed to do more to effectively communicate with our members and strengthen these core relationships. During this past year our relationship with members was tested as a four year funding error between EORLA and 12 members was uncovered. This resulted in a tremendous amount of work to fully understand and resolve. The outcome of this effort resulted in a full review of the EORLA funding/billing model as well as a complete EORLA accounting of the impact of the error and restitution to affected members. I want to acknowledge the leadership of the EORLA Board and the work of all member CFOs as we worked through this matter. The error was approximately \$8.6M over four years, however it should be considered in the context of over \$430M of total member funding during the same period.

As we move beyond 2015 – 2016, we see a future that has a renewed and relevant funding model, a transformed microbiology service delivery model and a team that is engaged and looking ever forward to creating a culture of excellence in laboratory medicine.

In closing, a sincere thank you is sent to everyone who is a part of the EORLA effort. To our employees and medical & scientific teams, for living our values and your contribution to delivering high quality patient care in an ever changing environment, we are grateful for everything you do. To our Member organizations and clinical staff, thank you for your continuing support, guidance and feedback which will help us better meet your needs. Finally, to the EORLA Board of Directors, thank you for your insight, perspective and commitment providing us the direction to achieve our mission.

Craig Ivany

# Chief Medical and Scientific Officer Note, Dr. John Veinot

As with my greetings in prior years, it always amazes me how quickly time passes and how much change occurs in the course of a year. Like the entire health system, the EORLA team faced many challenges and we also celebrated many successes. I am very proud of the efforts that everyone made to continue to provide the best patient care.

In the pursuit of providing the best patient care, I want to note the efforts of our collective team working as strong dyads to improve quality and performance. This year we witnessed improvements in the quality of our work. Those improvements were measured and thoughtful and associated with the attention to detail of our front line staff, and the entire organization. This was the second year that the revised quality metrics were in place and I am pleased to see improvement year over year. Thank you to everyone.



The hospital sector continues to be faced with difficult fiscal realities that drive hard choices. Our teams responded in a collaborative way to ensure that we met the fiscal challenges placed before us by our hospital members.

This past year we completed the transfer of Medical and Scientific staff to EORLA. I want to especially acknowledge the efforts of Liz Glover, HR Leader who was instrumental in leading this effort. During the year we participated in a Medical and Scientific engagement survey for our TOH based staff and it was rewarding to see an improvement in the overall engagement and satisfaction of the team. There is work to do and we will take the results seriously and try to improve in the appropriate areas of interest.

Academic achievements continued this year with numerous successful educational and research activities. We provided leadership on a provincial and national level through educational activities, quality initiatives and innovative utilization approaches. Many of these activities continue to evolve. We had many successful posters and platform presentations reflecting our excellent trainees and those that supervise them. Our resident's research day was a success and we had invited several excellent guest speakers. This year we co-sponsored, with IQMH, a symposium on Quality in Laboratory medicine. We also organized an excellent Forensic Pathology symposium attracting pathologists and medicolegal participants internationally. Thank you to Doctors Padmore and Walker and their teams.

Education continued to be successful. We made significant contributions to the Faculties of Medicine, Science, and Health Sciences. We provided teaching to undergraduates, medical students, graduate students, nursing and allied health professionals and many other groups including our laboratory technologists. We are all teachers at one time or another. Our students are our greatest resource and we are delighted to see them do well.

In closing, the many achievements that are highlighted are only possible through hard work by everyone. I wish to thank the entire team for continuing to work together. Thank you for your dedication.

Dr. John Veinot

# Quality and Performance 2015 - 2016

Quality and Performance are the core strategic deliverables for EORLA. Through a constant and balanced approach to both dimensions we have successfully improved in both areas. Success on the operations front was an important achievement during a year where the billing system, pricing model and funding rate errors took the spotlight at the governance level.

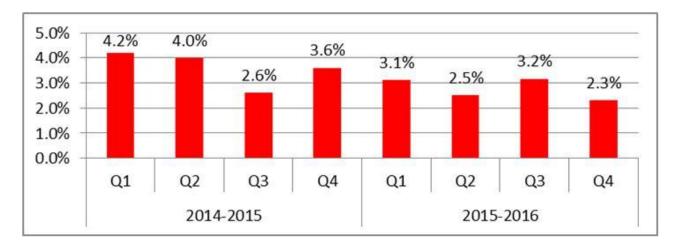
The 2015 – 2016 plan was guided by and fully linked to the EORLA strategic plan. The strategic plan embraces a commitment to meeting the initial expectations of Members, delivering further integration and preparing EORLA for the future.

The efforts of the full team over the course of the year delivered further improvements in our quality metrics. The focus on quality starts with the EORLA Board and flows through every aspect of the organization. Under the direction of Eric Hanna, Chair – Patient Safety and Quality Committee, the committee revised its terms of reference and added two additional members with Quality and Risk Management experience. Linda Hunter and Samantha Hamilton both joined the committee through a comprehensive recruitment process.

The Board Committee took an active role in elevating the quality agenda. Its most significant accomplishment was achieving Board approval of the Quality Improvement Plan (QIP). It is notable that this plan is consistent with the Excellent Care for All Act and the plan is tightly coupled to the core quality metrics that the organization adopted at the start of 2014 – 2015. Going forward the QIP will focus on those metrics that require our focus and attention; by focusing on the critical few we are confident that EORLA will continue to see improvements.

The Board is also supported by the EORLA Medical and Scientific Advisory Committee – Quality Sub-Committee. Under the leadership of Dr. Nathalie Lepage, this committee leads the clinical quality discussion for the organization and advises EMSAC as well as the Board Patient Safety and Quality Committee. This group was instrumental in the identification and refinement of the critical to quality metrics.

### Quality Improvement - Number of Indicators missing target by > 5%



One of the key tenants of quality management is an effective document management and control system. Under the leadership of Dr. John Veinot and Greg Doiron, EORLA issued an RFP to select a vendor that would support our regional model. We were pleased to select Bioleen Solutions Inc., a software supplier offering on-line quality management software exclusively for Medical Laboratories. Bioleen saw the relationship with EORLA as an essential element of their strategy to gain entry into the rest of the Canadian market beyond Quebec.

On a performance basis the plan delivered further integration and cost efficiencies. The 2015-16 Operating plan reflected the continued stabilization of the EORLA regional model and the strengthening of the integration model. Major integration accomplishments included:

- Anatomic Pathology (AP) integration and consolidation Under the direction of Dr. Diponkar Banerjee, Bill Parks, Dr. Alex Halil at The Queensway Carleton Hospital and Dr. Nicholas Roustan Delatour at Hopital Montfort, both hospital AP programs were integrated with The Ottawa Hospital and Cornwall on the regional AP information system. This effort moves EORLA closer to a fully networked and integrated AP model which will ensures standard high quality service across the region.
- Laboratory Connectivity Three hospitals' Laboratory Information Systems were electronically connected to the Reference Laboratory system. Hopital Montfort and Hopital Glengarry Memorial Hospital were linked via the CHAMP Meditech system and the CHEO core LIS, Beaker was connected. This enables the free flow of laboratory requisitions and results electronically, reducing turn-around-time issues, eliminating duplication of data entry and reducing data entry errors.
- Regional Point Of Care Testing Committee Under the leadership of Dr. Julie Shaw, a regional committee was established. The committee purpose allows for knowledge and information sharing between member sites as well as for sites to support each other in dealing with challenges related to POCT. The committee has been successful so far in developing several regional recommendations related to process standardization for POCT.
- Regional Laboratory Safety Manual Under the leadership of Lorraine Hart, Regional Quality Integration Manager, an integrated Lab Safety Manual was completed and implemented in all 18 Laboratory sites. This is a significant step in the pursuit of an integrated quality management system. Lorraine is leading the work to establish a Regional Laboratory Quality Manual for 2016-17. This effort along with the Safety Manual will set the groundwork to enable an integrated quality assurance program and an integrated auditing process.
- Regional Microbiology Reference Laboratory Under the direction of Dr. Ramotar and Marie-France Jemus, the transformation of regional Microbiology services achieved a significant milestone in 2015-16 with the Board approval to acquire the equipment to move to Total Laboratory Automation. With this approval the Microbiology team will complete the 3 year journey to full integration and consolidation.

The cost efficiency goal was designed to pursue opportunities that would generate an on-going annual savings target of \$3.4M. This was achieved through hard work and a broad based approach to pursuing efficiencies across the organization. The plan incorporated several efficiency strategies focused on labour cost reductions. The sum of these initiatives impacted 41 Full Time Equivalent (FTE)

positions and yielded the savings target. This effort required that we put the right tools in the hands of our leaders. In 2015-16 we realized the benefits from the bi-weekly labour hours management reporting tool, the bi-weekly attendance at work tool and maturation of the automated employee scheduling system managed by our service provider, The Ottawa Hospital. Collectively these initiatives were designed to ensure consistent and rapid response to managing labour hours across 41 units in 18 different environments.

### Performance Improvement - Worked Hours April 2013 to March 2016



The operating plan also took into account an assumption of 0% growth in laboratory testing provided by the members and there were also approved program changes that reflected an increase in funding from members of \$2.3M.

- \$0.9M New Molecular Oncology Diagnostics Laboratory
- \$0.8M Tissue Typing growth and new test requirements related to the Transplant Program
- \$0.6M Anatomical Pathology growth

In addition to these program changes, EORLA also supported several member driven clinical service changes without jeopardizing the success of the operational plan. These initiatives included the addition of several new clinics (Hepatitis, Obstetrics Low Risk, Hematology Autoimmune Clinic) as well as the addition of several new tests (EGFR Ki67), revised flu algorithm and growth in Bone Marrow testing.

#### Operations Key Performance Indicators 2014 - 15 and 2015 - 16

### Eastern Ontario Regional Laboratory Association Annual Report 2015-16

#### **Key Performance Indicators**

	Fiscal Year 2014-15					Fi	scal Y	ear 2015-1	6					
	Actuals	Budget		%	PY 13-14		%	Actuals	Budget		%	PY 14-15		%
Total Tests Performed	12,812,229	12,967,702	<u></u>	-1.2%	12,839,428	Δ	-0.2%	13,086,927	12,937,055		1.2%	12,812,229		2.1%
Cost per Test	\$7.65	\$7.09	<b>\rightarrow</b>	-7.9%	\$7.62	_	-0.4%	\$7.43	\$7.56		1.7%	\$7.65		2.8%
Overtime (excl. IT & Call Back)	\$617,163	\$623,430		1.0%	\$1,047,866		41.1%	\$367,879	\$296,498	<b>\rightarrow</b>	-24.1%	\$617,163		40.4%
Call Back Overtime	\$429,671	\$354,917	<b>\rightarrow</b>	-21.1%	\$506,457		15.2%	\$330,305	\$353,552		6.6%	\$429,671		23.1%
UPP & MOS Training/Orientation (excl. IT)	\$465,229	\$208,709	<b>\rightarrow</b>	-122.9%	\$879,199		47.1%	\$413,873	\$524,279		21.1%	\$465,229		11.0%
FTE (UPP&MOS)	682	635	<b>\rightarrow</b>	-7.4%	697		2.2%	638	656		2.8%	682		6.6%
Average Monthly Test / FTE (UPP&MOS)	1,565	1,701	<b>♦</b>	-8.0%	1,484		5.4%	1,711	1,644		4.1%	1,565		9.3%
Paid Sick	\$1,110,755	\$657,239	<b>♦</b>	-69.0%	\$1,178,651		5.8%	\$1,011,233	\$952,259	<b>\rightarrow</b>	-6.2%	\$1,110,755		9.0%
Admin expense rate (% of Total)	4.8%	5.6%		13.5%	4.5%	<b>\rightarrow</b>	-5.8%	6.1%	7.1%		13.7%	4.8%	<b>♦</b>	-27.7%

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## **Testing Volume Performed for Member Sites**

		Test Vol	ume	
Invoiced Site	15-16 Actuals	14-15 Actuals	Variance	Var %
ALMONTE GENERAL HOSPITAL	28,541	25,259	3,282	13.0 %
ARNPRIOR & DISTRICT MEMORIAL HOSPITAL	97,934	89,705	8,229	9.2 %
CARLETON PLACE AND DISTRICT MEMORIAL HOSPITAL	65,275	64,593	682	1.1 %
CHILDRENS HOSPITAL OF EASTERN ONTARIO	621,041	653,117	(32,076)	-4.9 %
CORNWALL COMMUNITY HOSPITAL	600,980	563,773	37,207	6.6 %
DEEP RIVER AND DISTRICT HOSPITAL	45,792	103,792	(58,000)	-55.9 %
GLENGARRY MEMORIAL HOSPITAL	96,832	99,150	(2,318)	-2.3 %
HAWKESBURY AND DISTRICT GENERAL HOSPITAL	394,455	360,341	34,114	9.5 %
HOPITAL MONTFORT	939,552	1,012,292	(72,740)	-7.2 %
KEMPTVILLE DISTRICT HOSPITAL	72,264	79,178	(6,914)	-8.7 %
PEMBROKE REGIONAL HOSPITAL	556,195	549,869	6,326	1.2 %
QUEENSWAY CARLETON HOSPITAL	1,116,863	1,172,020	(55,157)	-4.7 %
RENFREW VICTORIA HOSPITAL	195,640	201,658	(6,018)	-3.0 %
ST. FRANCIS MEMORIAL HOSPITAL	48,808	47,633	1,175	2.5 %
THE OTTAWA HOSPITAL - CIVIC CAMPUS	3,199,201	3,152,135	47,066	1.5 %
THE OTTAWA HOSPITAL - GENERAL CAMPUS	4,051,930	3,728,963	322,967	8.7 %
THE OTTAWA HOSPITAL - RIVERSIDE CAMPUS	784,795	716,518	68,277	9.5 %
WINCHESTER DISTRICT MEMORIAL HOSPITAL	170,780	192,233	(21,453)	-11.2 %
Grand Total	13,086,927	12,812,229	274,698	2.1 %

## **Testing Volume Performed by Laboratory Division**

	Test Volume					
Division	15-16 Actuals	14-15 Actuals	Variance	Var %		
Anatomic Pathology	627,688	564,077	63,611	11.3 %		
Biochemistry	9,199,999	9,111,196	88,803	1.0 %		
Electron Microscopy	1,995	2,431	(436)	-17.9 %		
Genetics	129	64	65	101.6 %		
Hematology	1,746,199	1,668,305	77,894	4.7 %		
Microbiology	505,389	515,179	(9,790)	-1.9 %		
Molecular Oncology	375	0	375	0.0 %		
Pre/Post Analysis	655,363	648,130	7,233	1.1 %		
Tissue Typing	12,491	8,516	3,975	46.7 %		
Transfusion Medicine	294,691	260,869	33,822	13.0 %		
Virology	42,019	33,462	8,557	25.6 %		
Grand Total	13,086,927	12,812,229	274,698	2.1 %		

# Billing Adjustment and Pricing Model Review

Over the course of August and September 2015 a significant funding error related to EORLA cost recovery model was identified. The identification of the error resulted in concerns being raised regarding the billing system and the pricing model.

The funding formula error was isolated to certain tests performed by the EORLA Paediatric Reference Laboratory at CHEO and it affected 12 member organizations which referred testing there. The funding formula error was traced back to the "effective date" of April 1, 2012 and has affected the funding process since that time.

The EORLA Board was apprised of the situation in September and took full control of the resolution process. Through the Board leadership, a comprehensive process was established to evaluate the full impact of the error and ensured that all Members were engaged in the efforts to validate and adjust funding accordingly. A seven member Finance Advisory Committee made up of member CFOs, representative of the region, provided the Board with working oversight to the process of remediation.

Specifically the Finance Advisory Committee accepted three tasks:

- Conduct a review of the funding and member billings since inception. The resulting report would also outline remedies and restitution to the affected members to correct over or under billing if applicable.
- Engage an independent third-party to review the Billing System on an expedited basis.
- Establish a new funding model based on the results of the funding and member billing review and the Third Party Billing System Review.

By the end of fiscal 2015-16 the review of the Billing System was completed by a large public accounting firm, with the conclusion that the billing system functions as designed. The review also generated recommendations which management is pursuing under the oversight of the Finance and Audit Committee.

The results of the member billings review found that 12 member hospitals were over charged for testing services at the Paediatric Reference Laboratory. The total impact was determined to be \$8.66M over four years. The EORLA Board immediately moved to establish a credible restitution and resolution process. It was agreed that Members and EORLA would share equally in the restitution. The Board approve the recommendations of the Finance and Audit Committee based on advice from the Pricing and Budget Committee. EORLA would recover \$4.33M through savings over the remainder of the Membership Agreement and Members accepted accountability for the remaining \$4.33M, in restitution to EORLA. This approach to restitution met the contractual language of EORLA and more importantly fit the spirit of the member-based laboratory services partnership.

Work continues to establish a new pricing model. The FAC proposed to build and validate a revised funding model by the fall 2016. The goal is to establish a robust model that will serve EORLA for many years to come.

In closing, it is important to note that EORLA is a complex organization with a 4 year operation expenditure in excess of \$430M. There have been many accomplishments and EORLA has shown provincial leadership in laboratory integration, providing high quality laboratory results to the benefit of all the patients across the LHIN in a timely fashion. The funding error and the resulting efforts are an opportunity for EORLA to improve its business model. The Board remains fully committed to providing member hospitals with a high quality sustainable laboratory service.

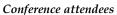
### **Academics and Education**

### First Annual Conference in Forensic and Pediatric Pathology

The Department of Pathology and Laboratory, and the University of Ottawa joined with EORLA to put on the University of Ottawa's **First Annual Conference in Forensic and Pediatric Pathology** which took place on September 25th, 2015 in the OHRI Room of The Ottawa Hospital General Campus. This inaugural event was very successful as there were 68 registrants from across Canada, United States and Europe. The content of the programme was delivered by 9 conference speakers from Ontario, the USA and Australia which included the two feature speakers, Professor Roger Byard, George Marks Chair of Pathology, University of Adelaide, Australia and Dr Roger Mitchell, Chief Medical Examiner, Washington DC, USA. Some conference topics included *Injury Presentation Techniques for Court: The Role of Computer Images, "Shaking," Abusive Head Trauma and the Forensic Pathologist – a difficult interface, The Investigation of Unexplained Still Birth Deaths and other interesting lectures.* 

Speakers from top to bottom (left to right): Dr Jacqueline Parai and Dr Charis Kepron Standing (left to right): Dr Jean Michaud, Dr Christopher Milroy, Dr Michael Pickup, Professor Roger Byard, Dr Roger Mitchell and Dr Alfredo E Walker.







# IQMH/EORLA Joint Symposium – Beyond quality: The laboratory as a high reliability organization

Held at The Ottawa Hospital, over 100 attendees travelled from different parts of the province and beyond to listen to world-class speakers impart expert advice and share their experiences on how medical laboratories can rise to join the ranks of high reliability organizations.

On October 17, 2016, Dr. Greg Flynn, from IQMH, Dr. John Veinot and Dr. Ruth Padmore, program organizer, welcomed attendees with their inspiring opening remarks that encouraged participants to make the most out of this event by engaging in meaningful conversations with their peers, sharing experiences and solutions.

Topics covered at the IQMH/EORLA Joint Symposium – *Beyond quality: The laboratory as a high reliability organization* included:

- Process redesign in Anatomical Pathology to enhance reliability
- Monitoring lot-to-lot variation
- Lab preparedness, EBOLA and other emerging infections
- Quality improvement in laboratory medicine
- · Quality systems and risk management
- · Big data analysis and management of information
- · Contingency planning for the management of blood shortages

The presentation illustrated the phases of a blood shortage and presented a rationale for having a blood shortage contingency plan. Provincial and national blood shortage plans as well as recent simulation exercises and their outcomes were also described. There was also a detailed discussion regarding the elements of a hospital blood shortage plan and its implementation.

More than 20 dedicated professionals from The Ottawa Hospital, Eastern Ontario Regional Laboratory Association, and Institute for Quality Management in Healthcare worked diligently to make this event happen.

Attendees were very pleased with the valuable information and high calibre of speakers that presented at the event. The feedback received through the evaluation forms was overwhelmingly positive with many indicating that they look forward to future educational events.

Speakers - from top to bottom (left to right): Dr. Stephen Raab (key note speaker), Dr. Diponkar Banerjee (EORLA), Dr. Katarina Pavenski (St. Michael Hospital), Dr. Andrew Don-Wauchope (Hamilton Regional Laboratory Medicine), Dr. Greg Flynn (IQMH), Dr. Marc Desjardins (EORLA).



# Pathology and Laboratory Medicine (P.A.L.M) Ground Rounds 2015/16 Schedule

Sep 15, 2015

Marisa Caruso The Evolving Role of the Cytotechnologist: Past, Present, Future Cytopathology

Sep 21, 2015

Dr Jeannelyn Estrella

(External Speaker - USA)

Pancreatic Neuroendocrine Neoplasms - An UpdateAnatomical Pathology

Sep 29, 2015

Prof Roger Byard

(External Speaker - Australia) The Law and the Laboratory

Forensic Pathology

Oct 13, 2015

Dr Marcio Gomes

Competency Based Medical Education: A Paradigmatic Change

**Anatomical Pathology** 

Oct 27, 2015

Dr Christopher Milroy

The Shafia Murders

Forensic Pathology

Nov 10, 2015

Dr Alfredo E Walker

A Disease That Should Not be of This Time; A Diagnosis Only Fit For Where The Sun Does Not Shine.

Forensic Pathology

Nov 24, 2015

Dr Bojana Djordjevic

Laboratory Testing for Lynch Syndrome in Endometrial Carcinoma Patients

**Anatomical Pathology** 

Dec 8, 2014

Dr Gerard Jansen

Beef, Cataract, and Hysteria...where does it all connect? - the Wonderful World of Prions

Neuropathology

Dec 15, 2015

Dr Bruce Burns

The Classification of Lymphomas: A Historical Perspective.

**Anatomical Pathology** 

Jan 12, 2016

Dr Robert Slinger

Molecular Diagnostics in Pediatric Clinical Microbiology

Microbiology

Jan 26, 2016 Lorraine Hart Root Cause Analysis for OFI and Non-Conformances Laboratory Management

Feb 9, 2016 Dr Bryan Lo and Venus Chirip Next Generation Sequencing Molecular Pathology

Feb 23, 2016

Dr Marie-Anne Brundler (External Speaker - Alberta) Eosinophilic Esophagitis - Is there more to it than just counting eosinophils? Pediatric Pathology

Mar 8, 2016

Dr Guy Trudel and Dr Odette Laneuville The Ottawa Bone and Joint Research Laboratory on board the International Space Station (ISS) EORLA-Clinical Research Program & Division of Biochemistry

Mar 22, 2015 Dr Matt Henderson Hyperbilirubinemia in Term and Late Pre - Term Infants Biochemistry

Apr 12, 2016 Tracy-Anne Forrest Tuberous Sclerosis: Review and Update Anatomical Pathology

Apr 25, 2016 Dr Yasmine Ayroud Inflammatory Skin Lesions Anatomical Pathology

May 10, 2016 Michael Snudden Laboratory Validation Automation Microbiology

May 31, 2016 Dr Fawaz Halwani A Real-time Dashboard for Managing Pathology Processes Anatomical Pathology

June 14, 2016 Dr Elizabeth Nizalik Primary Cilia Dyskinesia (Immotile Cilia Syndrome) Pediatric Pathology

## **Anatomical Pathology Residency Program**

The Anatomical Pathology Residency Program at the University of Ottawa is a well-balanced program with a long tradition of excellence; an outstanding and dedicated teaching staff with national and international recognition and a strong teaching, clinical service, and academic environment. The program is fortunate to have a rich and adequate mix of accessioned specimens which provides a sound basis for learning in a state of the art facility. The Residency program has recently been nominated for the PARO Residency Program Excellence Award and for Resident Teaching Excellence Award 2016.

The Anatomical Pathology Residency Program is very consistent in matching all three positions in the 1st iteration in the CaRMS match for the past 6 years. This year the physicians, who will join us as PGY1 residents are Anthea Girdwood from the University of Ottawa; Alexandre Petiquan from the Northern Ontario School of Medicine and Osama Khan from Saba University School of Medicine.

The program prides in the success of its trainees at the Anatomical Pathology Specialty Certification Examination offered by the Royal College of Physicians and Surgeons of Canada. This year all three residents, Dr. Sarah Strickland, Dr. Shaheed Hakim and Dr. Soufiane Elhelani passed their Royal College exam and will now be pursuing their fellowships at prestigious centers across North America. All residents that graduated last year have found jobs all across Canada including positions at EORLA/TOH.

The program is fully-accredited and the regular On-Site Survey by the Royal College of Physicians and Surgeons of Canada will take place on December 1st, 2016.

The program is directed by Dr. Islam as the Program Director and Ms. Schnupp as the Program Administrator for the Royal College at the University of Ottawa under the guidance of Dr. Veinot as the Chair of the Department of Pathology and Laboratory Medicine and Dr. Wiesenfeld as the Dean Postgraduate Medical Education, Faculty of Medicine at the University of Ottawa.

- Dr. Shahidul Islam

## Medical Microbiology Residency Program

In the last few years the Medical Microbiology Residency Training Program at the University of Ottawa has placed graduates nationally in British Columbia, and Prince Edward Island. After a successful residency program, Dr Chelsey Ellis has returned to the Atlantic Provinces, where she is now the Microbiologist at the Moncton Hospital, and the Horizon Health Network which provides service to 12 local hospitals. It is with great pleasure that one of our own trainees, Dr. Nadia Sant, has been hired into the Division of Microbiology at The Ottawa Hospital. I believe that is a mark of success for a training program when you are able to train someone who has the desired qualities. Dr. Sant has already immersed into the future direction of the Eastern Ontario Regional Microbiology Laboratory. Both Dr. Ellis and Sant presented at the national meeting of the Association of Microbiology and Infectious Diseases in Vancouver in March of this year.

The Microbiology training program presently has 3 residents. Dr. Vincent Deslandes will be coming to the laboratory after having had a very successful 1<sup>st</sup> year, and no doubt his prior PhD in Microbiology will make him easy to train. Dr. Liu and Dr. Gosal continue to progress in their training.

-Dr. Peter Jassamine

# **Specialization Courses**

### The Pathological Basis of Disease (3 cr.)

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.

## Cellular And Molecular Basis Of Cardiovascular Function/Dysfunction (3cr.)

Mechanism of failing heart and cardiovascular system, its associated functions and associated conditions. Therapies for restoring function. Topics include: regulation of heart development, cell signaling, cellular and molecular mechanisms of atherosclerosis and heart disease, hormonal regulation, hypertension, bioenergetics, cardiovascular genomics and genetics, cell therapy, and regenerative medicine.

## Introduction To Cancer Biology (3cr.)

An introduction to the biology of cancer. Major topics in cancer biology include the following: tumor suppression/oncogenes; apoptosis in cancer; cell immortalization and senesence; genomic instability; multistep tumorigenesis/inflammation in cancer; biology of angiogenesis; rational therapies.

## Advanced Topics In Cancer Biology (3cr.)

Advanced study of recent developments in the field of cancer biology with emphasis on cellular and molecular aspects. Specific topics to be covered include: angiogenesis, apoptosis, cancer genetics, cell signaling, genetic instability, oncogenes and tumour suppressors.

## Advanced Topics In Structure And Function Of Plasma Lipoproteins (3cr.)

Recent advances in our knowledge of the plasma lipoproteins with a special emphasis on their role in the etiology of atherosclerosis. The subject will be introduced by an overview of the general structural properties of lipoproteins which will be followed by detailed discussion of the structure, metabolism and genetics of the apolipoproteins, the proteins and enzymes that modify lipoproteins and cell surface lipoprotein receptors. Other topics will include cholesterol homeostasis, plasma cholesterol transport and disorders of lipoprotein metabolism.

# **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.

# **EORLA Undergraduate Courses**

Course Name	<u>Instructor</u>
Introduction to blood: (Week 4)	
Lecture: Disorders of growth	Dr. Trevor Flood
Lecture: Hematopoeisis II: Red Cells & Platelets	Dr. Ruth Padmore
UDA: Diagnostic Tools in Hematology	Dr. Zhaodong Xu
Lecture: Genetic alterations in Cancer Groups I to Q	Dr. Bruce Burns
Lecture: Genetic alterations in Cancer Groups R to Z	Dr. Bojana Djordjevic
Red Blood Cells: (Week 5)	
UDA: Introduction to autopsy	Dr. Jacqueline Parai
Microscopic Lab: Hematology Normal Blood and Marrow and Red Cell Disorders Groups: R-Z	Dr. Ruth Padmore
Microscopic Lab: Hematology Normal Blood and Marrow and Red Cell Disorders Groups:I-Q	Dr. Luke Shier
Coagulation and Tranfusion: (Week 6)	
UDA: Introduction to inflammation	Dr. David Grynspan
Leukemia: (Week 7)	
Microscopic Lab-Hematology: White Cells Disorders Groups: R-Z	Dr. Ruth Padmore
Microscopic Lab-Hematology: White Cells Disorders Groups: I-Q	Dr. Luke Shier
Immunology: (Week 8)	
LAB: Acute inflammation Groups R-Z	Dr. Alfredo Walker
LAB: Acute inflammation Groups I-Q	Dr. Alfredo Walker
Monoarthritis and microbiology: (Week 10)	
Lecture: Pathology of Monoarthritis	Dr. Bibianna Purgina
UDA: Chronic inflammation Groups R-Z	Dr. Iris Teo
UDA: Chronic inflammation Groups I-Q	Dr. Iris Teo
Introduction au sang: (semaine 4)	
Cours: Troubles de la croissance	Dr. Marcio Gomes
Hématopoiese 2: Globules rouges et plaquettes	Dr. John Leddy
Outils diagnostiques en hématologie	Dr. Melissa Toupin
Cours: Altérations génétiques du cancer	Dr. Marcio Gomes
Globules rouges: (semaine 5)	,
Activité spécifique à l'unité: Introduction à l'autopsie	Dr. Éric Bélanger

Course Name	<u>Instructor</u>
Microscopie: Hematologie sang normal et maladies	
moelle osseuse	Dr. David Allan
Coagulation et transfusion sanguine : (semaine 6)	
Activité spécifique à l'unite: Introduction à l'inflammation	Dr. Yyasmine Ayroud
Leucémie: (semaine 7)	
Microscopie: Hematologie Maladie des globules blancs	Dr. Pierre Villeneuve
Immunologie (semaine 8)	
LAB: Pathologie, Inflammation aigue Groupes A-H	Dr. Nicolas Roustan Delatour
Monoarthrite et microbiologie: (semaine 9)	
Cours: Pathologie de la monoarthrite	Dr. Denis Gravel
Polyarthrite: (semaine 10)	
	Dr. Nicolas Roustan Delatour
LAB: Pathologie, Inflammation chronique Groupes A-H	
CAD- Cardio 3: (Week 3)	
Lecture: Pathology of Atherosclerosis	Dr. John Veinot
Valvular Heart Disease Cardio 4: (Week 4)	
LAB: Unit directed activity: Pathology of valvular disease	
Groups R-Z	Dr. John Veinot
LAB: Unit directed activity: Pathology of valvular disease	DI. GOINT VOINGE
Groups I-Q	Dr. John Veinot
Oncology: (Week 6)	Dir delini veinet
Lecture: Introduction to neoplasia	Dr. Shahidul Islam
LAB: Pathology Neoplasms Groups: I-Q	Dr. Anna Adamiak
LAB: Pathology Neoplasms Groups: R-Z	Dr. Anna Adamiak
Airway Disease (Resp/Ent 3): (Week 9)	
Microscopic Lab: Airflow Diseases of the Respiratory	
Tract Groups: R-Z	Dr. Harman Sekhon
Microscopic Lab: Airflow Diseases of the Respiratory	
Tract Groups: I-Q	Dr. Harman Sekhon
Pneumonitis (Resp/Ent 4): (Week 10)	
Pathology: Interstitial Lung Disease: Group I-Q	Dr. Chi Lai
Pathology: Interstitial Lung Disease: Group R-Z	Dr. Chi Lai
Microscopic Lab: Pathology Respiratory Infections	
Groups: R-Z	Dr. Harman Sekhon
Microscopic Lab: Pathology Respiratory Infections	
Groups: I-Q	Dr. Harman Sekhon
Lung Cancer Resp/Ent 5 : (Week 11)	
Microscopic Lab: Pathology cancer of the lung and	
airways Groups: R-Z	Dr. Chi Lai
Microscopic Lab: Pathology cancer of the lung and	
airways Groups: I-Q	Dr. Chi Lai
Lymphoma: (Week 12)	
Lecture: Lymphatic Function & Anatomy	Dr. Bruce Burns
Lecture: Malignant Lymphomas and Plasma Cell	
Myeloma	Dr. Bruce Burns
Microscopy: Myeloma and Lymphoma Groups R-Z	Drs. Ruth Padmore/Ronald Booth
Microscopy: Myeloma and Lymphoma Groups I-Q	Drs. Ruth Padmore/Ronald Booth
Chronic Renal Diseases (Renal 3): (Week 16)	
Unit directed activity: Interactive discussion: glomerular	D. D. J. Division
diseases; clinical and pathological perspectives	Dr. Paula Blanco

Course Name	Instructor
Microscopic LAB: Pathology renal disease Groups:R-Z	Dr. Susan Robertson
Microscopic LAB: Pathology renal disease Groups: I-Q	Dr. Susan Robertson
Coronaropathie (Cardio 3): (semaine 3)	
Cours: Pathologie athérosclérose	Dr. Joseph de Nanassy
Valvulopathie (Cardio 4): (semaine 4)	·
Activité spécifique à l'unité: Patholgie de la	Dr. Joseph de Nanassy
valvulopathie Groupe: A-H	,
Oncologie: (semaine 6)	
Cours: Introduction à la néoplasie	Dr. Marcio Gomes
Microscopie-Pathologie: Néoplasmes Groupes A-H	Dr. Nicolas Roustan-Delatour
Maladies des voies respiratoires (Resp/ORL 3) :	
(semaine 9)	
Microscopie-pathologie: Obstruction à la circulation de	
l'air dans les voies respiratoires Groupes: A-H	Dr. Marcio Gomes
Pneumonite (Resp/ORL 4): (semaine 10)	
Pathologie: Maladie pulmonaire interstitielle Groupes:	
A-H	Dr. Marcio Gomes
Microscopie-pathologie: Infections respiratoires	
Groupes: A-H	Dr. Marcio Gomes
Cancer du poumon (Resp/ORL 5) : (semaine 11)	
Microscopie-pathologie: Cancer du poumon et des voies	Dr. Marcio Gomes
aériennes Groupes: A-H	
Lymphome: (semaine 12)	
Cours: Anatomie et fonction des noeuds lymphatiques	Dr. Marcio Gomes
Cours: Lymphomes malins et myélomes plasmocytaires	Dr. Marcio Gomes
Microscopie: Hematologie Myélome et lymphome	
Groupes: A-H	Dr. Marcio Gomes
Maladies rénales chroniques (Rénal 3) : (semaine	
16)	
Discussion interactive: maladies glomérulaires, aspects	
cliniques et pathologiques	Dr. Éric Bélanger
Microscopie-pathologie:Maladie rénale Groupes: A-	_
Н	Dr. Éric Bélanger
Week 2 (GI I):	
Unit-directed activity: Clinical pathological conference:	
Barrett's esophagus, carcinoma, eosinophilic	
esophagitis	Dr. Celia Marginean
Unit-directed activity: Clinical pathological conference:	
H. Pylori, peptic ulcer disease, gastric cancer	Dr. Terence Moyana
Week 3 (GI II):	
Unit-directed activity: Clinical pathological conference:	
IBD & Other Colitides	Dr. Celia Marginean
Unit-directed activity: Clinical pathological conference:	
Colorectal Cancer	Dr. Fawaz Halwani
Week 4 (GI III):	
Unit-directed activity: Clinical pathological conference:	
Pancreatic and biliary tumors	Dr. Celia Marginean
Week 5 (GI IV):	
LAB: Pathology/Radiology Workshop PCR: Liver tumors	
Groups: I-Q	Dr. Nicolas Roustan-Delatour
LAB: Pathology/Radiology Workshop PCR: Liver tumors	Dr. Fawaz Halwani
1 ~	DI. Fawaz naiwani
Groups: R-Z Unit-directed activity: Clinical pathological conference:	Dr. Terence Moyana

Course Name	<u>Instructor</u>
NASH, Alcohol and other hepatitides	
Week 7 (Endo II):	
LAB: Pathology in diabetes Groups: I-Q	Dr. Paula Blanco
LAB: Pathology in diabetes: Groups R-Z	Dr. Paula Blanco
Week 8 (Endo III):	
LAB: Parathyroid/thyroid metabolic disease Groups: I-Q	Dr. Bibianna Purgina
LAB: Parathyroid/thyroid metabolic disease Groups: R-	_
Z	Dr. Bibianna Purgina
Week 10 (Repro I):	
Unit-directed activity: Abnormal uterine bleeding	Dr. Shahidul Islam
Week 11 (Repro II):	
Lecture: Pathology of Pregnancy Groups: R-Z	Dr. David Grynspan
Lecture: Pathology of Pregnancy Groups: I-Q	Dr. David Grynspan
Week 12 (Repro III):	
Unit-Directed activity: Benign breast disease	Dr. Susan Robertson
LAB: Pathology/Radiology Breast: Group I-Q	Dr. Susan Robertson
LAB: Pathology/Radiology Breast: Group R-Z	Dr. Susan Robertson
Semaine 2 (Digestif I):	
Activité spécifique à l'unité: Conférence anatomo-	
clinique: oesophage de Barrett, carcinome, oesophagite	
éosinophile	Dr. Cherif Ibrahim
Activité spécifique a l'unité: Conférence anatomo-	
clinique: H. pylori, ulcère gastro-duodénal, cancer	
gastrique	Dr. Nicolas Roustan-Delatour
Semaine 3 (Digestif II):	
Activité spécifique a l'unité: Conférence anatomo-	
clinique: MICI et autres colites	Dr. Nicolas Roustan-Delatour
Activité spécifique a l'unité: Conférence anatomo-	
clinique: cancer colorectal	Dr. Nicolas Roustan-Delatour
Semaine 4 (Digestif III):	
Activité spécifique à l'unité: Conférence anatomo-	5 M · 0
clinique: Tumeurs pancréatiques et biliaires	Dr. Marcio Gomes
Semaine 5 (Digestif IV):	
LAB: Atelier pathologie/radiologie: Conference en radio-	D. Nicolae D. Later Delate
pathologie: Tumeurs du foie	Dr. Nicolas Roustan-Delatour
Activité spécifique à l'unité: conférence anatomo-	
clinique: stéatohépatite non alcoolique, hépatite	Dr. Cherif Ibrahim
alcoolique et autres	Dr. Cheni ibrahim
Semaine 7 (Endo II):	Dr. Maraia Comas
LAB: Pathologie du diabète	Dr. Marcio Gomes
Semaine 8 (Endo III):  LAB: Pathologie: Maladies métaboliques des os liées à	
	Dr. Denis Gravel
la parathyroïde et a la thyroïde  Semaine 10 (Repro I):	DI. Dellis Glavel
Activité spécifique à l'unité: saignement utérin anormal	Dr. Nicolas Roustan-Delatour
Activite specifique à l'utilité. Saignement utenn anormal	DI. NICUIAS NOUSIAII-DEIAIUUI
Semaine 11 (Repro II):	
Cours: Pathologie de la grossesse	Dr. Nicolas Roustan-Delatour
Semaine 12 (Repro III):	
Activité specifique à l'unite: Les maladies benignes du	
sein	Dr. Denis Gravel
LAB: Pathologie: sein Groupes A-H	Dr. Denis Gravel
Week 1 (Mood Disorders):	
22	

Course Name	Instructor
	Instructor
LAB: Dementia: Pathology & Pathophysiological	Dr. John Woulfo
concepts Groups I to Q	Dr. John Woulfe
LAB: Dementia: Pathology & Pathophysiological	Dr. Jahr Waylfa
concepts Groups R to Z	Dr. John Woulfe
Week 5 (Neuro I):	B 11 W 11
Lecture: Primary Tumors of CNS	Dr. John Woulfe
Week 6 Stroke and Trauma (Neuro II):	
LAB: Pathology Stroke Groupd R-Z	Dr. John Woulfe
LAB: Pathology Stroke Groupd I-Q	Dr. John Woulfe
Week 7 (Infectious,Inflammatory and Demyelinating	
disorders):	
LAB: Pathology: Infections and demyelinating disorders	
Group R-Z	Dr. Gerard Jansen
LAB: Pathology: Infections and demyelinating disorders	
Group I-Q	Dr. Gerard Jansen
Week 8 (Neuromuscular, Degenerative and	
Developmental Disorders):	
LAB: Pathology of movement disorders and muscle	
disorders Group R-Z	Dr. Gerard Jansen
LAB: Pathology of movement disorders and muscle	
disorders Group I-Q	Dr. Gerard Jansen
Week 9 (Neuro V):	
LAB: Pathology: Epilepsy Groups I-Q	Dr. Gerard Jansen
LAB: Pathology: Epilepsy Groups R-Z	Dr. Gerard Janssen
Semaine 1: Trouble de l'humeur:	
LAB: Pathologie: Démence, pathologie et concepts	Dr. Jean Michaud
physiopathologiques	
Semaine 5: Neuro I:	
Cours: Tumeurs primaires du SNC (pathologie)	Dr. Jean Michaud
Semaine 6: Neuro II:	
LAB: AVC	Dr. Jean Michaud
Semaine 7: Neuro III:	
LAB: Pathologie: Infections et maladies demyelinisantes	Dr. Jean Michaud
Semaine 8: Neuro IV:	
LAB: Pathologie: Troubles du mouvement	Dr. Jean Michaud
Semaine 8: Neuro V:	
LAB: Pathologie: Épilepsie	Dr. Jean Michaud

## **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.

## List of Winners at the 2016 Department Of Pathology and Laboratory Medicine Annual Research Day

Nadia Mikhael Award for Best Paper presented by a Junior Resident (Aurelia Busca)

# IFITM1 IS SUPERIOR TO CD10 IN THE EVALUATION OF MYOMETRIAL INVASION IN ENDOMETRIAL ENDOMETRIOID ADENOCARCINOMA

<u>Aurelia Busca</u>, Bojana Djordjevic, Shahidul Islam, Ana Giassi, Carlos Parra-Herran Department of Pathology and Laboratory Medicine, Eastern Ontario Regional Laboratory Association & The Ottawa Hospital, Faculty of Medicine, University of Ottawa.

#### 2nd Best paper by a Junior Resident (Kevin Hogan)

DO SPECIFIC GLEASON PATTERN 4 MORPHOLOGIES DETECTED ON TRANSRECTUAL ULTRASOUND (TRUS)-GUIDED BIOPSIES PREDICT UPGRADING OR UPSTAGING IN GLEASON SCORE 3+4=7 PROSTATE CANCER?

<u>Kevin Hogan</u>, Susan J. Robertson, Nicola Schieda, Kien T. Mai, Daniel T. Keefe, Eric C. Belanger, Rodney H. Breau, Chris Morash, Trevor A. Flood

Department of Pathology and Laboratory Medicine, Eastern Ontario Regional Laboratory Association & The Ottawa Hospital, Faculty of Medicine, University of Ottawa.

Virbala Acharya Award for Best Presentation by a Senior Resident or Fellow (Jason Wasserman)

# CORE NEEDLE BIOPSIES HAVE LOWER DIAGNOSTIC YIELD AND DELAY TREATMENT FOR PATIENTS WITH LYMPHOMA: AN INSTITUTIONAL REVIEW OF ALL LYMPH NODE BIOPSIES FOR SUSPECTED LYMPHOMA

<u>Jason K. Wasserman</u>, Kevin Hogan, Bruce F. Burns, Iris Teo, Philip Berardi, Diponkar Banerjee Department of Pathology and Laboratory Medicine, Eastern Ontario Regional Laboratory Association & The Ottawa Hospital, Faculty of Medicine, University of Ottawa.

#### 2nd Best paper by a Senior Resident or Fellow (Nina Chang)

# LUNG ADENOCARCINOMA WITH AEROGENOUS SPREAD: DESCRIPTION OF HISTOLOGICAL FEATURES AND RADIOLOGICAL-PATHOLOGICAL CORRELATION

Nina Chang (1), J Inacio (2), C Lai (1), A Gupta (2), CA Souza (2), HS Sekhon (1), MM Gomes (1)

(1) Department of Pathology and Laboratory Medicine, (2) Department of Diagnostic Imaging, The Ottawa Hospital, University of Ottawa, Ottawa Hospital Research Institute, Ottawa, ON, Canada.

#### Best Poster Presentation by a Resident (Nina Chang)

# A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED WINDOW OF OPPORTUNITY TRIAL EVALUATING CLINICAL EFFECTS OF HIGH DOSE VITAMIN D IN PATIENTS WITH BREAST CANCER

Nina Chang, K Keyhanian, Arnaout A, C Addison, M Clemons, G Pond, R Vieth, SJ Robertson

Department of Pathology and Laboratory Medicine, Eastern Ontario Regional Laboratory Association & The Ottawa Hospital, Faculty of Medicine, University of Ottawa.

#### 2nd Best Poster Presentation by a Resident (Aurelia Busca)

# ROLE OF PATHOLOGIC EVALUATION OF ENDOMETRIAL ABLATION RESECTIONS IN PREDICTING ABLATION FAILURE AND PRESENCE OF ADENOMYOSIS IN HYSTERECTOMY

Aurelia Busca and Carlos Parra-Herran

Department of Pathology and Laboratory Medicine, Eastern Ontario Regional Laboratory Association & The Ottawa Hospital, Faculty of Medicine, University of Ottawa.

#### Dr. M. Orizaga Award for Best Teacher (Dr. Bibianna Purgina)

## **EORLA Academic Staff**

EORLA's partnership with the University of Ottawa has been well-established. 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
Pranesh	Chakraborty	<b>Assistant Professor</b>
Francis	Chan	<b>Assistant Professor</b>
Joseph	de Nanassy	Associate Professor
Dina	El Demellawy	Associate Professor
Michael	Geraghty	Full Professor
David	Grynspan	<b>Assistant Professor</b>
Ashok	Kumar	Full Professor
Nathalie	Lepage	Associate Professor
Elaine	Leung	Assistant Professor
Brian	Luke	Adjunct Professor
Jean	McGowan-Jordan	<b>Assistant Professor</b>
Jean	Michaud	Full Professor
Elizabeth	Nizalik	Assistant Professor
Robert	Slinger	<b>Assistant Professor</b>
Baldwin	Toye	Assistant Professor

#### Health Canada

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

### 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

**Assistant Professor** Adamiak Anna Yasmine Ayroud **Assistant Professor** Diponkar Banerjee **Full Professor** Paul Beaulé **Full Professor** Eric Bélanger **Assistant Professor** Blanco **Assistant Professor** Paula Ronald **Booth Assistant Professor Janis Bormanis** Full Professor Seymour Brownstein Full Professor Bruce **Burns** Full Professor Desjardins **Assistant Professor** Marc Djordjevic **Assistant Professor** Bojana Farmer **James** Assistant Professor Trevor Flood **Assistant Professor** Giulivi Associate Professor Antonio **Assistant Professor** Marcio Gomes

Denis Gravel **Assistant Professor** Donald Greenway Assistant Professor Fawaz Halwani **Assistant Professor** Matthew Henderson **Assistant Professor** Shahidul Islam Associate Professor Bruce **Iamison** Assistant Professor Associate Professor Gerard Jansen Peter Jessamine **Assistant Professor** Charis Kepron **Assistant Professor** Kos **Assistant Professor** Zuzana Thomas Lagacé **Assistant Professor** Chi Lai **Assistant Professor Assistant Professor** Goo Lee Manisha Lamba **Assistant Professor** Kien Mai Full Professor Esmeralda Celia Marginean Associate Professor Christopher McCudden **Assistant Professor** Christopher Milrov Full Professor Terence Moyana **Full Professor** Bernhard Olberg **Assistant Professor Ruth Frances** Padmore **Associate Professor Assistant Professor** Parra-Herran Carlos Jacqueline Parai Assistant Professor Sherry Perkins Associate Professor Robert Prokopetz **Assistant Professor** Bibianna Purgina **Assistant Professor Pvatibrat** Sergey Assistant Professor Karamchand Ramotar Associate Professor Susan Robertson **Assistant Professor** Elianna Saidenberg **Assistant Professor** Harman Sekhon Assistant Professor Senterman **Assistant Professor** Mary **Assistant Professor Julie** Shaw Luke Shier **Associate Professor Assistant Professor** Iris Teo Alan Tinmouth **Assistant Professor** Iohn Veinot Full Professor Alfredo Walker **Assistant Professor** Don Assistant Professor Wang John Woulfe Associate Professor

#### **University of Ottawa**

Marilyn Ann Keaney Associate Professor Qiao Li Assistant Professor

#### **University of Ottawa Heart Institute**

Adolfo	De Bold	<b>Emeritus Professor</b>
Mercedes	De Bold	<b>Assistant Professor</b>
Thomas	Lagacé	<b>Assistant Professor</b>

Yves Marcel Emeritus

# 2015/16 Academic Publications by EORLA Medical and Scientific Staff

#### 2015

- 1. Genevieve Bondy, Donald Caldwell, <u>Syed Aziz</u>, Laurie Coady, Cheryl Aramstrong, Ivan. Curran, Robyn Koffman, Kamla Kapal, Lefebvre DE, and Rekha Metha. Effects of Chronic Ochratoxin A Exposure on p53 Heterozygous and p53 Homozygous Mice. Toxicol Pathol July 2015 vol. 43 no. 5 715-729.
- 2. Syed A. Aziz, Shamoon Noushad, Sadaf Ahmed. Generalized review of the successes & challenges of medicine; an insight of the past, present and future prospects. International Journal of Endorsing Health Science Research Volume 3 Issue 1, March 2015.
- 3. Xu Z, Padmore R, Shier L and Beaulieu Bergeron M. A rare case of acute leukemia of ambiguous lineage overexpressing C-MYC with monosomy 7 and Philadelphia chromosome. Annals of Hematology 94:1761-1763, 2015. PMID: 26159563
- 4. Bichitra N. Nayak., <u>Buttar, HS</u>
  Herbal therapy for men with erectile dysfunction. Curr Res Cardiol 2015; 2 (1): 30-34.
- Siddhi Bagwe, Leo J.P. Tharappel, Ginpreet Kaur and <u>Buttar HS</u> Bovine colostrum: an emerging nutraceutical J. Complement Integre Med. 2015
- Siram R, Lo V, Pryce B, Antonova L, Mears AJ, <u>Daneshmand M</u>, McKay B, Conways SJ, Muller WJ, Sabourin LA (2015) Loss of Protein/OSF-2 in ErbB2/Neu-driven tumors results in androgen receptor-positive molecular apocrine-like tumors with reduced Notch1 activity Breast Cancer Res. 2015 Jan 16;17(1):7
- Go protein subunit Goα and the secretory process of the natriuretic peptide hormones ANF and BNP. Roeske C, Martinuk A, Choudhry A, Hendy GN, Gollob M, Li Q, Georgalis T, de Bold AJ. J Mol Endocrinol. 54(3):277-88, 2015.
- 8. INTERACTING DISCIPLINES: Cardiac natriuretic peptides and obesity: perspectives from an endocrinologist and a cardiologist. Ramos HR, Birkenfeld AL, <u>de Bold AJ</u>. Endocr Connect. 4:R25-36, 2015.
- Alvarez GG, VD Dyk, M. Desjardins, AS Yasseen III, S Aaron, SD Cameron, N Obed, M Baikie, S Pakhale, CM Denkinger, H Sohn, M Pai. The feasibility, accuracy and impact of Xpert® MTB/RIF testing in a remote Aboriginal community in Canada. Chest. 14:2948. 2015.
- 10. Eshagi A, D Shashinas, A Li, R Kariyawasam, P Banh, <u>M Desjardins</u>, RG Melano, and S. Patel. Molecular characterization of Enterococcus gallinarum carrying dual vanA and vanB cassette. 2015. J. Clin. Microbiol. doi:10.1128/JCM.03267-14.

- 11. Pourya Masoudian; Ahmed Nasr; Joseph de Nanassy; Karen Fung Kee Fung; Shannon A Bainbridge; <u>Dina El Demellawy</u>. Oocyte Donation Pregnancies and the Risk of Preeclampsia or Gestational Hypertension: A Systematic Review and Meta-Analysis. Am J Obstet Gynecol. 2015 Nov 25 [Epub ahead of print]
- 12. Williams K, Chernetsova E, Michaud J, <u>El Demellawy D</u>. Neurogenic Ovarian Cyst. A Rare Monodermal Teratoma. Pediatr Dev Pathol. 2015 Apr 9
- 13. Elizaveta Chernetsova, Ahmed Nasr, Luis Gerra, Bilaal Kabir, Marie JeongMin Kim, Joseph de Nanassy, Katrina J Sullivan, <u>Dina El Demellawy</u>. An unusual Wilms tumor with urethral recurrence: rare case report and litera-ture review. Case Reports in Clinical Pathology, 2015; 2(4):65-70
- 14. Keller RB, <u>El Demellawy D</u>, Quaglia A, Finegold M, Kapur RP. Methylation Status of the Chromosome 19q MicroRNA Cluster in Sporadic and Androgenetic-Biparental Mosaicism-Associated Hepatic Mesenchymal Hamartoma. Pediatr Dev Pathol. 2015;18(3):218-227
- 15. Mukherjee A, Chan AD, Keating S, Redline RW, Fritsch MK, Machin G, Cornejo-Palma D, de Nanassy J, <u>El Demellawy D</u>, von Dadelszen P, Benton SJ, Grynspan D. The placental distal villous hypoplasia pattern: Observer agreement and automated fractal dimension as an objective metric. Pediatr Dev Pathol. 2015 Aug 14
- 16. Cundiff C, Elawabdeh N, Naguib MM, Jactel S, <u>El-Demellawy D</u>, Abramowsky CR, Durham MM, Youssef L, Wittkamp ML, Shehata B. Does MAP2 play a role in predicting the development of anti-NMDAR encephalitis associated with Benign Ovarian Teratoma? A report of six new pediatric cases. Pediatr Dev Pathol. 2015 Jan 8
- 17. Agarwal, Kaartikaiy; Grynspan, David; de Nanassy, Joseph; <u>El-Demellawy, Dina</u>; Tomiak, Eva; Dumont, Tania; Mullen, Michelle. An institutional audit of ovarian tumors in the pediatric and adolescent age group: scientific and ethical considerations. Canadian Journal of Pathology. 2015;7(1):p15-19
- 18. Can Quantitative CT Texture Analysis be Used to Differentiate Fat-poor Renal Angiomyolipoma from Renal Cell Carcinoma on Unenhanced CT Images? Hodgdon T, McInnes MD, Schieda N, Flood TA, Lamb L, Thornhill RE. Radiology. 2015 Apr 23:142215. [Epub ahead of print]
- 19. Diagnosis of Sarcomatoid Renal Cell Carcinoma With CT: Evaluation by Qualitative Imaging Features and Texture Analysis. Schieda N, Thornhill RE, Al-Subhi M, McInnes MD, Shabana WM, van der Pol CB, Flood TA. AJR Am J Roentgenol. 2015 May;204(5):1013-23. doi: 10.2214/AJR.14.13279.
- 20. Quantitative pharmacokinetic analysis of prostate cancer DCE-MRI at 3T: Comparison of two arterial input functions on cancer detection with digitized whole mount histopathological validation.
  Fennessy FM, Fedorov A, Penzkofer T, Kim KW, Hirsch MS, Vangel MG, Masry P, Flood TA, Chang MC, Tempany CM, Mulkern RV, Gupta SN. Magn Reson Imaging. 2015 Feb 12. pii: S0730-725X(15)00047-8. doi: 10.1016/j.mri.2015.02.008. [Epub ahead of print]
- 21. The role of pathology correlation approach in prostate cancer index lesion detection and quantitative analysis with multiparametric MRI. Fedorov A, Penzkofer T, Hirsch MS, Flood TA, Vangel MG, Masry P, Tempany CM, Mulkern RV, Fennessy FM.
  Acad Radiol. 2015 May;22(5):548-55. doi: 10.1016/j.acra.2014.12.022. Epub 2015 Feb 13.
- 22. Is primary tumor detectable in prostatic carcinoma at routine contrast-enhanced CT? Schieda N, Al-Dandan O, Shabana W, <u>Flood TA</u>, Malone SC. Clin Imaging. 2015 Jan 16. pii: S0899-7071(15)00010-8. doi: 10.1016/j.clinimag.2015.01.008. [Epub ahead of print]
- 23. Intracellular lipid in clear cell renal cell carcinoma tumor thrombus and metastases detected by chemical shift (in and opposed phase) MRI: radiologic-pathologic correlation.

- Moosavi B, Shabana WM, El-Khodary M, van der Pol CB, <u>Flood TA</u>, McInnes MD, Schieda N. Acta Radiol. 2015 Feb 13. pii: 0284185115572207. [Epub ahead of print]
- 24. Intracellular lipid in papillary renal cell carcinoma (pRCC): T2 weighted (T2W) MRI and pathologic correlation. Schieda N, van der Pol CB, Moosavi B, McInnes MD, Mai KT, <u>Flood TA</u>. Eur Radiol. 2015 Feb 14. [Epub ahead of print]
- 25. Earlam K, Souza CA, Glikstein R, Gomes MM, Pakhale S. Pulmonary Langerhans' cell histiocytosis and diabetes insipidus in a young smoker. Can Respir J. 2015 Sep 2. pii: 16996. [Epub ahead of print] Wasserman JK, Purgina B, Sekhon H, Gomes MM, Lai C. The Gross Appearance of a NUT Midline Carcinoma. Int J Surg Pathol. 2016 Feb;24(1):85-8. Gomes MM. Competency-Based Medical Education in Pathology. Can J Path. 2015 Autumn;7(3):06-10.
- 26. Savard M, Laforce R, Guillemette E, Goselin-Lefebvre S, Geschwind M, Irani SR, Jansen GH, Gould PV: Creutzfeldt-Jakob disease-like periodic EEG discharges in voltage-gated potassium channel complex antibody encephalitis: A case report. J Clin Neurophys 2015 Sept 10 (epub ahead of print PMID: 26375660)
- 27. Wasserman JK, Tsai EC, Glikstein R, Mai KT, <u>Jansen GH</u>: Metastatic renal cell carcinoma mimicking a schwannoma in a dorsal root ganglion: a case report and review of literature. J of Neurosurg: Spine 2015: 22; 314-317. Online January 2, 2015; DOI: 10.3171/2014.9.SPINE131075
- 28. Miguel Y, <u>Jansen GH</u>, Alkherayf F: Unique occurrence of subependymoma presenting bilaterally with hemorrhage: a case report. OJMN 2015; 5: 59-63.
- 29. Wasserman JK, Nicholas G, Yaworski R, Wasserman A-M, Woulfe JM, <u>Jansen GH</u>, Chakraborty S, Nguyen TB: Radiological and pathological features associated with IDH1-R132H mutation status and early mortality in newly diagnosed anaplastic astrocytic tumours. PLoS ONE 2015;10(4): e0123890. doi: 10.1371/journal.pone.0123890
- 30. <u>Leung E</u>, Dix D, Ford J, Barnard D, McBride, E. The Pediatric Hematology/Oncology Educational Laboratory In-Training Examination (PHOELIX): A Formative Evaluation of Laboratory Skills for Canadian Pediatric Hematology/Oncology Trainees." Pediatric Blood and Cancer. 2015
- 31. C.M. Milroy, <u>J.L. Parai</u>. Sudden unexpected death in Epilepsy (SUDEP) and Certification. Academic Forensic Pathology 5(1): 59-66; 2015
- 32. <u>J.L.Parai</u> and C.M. Milroy. Histological aging of bruising: A historical and ongoing challenge. Academic Forensic Pathology 5(2): 266-272: 2015
- 33. <u>Kos Z</u>, Nielsen TO. Developing a new generation of breast cancer clinical gene expression tests. Breast Cancer Res. (in press).
- 34. Liu S, Foulkes WD, Leung S, Gao D, Lau S, <u>Kos Z</u>, Nielsen TO. Prognostic significance of FOXP3+ lymphocyte infiltration depends on ER and HER2 expression, and cytotoxic T-cell infiltration status in breast cancer. Breast Cancer Res. (in press).
- 35. Jones P, Nathalie Lepage. Tandem MS: it's now the norm. Clinical Biochemistry 48:1, 2015.
- 36. Chen J, Wang Y, Hamed M, Lacroix N, <u>Li Q</u>. Molecular basis for the regulation of transcriptional coactivator p300 in myogenic differentiation. Sci Rep. 2015, 5:13727.

- 37. Wasserman JK, Tsai EC, Glikstein R, Mai KT, Jansen GH. Metastatic renal cell carcinoma mimicking a schwannoma in a dorsal root ganglion: case report. J Neurosurg pine. 2015 Mar;22(3):314-7. doi: 10.3171/2014.9.SPINE131075. Epub 2015 Jan 2. PubMed PMID: 25555049
- 38. Mai KT, Ball CG, Swift J, A Flood T, Belanger EC. Novel technique of sampling the urinary bladder for urothelial carcinoma specimens. Int J Surg Pathol. 2015 May;23(3):202-6. doi: 10.1177/1066896914567329. Epub 2015 Jan 27. PubMed PMID:25627071.
- 39. Schieda N, van der Pol CB, Moosavi B, McInnes MD, <u>Mai KT</u>, Flood TA.Intracellular lipid in papillary renal cell carcinoma (pRCC): T2 weighted (T2W) MRI and pathologic correlation. Eur Radiol. 2015 Jul;25(7):2134-42. doi:10.1007/s00330-015-3610-x. Epub 2015 Feb 14. PubMed PMID: 25678078.
- 40. Mai KT, Truong LD, Ball CG, Olberg B, Lai CK, Purgina B. Lymphatic endothelial cancerization in papillary thyroid carcinoma: hidden evidence of lymphatic invasion. Pathol Int. 2015 May;65(5):220-30. doi: 10.1111/pin.12272. Epub 2015 Feb 26. PubMed PMID: 25722068
- 41. Keefe DT, Schieda N, El Hallani S, Breau RH, Morash C, Robertson SJ, Mai KT, Belanger EC, Flood TA. Cribriform morphology predicts upstaging after radical prostatectomy in patients with Gleason score 3 + 4 = 7 prostate cancer at transrectal ultrasound (TRUS)-guided needle biopsy. Virchows Arch. 2015 Jul 31. [Epub ahead of print] PubMed PMID: 26229020
- 42. Gulavita P, Hakim SW, Schieda N, Breau RH, Morash C, Keefe DT, Robertson SJ,

  <u>Mai KT</u>, Belanger EC, Flood TA. Prostatic ductal adenocarcinoma: An aggressive variant that is underdiagnosed and undersampled on transrectal ultrasound (TRUS)-guided needle biopsy. Can Urol Assoc J. 2015 Sep-Oct;9(9-10):302-6. doi: 0.5489/cuaj.2976. PubMed PMID: 26664660; PubMed Central PMCID: MC4662389.
- 43. Mai KT, Ball CG, Belanger EC. Noninvasive Papillary Basal-like Urothelial
  Carcinoma: A Subgroup of Urothelial Carcinomas With Immunohistochemical Features of Basal Urothelial Cells
  Associated With a High Rate of Recurrence and
  Progression. Appl Immunohistochem Mol Morphol. 2015 Nov 16. [Epub ahead of print]
- 44. Wasserman JK, Bateman J, <u>Mai KT</u>. Differentiated Squamous Intraepithelial Neoplasia Associated with Squamous Cell Carcinoma of The Anal Canal. Histopathology. 2015 Sep 24. doi: 10.1111/his.12874. [Epub ahead of print] PubMed PMID: 26402383.
- 45. Keefe DT, Schieda N, El Hallani S, Breau RH, Morash C, Robertson SJ, Mai KT, Belanger EC, Flood TA. Cribriform morphology predicts upstaging after radical prostatectomy in patients with Gleason score 3 + 4 = 7 prostate cancer at transrectal ultrasound (TRUS)-guided needle biopsy. Virchows Arch. 2015 Oct;467(4):437-42. doi: 10.1007/s00428-015-1809-5. Epub 2015 Jul 31. PubMed PMID:26229020.
- 46. Gastrointestinal Stromal Tumors (GIST)—Paving the Way for Modern Oncology—Epidemiology, Diagnosis, Treatment Elena Tsvetkova, <u>E Celia Marginean</u>, Carolyn Nessim, Shailendra Verma Oncology & Hematology Review, 2015;11(1):74–86 DOI: http://doi.org/10.17925/OHR.2015.11.01.74
- 47. Adjuvant sunitinib following chemoradiotherapy and surgery for locally advanced esophageal cancer: a phase II trial. Horgan AM, Darling G, Wong R, Guindi M, Liu G, Jonker DJ, Lister J, Xu W, MacKay HM, Dinniwell R, Kim J, Pierre A, Shargall Y, Asmis TR, Agboola O, Seely AJ, Ringash J, Wells J, Marginean EC, Haider M, Knox JJ.Dis Esophagus. 2015 Dec 10. doi: 10.1111/dote.12444. [Epub ahead of print]
- 48. Clinical and pathological features of intraductal papillary neoplasm of the biliary tract and gallbladder. Bennett S, <u>Marginean EC</u>, Paquin-Gobeil M, Wasserman J, Weaver J, Mimeault R, Balaa FK, Martel G. HPB (Oxford). 2015 Sep;17(9):811-8. doi: 10.1111/hpb.12460.

- 49. The Prognostic Significance of c-MET and EGFR Overexpression in Resected Gastric Adenocarcinomas. Paliga A, Marginean H, Tessier-Cloutier B, Purgina B, Jonker D, Marginean EC. Am J Clin Oncol. 2015 Jun 29. [Epub ahead of print]
- 50. Evaluation of Quantitative Digital Pathology in the Assessment of Barrett Esophagus-Associated Dysplasia. El Hallani S, Guillaud M, Korbelik J, Marginean EC.Am J Clin Pathol. 2015 Jul;144(1):151-64.
- 51. Inflammatory pseudotumours of the oesophagus--histological and immunohistochemical findings. Sy K, Parfitt J, <u>Marginean EC</u>, Riddell RH, Streutker CJ. Histopathology. 2015 Jun;66(7):1003-9. doi: 10.1111/his.12615. Epub 2015 Jan 20.
- 52. Congenital nemaline myopathy: The value of magnetic resonance imaging of muscle. Ennis, J., Dyment, D.A., Michaud, J., McMillan, H. J. Can. J. Neurol. Sc. 42: 338-340, 2015
- 53. Molecular subgroups of atypical teratoid rhabdoid tumours in children: an integrated genomic and clinicopathological analysis. Torchia, J., Picard, D., Lafay-Cousin, L., Hawkins, C. E., Kim, S.-K., Letourneau, L., Ra, Y.-S., Ho, K. C., Chan, T. S. Y., Sin-Chan, P., Dunham, C. P., Yip, S., Ng, H.-K., Lu, J.-Q., Albrecht, S., Pimentel, J., Chan, J., Somers, G., Zielenska, M., Faria, C.C., Roque, L., Baskin, B., Birks, D. K., Foreman, N. K., Strother, D., Klekner, A., Garami, M., Hauser, P., Hortobágyi, T., Wilson, B., Hukin, J., Carret, A.-S., Van Meter, T., Nakamura, H., Toledano, H., Fried, I., Fults, D., Wataya, T., Fryer, C., Eisenstat, D., Scheineman, K., Johnston, D., Michaud, J., Zelcer, S., Hammond, R., Ramsay, D., Fleming, A., Lulla, R. R., Fangusaro, J. R., Sirachainan, N., Barakzai, M. A., Montpetit, A., Stephens, D., Grundy, R. G., Schüller, U., Nicolaides, T., Tihan, T., Phillips, J., Taylor, M. D., Rutka, J. T., Dirks, P., Bader, G. D., Warmuth-Metz, M., Rutkowski, S., Pietsch, T., Judkins, A., Jabado, N., Bouffet, E., Huang, A. The Lancet Oncology 16: 569-582, 2015 doi: 10.1016/S1470-2045(15)70114-2. (Epub ahead of print 2015 Apr 14)
- 54. Neurogenic Ovarian Cyst A rare monogenic teratoma. Williams, K., Chernetsova, E., Michaud, J., El-Demellawi, D. Ped Devel Pathol 18: 341-342, 2015. Apr 9. [Epub ahead of print]
- 55. Primary cutaneous adenoid cystic carcinoma with brain metastases: case report and literature review Pozzobon, L. D., Glikstein, R., Laurie, S. A., Hanagandi, P., Michaud, J., Purgina, B., Ayroud, Y., Wasserman, J. K. J. Cutan. Pathol. 2105 Aug 4. Doi: 10.1111/cup. 12563. [Epub ahead of print]
- 56. Detailed Biochemical and Bioenergetics Characterization of FBXL4-Related Encepahalomyopathic Mitochondrial DNA Depletion Antoun, G., McBride, S., Vanstone, J.R., Naas, T., Michaud, J., Redpath, S., McMillan, H.J., Brophy, J., Daoud, H., Chakraborty, R., Dyment, D., Holcik, M., Harper, M.-E., Lines, M.A. JIMD Rep 2015 Sep 25 [Epub ahead of print]
- 57. DNM1L-related mitochondrial fission defect presenting as refractory epilepsy Vanstone, J., Smith, A., McBride, S. Maas. T., Holcik, M., Antoun, G., Harper, M.-E., Michaud, J., Sell, E., Chakraborty, P., Tetreault, M., Majewski, J., Baird, S., Boycott, K., Dyment, D., MacKenzie, A., Lines, M.A. Eur. J. Human Genet Nov 25 2015. doi: 10.1038/ejhg.2015.243. [Epub ahead of print]
- 58. Grams SE, Argiropoulos B, Lines M, Chakraborty P, McGowan-Jordan J, Geraghty MT, Tsang M, Eswara M, Tezcan K, Adams KL, Linck L, Himes P, Kostiner D, Zand DJ, Stalker H, Driscoll DJ, Huang T, Rosenfeld JA, Li X, Chen E Genotype-phenotype characterization in 13 individuals with chromosome Xp11.22 duplications. Am J Med Genet A. 2015 Dec 22. doi: 10.1002/ajmg.a.37519.
- 59. Rajput A, Bence-Bruckler I, Huebsch L, Jessamine P, Toye B, <u>Padmore R</u>. Disseminated Histoplasmosis associated with acquired hemophagocytic lymphohistiocytosis. Clinical Case Reports 2015 Mar;3(3):195-6.
- 60. McFarlane A, Aslan B, Raby A, Bourner G, <u>Padmore R</u>. Critical Values in Hematology. International Journal of Laboratory Hematology 2015 Feb;37(1):36-43.

- 61. C.M. Milroy, <u>J.L. Parai</u>. Sudden unexpected death in Epilepsy (SUDEP) and Certification. Academic Forensic Pathology 5(1): 59-66; 2015
- 62. <u>J.L.Parai</u> and C.M. Milroy. Histological aging of bruising: A historical and ongoing challenge. Academic Forensic Pathology 5(2): 266-272: 2015
- 63. <u>Pulido OM, Abbott M, Koerner TB, Godefroy S. Celiac disease and gluten-free oats: A Canadian position based on a literature review.</u>
  Can J Gastroenterol Hepatol. 2015 Sep 30. pii: 17129.
- 64. V. R. Roth, T. Longpre, M. Taljaard, D. Coyle, K. N. Suh, K. A. Muldoon, K. Ramotar and A. Forster. Universal vs Risk Factor Screening for Methicillin-Resistant Staphylococcus aureus in a Large Multicenter Tertiary Care Facility in Canada. Infection Control & Hospital Epidemiology, Available on CJO 2015 doi:10.1017/ice.2015.230.
- 65. Colin G. Rousseaux and Stephanie F. Greene
  Sigma receptors [pRs]: biology in normal and diseased states. J Recept Signal Transduct Res, Early Online: 1–62.
  2015 Informa Healthcare USA, Inc. DOI: 10.3109/10799893.2015.1015737
- 66. Spika J. and <u>E.W. Rud</u> (2015). Immunization as a tool to combat antimicrobial resistance (AMR). Canada Communicable Disease Report CCDR. Volume 41S-5.
- 67. Christou G, Kekre N, Petrcich W, Tokessy M, Neurath D, Giulivi A, Saidenberg E, McDiarmid S, Atkins H, Bence-Bruckler I, Bredeson C, Huebsch L, Sabloff M, Sheppard D, Tay J, Tinmouth A, and Allan DS Impact of platelet transfusion on toxicity and mortality after hematopoietic progenitor cell transplantation. Transfusion, 2015; 55:253-258
- 68. Wasserman J.K., <u>H.S. Sekhon</u> and Y. Ayroud. Malignant melanoma with osteoclast-like differentiation. Int J of Surg Pathol. 2015; 23: 478-82
- 69. Akbani R, Akdemir KC, Aksoy BA, Albert M, Ally A, Amin SB, Arachchi H, Arora A, Auman JT, Ayala B, Baboud J, Balasundaram M, Balu S, Barnabas N, Bartlett J, Bartlett P, Bastian BC, Baylin SB, Behera M, Belyaev D, Benz C, Bernard B, Beroukhim R, Bir N, Black AD, Bodenheimer T, Boice L, Boland GM, Bono R, Bootwalla MS, Bosenberg M, Bowen J, Bowlby R, Bristow CA, Brockway-Lunardi L, Brooks D, Brzezinski J, Bshara W, Buda E, Burns WR, Butterfield YS, Button M, Calderone T, Cappellini GA, Carter C, Carter SL, Cherney L, Cherniack AD, Chevalier A, Chin L, Cho J, Cho RJ, Choi YL, Chu A, Chudamani S, Cibulskis K, Ciriello G, Clarke A, Coons S, Cope L, Crain D, Curley E, Danilova L, Seidman J, Sekhar PC, Sekhon H.S., Senbabaoglu Y, Seth S, Shannon KF, Thorne L, Thorsson V, Trent JM, Triche TJ Jr, Tsai KY, Tsou P, Van Den Berg DJ, Van Allen EM, Veluvolu U, Verhaak RG, Voet D, Voronina O, Walter V, Walton JS, Wan Y, Wang Y, Wang Z, Waring S, Watson IR, Weinhold N, Weinstein JN, Weisenberger DJ, White P, Wilkerson MD, Wilmott JS, Wise L, Wiznerowicz M, Woodman SE, Wu CJ, Wu CC, Wu J, Wu Y, Xi R, Xu AW, Yang D, Yang L, Yang L, Zack TI, Zenklusen JC, Zhang H, Zhang J, Zhang W, Zhao X, Zhu J, Zhu K, Zimmer L, Zmuda E, Zou L. Genemoic classification of cutaneous melanoma. Cell. 2015; 161: 1681-1697.
- 70. Janice M. Leung, John Mayo, Wan Tan, C. Martin Tammemagi, Geoffrey Liu, Stuart Peacock, Frances A. Shepherd, John Goffin, Glenwood Goss, Garth Nicholas, Alain Tremblay, Michael Johnston, Simon Martel, Francis Laberge, Rick Bhatia, Heidi Roberts, Paul Burrowes, Daria Manos, Lori Stewart, Michel Gingras, Sergio Pasian, Ming-Sound Tsao, Stephen Lam and Don D. Sin for the Pan-Canadian Early Lung Cancer Study Group (Diana Ionescu, Sukhinder Atkar-Khattra, Mark Elwood, Sharon Gee, Sonya Cressman, Diana Sonnichsen, Annette McWilliams, Serge Puksa, Bill Evans, Elaine Moore, Christian Couture, Carolle St-Pierre, Erin Pennell, H.S. Sekhon, Kayvan Amjadi, Sharon Kelly, Xu Zhaolin, J-C Cutz, Stefan Urbanski, Paul MacEachern, Rommy Koetzler, David Hwang, Kam Sopharati, Kazuhiro Yasufuku, Natasha Leighl, Maureen McGregor, Tom Sutedja). Plasma pro-surfactant protein B and lung function decline in smokers. Eur Respir J. 2015; 45: 1037-1045.

- 71. Al-Baimani K., <u>H.S. Sekhon</u> and P. Wheatley-Price. Recurrence of anaplastic lymphoma kinase (ALK) positive adenocarcinoma after 17 years: Case report. Cancer Treatment Comm. 2015; 4: 06-09.
- 72. Watson I.R., W. Chang-Jiun, L. Zou, S. Moschos, K.A. Hoadley, S.E. Woodman, J. Roszik, W.R. Burns, A.D. Cherniack, E. Hodis, C. Wu, A. Korkut, <u>H.S. Sekhon</u> et al. Genemoic classification of cutaneous melanoma. Cell. 2015; 161: 1681-96.
- 73. Ellis C, Misir A, Hui C, Jabbour M, Barrowman N, Langill J, Bowes J, Slinger R. Detection of respiratory viruses and bacteria in children using a twenty-two target reverse-transcription real-time PCR (RT-qPCR) panel. World J Pediatr. 2015 Dec 18. [Epub ahead of print] PubMed PMID: 26684315.
- 74. Kong, LY, Dendukuri, N. Schiller, I, Bourgault, A-M, Brassard, P, Poirier, L. Lamothe, F, Béliveau, C, Michaud, S, Turgeon, N, TOYE, B, Frost, EH, Gilca, R, Dascal, A, Loo, VG. Predictors of Asymptomatic Clostridium difficile Colonization on Hospital Admission.

  Am J Infect Control 2015; 43:248-253.
- 75. Nguyen, M-L, Zvonar, R., <u>TOYE, B.</u>, Kanji, S. Risk Factors and Outcomes for Extended-Spectrum Beta-Lactamase-Producing Escherichia coli and Klebsiella Species Bacteremia at a Canadian Tertiary Care Hospital. Can J Hosp Pharm 2015; 68:136-143
- 76. Van Oosten EM, Boag AH, Cunningham K, <u>Veinot JP</u>, Hamilton A, Petsikas D, Payne D, Hopman WM, Redfearn DP, Song WJ, Lamothe S, Zhang S, Baranchuk.The Histology of Human Right Atrial Tissue in Patients with High-Risk Obstructive Sleep Apnea and Underlying Cardiovascular Disease: A Pilot Study. IJC Heart & Vasculature. 2015; 6:71-75
- 77. Ball CG, <u>Veinot JP</u>. Overview of technological development, complications, and grossing techniques in percutaneous coronary intervention. Acad Forensic Pathol 2015; 5(2):240-253.
- 78. Stone JR, Bruneval P, Angelini A, Bartoloni G, Basso C, Bartoroeva L, Buja LM, Butany J, d'Amati G, Fallon JT, Gittenberger-de Groot AC, Gouveia RH, Halushka MK Kelly KL, Kholova I, Leone O, Litovsky SH, Maleszewski JJ, Miller DV, Mitchell RN, Preston S, Pucci A, Radio SJ, Rodriguez ER, Sheppard MN, Suvarna SK, Tan CD, Thiene G, van der Wal AC, Veinot JP. Consensus statement on Surgical pathology of the aorta from the Society for Cardiovascular Pathology and the Association for European Cardiovascular Pathology: 1: Inflammatory diseases. Cardiovascular Pathology 2015 24:267-278.
- 79. Cote I, Sinclair J, Glikstein R, Woulfe J, <u>Veinot JP</u>. Cerebral metastasis presenting after complete primary resection of atrial myxoma: case report. C J Neurological Sciences 2015; 42:457-460
- 80. Strickland S., Pena E., <u>Walker AE</u>. (2015). Fatal foreign body granulomatous pulmonary emoblization due to microcrystalline cellulose in a patient receiving total parenteral nutrition: all crystals are not what they seem. Forensic Sci Med Pathol. Epub ahead of publication.
- 81. Nguyen T, Thornhill R, Cron G, Cameron I, Footit C, Caudrelier J-M, Jansen GJ, <u>Woulfe J</u>, Sinclair J, Chakraborty S, Hogan M. Preoperative prognostic value of DCE-MR derived Ktrans and Vp in patients with cerebral gliomas. Am J Neuroradiol. 2015;36(1):63-69.
- 82. Nguyen TB, Cron GO, Perdrizet K, Bezzina K, Torres CH, Chakraborty S, <u>Woulfe J</u>, Jansen GH, Sinclair J, Thornhill RE, Footit C, Zanette B, Camron IG. Comparison of the diagnostic accuracy of DCS- and dynamic contrast enhanced MRI in the preoperative gradining of astrocytomas. Am J Neuroradiol 2015;36(11):2017-2022.
- 83. Gray M, <u>Woulfe J</u>. Striatal blood-brain permeability in Parkinson's disease. J Cereb Blood Flow Metab. 2015; 35(5):747-750.

- 84. Wasserman JK, Nicholas G, Yaworski R, Wasserman A-M; <u>Woulfe J</u>, Jansen G, Chakraborty S, Nguyen T. Radiological and pathological features associated with IDH1-R132H mutation status and early mortality in newly diagnosed anaplastic astrocytic tumours. PLoS One. 2015;10(4):e0123890.
- 85. Cote I, Sinclair J, Woulfe J, Gilkstein R, Veinot JP. Cerebral metastasis presenting after complete primary resection of atrial myxoma: case report. Can J Neurol Sci. 2015;42(6):457-460.
- 86. Gray MT, Gray DA, Schlossmacher M, Munoz DG, Woulfe J. Letter to the Editor: "Protective effect of vagotomy suggests source organ for Parkinson's disease". Ann Neurol. 2015;17(5):834-835.
- 87. Warman-Chardon J, Smith A, Woulfe J, Pena E, Rakhra K, Dennie C, Beaulieu C, Schwartzentruber J, Hawkins C, MD, PhD, Harms MB, Zhang M, FORGE Canada Consortium, Majewski J, Bulman DE, Boycott KM, Dyment DA. LIMS2 mutations are associated with a novel muscular dystrophy, severe cardiomyopathy and triangular tongues. Clin Genet. 2015;88(6):558-564.
- 88. Woulfe J, Gray M, Munoz DG. Write-Click article. Comment on: Colonic alpha-synuclein lacks specificity as a biomarker for Parkinson's disease. Neurology 2015;85(9):834.
- 89. Munoz DG, <u>Woulfe J</u>. Invited Editorial for "Angiogenesis: A new paradigm for Parkinson's disease with practical and pathogenic implications". Neurology 2015;85(21):1826-1827.
- 90. Kovacs G. (+ 71 authors incl. <u>Woulfe J.</u>. Aging-related tau astrogliopathy (ARTAG): harmonized evaluation strategy. Acta Neuropathol. 2015. DOI 10.1007/s00401-015-1509-x.
- 91. Zhang W, Bamji-Mirza M, Chang N., Haqqani A, Stanimirovic DB. 2015. Expression and Function of ABC Transporters at the Blood-Brain Barrier. In. The Blood-Brain Barrier in Health and Disease (Volume one), pp. 172-214. Ed. K. Dorovini-Zis, CRC press/Taylor & Francis Group, New York (Corresponding author).
- 92. Zhang W, Hou S-T, Stanimirovic DB. 2015. Blood-brain barrier protection in stroke: Taming tPA. In. The Blood-Brain Barrier in Health and Disease (Volume two), pp. 226-246, Ed. K. Dorovini-Zis, CRC press/Taylor & Francis Group, New York.

#### *2016*

- Syed A. Aziz and Rekha Mehta. Immunohistochemistry: Overview, Its Potential, and Challenges. Technical
  Aspects of Toxicological Immunohistochemistry System Specific Biomarkers. Springer Science+Business Media
  LLC New York is part of Springer Science+Business Media. 2016
- 2. Xu Z, Padmore R, Shier L and <u>Beaulieu Bergeron M</u>. Atypical acute promyelocytic leukaemia with mixed T-cell/Myeloid immunophenotype. In preparation
- 3. Matthew P.A. Henderson, Holger Hirte, Sebastien J. Ho e, and Peter A. Kavsak. Cytokines and cell adhesion molecules exhibit distinct profiles in health, ovarian cancer, and breast cancer. Heliyon, 2(1):e00059, 2016
- 4. Coulthart MB, Geschwind MD, Demarsh A, Abrams JY, Quereshi S, Phielipp N, Hedge M, Valcour V, Atri A, Belay E, DeArmond S, Gambetti P, <u>Jansen GH</u>, Lang AE, Schonberger LB: A case cluster of variant Creutzfeldt-Jakob disease linked to the Kingdom of Saudi Arabia. Brain 2016
- 5. AlSudais H, Aabed K, Nicola W, Dixon, K, Chen J, <u>Li Q</u>. Retinoid X receptor-selective signaling in the regulation of Akt/protein kinase B isoform-specific expression. J Biol Chem. 2016. 291:3090-3099
- 6. den Dunnen JT, Dalgleish R, Maglott D, Hart R, Greenblatt M, McGowan-Jordan J, RouxAF, Smith T, Antonarakis SE, Taschner, PEM HGVS recommendations for the description of sequence variants: 2016 update. Accepted for publication in Human Mutation.

- 7. Chen J, Li Q. Implication of retinoic acid receptor selective signaling in myogenic differentiation. Sci Rep. 2016, 6:18856.
- 8. Pulido Olga M. "Letter to the Editor GHFBB; Response to Peña AS: What Is the Best Histopathological Classification for Celiac Disease? Does It Matter?".Gastroenterology and Hepatology From Bed to Bench (2016) 9.1:68–69
- 9. Rud, E. W., T.U. Vogel, A. Sherring, D. Bogdanovic, D. Ko, J. Mihowich, M. Parenteau, N. J. Edgar, K. A. Reimann, N.L. Letvin, M. P. Cranage and J. Fournier (2016). Infection with the attenuated SIVmacC8 does not protect against superinfection with SIVsmmPBj14 nor SHIV89.6P but provides long-term protection against onset of disease. (in preparation).
- 10. Rud, E. W., D. Ko, T.U. Vogel, A. Sherring, D. Bogdanovic, J. Mihowich, K. A. Reimann, N.L. Letvin, M. P. Cranage and J. Fournier (2016). Recombination between challenge virus and attenuated SIV viral vaccine leads to rapid progression in cynomolgus macaques. (in preparation).
- 11. Rud, E. W., D. Ko, T.U. Vogel, A. Sherring, D. Bogdanovic, J. Mihowich and J. Fournier (2016). Differential Nef evolution correlates to rate of disease progression in cynomolgus macaques infected with wild type and attenuated SIV. (in preparation).
- 12. Salha, M.D., R. Cheynier, H. McGrath, T.Y. Langaee, B. Yassine-Daib, H. Soudeyns, J. Fournier, M. Parenteau, J. Edgar, D. Ko, A. Sherring, D. Boganovic, R.-P. Sekaly and <u>E.W. Rud</u> (2016). Expansions and exhaustions of the CD4 T cell repertoire during primary infection predict disease progression in SIV infected cynomolgus macaques. (in preparation).
- 13. Bosinger, S.E., A. Danesh, L. Xu, A. Sidahmed, L. Ran, M. Parenteau, J. Fournier, B.P. Lee, D. Ko, M.J. Cameron, L. Zhang, D.J. Kelvin and <u>E.W. Rud</u> (2016). Live attenuated Lentiviral vaccine induced protection against intravenous challenge with pathogenic SHIV89.6P is associated with maintenance of Toll-like Receptor expression and Interferon induced gene expression. (Rewriting for resubmission).
- 14. Wasserman J.K., M. Gomes, <u>H.S. Sekhon</u> and C. Lai. Gross appearance of NUT midline carcinoma. Int J of Surg Pathol. 2016 Feb;24(1):85-8
- 15. Mulvey, MR, Mataseje, L, Robertson, J, Nash JHE, Boerlin, P, <u>Toye, B</u>, Irwin, R, Melano, RG. Dissemination of mcr-1, Canada. Lancet Infect Dis (Accepted).
- 16. Nguyen TB, Cron G, Thornhill R, Cameron I, Bezzina K, Chakraborty S, Torres C, Woulfe J, Jansen GH. Correlation of MR contrast enhancement and DCE and DSC-parameters with immunohistochemistry in patients with gliomas. Submitted.
- 17. Kumar R, Gont A, Hanson JEL, Parolin J, Lavictoire SJ, <u>Woulfe J</u>, Lorimer IAJ, Da Silva VF, Corsten M, Cheung AYL, Kassam A. Isolating glioblastoma tumor initiating cells from the subventricular zone beyond the visible tumor using a minimally invasive approach. Neurosurgery. Submitted.
- 18. Woulfe J, Gray M, Ganesh M, Middeldorp M. Human serum antibodies against an Epstein-Barr virus protein cross-react with alpha-synuclein. Neurology: Neuroimmunology and Neuroinflammation. Submitted.
- 19. Dorey E, Bamji-Mirza M, Najem D, Liu H, Callagham D, Walker D, Lue L-F, Stanimirovic D, <u>Zhang W</u>. 2016. Apolipoprotein E isoforms differentially regulate Alzheimer's and Aβ-induced inflammatory response in vivo and in vitro. J. Alzheimer's Disease (submitted).
- 20. Bamji-Mirza M, Li Y, Najem D, Liu QY, Stupak J, Chen K, Li J, Walker D, Lue L-F, Yang Z, Rogaeva E, <u>Zhang W</u>. 2016. Genetic variations in ABCA7 can increase secreted levels of Aβ1-42 and ABCA7 transcription in cell culture models. J. Alzheimer Disease. (Submitted under revisions) (Corresponding author).

21.	Najem D, Bamji-Mirza M, Yang Z, <u>Zhang W</u> . 2016. Characterization of Aβ-induced insulin resistance and th
	effects of insulin on cholesterol synthesis pathway and Aβ secretion in neural cells. Neuroscience Bulletin
	(submitted under revisions) (Corresponding author).