

The Department of Pathology and Laboratory Medicine

ANNUAL REPORT 2015



BY THE NUMBERS

55

Full Time Academics

50%

Growth in Faculty Appointments
in 10 years

49

Graduate Students

2

Graduate Programs

17

Postgraduate Trainees

2

Residency Training Programs

414

Hospital Staff

25

Laboratory areas and 5 lab test
Centres in 3 sites

119

Publications

\$10m

In grants and awards

A woman with long brown hair, wearing safety glasses and a white lab coat, is looking down at a piece of equipment in a laboratory. Another person in a lab coat is partially visible in the background. The scene is dimly lit, with a focus on the woman's face and hands.

“Seeing Small ... Thinking Big.”

**Dr. Subrata Chakrabarti, Chair/Chief,
Department of Pathology and Laboratory Medicine**

Pathology and Laboratory Medicine’s Vision

To provide state-of-the-art diagnostic pathology and laboratory medicine services while achieving excellence in pathology and laboratory medicine research and education.

Contents

General Information

- 6 Message from the Chair
Dr. Subrata Chakrabarti
- 8 About Us
Pathology and Laboratory Medicine
- 9 Mission, Vision and Values
- 11 History
A 10 Year Timeline
- 13 Our People
Leadership, Faculty and Staff

Education

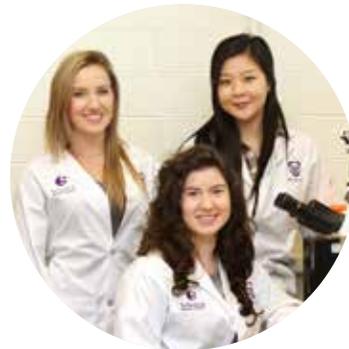
- 15 Undergraduate
- 18 Graduate
- 20 Postgraduate
- 22 Advanced Training
- 23 Continuing Professional Development

Research

- 26 Message from Director of Research
- 28 Publications
- 31 Grants and Funding

Clinical Service

- 32 Program of Pathology
- 34 Program of Laboratory Medicine



Message from the Chair

Dr. Subrata Chakrabarti

Welcome to the Department of Pathology & Laboratory Medicine at the Schulich School of Medicine & Dentistry, Western University.



This annual report highlights our achievements and our challenges over the past year and outlines our future directions. I feel proud and honoured to be a member of Pathology and Laboratory Medicine, a department that is committed to excellence in clinical service, research, education and in staff and faculty development. During the last year, we have largely followed the course of actions that was developed by the departmental members in 2014.

Our major strength is our people. We have a motivated, highly committed group of individuals with high levels of expertise. This is true for our physicians, scientists, technical and administrative staff. Our strength lies in our open communication process at all levels.

During the past year, we have continued our work in developing our new identity as the Department of Pathology and Laboratory Medicine. Our website, our vision and mission statements, our newsletter and all other communication channels have been updated to reflect the

new name and efforts have been made in all areas to ensure inclusion of our very large and diverse department.

During the past year, with the continued support from the Schulich School of Medicine & Dentistry and the London Health Sciences Centre, we have successfully recruited a clinical biochemist (Saranya Kittanakom-Arnoldo); a medical microbiologist (Aaron Campigotto); a clinical microbiologist (Jeff Fuller); a molecular geneticist (Hanxin Lin), and a new director for the transplant histocompatibility laboratory (Qingyong Xu) to fill vacancies in our current cohort. We hope to conclude searches for a veterinary pathologist and a scientist in the area of viral evolution soon. Recruitment is also underway for a Canada Research Chair in integrative neurobiology and a new endowed chair in One Health.

Clinical Service remains the busiest operation of the department. Our service load in most of the areas keeps on increasing along while resources decline. However, our efficiencies have shown remarkable improvement; for example in surgical pathology we have been able to implement process and workflow changes leading to significant improvement of turnaround time. In medical microbiology we had an external review and we have launched a continuous improvement project with high level of success. We are working toward transformation of molecular genetics services and we believe that we will be able to take a provincial leadership role in this area.

We are proud of our committed and innovative educators. We have appointed our second trainee to our Area of Focused Competence (AFC) Diploma Program in Cytopathology, Canada's first Royal College accredited program in this area. Our Anatomic Pathology residency training program continues to thrive and has demonstrated 100 per cent success rate in the Royal College exam for 24 years in a row. Our research-based graduate education program continues to thrive beyond expectations. At the undergraduate level, we started two new course offerings. In addition we have established combined honors specialization programs with Microbiology & Immunology and with Biochemistry. In 2016, we plan to launch novel interdisciplinary undergraduate and graduate programs in One Health. During past few years, we are carrying out continuing professional development (CPD)

activities with renewed vigor. We continue to hold regular research seminars. We have also developed a forum for educators, the Novel Education Resource Development (NERDs) group, which functions as an educational interest group, providing resources, leadership and scholarship in education.

Our established researchers and new researchers continue to be productive and engaged. In addition, the level of productivity of our clinical faculty continues to be impressive. Our residents and graduate students are encouraged to present at national and international conferences. Our research commitment is also reflected in our willingness to provide protected time for our clinical academics. However one of the major challenges we are facing (this is not unique to our department) is availability of the research funds, with Canadian Institutes of Health Research's new funding model possibly being a major contributor.

In delivering the complex health care in the hospital we have developed a model of "doctor/manager" partnership. Such partnership facilitated the exchange of ideas and better strategic decisions. On the hospital side, we have initiated "rounding." Through this process we get input from front-line staff. Such an approach helps us to make better decisions.

However, we continue to face challenges. These include increasing workload in Pathology and Laboratory Medicine, increased complexity of testing along with limited resources. Dwindling research funding and changing CIHR funding mechanisms have further created additional anxiety.

This is an exciting time as we embark on new ventures with our dedication and commitment. I look forward to our departmental external review in 2016. What we have accomplished in the past few years have definitely positioned us with respect to clinical service delivery, education and research. I sincerely believe that we will be able to keep this momentum and create a better future for our department.

Dr. Subrata Chakrabarti, MBBS, PhD, FRCP(C)



About Pathology and Laboratory Medicine

The department is uniquely placed as a bridge between the basic science and clinical medicine disciplines.

Translational Department

The Department of Pathology and Laboratory Medicine is unique and very complex with a basic science research department located at Schulich School of Medicine & Dentistry, Western University and a large clinical department in the London hospitals. This allows us to be an effective conduit and facilitator of multidisciplinary and translational research, and cross-disciplinary teaching initiatives.

The Department at a glance

Founded

1945

Faculty

55 Full Time

Staff

8 FT university staff

414 hospital staff

Chair/Chief

Subrata Chakrabarti

2015 Funding

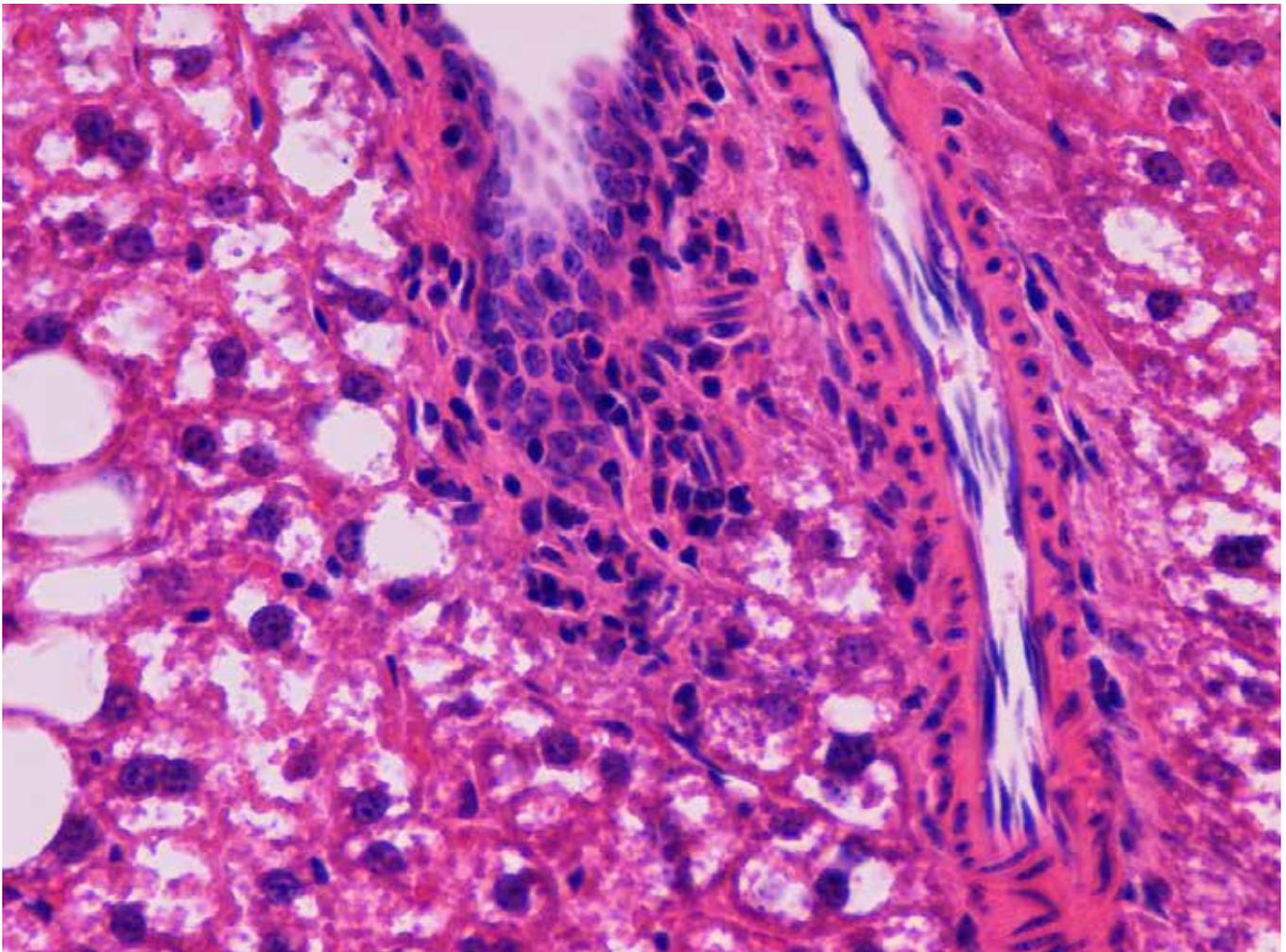
\$10,000,000

Trainees

17 residents and fellows

49 graduate students

11 BMSc undergraduates



Vision, Mission & Values



“We must become the
change we want to see”

Mahatma Gandhi (1869-1948)

Our Vision

Provide state-of-the-art diagnostic pathology and laboratory medicine services while achieving excellence in pathology and laboratory medicine research and education.

Our Mission

Members of the Department of Pathology and Laboratory Medicine strive to provide a quality work environment that fosters unity, respect for diversity, teamwork and professional growth. We are committed to serve our:

PATIENTS, by providing efficient, comprehensive and high quality diagnostic services for optimal patient outcome and health. We are committed to strategies that result in continuous improvement of the quality of our services.

STUDENTS, by providing the best student experience through outstanding educational programs for undergraduate, graduate and postgraduate students, and other health care professionals within a clinical and research intensive environment. We integrate continuing medical education programs into the departmental activities.

SCIENTIFIC RESEARCH COMMUNITY AND HEALTH CARE PARTNERS, by sharing expertise, fostering interdisciplinary collaboration, and providing exemplary educational and scientific resources. We are a strong clinical and basic science department and our research endeavors include basic science, clinical and translational research.

We provide research leadership by identifying our strong research strengths and enhancing research productivity with selective allocation of resources. We guide and collaborate with our regional partners to improve the diagnostic pathology and laboratory services throughout Southwestern Ontario.

SOCIETY, by actively applying the art and science of pathology and laboratory medicine in educating the community in matters of health and disease.

Our Values

TEAM WORK

We believe in a team-based problem identification and problem solving methodology. We believe in interdisciplinary networking.

INNOVATION

We are flexible and adaptable in order to meet the changing needs of society. We strongly believe in continuous quality improvement to enhance clinical performance outcomes.

LEADERSHIP

We strongly encourage members to take leadership roles in education, research and management. We support the leaders who guide our mission.

Our History

2006

Reappointed Chair/Chief

Dr. Bertha Garcia is appointed to her second term as Chair/Chief of Pathology. Pathology has been consolidated to a single site at University Hospital. All four residency programs receive full accreditation for six years: Anatomical Pathology, General Pathology, Medical Microbiology and Neuropathology.

2007

Course-based Program

Under the leadership of Graduate Chair, Dr. Subrata Chakrabarti, a new Course-Based Graduate Program for Pathologists' Assistants is launched.

Dr. M. Daria Haust, Emeritus Professor, is appointed to the Order of Canada.

2008

Vice Dean

Dr. Bertha Garcia is appointed Vice Dean, Education, Schulich School of Medicine & Dentistry. The Course-Based Pathologists' Assistant Program receives preliminary accreditation from the National Accrediting Agency for Clinical Laboratory Sciences.

2009

Medical Microbiologists

Academic appointments of three medical microbiologists are transferred to the university Department of Pathology to align with their hospital appointments. Drs. Joan Knoll and Peter Rogan receive the Stiller Center Prize, awarded at the Canadian Medical Hall of Fame.



Our notables and key highlights throughout the years

2010

NAACLS

Pathologists' Assistant Graduate Program is fully accredited by the US-based National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). Drs. Bertha Garcia and Jack Bend lead the launching of a professional inter-faculty Masters of Public Health Program.

2011

New Chair/Chief

Dr. Bertha Garcia's second term as Chair/Chief of the department comes to an end. Dr. Subrata Chakrabarti is appointed as Chair/Chief of Pathology. The department becomes home to the Motor Vehicle Safety (MOVES) Research Team. This unique multidisciplinary team under the leadership of Dr. Mike Shkrum will carry out cutting edge research in this field.

2012

Rebranding

The University of Western Ontario rebrands and changes its name to Western University. The Masters of Clinical Science (MCISc) Pathologists' Assistant program is accredited as a stand-alone professional program

2013

AFC

Launch of Area of Focused Competence (AFC) Diploma Program in Cytopathology. This new program is different from a subspecialty or specialty program at the Royal College of Physicians and Surgeons of Canada because it is competency based without a final examination, assessment is based on a summative portfolio, funding for the program is not supported by the Royal College and, training is not entirely time dependent.

2014

New Department Name

University Senate approval is received to change the academic department name to the Department of Pathology and Laboratory Medicine, this better aligns with our clinical department. Transfer of academic appointments of eight Clinical Chemists to our department. AFC Diploma Program in Cytopathology is accredited by the Royal College and first trainee completes the program.

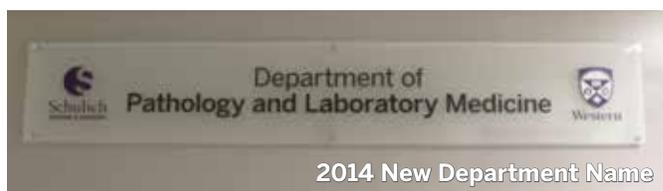
2015

MCISc Expands

MCISc Pathologists' Assistants program expands by establishing a collaboration with Mt. Sinai Hospital and the Hospital for Sick Children in Toronto, and the Toronto Forensic Unit. New combined undergraduate programs are initiated with the Departments of Microbiology & Immunology, and Biochemistry.



2011 Dr. Subrata Chakrabarti



2014 New Department Name



Pathology and Laboratory Medicine Christmas Party

Leadership



Subrata Chakrabarti
Chair/Chief

Appointed Chair/Chief in 2011. He is respectively accountable to the University and the Hospitals.



David Driman
Director of Education

Appointed in 2011. Director of Education oversees the educational activities in undergraduate, graduate and postgraduate education.



Zia Khan
Director of Research

Appointed in 2011. Director of Research develops research programs and facilities, and supports the recruitment and selection of new researchers.



Rob Lannigan
Program Head
Laboratory Medicine

Appointed in 2015. Program Head of Laboratory Medicine oversees activities of Immunology & Biochemistry, Microbiology, Transplant Immunology, LHSC Pulmonary Function and Hematology.



Meg McLachlin
Program Head
Pathology

Appointed in 2011. Program Head of Pathology oversees activities on Surgical Pathology, Cytology, Autopsy Services and Molecular Pathology

Department Organization

UNDERGRADUATE EDUCATION

Undergraduate Bachelor of Medical Sciences

Zia Khan, Undergraduate Chair

Undergraduate Medicine

Ted Tweedie, Meds 1 & 2

Mariamma Joseph, Meds 3

Michele Weir, Meds 4

Undergraduate Dentistry

Mark Darling, Coordinator

GRADUATE EDUCATION

Research Based Graduate Programs

Chandan Chakraborty, Graduate Chair

Masters of Clinical Sciences PA Program

Nancy Chan, Program Director

Elena Tugaleva, Medical Director

POSTGRADUATE EDUCATION

Anatomical Pathology Residency Program

Aaron Haig, Program Director

Neuropathology Residency Program

Lee Cyn Ang, Program Director

Surgical Pathology Fellowship Program

David Driman, Program Director

AFC Diploma Program in Cytopathology

Michele Weir, Program Director

Continuing Professional Development

Joanna Walsh, Program Director

Novel Education Resource Development

Michele Weir, Coordinator



ADMINISTRATIVE SUPPORT

Mair Hughes

Manager, Administration & Finance

Mellonie Carnahan

Finance & HR Coordinator

Cheryl Campbell

Education Coordinator, Undergraduate & Postgraduate

Tracey Koning

Education Coordinator, Graduate Programs

Linda Jackson

Departmental Technician

Kathilyn Allewell

Media Specialist

Susan Underhill

Administrative Assistant

Education Programs

Dr. David Driman, Director of Education

From an educational perspective, the Department continues to grow and perform at a high level; particularly pleasing is to see this happening across all aspects of education. At the undergraduate level, there is ever-increasing interest in the BMSc program by academically high-level students and both a new course and a new combined Honors Specialization module have been introduced. Dentistry student training continues to provide essential teaching in oral pathology, as well as systemic pathology. For medical students, new programs to engage students in the clinical years have been developed and have proven successful. In graduate education, enrollment continues to climb and students are engaged in research across a broad-front of scientific experience ranging from stem cell biology to diabetes. A new part-time research based graduate program has

proven to be a popular pathway for potential clinician-scientists. The Pathologists' Assistant program has expanded and is increasingly popular, allowing students to train in an area of increasing demand in the Canadian health care system. Postgraduate medical education remains a major strength of the department, building on a long history of educational excellence. Fortunately, the Department is able to continue to offer fellowship training in surgical pathology, and the new competency based training in cytopathology is a welcome development. The Department continues to mount a regular series of continuing educational experiences including Grand Rounds and a successful full-day program in CME for trainees and community pathologists. All in all, education continues to be a great strength of our department, and all members of the Department, teachers and students alike, deserve credit for this.



2015 BMSc Program Students

Undergraduate Education

Who

Medical students, Dental students,
Science students & Nursing students

Where?

Western, University Hospital and Fanshawe

Why?

To enhance Pathology and Laboratory
Medicine as a career choice

Undergraduate Bachelor of Medical Sciences

The Department of Pathology and Laboratory Medicine offers several modules in the Bachelor of Medical Sciences Program:

- An Honors Specialization and a Specialization in Pathology
- A Major in Pathology is also offered and can be completed only in combination with another Major (double Majors) in a Bachelor of Medical Sciences (BMSc) degree.
- The Department of Pathology and Laboratory Medicine also offers Honors Specialization modules jointly with the Department of Computer Science (Medical Health Informatics), the Department of Biochemistry (Biochemistry and Pathology of Human Disease), and the Department of Microbiology and Immunology (Microbiology and Immunology with Pathology).



Pathology modules in the BMSc program at Western are now one of the most sought after modules. Interest in our courses and programs, particularly the Honors Specialization in Pathology, remains high and we still have the distinction of having the highest entrance average among the BMSc modules. Our most recent joint module with the Department of Microbiology and Immunology was the second with the highest entrance average.

The strengths of our modules include a broad faculty base, the number of teaching awards won by our faculty, and the calibre of the students entering our programs. The major weakness and opportunity for improvement include expanding the research project base to increase enrollment. During the past five years, we have taken several initiatives to continue to grow and maintain the program. These initiatives include the introduction of a Major module in Pathology and the delivery of a new courses. As we look to the future, we have tremendous opportunities to grow our program and set precedent. We are developing a new truly collaborative undergraduate program in a field called One Health (anticipated to start in September 2016). One Health is an interdisciplinary approach to understanding the intricate link between human health, animal health, and our ecosystems. This program breaks down faculty and School barriers and involves participation by members across Western University. We are anticipating a very high level of interest in this new initiative. Drs. Zia A. Khan (Chair of the BMSc program in Pathology) and Martin Duennwald are also in the process of developing a new course on Biotechniques (being developed for 2017-2018). The course will increase the menu of courses offered, increase enrollment in

Pathology courses, and will provide essential tools to students wishing to continue to the graduate programs offered by Pathology and Laboratory Medicine at Western.

Undergraduate Medicine Education

We want to elevate the visibility of Pathology and Laboratory Medicine to medical students early on and enhance student consideration of Pathology and Laboratory Medicine as a career choice. We also want to train our students to achieve certain pathology exit competencies we believe a graduating medical student should learn and demonstrate by the end of fourth year in preparation for and transition to residency.

Meds I and Meds II

During the past year, our faculty actively participated in various Meds I and Meds II curriculum courses, which included pathology lectures, PCCIA, CPC, portfolio teaching and small group discussions. Three pathologists served as course chairs in these courses. In addition we offered individual one-to-one observership opportunities to a number of Meds I and Meds II medical students. Through the Pathology and Laboratory Medicine interest group, four activities were organized this past year in which students, in small and large groups, learned basic skills in the work up of real case scenarios and observed and experienced the life of a pathologist in an academic hospital. This year a new document was produced as a guide to assist the future students in organizing these sessions and one pathology resident is introduced as the resident contact.

Meds III and Meds IV

During the past year, our faculty actively participated in the Med III pathology case conference seminar series, as part of Surgery clerkship. In order to equip residents for successful pathology teaching, one pathology resident is introduced as an organizer and teacher. Following the seminar, students were given a short tour of the pathology lab. In addition, this year as a new initiative, students received from the cytology division, a short hands on demonstration on "Fine Needle Aspiration Cytology" procedure and smear preparation. The addition of a camera to the current multi-head microscope, enhanced large group teaching opportunities for medicine students.



Adam Tenn and Sharice Molko

Last year we offered the Meds III and IV Clinical Clerkship Pathology Electives to a number of medical students from Western and external universities. These electives were very well received by the students.

Two of the Med IV selective courses in Pathology and Laboratory Medicine retired this year. Instead Dr. M. Weir as the co-ordinator, introduced a variety of pathology and lab medicine topics into the mandatory Meds 4 Integration & Transition course, and the Physicianship course. We were excited about this course that started in 2015.

Looking Ahead: Our department is fortunate to have a group of passionate teachers. We will continue the current educational activities and participate in future new initiatives. We will continue involving our residents into undergraduate medical education teaching and mentoring.

Undergraduate and Postgraduate Dentistry

In the Schulich School of Dentistry curriculum, instruction in general and systemic pathology is introduced in the first year. Five full courses in pathology and oral pathology were offered to undergraduate and postgraduate dental students from 2010 -14.

The strengths in the pathology components of the dentistry curriculum and courses lie in the depth and breadth of the subject matter. There is control over the subject matter and excellent cooperation among the instructors. The students are of high standard and intellect and there is great diversity among the trainees, providing opportunity to teach internationally trained dentists.

There is, however, fragmentation of topics, due to timing, within the curriculum, of delivery of common and uncommon conditions. This can lead to the students' perception that some subject matter is superfluous. There is the opportunity to try to engage students more fully through the small group learning sessions (labs)

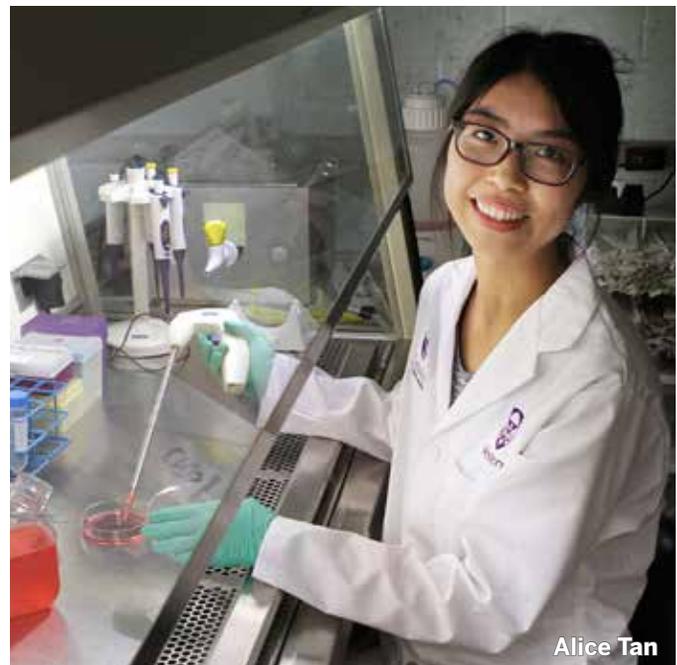
The strengths of our modules included a broad faculty base, the number of teaching awards won by our faculty, and the caliber of the students entering our programs.

Future plans include investigating opportunities to develop online learning through the OWL online course management system. We would like to research Oral Pathology undergraduate education with a focus on increasing impact on students and securing funding for research.

2014-15 Graduating Class BMSc Honors Specialization in Pathology and Toxicology

Michelle Lynn Anderson
Shannon Danielle Baker
Gurinder Grewal
Peter Grin
Tharsan Kanagalingam
Mariya Kuk
Sophia Yijia Liu
Neruja Loganathan *

Tal Milman
Injun Seo
David Je-Bin Seok
Eun Jung Shin
Qi Yao
Edmund Kar-Kee Yim
* Gold medal winner



Alice Tan

Graduate Programs

The objective of our Graduate Program is to train tomorrow's researchers and scientists to make significant contributions to the global understanding of disease diagnosis and mechanisms.

Research Based Graduate Program

The Graduate Program in Pathology and Laboratory Medicine is an integrated research program and offers full-time and part-time degrees of Master of Science (MSc) and Doctor of Philosophy (PhD).

Investigation occurs at the molecular, cellular, tissue, whole organism, and clinical levels. As part of the program, our graduate students carry out supervised research in various thematic areas including cancer, diabetes, transplantation, stem cell biology, neurodegenerative diseases, cardiovascular disease, developmental defects, medical molecular cytogenetics and toxicology.

The objective of our Graduate Program is to train tomorrow's researchers and scientists to make significant contributions to the global understanding of disease diagnosis and mechanisms. Graduates of the research-based program are qualified for a diverse set of careers including academia, government, and the pharmaceutical industry, many others have also gone to professional schools to become clinicians, dentists, other health professionals, lawyers, and business administrators in biotech companies.

Ecosystem Health is being developed as a focused research and study area within the Environmental Pathology theme of the Department of Pathology and Laboratory Medicine Graduate Program. Future plans include the implementation of novel interdisciplinary undergraduate and graduate programs in One Health.

Masters of Clinical Science Pathologists' Assistant Program

The Pathologists' Assistant program was established in 2007. In 2012, the program was approved as a professional program leading to a Master of Clinical Sciences-Pathologists' Assistant. The program was the first of its kind accredited in Canada. Pathologists' Assistants (PAs) are highly-trained health professionals who work under the supervision of a medically-qualified pathologist providing a broad range of services in anatomical pathology.

The extra technical skills brought to the laboratory by PAs standardize and enhance the overall quality in the practice of anatomical pathology. PAs assume major responsibility for the initial examination and dissection of all surgically removed tissues and, to a variable extent, for the dissection of bodies during post-mortem examination.



Sonya DiGregorio

There are twelve graduate students registered in the program; six in their first year of coursework and six in their second year of clinical practicum experience. We were able to expand the program in 2013 by negotiating with the Toronto hospitals to accept our students for clinical rotations in their second year. For the first time since the start of the program, in the fall of 2014, the second year includes hospital rotations not only at London Health Sciences Centre, but also Mt. Sinai Hospital in Toronto, the Ontario Forensic Pathology Service, and The Hospital for Sick Children. Students also complete a two month community hospital rotation prior to graduation.

In 2015 the program received full accreditation to 2022. This is an innovative program with room to grow.



Anu Thomas

Western Pathology Association (WPA)

The graduate students in Pathology and Laboratory Medicine established the WPA to promote interaction and enhance collaboration between the students, staff and faculty of the Department of Pathology and Laboratory Medicine. Our department is unique in that it contains both clinical and basic sciences program, and the graduate students felt this would be a way for all the members of the various streams in our various education programs to come together.

In 2016 the WPA council hopes to host more academic events where everyone can learn and social events that everyone can enjoy.

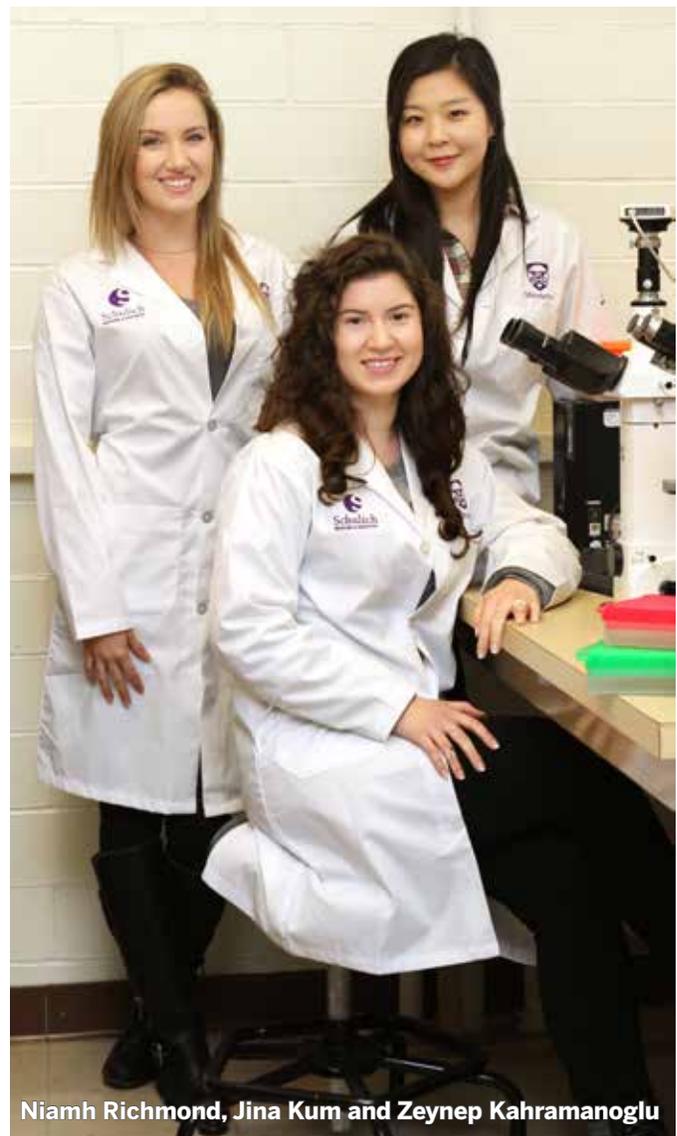
2014-15 Graduating Class

Research Based Program

Kevin Cheung, MSc
Phaedra Henley, PhD
Nathan J. Johnston, MSc
Wahab A. Khan, PhD
Jina J.Y. Kum, MSc
Arthur Lau, PhD
Rokhsana Mortuza, PhD
Alex Pavlosky, PhD
Meghan A. Piccinin
Matt Riopel, PhD
Mike Ruiz, MSc

MCISc PA Program

Samantha Crombie
Melissa Stegmaier
Shelby Dean
Jessica Kent
Lei Gong
Andrew Zhang



Niamh Richmond, Jina Kum and Zeynep Kahramanoglu

Postgraduate Programs

Our programs have a high faculty-to-resident ratio, a strong faculty commitment to resident education, and faculty mentoring of junior residents.

The Department of Pathology and Laboratory Medicine offers intensive, integrated residency training programs in Anatomical Pathology and Neuropathology. These programs fulfill the requirements of the Royal College and are fully accredited. The training programs may be used to embark on a career in either an academic or community hospital setting.

Anatomical Pathology Resident Training Program

There were 10 residents in Anatomical Pathology in 2014-15 (PGY1-5). The PGY2-5 residents were primarily located at the University Hospital, and only go off-site for

frozen section coverage at other hospitals or to attend some academic events or rounds. They have the benefit of the Regional Forensic Unit also being on-site, as well as a parallel Neuropathology Program, and adjacent Schulich Medicine, so there is beneficial sharing of facilities. All the full-time anatomical pathologists participated in teaching and mentoring residents, covering one or more subspecialty areas, as members of subspecialty teams.

Dr. Aaron Haig, Program Director cites many strengths of the AP Program. Most pathology work is consolidated at one physical location, which allows for maximum exposure



Residents working at the multihead microscope

to cases and teaching. The residents are exposed to wide variety of cases due to the presence of a large regional cancer care centre and wide referral base. The program is fortunate to have a high faculty-to-resident ratio, a strong faculty commitment to resident education, and faculty mentoring of junior residents.

Lack of space continues to be a challenge and limits any expansion to the program, however funding was identified this year for a new grossing space specifically for residents. Ongoing unpredictability of the job market for new pathologists is also a challenge, most positions are tied to hospitals whose budgets continue to be cut, despite the increasing workload and case complexity that pathologists are facing.

We are proud of our residents' continued success at the Royal College examinations (unbroken 25 year pass record) and in developing sound practice competence. This is reflected too by the successful internal review and accreditation of the program in December of 2014

Future plans include implementation of implement competency-based medical education in collaboration with the Royal College.

2014-15 Graduating Class

Dr. Fahd Al-Sulfiani
Dr. Murad Alturkustani
Dr. Alison Osmond



2015 Residents graduation party

Neuropathology Resident Training Program

There were three residents and one clinical fellow registered in the NP Program during 2014-15. Throughout the year, a number of AP residents, Neurology residents and Neurosurgery residents completed their electives in our program. The three full-time faculty members in Neuropathology (Drs. Lee-Cyn Ang, Robert Hammond and David Ramsay) are involved in the training of the residents in Neuropathology as a specialty, and more than 28 anatomical pathologists in their one year compulsory rotation in the specialty of Anatomical Pathology. A two-month rotation in Pediatric Neuropathology at the University of British Columbia is mandatory.



Clinical fellow at the microscope

The program was accredited in 2012 and many strengths were cited by the accreditation committee. The program director is dedicated, innovative and hardworking and provides a positive learning environment with individualized coaching and feedback on a daily basis. Excellent opportunities are available for the trainees for collaboration with other neurosciences divisions and departments. The curriculum is tailored to individual residents' needs, and there are varied and effective methods of assessment.



2015 Holiday Party

Advanced Training

Surgical Pathology Fellowship Program

There were two surgical pathology fellows in the Department in 2014-2015. Dr. Chaturika Herath spent the year in gastrointestinal and liver pathology, while Dr. Amir Salehi rotated through genitourinary, breast and gynecological pathology. Both fellows took staff positions in academic centres following their training.

Strengths of the program include the following: quality of teaching staff in department, volume of material available for learning, pleasant and agreeable learning environment and external recognition of Schulich Medicine & Dentistry as a desirable location for fellowship training in pathology. The only weakness identified was the physical location of fellows' office. Opportunities lie in the possibility of innovative funding sources and mechanisms and the facilitation of greater participation of fellows in resident teaching. The greatest threat is our depleting sources of funding.

Looking ahead

The need for continued stable funding for the surgical pathology fellowship program is important, ideally for two positions. This would be appropriate given the strengths of the department in education and the large volume of material available. Ongoing stable funding would allow the program to be more competitive with programs in the US and would further strengthen our position as one of the few and most desirable places in Canada to undertake fellowship training.

2014-15 Graduating Fellows

Dr. Chaturika Herath, Surgical Pathology Fellowship
Dr. Amir Salehi, Surgical Pathology Fellowship

Area of Focused Competence (Diploma) in Cytopathology

The team took a break from training for 2014-15, but did review applications for 2015-16 and secured our second trainee for 2015-16. We will not be training anyone for 2016-17 since funding is dependent on limited departmental sources.

The first trainee from 2013-14 was successful in obtaining the official Diploma certification in Cytopathology. This trainee was the first in Canada and first from Schulich Medicine & Dentistry, Western University to do this.

As a new program, there is an upcoming mandatory internal review in 2016. Changes have already been made to the program in anticipation of the review. Particular attention is being paid to areas requiring improvement including trainee and supervisor workloads and trainee competition for fine needle aspiration experience. Preparation of the documentation for the review is in process.

As with any new curriculum, there have been minor changes to the training documents from the Royal College and we have updated our program accordingly. There has been a new on-line submission of the e-Portfolio documents as well as a pilot study of an e-Logbook which will streamline assessment material submission considerably.

Our team had the opportunity to share our Lessons Learned from our New Competency Based Pathology Program at the Centre for Education Research & Innovation Annual Research Symposium in the fall of 2014 as an oral presentation.

Continuing Professional Development



Joyce Kitazaki-Lee, Cytotechnologist, Toronto

The Department of Pathology and Laboratory Medicine held a well-received "Advances in Practice of Cytopathology" CME day in May in collaboration with Mt. Sinai Hospital, Toronto. The event, targeted at, and attended primarily by community pathologists, residents and cytopathology technicians, included various speakers from LHSC Pathology program speaking on select topics and challenges in cytopathology. The event also included a guest speaker, Dr. Jeffery Krane from Harvard Medical School.

Pathology and Laboratory Medicine Grand Rounds were held every other month. There were a variety of interesting speakers. There was excellent attendance from Pathology and Laboratory Medicine staff and faculty from both the hospital and University.

The Continuing Professional Development (CPD) events attracted strong attendance, covered a wide range of topics, and had support to bring in speakers. The only problem area was in the technical difficulties with web casting.

The Department is looking at web casting to enable us to reach a wider audience. We hope to bring in prominent and relevant guest speakers, and to advertise to broader medical community when

Looking ahead

We plan to host CME update days in alternate years. Plans are in place for a new initiative in the form of multi-header microscope workshops for community pathologists, occurring up to 4 times annually. A survey was sent to our regional pathologists to assess interest in attending events of this type and we received a positive response. Plans are also underway for the first event to occur in January 2016 with the topic of GI and liver pathology.

For the upcoming 2015-2016 academic year we are continuing with Pathology and Laboratory Medicine Grand Rounds every other month (alternating with the Dr. R. Zhong lecture series). We have a variety of speakers scheduled, both internal and external. Rounds are moving to the largest UH lecture hall to better accommodate the size of the audience. We have requested a lapel microphone to improve web casting audio.

2014-15 Grand Rounds

Date	Presenters	Title
September 2014	Dr. J. C. Cutz, Associate Professor Department of Pathology and Molecular Medicine St. Joseph's Healthcare Hamilton	Four years of molecular testing in lung cancer. Pathologists line up at biomarker buffet for molecular pie, one slice at a time.
November 2014	Dr. Gino Somers Associate Professor, University of To- ronto	Insights into Sarcomagenesis: Paediatric Undifferentiated Sarcomas
January 2015	Dr. C. Meg McLachlin, Professor, Pathology and Laboratory Medicine	Recent changes in cervical cancer screening in Canada - The 2014 Canadian Society of Cytology Kulcsar Lecture
April 2015	Dr. Chris Watling, Associate Dean, Postgraduate Medical Education	Cognition, Culture, and Credibility: Deconstructing Feedback in Medical Education.



CME Event

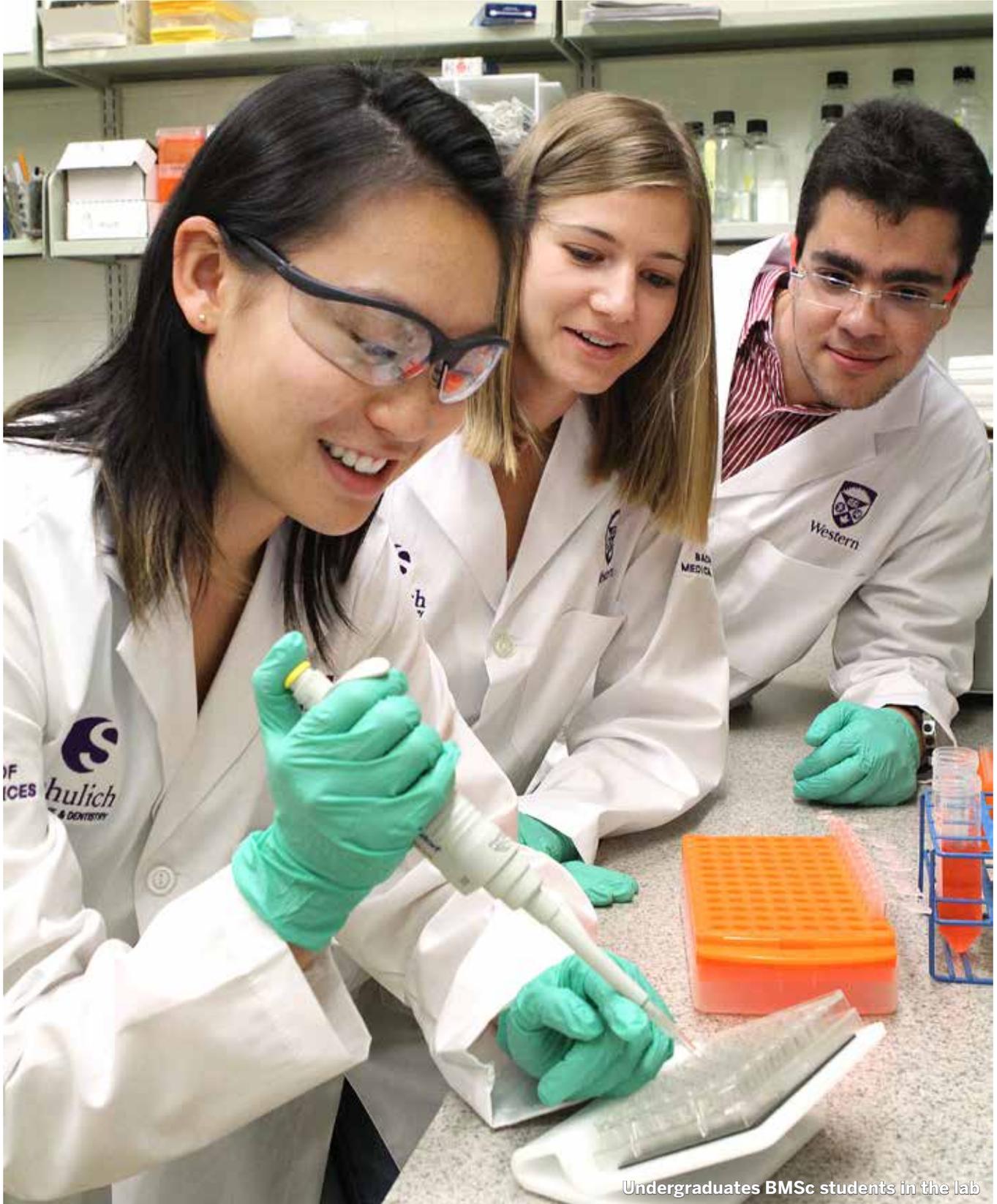
May 2 2015, Advances in Practice of Cytopathology
Guest Speaker: Dr. J. Krane, Harvard Medical School.



Novel Education Resource Development (NERDs)

A workgroup was been struck under the leadership of Dr. Michele Weir to develop this forum for Educators, which functions as an educational interest group, providing resources, leadership and scholarship in education. The group has implemented an OWL website and is in the process of uploading resources for learning, education tips and tools, competency based education etc.

NERDs have also initiated a very successful Open Forum series for sharing of best practices in teaching. Topics presented include peer dialoguing, small group facilitation and competency based education.



Undergraduates BSc students in the lab

Message from the Director of Research

**Dr. Zia Khan,
Director of Research**

Members have continued to excel in their respective research programs, which are in alignment with Schulich Medicine & Dentistry key areas of research strengths. These areas include cancer biology, cardiovascular science and metabolic diseases, infection and immunity, and neuropathology. We also play a lead role in areas such as environmental pathology and global health.

The basic, clinical and translational research is facilitated and supported by the Research Committee. This is an advisory committee to the Chair of the Department of Pathology and Laboratory Medicine that advises the Chair with regards to research resources (human, infrastructure, others), research environment (physical and intellectual) and strategic planning with respect to research. The committee also interacts with the Education Committee to facilitate trainee research.

Seminar Series:

To highlight The Department's research stance, the Research Committee initiated a research seminar, named after Dr. Robert (Zheng) Zhong. The purpose of this seminar series is to capture and showcase the research interests of our department and the wider university and hospital community. The objectives are to enhance our departmental basic and clinical science research, and to improve communication within the department and between departmental members and other researchers in the city. The Research Committee invites high profile speakers from Western University to enhance our research profile and to help establish collaborations. The seminars are accredited by the Royal College, Maintenance of Certification program.

September 2014	Dr. David Litchfield Professor, Chair Department of Biochemistry Western University	Convergence of protein kinase and caspase signaling: a mechanism for pathological rewiring of signaling pathways?
February 2015	Dr. John Capone, PhD Vice President Research Western University	Research at Western: Achieving Excellence on the World Stage

Research Day

Pathology and Laboratory Medicine Research Day is an event organized to recognize research excellence and promote inter- and intra-departmental collaboration. This full-day event allows our trainees to present their research in oral presentations and poster sessions. This past year, we had a record 60 presentations which was a great accomplishment for our relatively small but mighty department. This certainly provides a glimpse of a fantastic future.

We were fortunate to have Dr. Nahum Sonenberg deliver the keynote address. Dr. Sonenberg is the James McGill Professor in the Department of Biochemistry at McGill University. He discovered the mRNA cap-binding protein, eukaryotic translation initiation factor 4E (eIF4E). Dr. Sonenberg has continued to explore the implications of his discovery and has provided critical insights into the role of eIF4E in health and disease. His ground-breaking work has also led to the discovery of eIF4E as a proto-oncogene. Dr. Sonenberg has received numerous awards including the Robert L. Noble Prize from the National Cancer Institute of



Canada in 2002, the Killam Prize in 2005, the Gairdner International Award in 2008, the Centenary Award of the Biochemical Society (UK) in 2011, and the Lewis S. Rosenstiel Award in 2012. Most recently, Dr Sonenberg received the 2014 Wolf Prize in Medicine, one of the most prestigious awards. Our recent research day was a huge success and set a precedent. We are confident that we will continue to grow and enhance the research day as it is one of the best academic days of the year.



Future Planning

As we look to the future, we have identified two major challenges: 1) our low faculty complement, and 2) inadequate research space. We are addressing the first challenge through recruitment of new faculty, granting of cross-appointment of strong scientists from other departments, and establishing collaborations within and outside of our department. The second challenge of inadequate space is equally limiting our growth. As mentioned, space will be critical for recruitment of new faculty. In addition, the space that we do have is not functional and efficient. We are active in applying for funds to renovate the existing space because without this support, our research growth will be certainly limited.

Top 10 Publications of 2014-2015

Number 1

Hemmett J, Qirjazi E, Weir MA, **Moussa M**, Landry YD, Gunaratnam L. Cardiac, renal, and central nervous system dysfunction with eosinophilia: eosinophilic granulomatosis with polyangiitis. *Lancet*. 2015 Jan 31;385(9966):480. doi: 10.1016/S0140-6736(14)62352-7. PMID: 25706976

Number 2

Boycott K, Hartley T, Adam S, Bernier F, Chong K, Fernandez BA, Friedman JM, Geraghty MT, Hume S, Knoppers BM, Laberge AM, Majewski J, Mendoza-Londono R, Meyn MS, Michaud JL, Nelson TN, Richer J, **Sadikovic B**, Skidmore DL, Stockley T, Taylor S, van Karnebeek C, Zawati MH, Lauzon J, Armour CM; Canadian College of Medical Geneticists. The clinical application of genome-wide sequencing for monogenic diseases in Canada: Position Statement of the Canadian College of Medical Geneticists. *J Med Genet*. 2015 Jul;52(7):431-7. doi: 10.1136/jmedgenet-2015-103144. Epub 2015 May 7. PMID: 25951830

Number 3

O'Connor K, Li-Chang HH, Kalloger SE, Peixoto RD, Webber DL, Owen DA, **Driman DK**, Kirsch R, Serra S, Scudamore CH, Renouf DJ, Schaeffer DF. Tumor budding is an independent adverse prognostic factor in pancreatic ductal adenocarcinoma. *Am J Surg Pathol*. 2015 Apr;39(4):472-8. doi: 10.1097/PAS.0000000000000333. PMID: 25634751

Number 4

Salsberg J, Parry D, Pluye P, Macridis S, **Herbert CP**, Macaulay AC. Successful strategies to engage research partners for translating evidence into action in community health: a critical review. *J Environ Public Health*. 2015;2015:191856. doi: 10.1155/2015/191856. Epub 2015 Mar 1. PMID: 25815016

Number 5

Chakrabarti S. Unacylated ghrelin: a gut-limb connection. *Diabetes*. 2015 Apr;64(4):1097-8. doi: 10.2337/db14-1825. PMID: 25805761

Number 6

Zeineh MM, Chen Y, Kitzler HH, **Hammond R**, Vogel H, Rutt BK. Activated iron-containing microglia in the human hippocampus identified by magnetic resonance imaging in Alzheimer disease. *Neurobiol Aging*. 2015 Sep;36(9):2483-500. doi: 10.1016/j.neurobiolaging.2015.05.022. Epub 2015 Jun 6. PMID: 26190634

Number 7

Zhang ZX, Huang X, Jiang J, **Lau A**, Yin Z, Liu W, **Haig A**, Jevnikar AM. Natural Killer Cells Mediate Long-term Kidney Allograft Injury. *Transplantation*. 2015 May;99(5):916-24. doi: 10.1097/TP.0000000000000665. PMID: 25719259

Number 8

Dawson H, Kirsch R, **Driman DK**, Messenger DE, Assarzaghan N, Riddell RH. Optimizing the detection of venous invasion in colorectal cancer: the ontario, Canada, experience and beyond. *Front Oncol*. 2015 Jan 5;4:354. doi: 10.3389/fonc.2014.00354. eCollection 2014.

Number 9

Goubran M, **Hammond RR**, de Ribaupierre S, Burneo JG, Mirsattari S, Steven DA, Parrent AG, Peters TM, Khan AR. Magnetic resonance imaging and histology correlation in the neocortex in temporal lobe epilepsy. *Ann Neurol*. 2015 Feb;77(2):237-50. doi: 10.1002/ana.24318. Epub 2014 Dec 17. PMID: 25424188

Number 10

Farhan SM1, Murphy LM, Robinson JF, Wang J, Siu VM, **Rupar CA**, Prasad AN; FORGE Canada Consortium, Hegele RA. Linkage analysis and exome sequencing identify a novel mutation in KCTD7 in patients with progressive myoclonus epilepsy with ataxia. *Epilepsia*. 2014 Sep;55(9):e106-11. doi: 10.1111/epi.12730. Epub 2014 Jul 24. PMID: 25060828

A full listing of publications, by year is accessible on our website at: www.schulich.uwo.ca/pathol/research/publication.html



Dr. Chandan Chakraborty, Graduate Chair

Research Spotlight

Martin Duennwald joined the Department of Pathology and Laboratory Medicine in September 2012 as an Assistant Professor. His research focuses on how the protein quality control systems in our cells and improperly folded proteins contribute to human diseases – specifically neurodegenerative diseases such as amyotrophic lateral sclerosis (ALS), Huntington’s disease, and Parkinson’s disease.

Dr. Duennwald received his PhD in 2001 from the Max-Planck-Institute for Breeding Research in Cologne, Germany. His work deciphered basic mechanisms of cellular protein transport into the endoplasmic reticulum (ER) using protein-protein interaction assays in the model organism yeast (*Saccharomyces cerevisiae*). Following his doctoral training, he moved to the Whitehead Institute for Biomedical Research at the Massachusetts Institute of Technology (MIT) in Cambridge, Massachusetts, for his postdoctoral fellowship. His postdoctoral work established a yeast model for the misfolding and toxicity of polyglutamine (polyQ) expansion proteins as it relates to Huntington’s disease. Using this yeast model and mammalian neuronal cell models, he deciphered the molecular mechanisms and cellular factors that contribute to the toxicity of polyQ expansion proteins. He also characterized how cellular defense systems (molecular chaperones) fight against toxicity of polyQ expansion proteins.

From 2007 to 2012, Dr. Duennwald was the head of an independent research team at Boston Biomedical Research Institute (BBRI). His research there focused on the impact of ageing and its ensuing physiological changes on protein misfolding, the molecular and cellular mechanisms by which molecular chaperones modulate protein misfolding, and the molecular mechanisms and structural aspects by which small molecules transform misfolded proteins from toxic species to benign species.

Since joining Western, Dr. Duennwald has made himself a very valuable member of the Pathology and Laboratory Medicine basic research program. His ongoing collaborations include research programs with Dr. Patrick Lajoie (Anatomy and Cell Biology), Dr. Gary Shaw (Biochemistry) Dean Michael Strong (Robarts Research Institute). These projects have resulted in external funding from CIHR, ALS Society of Canada and Parkinson Society of Canada.



Dr. Martin Duennwald

Dr. Duennwald recently received a new two-year ALS Canada – Brain Canada Discovery Grant for his project entitled “RGNEF modulates protein misfolding in ALS.” He also holds the distinction of being the first researcher in Pathology and Laboratory Medicine to have a successful Canada Foundation Innovation application. This CFI will be used to put state of the art infrastructure in place including a computer controlled, motorized microscope platform for the dissection and documentation of yeast cells.

With support from the recently awarded Western Mentoring Micro Grant Program, Dr. Duennwald will be travelling to Montreal to learn new techniques that he will be bringing back to his lab, students and colleagues, and Western University.

Our members have continued to excel in their respective research programs, which are in alignment with Schulich Medicine & Dentistry key areas of research strengths.

////////////////////////////////////

July 1, 2014 to June 30, 2015 Highlights

Summary of Grant Funding Data

\$5m

Externally Funded (PI)

\$4m

Externally Funded
(co-PI/co-investigator)

\$400k

Internally Funded (PI)

\$300k

Internally Funded
(co-PI/co-investigator)

\$10m

Total Grant Funding

Clinical Service

The Department of Pathology and Laboratory Medicine is a joint venture of London Health Sciences Centre (LHSC) and St. Joseph's Health Care London (St. Joseph's), created in September 2000. The Programs of Pathology and Laboratory Medicine provide a comprehensive range of routine and specialized laboratory testing and clinical consultation to support diagnosis and monitor treatment of patients within London, Southwestern Ontario, nationally and internationally.

Program of Pathology

The Program of Pathology includes the Divisions of Surgical Pathology, Cytopathology, Autopsy and Molecular Diagnostics. The tissue based services of surgical pathology, cytopathology and autopsy are provided at University Hospital and molecular diagnostics is situated at Victoria Hospital. Providing services across three campuses (UH, VH, SJHC) requires daily off site coverage by both professional and technical staff as well as a regular and reliable transportation system. Pathologists are available at all 3 sites for intraoperative consultations that are critical for surgeons to make decisions while operating

Surgical Pathology

The volume of surgical pathology specimens submitted to the Department has steadily increased over the past five years. This increase has occurred most notably in GI specimens. As well, the complexity of reporting requirements and ancillary testing methods have added to per case workload.

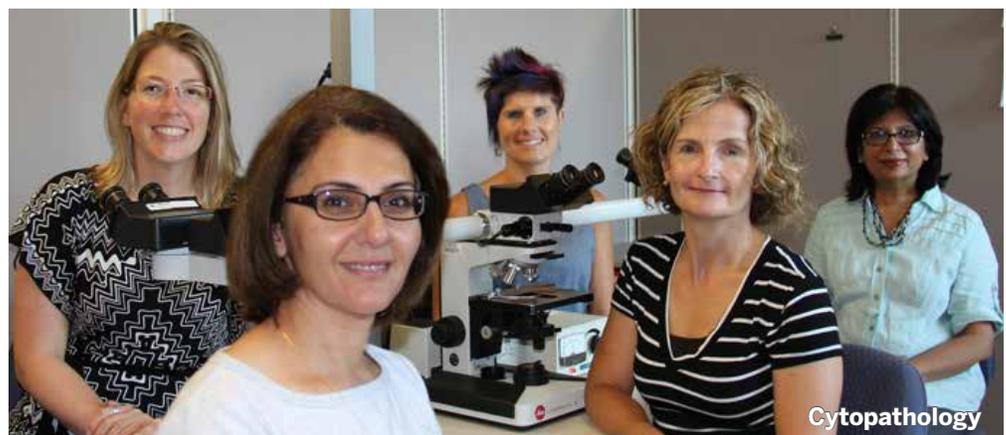
Recently, the Department has been able to measure turnaround times throughout the processes from specimen collection to report completion.

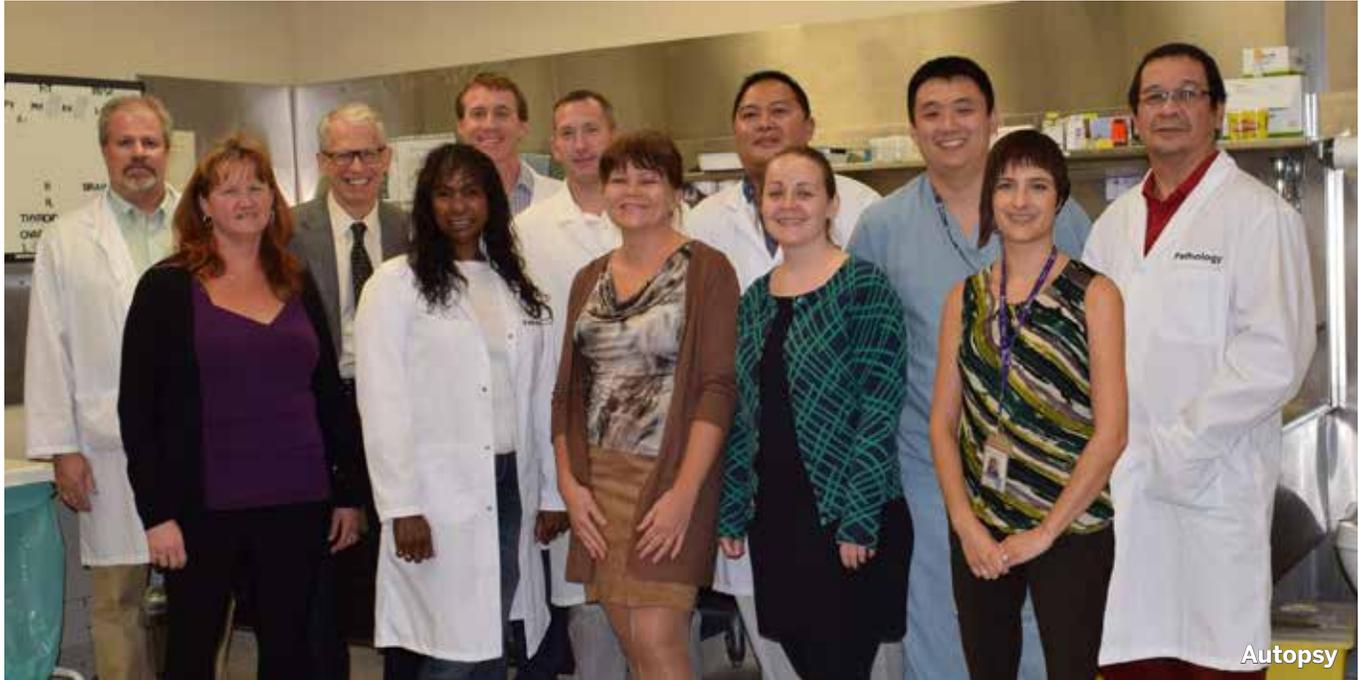
This data has been able to show a breakdown of turnaround times for each step in the process for 2014. It also demonstrates that the largest fluctuations in TAT are in specimen grossing and processing. Slowdowns in these areas are directly related to technical and human resources that are available to process specimens.

In recent years the reporting of pathology specimens has extended to molecular/predictive markers for many cancer types. The Department has implemented integrated testing for many of these markers. This has required the development of detailed work flow to ensure that the appropriate tissues and reports are created in partnership with the molecular diagnostics division. Undoubtedly the division of surgical pathology and molecular diagnostics will continue to work closely in future to align diagnostic processes to support personalized medicine.

Cytopathology

The Cytology laboratory provides a wide range of diagnostic services to physicians in London and many regional hospitals. We deliver expert cytology consultation service to regional pathologists. The strength of our lab lies in its continued efficiency in providing test results with TAT in lab target. We have a robust ongoing technical and professional quality management program in place.





The cytotechnologists continue to provide an efficient and highly valued Rapid Onsite Evaluation (ROSE) FNA service to clinicians (1159 cases in 2013) and this volume is steadily increasing with increase in number of EUS and EBUS procedures. The laboratory expanded our cytology service to Stratford and their regional hospitals in 2014 including processing, screening and reporting as part of the regional expansion of cytology practice. Further regional expansion is being planned. There are plans to introduce a number of molecular tests related to cancer therapy on small cytology samples and currently validation projects for P16 and EGFR are in progress.

Autopsy

The autopsy service based at University Hospital performs a dual role. By doing autopsies authorized by families of individuals dying in hospital, it monitors quality assurance of the LHSC clinical services. As a regional forensic pathology unit, the service assists coroners conducting death investigations in Southwestern Ontario.

In 2014, the total number of autopsies (hospital consent and coroner's warrant) increased 6.7 per cent (from 565 to 603). There was an 11.5 per cent increase in coroners' cases (425 to 474) but a 7.9 per cent decrease in hospital consent autopsies (140 to 129). The proportion of coroners' cases originating outside of London done in the LHSC facility was 42 per cent. In 2013, 43 per cent of cases originated outside London. Although current staffing by pathologists and support staff is sufficient to meet this regional need, this will be a concern if community hospitals in the region continue to close their autopsy services.

Division of Molecular Diagnostics

Molecular Diagnostics Division is comprised of Biochemical Genetics, Cytogenetics and Molecular Genetic Sections (which includes Molecular Pathology) and provides specialized genetic testing including inherited metabolic disorders, chromosome analysis/karyotyping, FISH, microarray analysis and a wide variety of gene tests for inherited disorders, predictive cancer testing and therapeutic monitoring. It also serves as a reference laboratory for multiple tests at the provincial level and performs some testing at the national level.

Molecular testing for most inherited diseases and many cancers is advancing to use technologies that interrogate multiple genes simultaneously. A major goal for the division is improve our depth of professional and technical coverage and acquire new technology (such as automation and next generation sequencing capability [NGS]) to meet current demands, advance our test menu and participate in future opportunities. This effort is being supported by Hospital Leadership and the London Health Sciences Foundation.

Program of Laboratory Medicine

The Program of Laboratory Medicine consists of a number of Divisions: Core Labs, Point of Care Testing, Biochemistry and Immunology, Hematology, Transfusion Medicine, Microbiology, Transplant Immunology and Pulmonary Function.

Microbiology

The laboratory has been able to acquire much needed capital equipment along with middleware software that has allowed us to change workflow and provide more timely results for patient management. The MALDI-TOFF equipment, which provides rapid identification of bacteria has resulted in us being able to identify the bacteria present in blood cultures rapidly and this has resulted in more appropriate and targeted antibiotic use in patients with sepsis. We continue to strive to improve and have incorporated physician feedback in laboratory service changes, resulting in significant savings and service improvements. Examples include an ova and parasite screen and protocol allowing for a more focused use of time consuming and costly methods for diagnosis of parasitic disease. A change in *Clostridium difficile* testing frequencies and algorithms has been implemented so that we can now offer the service 7 days a week. The introduction of a protocol for monitoring patients at risk of developing invasive fungal infections using a galactomannan assay has led to significant savings in the use of high cost anti-fungal agents along with better utilization of other laboratory resources.

Hematology

The hematology laboratories support the large volume core laboratories for all hospital sites, as well as the specialty areas of Blood Transfusion Laboratory and Investigational

hematology (comprised of coagulation, hemoglobinopathy, flow cytometry and morphology).

Being one of the 3 largest blood banks in Ontario, our focus is to ensure the proper and safe use of blood products at LHSC and our regional hospitals. We are required to be registered with Health Canada in accordance with the new blood regulations. The Blood Transfusion Laboratory continues to participate in national and international research studies that range from evaluating new and safer blood products to understanding the impact of the current standard of care compared to the use of "fresh blood".

The coagulation laboratory supports one of the largest regional bleeding disorders programs in Ontario providing specialty testing for patients with hemophilia and other bleeding disorders. This past year the coagulation laboratory introduced ADAM-TS13 testing for renal patients with suspected TTP or HUS. A national quality assurance program has been implemented by LHSC to ensure this test is available to all patients in Canada

Flow cytometry provides regional testing for patients with hematologic malignancies and continues to be an innovator both nationally and internationally. Flow cytometry at LHSC has developed and implemented some lead technologies in rare event detection including circulating tumor cells in patients with breast and prostate cancer, minimal residual disease testing in childhood leukemia and hematopoietic stem cell enumeration. This year we hope to implement a new technology in automated morphology analysis, Cellavision, which will allow remote scanning of microscope slide for expert review and education.

The strength and success of the Hematology and Blood Transfusion laboratories has always rested on a culture of innovation, education and collaboration among technologists, trainees, scientists and medical staff.

Biochemistry and Immunology:

Core Laboratories Biochemistry: This laboratory supports a large volume of routine testing in the core laboratories at two LHSC hospital sites and one St Joseph's Hospital site. New instruments for urinalysis and HbA1C testing were acquired

to replace our aging analyzers. The core laboratories have also adopted lean processes to streamline routine workflow. Immunology: Paraneoplastic antibodies (Hu, Yo, Ri, Ta/Ma2, CV2 and amphiphysin) that were send-out tests, are now being done in-house. A new policy for ANA testing frequency has been implemented to curtail unnecessary repeat testing. Our laboratory is in the process of validating the serum free light chain assay. Trace Elements: An elaborate study was done to establish reference ranges for trace elements in whole blood, erythrocytes, and plasma. The trace element laboratory generates a large amount of revenue by doing testing for national and international clients. Endocrinology & Maternal Serum Screening: A new Diasorin Liaison XL was purchased and is now running several assays that were previously done by manual radioimmunoassays. Toxicology, Therapeutic Drug Monitoring & Special Chemistry: This laboratory performs tests for LHSC/ SJHC and for clients across the country.

Pulmonary Function Lab

There is still no availability online / Cerner access of all PFT clinical data, including numerical data, graphs, and physician reports from the PFT-specific Breeze software. This has become a bigger problem raise by several referring services / physicians and has impacted clinical care as well, as PFTs are not available evenings / weekends when respiratory disease patients are admitted to hospital. Similarly, patients going to urgent surgery need PFT results prior to this, and if there is no information on previous PFTs, repeat testing is ordered.

Transplant Immunology Laboratory

The Transplant Immunology Laboratory services a comprehensive multiple organ transplant program at University Hospital. Last year, a total of 148 patients received 152 organ transplants, including 89 kidneys, 15 hearts and 48 livers. We also provide histocompatibility support for the allogeneic hematopoietic stem cell transplantation program at Victoria Hospital.



Lab work at the Biotron

**The Department of
Pathology and Laboratory Medicine**

Schulich Medicine & Dentistry
Western University
London, ON N6A 5C1
t. 519.661.2030
e. media.palm@schulich.uwo.ca

schulich.uwo.ca/pathol

