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The time interval spanned by the last 2 academic years (2012–13 and 2013–14) were characterized by significant transitions in leadership throughout the Department of Surgery.

In November 2012, Dr. Eric Poulin concluded an illustrious surgical career and also a nine-year term as Chairman, Department of Surgery, University of Ottawa and Surgeon-in-Chief. This will be discussed in greater detail on the following page.

I have had the honor of serving as Surgeon-in-Chief and Chairman for the past year, after serving as interim Department Head for the previous year. It has certainly been a busy time getting more closely acquainted with the membership of the Department, with the leadership team at the Faculty of Medicine, and with the Senior Management Team at the Ottawa Hospital; learning the ropes of the processes in these various domains; and balancing a demanding meeting schedule with the conduct of a thoracic surgical practice! We work in financially daunting times which certainly increases the challenge level as we push forward and strive towards excellence in quality and safety of patient care, patient experience, education and research. However, I can say with great confidence that we have outstanding surgical faculty, residents and staff—and are supported by a truly outstanding senior administration that consistently demonstrates a profound commitment to excellence in patient care. We are facing significant change in the way in which surgical training will take place in the relatively near future. All of this underscores the importance of critically evaluating the way in which we conduct our work and embracing fundamental change.
Dr. Eric Poulin

Dr. Poulin completed his 9-year term as Department Chair in 2012, and expressed his feelings very eloquently in his final Annual Report from that year. It is not possible to summarize a fitting tribute to his enormous legacy in this small space here. However, it is important to recognize just a few of his many important contributions to the Department and to the welfare of surgical patients here.

Dr. Poulin was a staunch advocate of all Division heads and supported their recruitment to the faculty. Under his guidance, 44 surgeons were recruited to the Department, with a strong emphasis on minimally-invasive surgery and academics (28 of these 44 surgeons had additional academic degrees, either master’s or PhD). He created the infrastructure to provide introductory financial support to these academic recruits. He was also instrumental in The Ottawa Hospital’s participation in the American College of Surgeons NSQ IP program, which was vital in allowing us to benchmark our surgical outcomes relative to nearly 500 prominent hospitals participating throughout North America. Our NSQ IP data has allowed us to recognize that we are top 10% in perioperative mortality; but also to identify areas of weakness in our perioperative care, namely surgical site infections. This recognition spawned widespread surgeon and staff engagement leading to the vigorous surgical quality improvement activity. Dr. Poulin left the Department of Surgery in strong financial shape at the conclusion of his term. The Department of Surgery owes a huge debt of gratitude to Dr. Poulin for his visionary work and leadership.
HIGHLIGHTS OF 2013–2014

1. **Departmental Retreat**

On Saturday, January 18, 2014, the Department of Surgery held a retreat which was attended by more than half of the membership of the Department. The Retreat featured presentations by Drs. John Mahoney, Homer Yang, Sebastien Gilbert, George Hajjar, Andrew Seely and Paul Hendry; and the themes explored and developed that day included Professionalism, clinical and financial integration, and transparency/accountability. Members of the Department of Surgery had an opportunity to develop our own vision, mission and goals. Through work conducted in the surgery executive subsequently, a Department of Surgery strategic plan was developed, closely aligned with the strategic plan of The Ottawa Hospital, as follows:

**DoS Strat Plan**

Our goal continues to be to achieve top 10% status in quality, safety and patient experience in North America. Fundamental strategies will include: Maximizing the quality of the patient experience; a focus on maximizing quality at lowest cost (i.e. optimizing value); and in keeping with our mandate as an academic department, a focus on surgical education and research.

---

**DoS Strategic Plan**

To provide each surgical patient with the world-class care, exceptional service and compassion that we would want for our loved ones.

- **DoS Vision**
  - To become a top 10% performer in quality, safety and patient experience in North America

- **DoS Goal**
  - Maximize patient experience
  - Focus on quality at less cost
  - Focus on education and academics

- **Portfolios**
  - Education
  - Research
  - Quality Improvement
  - Informatics
  - Innovation, Technology

- **Enablers**
  - Engagement, Culture Change, Process Reform, Technology

- **Core Values**
  - Respect for the individual
  - Compassion
  - Commitment to quality
  - Working together
2. Formation of a Department of Surgery Quality and Patient Safety program

This new initiative in the Department will move forward under the direction of Dr. Andrew Seely, with all Divisions participating and represented by their divisional QPS representative. It is expected that this new QPS program will create a rigorous platform for tracking and analyzing surgical adverse events, generating surgeon-specific progress reports, and facilitating open dialogue between surgical colleagues in order to share best practice (modeled on the “positive deviance” concept).

3. Formal opening of the Office of Surgical Education

The Office of Surgical Education opened in January 2014, which was in planning for nearly 3 years.

4. Ongoing progress with Surgical Quality Improvement

On March 6, 2013, the Department of Surgery hosted grand rounds featuring a presentation on NSQ IP by Dr. Clifford Ko, the director of ACS NSQ IP program. There were also presentations by Dr. Liza Wick and Deb Hobson (both from the Armstrong Institute for Patient Safety at Johns Hopkins University) on the Comprehensive Unit-based Safety Program (CUSP) as a means for quality improvement. This event kick-started the creation of 3 CUSP teams—and under the very capable leadership of Dr. David Schramm, Surgeon Champion of the NSQ IP program, there was widespread engagement and implementation of CUSP to address several performance and quality improvement measures. A more detailed summary of this progress will be submitted separately in this publication by Dr. Schramm.
5. **Huge gains achieved by the Surgical Oncology Program**

Lead by Dr. Michael Fung-Kee-Fung, the Surgical Oncology program attacked the problem of excessively long surgical wait times for our cancer patients. Through a multifaceted and systematic approach, the surgical oncology group achieved greater than 90% compliance for Ottawa Hospital patients requiring cancer surgery, early in 2014. In fact, TOH became the leading centre in Ontario for cancer surgery wait times, and has consistently maintained this status since making this remarkable achievement several months ago. A more detailed progress report about this achievement and the many important programmatic advancements in surgical oncology will be submitted in this publication by Dr. Fung-Kee-Fung.

6. **Development of Surgery Research Chair**

The Department of Surgery was proud to announce the establishment of the “Department of Surgery Research Chair in Urologic Oncology“ for Dr. Rodney Breau in July 2014. This chair was made possible through a generous financial contribution from a patient, significant input from the members of the Division of Urology, and financial support from the Office of the Department of Surgery. There is currently active planning towards developing several other chairs in other surgical divisions.
It has been a privilege to help compile this summary report of the activities of the Department of Surgery spanning academic years 2012–13 and 2013–14. This report is a testimony to the hard work, dedication and commitment of the faculty, residents and fellows of our Department, and I sincerely hope I have managed to accurately capture and present the many accomplishments and achievements.

The current report features new entries highlighting NSQIP (from Dr. David Schramm, Otolaryngology) and the Surgical Oncology program (from Dr. Michael Fung-Kee-Fung). Finally, in the spirit of inclusiveness, there is a dedicated section for the Department of Surgery at CHEO. Although there is inevitably some repetition with these additions, we are pleased to be able to separately highlight the activities of our pediatric colleagues as well as the progress in these quality improvement and specialty programs.

Respectfully submitted,

Sudhir Sundaresan
Chair, Department of Surgery, University of Ottawa
PROMOTIONS

To Assistant Professor:

» Dr. Shaheer Tadros

To Associate Professor:

» Dr. Marcos Bettolli
» Dr. Wade Gifton
» Dr. Erik Suuronen
RECRUITMENTS

2012
» Dr. Adam Sachs
   Neurosurgery
» Dr. Hesham Abdelbary
   Orthopedic Surgery
» Dr. Vincent Chan
   Cardiac Surgery
» Dr. James Villeneuve
   Thoracic Surgery

2013
» Dr. David McAuley
   Neurosurgery, CHEO
» Dr. Duane Hickling
   Orthopedic Surgery
» Dr. Amy Neville
   General Surgery
» Dr. Braden Gammon
   Orthopedic Surgery
» Dr. Guillaume Martel
   General Surgery
» Dr. Carolyn Nessim
   General Surgery

2014
» Dr. Fahad Alkherayf
   Neurosurgery
» Dr. Phillippe Phan
   Orthopedic Surgery
» Dr. Melise Keays
   Urology, CHEO
» Dr. Claudia Malic
   Plastic Surgery, CHEO
» Dr. Elsayed
   Elmestekawy
   Cardiac Surgery
» Dr. Isabelle Raiche
   General Surgery

RETIREMENTS

» Dr. Vijay Moonje
   General Surgery
» Dr. Alan Giachino
   Orthopedic Surgery
» Dr. Garth Johnson
   Orthopedic Surgery

DEPARTURES

» Dr. Amin Kassam
   Neurosurgery
TRANSITIONS IN LEADERSHIP/END OF MANDATE

Dr. Mario Jarmuske

Dr. Jarmuske served a five-year mandate as the 1st academic plastic surgery Division Chief and Chair, and served to unite a previously largely community-based group of plastic surgeons into a hospital and university-based division. He was responsible for the recruitment of several young academic faculty, and organizing structure and governance for a 3-campus Plastic Surgery program. He was also instrumental in the establishment of the 1st new plastic surgery residency in Canada in several decades. This excellent training program came to fruition and graduated its 1st trainee in 2014. Congratulations Mario!

Dr. Ron Gerridzen

Dr. Gerridzen served 2 five-year terms as Division Chair/Chief of Urology, and was instrumental in creating one of the preeminent Urology programs in Canada. His visionary leadership led to the establishment of several outstanding subspecialty programs, along with recruitment of excellent young academic faculty. His integration of the Division created an atmosphere conducive to excellence in clinical care, education and research. Under his tenure, two research chairs were established in the Division of Urology. He has left the Division in superb shape to continue to dominate nationally and internationally in the future. Well done Ron.
Dr. Jim Watters

Dr. Watters has worked tirelessly as director of research for the Department of Surgery for the past couple of decades. A principal focus of this role was the organization of the Annual Collins Surgical Research Day, including setting the scientific program, conduct of the days activities, and functioning as MC of the awards dinner, which he has done with tremendous style and class. Jim has played the role of research mentor to many young surgical faculty. In recent years, he was also responsible for the selection of the annual Department of Surgery research awards. Jim, you have done an incredible job, yours will be hard shoes to fill; and, it seems inconceivable to attend a Collins Day dinner without you at the mic! A sincere thanks from the entire Department of Surgery.

Dr. Geoff Dervin

Dr. Dervin also completed two 5-year terms as Division Chief/Chair of Orthopedics. His tenure as chief was notable for a strong recruitment strategy into several key subspecialty areas (upper extremity, spine, foot/ankle, arthroplasty, oncology and trauma); strengthening the research infrastructure and creation of an environment and incentivization system that promoted expansion of research; a notable increase in arthroplasty volumes at TOH; and a rise in stature of the Orthopedics residency program into one of the most sought-after in the country. Geoff has kindly agreed to stay on in this role after July 1, 2014, as the selection process for the next Division Chief is well underway. Geoff, congratulations on a job well done.

Dr. Sudhir Sundaresan

Dr. Sundaresan completed 8 years as Thoracic Surgery Division Chief/Chair in November 2012, when he took the position of Interim Department Head; and then received the position of Department Chair in September 2013. During his term, he oversaw several key recruitments; and his leadership with the integrated thoracic oncology model in the CAC laid the foundation for programmatic work with Cancer Care Ontario, establishing standards for thoracic surgery and its regionalization throughout Ontario.
UNDERGRADUATE EDUCATION

Successes:

1. The first full year of Surgery Preparation (Boot Camp) Week was completed with great collaboration and input from all Divisions within the Department. It was an overwhelming success with regards to students' satisfaction, learning and preparation level prior to starting surgical clerkship. Students' evaluations were superior this year and exam performances were also excellent.

2. The Surgical Exploration And Discovery (SEAD) program was also a great example of Departmental collaboration and leadership in the introduction and potential recruitment of future surgical candidates. Feedback has been stellar and we would anticipate that this initiative would be an annual program offered to first and second year medical students.

3. The surgery rotation has been expanded to rural locations. The Undergraduate Surgical Medical Education Office has performed formal credentialing of all the rural sites.

4. Teaching Faculty and Residents are enthusiastically committed to the education of the students and have responded positively to the Faculty’s requirements.

5. Overall satisfaction has been consistent and most students have a positive rotation.

Long-term goals:

1. Refinement of Surgery Preparation Week with regards to creation and expansion of Quizzes Database.

2. Progressive integration of Longitudinal Curriculum elements into the Surgery Undergraduate Curriculum in preparation for an eventual transition towards Longitudinal Medical Curriculum and Competency Based Medical Training.

3. Evaluation and potential integration of tasks with Postgraduate Surgery Education.

4. Publication and dissemination of our experience with Surgery Boot Camp.
2013–2014 was a milestone year for the Department of Surgery’s Postgraduate Education Committee. In November 2013 the Department of Surgery Surgical Education Office officially opened and is located on the first floor of the Loeb Building. The Office houses 9 postgraduate programs, including Surgical Foundations, along with Undergraduate Surgical Education. In its inaugural phase, the Office has programs administered under shared administrative assistants for the purposes of information sharing and manpower efficiency.

The Office functions as a not-for-profit corporation and has been officially incorporated under the Not-for-profit Corporations Act with the Government of Canada. Bylaws have been structured, and officers named. The Office’s incorporation status has allowed and facilitated a high level of financial efficiency for Surgical Education. Along with the significant manpower realignment within the Office, the Department of Surgery has hired Karen Hall to function as the Office Manager. Karen oversees day to day management of the Office along with overseeing the development of educational initiatives.
Over the course of several meetings, the Postgraduate Education Committee has established a list of tasks to be accomplished that is viewed as being important to all programs. These initiatives include:

1. standardizing the Pre-surgery Questionnaire for in-common PSQ questions;
2. a comprehensive CanMEDS Evaluation package to be used by all programs;
3. establishment of a Code of Conduct Policy that covers University/Hospital and CPSO obligations;
4. the development of Resident Promotion Policy;
5. the centralization of off-site rotations; and
6. Office of Education branding.

These items are all a work in progress with good movement forward in each category.

The Vision of the Office is to “share best educational practices amongst all Departmental Programs and to exercise the commonality owned by our 11 educational programs including undergraduate education”.

Our Mission is to “facilitate the implementation of best practices” and in order to accomplish this, we have entered into a 5-year developmental plan.

» July to November 2013 Transition
» November 2013 to early 2015 Programmatic Assignment
» Early 2015—next 5 years Task Based Assignment

The next year will involve the Office entering into task-based job assignments that will see programs being administered by all Programmatic Administrative Assistants rather than one. This realignment will be done with the assistance of an Organizational Development Consultant. Our Committee believes that this will be in alignment with our vision and mission statement and will prepare all for the 2016 Royal College Review.

Respectfully submitted,

J. Stuart Oake MD, FRCSC, MBA
Chair, Postgraduate Education Committee, Department of Surgery
Since its grand opening on October 14th 2010 the University of Ottawa Skills and Simulation Centre has quickly become an essential component of the education landscape within the Department of Surgery. The importance of the centre in surgical education over the past four years is clearly demonstrated by the exponential growth of surgical activity. Learners from medical student to practising surgeon attend the centre throughout the year to participate in a wide range of activities in well designed skills and simulation based curriculums.

Surgery has enjoyed another exciting year at the Skills and Simulation Centre. The following pages show a list of just some of the highlights.
CPD EVENTS

From the CPD perspective, surgeons-in-practice and surgical residents from our own University and other centres have had a number of opportunities this past year to improve their skills and learn new techniques at the Skills and Simulation Centre.

» Orthopedics ran the JOINTS National Shoulder course for residents in January 2014.

» Neurosurgery ran skull-based surgery courses in July and September 2013, as well as an annual review course at the Centre, with an attendance of up to 60 people.

» The Canadian Association of General Surgeons held a hands-on workshop at the Skills Centre, in association with their national meeting, held in Ottawa in September 2013.

» Cardiac Surgery ran a hands-on workshop at the Centre in June 2013, in association with their National meeting.

» Trauma Surgery continues to host quarterly ATLS courses.

» Collins Day was held in May 2014.

SURGICAL RESIDENTS

Surgical residents participate in activities at the Skills Centre with individual specialty-related academic half-days, as well as the Surgical Foundation’s program (65 residents) on a weekly basis.

New for this past year: Orthopedics, cardiac and vascular surgery have instituted surgical boot camps for their junior trainees.

General surgery has also collaborated with anesthesia in multidisciplinary intraoperative simulated scenarios of critical events to teach and provide feedback on non-technical skills, such as communication and collaboration. Following their lead, other surgical specialties are planning to implement similar training.

MEDICAL STUDENTS

2013–2014 was the first academic year for the Undergraduate Surgery Boot Camp, consisting of lectures and hands-on skills sessions. The Boot Camp is run eight times a year for 3rd year medical students rotating through surgical clerkship, until all 156 students have completed this training.
Surgical Exploration and Discovery (SEAD)

The Department of Surgery was pleased to participate in the inaugural roll out of the SEAD program in Ottawa, hosted at the University of Ottawa Skills and Simulation Centre in June of 2014. Originally developed by medical students at the University of Toronto, this program was designed to provide dedicated exposure for 1st year medical students to surgical specialties, to facilitate future career choices. The program consisted of a two-week curriculum, which included specialty-specific, simulation-based workshops, specialty-centred career discussions and operating room observerships. Surgeons and surgical residents from all Divisions in the Department of Surgery volunteered their time to ensure the success of this program. Feedback from the medical students enrolled was overwhelmingly positive. My favourite testimonial came from one participant who stated it was “the best two weeks of medical school so far”.

Education/Research

The first surgical resident to enter the Surgical Education Research program based at the Skills and Simulation Centre, Dr. Janelle Rekman (PGY3, General Surgery), is wrapping up her first year of research training. She has contributed to the various surgical teaching events at the uOSSC and developed her research in the area of assessment tool development.

Dr. Tarek Malas from Cardiac Surgery conducted a study on procedure visualization and surgical skills training, using a vascular anastomosis model. He continued to build on this work during his MPH.
The SERG (Surgical Education Research Group) was formed to facilitate collaboration of surgical education research projects. Comprised of approximately 15 surgeons, the group meets several times per year at the uOSSC to develop and initiate new projects.

**Expanding the Education Footprint**

Renovations on the 1st floor of the Loeb Building were completed in March 2014 and the new Office of Surgical Education was opened.

The Animal Care Facility in the basement of the Loeb Building has been completely refurbished and opened in late December 2013. The facility now boasts four stations for large animal skills training, fully-equipped with the latest MIS capabilities. This area will further enhance the Centre’s ability to provide state-of-the-art learning to our trainees and the surgical community worldwide. General Surgery and Urology residents are already utilizing this area for MIS training on a regular basis.

Respectfully submitted,

**Tim Brandys**  MD, MEd, FRCS(C), FACS  
Surgical Lead, University of Ottawa Skills and Simulation Centre
RESEARCH REPORT

COLLINS DAY

The 31st Collins Surgical Day was held Friday, May 9, 2014. This annual event began in 1979 and in 1984 was named in honour of Dr. W.E. Collins, Emeritus Professor of Surgery and the first Coordinator of the Surgical Training programs at the University of Ottawa (1976–1984).

Our honoured guest this year was Dr. Joe B. Putnam Jr., Professor and Chairman, and Ingram Professor of Cancer Research, Department of Thoracic Surgery, Vanderbilt University Medical Center. He is also Program Director, Residency Program in Thoracic and Cardiac Surgery and Professor of Biomedical Informatics. He has extensive experience in the surgical management of a wide spectrum of simple and complex thoracic diseases. Dr. Putnam’s research has focused on improving outcomes in thoracic surgery, and evaluating novel therapies for thoracic diseases.

The scientific session was held in the University of Ottawa Skills and Simulation Centre at the Civic Site of The Ottawa Hospital. There were seventeen platform and twenty-four poster presentations. The five top-ranked posters were presented individually in a poster discussion session. Dr. Putnam gave a very insightful and engaging address entitled “Drowning in Data and Starving for Information: A Personal Quest for Excellence in Thoracic Surgical Oncology”, drawing on his own experiences and career path.

The scientific program was very successful and well attended. The skill, commitment and hard work of the residents and fellows in our training programs were very evident, and the contributions of their supervisors and mentors much appreciated. Thanks are due to the adjudicators for Collins Day, Drs. Guillaume Martel, Allan Liew, James Villeneuve and Ehab Elzayat; to Dr. Rodney Breau for chairing the poster session; and to Drs. Ahmed Nasr, Adam Sachs, and Sebastien Gilbert who chaired the platform sessions. The program was accredited by the Royal College.

The Collins Day Reception and Dinner were held this year for the first time in the Drawing Room at the Chateau Laurier. This larger venue allowed a record 180 residents, staff, spouses and others to attend. A key part of the evening were the presentations of the research prizes and teaching awards (see below), recognition of the graduating residents and fellows, and acknowledgment of staff who have completed leadership roles in the Department.

Many thanks are due to Karen Hall, Christine Seabrook, and Laura Gerridzen in the Department of Surgery Office of Education for their attention to the myriad details and arrangements upon which the success of Collins Day depends.
Farid Shamji Award for Best Resident Teacher
Chosen by the medical students rotating in the Department of Surgery.

1. Dr. Jean-Michel Aubin (General Surgery)
2. Dr. Travis Marion (Orthopedic Surgery)
3. Dr. Beverley Chan (General Surgery)

Award for Best Surgical Teacher
Chosen and presented by the residents of the Department of Surgery.

4. Dr. Karl-André Lalonde (Orthopedic Surgery)
5. Dr. Stuart Oake (Urology)
Department of Surgery Leadership Award
Presented to surgeons who had completed their terms as Residency Program Directors:
6. Dr. Fady Balaa (General Surgery)
7. Dr. Tim Brandys (Vascular Surgery)
 » Dr. Martin Friedlich (Colorectal Surgery) (not pictured)

John P. Collins Award for Best Basic Science Paper
8. Dr. Ian MacNiven (Orthopedic Surgery)
Biomechanical Evaluation of Two Suturing Techniques for Distal Biceps Tendon Rupture Repair
Graeme Barber Award for Best Clinical Paper
9. Dr. Anas Alshuhayeb (Thoracic Surgery)
   Prognostic Role of Standardized Uptake Value of PET Scan in Non-Small Cell Lung Cancer

W.E. Collins Award for Best Overall Paper
10. Dr. Tarek Malas (Cardiac Surgery)
    The Use of Visualization in Surgical Simulation Training to Evaluate Performance of Vascular Anastomosis on a Bench Model

Best Poster Presentation
» Dr. Janelle Rekman (General Surgery)
   Determining Trauma Quality Indicators in Pediatrics to Improve Outcomes (not pictured)
DEPARTMENT OF SURGERY
RESEARCH AWARDS

The winners in the sixth competition for these $25,000 awards were selected from amongst many excellent submissions and announced in November 2013. The aim of the awards is to promote high quality research and the development of research capacity in the Department. Drs. Fraser Rubens (Professor, Division of Cardiac Surgery), Ahmed Nasr (Division of Pediatric Surgery), and Tim Ramsay (Director, Clinical Epidemiology Program Methods Centre) have contributed greatly to the program by their advice and review of submissions. The Surgical Executive Committee has approved a 2014 competition which is currently underway.

The 2013 awardees (alphabetically) are:

» Dr. Hesham Abdelbary (Orthopedic Surgery)
  Investigating Sarcoma Epigenetics and Susceptibility to Oncolytic Virotherapy.

» Dr. Wade Gofton (Orthopedic Surgery)
  Development of a CanMEDS Clinical Assessment Tool for Surgical Clinic.

» Dr. Prasad Jetty (Vascular Surgery)
  Rivaroxaban for the Prevention of Restenosis after Infraringuinal Percutaneous Transluminal Angioplasty for Critical Limb Ischemia. The RIFLE study.
PERIOPERATIVE QUALITY IMPROVEMENT

Comprehensive Unit-based Safety Program (CUSP) has Reduced Surgical Site Infections at The Ottawa Hospital

The Ottawa Hospital implemented an integrated perioperative quality management program using the American College of Surgeons National Surgical Quality Improvement Program (NSQIP) in May 2010. NSQIP uses clinical data collected by trained surgical clinical reviewers from a sample of 20% of surgical cases. Inpatient and outpatient records are analyzed for evidence of postoperative morbidity and mortality occurring within 30 days of surgery. NSQIP is considered to be the pre-eminent surgical quality improvement program.

Analysis of NSQIP data demonstrated that although TOH has very low perioperative mortality, there is a high rate of surgical site infections (SSI). To address this issue, a Comprehensive Unit-based Safety Program (CUSP) was implemented in March 2013 at TOH. CUSP is a quality improvement framework developed at Johns Hopkins Hospital which has been demonstrated to reduce SSIs in colorectal surgery.

15 multidisciplinary teams were formed over 8 months. All teams include frontline providers and a hospital Senior Vice President. Initial teams were based on the surgical specialities with the highest SSI rates. Subsequent teams were formed based on unit/location or the primary issue addressed. Surgical specialties participating in the CUSP initiative account for over 90% of SSIs.

Frontline providers were surveyed for improvement ideas using a two question survey:

» “Describe how you think the next patient will get a Surgical Site Infection.”
» “Describe what you think can be done to prevent this Surgical Site Infection.”

Individual CUSP teams used these results to inform changes to clinical processes. Specific interventions began in September 2013. A total of 47 unique interventions have been tested.

Although the majority of interventions were specific to the individual surgical specialties, there were four primary multispecialty perioperative quality improvement initiatives implemented across ORs at all campuses of TOH:
1. **Perioperative Patient Warming**

Heated operating room tables were introduced and the ambient room temperature was increased to 21.5°C +/- 1°C. Pre-warming was introduced for all patients with a surgical case time over 2 hours. These changes resulted in a statistically significant increase in normothermia in cases over 1 hour (Figure 1, below).

![Figure 1: Normothermia in Surgical Cases >1 Hour](image-url)
2. **Antibiotic Prophylaxis**

Best practice guidelines for antibiotic re-dosing were created and promoted. Manual timers were introduced to prompt antibiotic re-dosing in cases over 4 hours, which were followed by an automatic prompt embedded in the anesthesiology electronic documentation system. This resulted in a statistically significant increase in timely antibiotic re-dosing (Figure 2, below). Best practice guidelines for antibiotic prescribing in patients with a penicillin allergy were created and integrated into the pre-operative order forms.

![Figure 2: The Ottawa Hospital Unadjusted Surgical Site Infection Rate as Reported in NSQIP](chart)

3. **Wound Management**

New antimicrobial dressings were introduced, along with a new protocol for application in the OR and a new protocol for inpatient postoperative wound management.

4. **Environmental Sterility**

Improvements in environmental sterility and surgical asepsis included automatic scrub dispensers, posters displaying appropriate attire, a protocol for enhanced cleaning of the anesthesia workstation, review of OR housekeeping protocols, delayed opening of irrigation solution and use of a sterile towel to cover open irrigation solution, double-gloving by scrub nurses, and re-gloving and re-gowning prior to closing in colorectal cases.
From March 2013 to May 2014, there has been a decrease in the overall SSI rate by 20% (Figure 3, below). CUSP produced process changes resulting in the successful achievement of the target SSI rate within 15 months. Process improvements were particularly achieved in 4 key areas: normo-thermia, antibiotic prophylaxis, wound management, and environmental sterility. These, along with other process improvements have led to a statistically significant downward trend in the overall SSI rate.

The commitment of TOH staff surgeons, anesthesiologists, residents, and OR personnel to work collaboratively has been essential to the success of this surgical quality improvement initiative.

Figure 3: Cefazolin Re-dosing Success in Surgical Cases >4 Hours
The Surgical Oncology Program (SOP) is an interdisciplinary program that extends across three Departments and five Divisions at The Ottawa Hospital and University of Ottawa. Its mandate is to provide leadership in the care delivery, education and research domains in surgical oncology within the Ottawa Regional Cancer Program and the Champlain LHIN. Specifically, with Cancer Care Ontario (CCO), the program delivers direction in the development and implementation of regional and provincial standards and quality of care metrics for cancer surgery performance for the nine hospitals in the region. In addition the program is seamlessly integrated into the wider Cancer Program providing strong interdisciplinary care and research programs with the non-surgical cancer divisions. The program focus to date has been the development of innovative models for care delivery, health services and translational research, and interdisciplinary research collaboration. Educationally the program hosts one Royal College fellowship (Gynecologic Oncology) and five non-Royal College surgical oncology fellowships (Urology, Orthopedics, ENT, Colorectal, Hepatobiliary). The planning for a Royal College Surgical Oncology fellowship program is underway.
<table>
<thead>
<tr>
<th>Members</th>
<th>Disease Site(s)</th>
<th>Division/Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Hesham Abdelbary</td>
<td>Sarcoma</td>
<td>Orthopedic Surgery</td>
</tr>
<tr>
<td>Dr. Angel Arnaout</td>
<td>Breast</td>
<td>General Surgery</td>
</tr>
<tr>
<td>Dr. Rebecca Auer</td>
<td>Colorectal, Sarcoma</td>
<td>General Surgery</td>
</tr>
<tr>
<td>Dr. Fady Balaa</td>
<td>Hepatobiliary</td>
<td>General Surgery</td>
</tr>
<tr>
<td>Dr. Robin Boushey</td>
<td>Colorectal (Lead)</td>
<td>General Surgery</td>
</tr>
<tr>
<td>Dr. Rodney Henry Breau</td>
<td>GU/Prostate</td>
<td>Urology</td>
</tr>
<tr>
<td>Dr. Illias Cagiannos</td>
<td>GU/Prostate</td>
<td>Urology</td>
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<td>Dr. Wylam Faught</td>
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<tr>
<td>Dr. Laura Hopkins</td>
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<tr>
<td>Dr. Stephanie Johnson-Obaseki</td>
<td>Head and Neck</td>
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<tr>
<td>Dr. Andre Lamothe</td>
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<tr>
<td>Dr. Tien Le</td>
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<tr>
<td>Dr. Guillaume Martel</td>
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<td>Dr. Donna Maziak</td>
<td>Lung/Eosophagus/Stomach (Lead)</td>
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<tr>
<td>Dr. Husein Moloo</td>
<td>Colorectal</td>
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<tr>
<td>Dr. Chris Morash</td>
<td>GU/Prostate (Lead)</td>
<td>Urology</td>
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<tr>
<td>Dr. Carolyn Nessim</td>
<td>Breast, Melanoma (Lead), Sarcoma</td>
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<tr>
<td>Dr. Michael Odell</td>
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<td>Dr. Johanne Weberpals</td>
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<tr>
<td>Dr. Joel Werier</td>
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Dr. Stephanie Johnson-Obaseki joined the SOP in 2014. She completed fellowship training in head and neck oncologic surgery and microvascular reconstruction at the University of Toronto and is now pursuing a Master’s degree in Epidemiology and Public Health at Harvard University.

Dr. Carolyn Nessim joined the SOP in September 2013 with a focus on breast cancer, sarcoma and melanoma, as well as on medical education. She completed the Surgical Oncology Fellowship program at the University of Toronto in 2012 and further training in Melbourne, Australia.

Dr. Martin Corsten, a leader both in the Department of Otolaryngology and the SOP, relocated to Wisconsin in March 2014.

SOP INITIATIVES

The Ottawa Surgical Model (Community of Practice)

The Ottawa Regional Cancer Surgery Program has established a novel and innovative Community of Practice (CoP) platform to address the issue of regional access to high quality cancer surgery and multidisciplinary cancer care in the Champlain LHIN. This model has been deployed in the common cancers (breast, colorectal, prostate, lung, and head & neck cancers) and has engaged a large group of multidisciplinary care specialists over 9 hospitals.

The program has had a number of successes to date including: standardization of best practices in breast, prostate, and colorectal cancers, creation of regional access to sentinel lymph node surgery for breast cancer, centralization of rectal cancer to specialized teams, the development of regional teams in all the disease sites, to name a few.

Implementation of Wait Time Methodology

TOH has implemented a novel Wait Time management methodology for improved access to cancer surgery. Under the direction of Dr. Michael Fung-Kee-Fung, the hospital initiated a multi-pronged process that involves the:

» Collection of qualitative and quantitative information
» Identification of operational and patient flow issues within each disease site
» Quantification of demand/capacity issues
» Recommendation and development of potential solutions to mitigate barriers to compliance
» Active management of the Surgical Oncology wait lists

TOH has improved oncology surgical patients’ access to care, consistently exceeding CCO’s Wait Time performance guidelines since February 2014.
Robotic Surgery Program

The program has established a formal interdisciplinary Robotic Surgery program that now provides leading edge surgical care for patients with prostate, uterine, cervix and oropharyngeal cancers. The program, now in its third year, has been one of the fastest ramped up programs across Canada. Its unique structure includes active leadership from all disciplines, specialized operating teams and 10 robotic trained surgeons. The program now provides fellowship training in urological and gynecological oncology procedures as well as introductory training for residents. Quality, safety and performance evaluation metrics have been built in to the program’s operational procedures. The program is focused now on outcome and health services evaluation and research. In April 2015 the program will have reached its 1,000th case.

SITE GROUP HIGHLIGHTS

Grants, publications and presentations are detailed in the Divisional sections of the Department of Surgery annual report and in the annual reports of the Department of Obstetrics and Gynecology and Department of Otolaryngology.

Head and Neck Oncology

The thyroid cancer CoP, led by Dr. Michael Odell, is developing guidelines to assist in appropriately choosing which thyroid nodules should undergo ultrasound guided FNA. A strategy for maximizing efficiency while eliminating redundancy in the follow-up of patients who have undergone treatment for malignant thyroid tumours is in development. Dr. Odell is a member of CCO’s Head and Neck Disease Site Group, and is actively involved in the Program in Evidence Based Care (PEBC).

Drs. Odell and Johnson-Obaseki have established the Transoral Robotic Surgery program (TORS) and anticipate enrolling patients in the multi-institutional ORATOR trial, comparing TORS and adjuvant therapy to up-front chemoradiation protocols, potentially allowing de-escalation of therapy in selected patients and minimizing long term morbidity.

Colorectal Oncology

The regional colorectal team was one of the very early adopters of the Communities of Practice (CoP) model in 2007 and has achieved notable improvements in patient care, among the most significant of which has been centralizing the care for individuals with rectal cancer. The CoP has constructed a regional data system that tracks patient, surgeon and institutional outcomes related to colon and rectal cancer. This has allowed the development of Regional Centres of Excellence consisting of high performing multidisciplinary cancer teams that focus on treating patients with rectal cancer and
advanced colorectal cancers, a new and unique model of care delivery. As a result, approximately 90% of rectal cancer patients in the region undergo surgery by one of nine surgeons in three institutions. A recent analysis using large population databases has demonstrated that centralization of patient care has significantly reduced rectal cancer 90-day mortality and, in addition, the number of complex, potentially curative surgeries performed for advanced rectal cancers has nearly tripled. NSQIP data show that hospital mortality rates for colorectal surgery at The Ottawa Hospital are among the lowest in North America, within the top 10% of hospitals.

The regional team has worked diligently to ensure a very patient centered experience. Specific initiatives have included regional standardization of preoperative evaluation, development of a colorectal cancer survivorship program, development and implementation of a rectal cancer decision aid, regional multidisciplinary teaching sessions including sessions with enterostomal nurses, social workers and psychosocial oncology, as well as development of our own colorectal cancer manual.

The colorectal team is actively enrolling patients into national and international clinical trials including trials looking at various changes in the delivery of chemo- and radiation therapy protocols for patients with rectal cancer. Several national studies were also developed by surgeons working at TOH, for example, the extended use of perioperative low molecular weight heparin in reducing distant metastases (Drs. Rebecca Auer and Marc Carrier). As well, a pilot study of the implementation of a rectal cancer patient decision aid, developed by Drs. Robin Boushey and Dawn Stacey has recently been completed. The decision aid is likely to be adopted by the American Society of Colorectal Surgery for use internationally.

Gynecologic Oncology

The Division of Gynecologic Oncology was the first disease site within Surgical Oncology to meet or exceed provincial cancer surgery wait times, and has demonstrated sustainability of this goal for 24 consecutive months, without fail. Using the collaborative framework necessary for this achievement, we are now in the midst of revision and reconstruction of our team. Gynecologic Oncology was one of the first three CUSP groups at the General Campus (since September 2013) and, with the goal of reducing SSIs, will lead a corporate process to optimize perioperative glycemic control for all surgical patients starting February 1, 2014.

We expect to develop a maximally invasive surgery program in ovarian cancer over the next two years, to be realized through formalized partnership with other members of the Surgical Oncology program. Our robotic surgery program in endometrial cancer patients is very successful, with the capacity to operate on women with significant BMI who otherwise face significant morbidities with conventional open techniques. We now need to develop a plan to expand staging in robotics and will focus the training of defined robotic surgeons over the next 2–3 years.

In 2014, Dr. Vanderhyden and her research team published the first reports of the development and characterization of two new model systems of ovarian cancer, suitable for testing.
of novel therapeutics and further investigation of the molecular nature of these diseases. Her lab also identified a novel estrogen-induced protein in ovarian cancers, GREB1, a potential new therapeutic target. Their work on stem cells in the ovarian epithelium continues to progress well. Dr. Vanderhyden is lead on the ovarian cancer tissue bank, collecting samples for research purposes, including a national collaborative project to define biomarkers for ovarian cancer. We plan to forge new relationships with OHRI (Dr. Bob Bell) and through collaboration with Dr. Rebecca Auer from the Colorectal/Sarcoma group.

We have demonstrated leadership globally in international health and teaching surgical skills in Africa as active participants in the Canadian Network for International Surgery. As the only group with a Royal College-approved Fellowship program since 2010, we will contribute our experience and knowledge to help define the structure and to support a Surgical Oncology Fellowship within the SOP.

**Hepatobiliary and Pancreatic Oncology**

A comprehensive multidisciplinary program of transarterial tumor ablation, led by Dr. Guillaume Martel, was initiated in March 2014 focusing on patients with intermediate-stage liver cancers and metastatic neuroendocrine tumors. It has been exceptionally successful and has led to the coordinated care of over 30 patients to date. Dr. Martel has been an active member of the CCO Focal Tumour Ablation Committee and its TACE Evidence-Based Working Group.

An HPB administrative and outcomes database has been implemented and Research Coordinator hired. A CUSP group has been created and several key initiatives to decrease surgical site infections implemented. A Whipple surgery care pathway will be implemented in 2015. All HPB MCC discussions are now documented within the patient electronic medical record.

**Sarcoma**

The multidisciplinary sarcoma unit has been designated as one of three Sarcoma Centres of Excellence in Ontario. Members of the group have been actively involved in CCO’s Sarcoma Steering Committee, Data Management Working Group, Disease Pathway Working Group, and Quality Metrics Working Group. The sarcoma group supports weekly teleconferenced sarcoma teaching rounds as well as weekly multidisciplinary sarcoma conferences and bi-weekly Pediatric tumour review boards. There is an annual MSK oncology journal club for Orthopedic residents as well as multidisciplinary journal clubs.

New clinical initiatives include the Vacuum Assisted Closure (VAC) wound at risk bridging program leading to expedited discharge, decreased hospital days combined with state of the art wound care. A prospective database of functional and oncological outcomes is maintained on all sarcoma patients. A dedicated sarcoma tumour-banking program maintains tumour samples on all sarcoma patients to complement the database. The Ottawa Bone Oncology Program (OBOP) is a new collaborative effort focusing on the study of metastatic carcinoma to bone.
Melanoma

Preliminary work has been done for the Melanoma/Skin Cancer CoP to start in January 2015, to bring together family physicians, dermatologists, pathologists, radiologists, nuclear medicine physicians, general surgeons and surgical oncologists, ENT and plastic surgeons, and medical and radiation oncologists.

Potential CoP priorities include how to recognize and when to biopsy a suspicious lesion; the role of mole mapping for high risk patients; wait times to initial biopsy of a potential melanoma/skin cancer; increasing patient awareness; sentinel lymph node biopsy for melanoma; indications for metastatic work-up in newly diagnosed melanoma; MCC in melanoma and other skin cancers; the referral process for melanoma to the cancer centre; and many others.

Urologic Oncology

2013-2014 has seen continued growth and success for the Uro-Oncology group. The Prostate CoP has established a novel regional Active Surveillance (AS) protocol. Provincially Dr. Chris Morash is leading the CCO Prostate Cancer AS Guideline process, which will further guide the CoP. Under Dr. Rodney Henry Breau’s leadership with 2 successful major grants, we are measuring functional outcomes in radical prostatectomy in addition to margin status. This is being measured with novel “surgeon scorecards” and feedback as an innovative quality improvement initiative. As a regional program, this is a North American “first.” The CoP has also developed and implemented standardized regional protocols for multiparametric prostate MRI and targeted prostate biopsies. The Prostate Cancer Assessment Centre (CAC) continues to provide central registry, single queue, and outstanding regional access for men at risk of having prostate cancer. The CAC provides a referral centre where we have uncoupled diagnosis from treatment to address concerns regarding overdiagnosis and overtreatment. A LHIN-wide prospective database continues to provide feedback to regional surgeons to improve surgical quality. The CAC model for diagnostic assessment continues to be copied nationally. Our group is leading 2 major CIHR grant-funded multicenter Canadian surgical RCT’s: Renal Hypothermia in Partial Nephrectomy (PI: Dr. Cagiannos) and Tranexamic Acid in Cystectomy Trial (PI: Dr. Breau). Our group holds over $1.2 million in peer-reviewed research grants. Our clinical fellow, Dr. Luke Lavallee received the prestigious Kidney Cancer Research Network of Canada Award. Our group (3 staff and 1 fellow) published 20 peer reviewed papers from June 2013 to June 2014. Dr. Breau is a member of the CCO GU Site Group Guideline Steering Committee as well as the American Urology Association Guidelines Steering Committee and has co-authored CUA and CCO guidelines and reviewed CCO, AUA, and AHRQ practice guidelines. Dr. Morash was elected to the CUA Guidelines and Executive committee and has lead and co-authored CCO Guidelines. Dr. Ilias Cagiannos leads our resident oncology research program.
Breast Oncology

Members of the breast group have led in the establishment of innovative clinical programs in the context of the interprofessional model of care in the Women’s Breast Health Centre. The Ottawa Hospital Rapid Diagnosis and Support (RADS) program, led by Dr. Angel Arnaout, has the goal of reducing wait times for patients with a high probability of having breast cancer based on their initial breast imaging. RADS moved from a pilot to a continuing program in February 2013. The Advanced Multidisciplinary (TEAM) program was initiated in the WBHC in January 2014, led by Dr. Arnaout. The program identifies women with locally advanced and inflammatory breast cancer at the time of referral and provides them with expedited, individualized care. The Riverside Combined Prophylactic Mastectomy/Immediate Reconstruction program utilizes side-by-side operating rooms, was initiated in November 2013 and is now led by Dr. Carolyn Nessim and Dr. Kirsty Boyd. It very successfully addressed the long wait times of BRCA gene mutation carriers and other women at high risk of developing breast cancer. Planning for an interdisciplinary Radioactive Seed Localization (RSL) program for image-guided breast surgery at TOH was begun in the spring of 2014, led by Dr. Nessim. RSL has several key advantages for patients, breast radiologists and breast surgeons. It will largely replace wire localizations and facilitate the consolidation of TOH breast surgery at the General Campus. The WBHC has become an established regional program and now provides a comprehensive interprofessional model of care through a single queue to approximately 75% of the women diagnosed with breast cancer each year in the Champlain LHIN.

The breast surgical oncology group continues to lead and support the activities of the Regional CoP and are actively engaged in the TOH Regional Cancer Program Breast Disease Site Group. CoP activities include weekly diagnostic/treatment planning rounds, regular journal clubs, and an annual workshop. During the past year, the CoP has developed updated guidance on the use of preoperative breast MRI in early breast cancer and new recommendations on preoperative imaging of the axilla and biopsy of abnormal lymph nodes. Enhancing linkages with family physicians and improving access to psychosocial care for high needs patients were themes addressed at the May workshop on which work is ongoing. The CoP continues to track breast cancer surgical activity and associated quality indicators throughout the LHIN. Dr. Nessim sits on the Ontario Cancer Research Ethics Board. Dr. Arnaout is active at CCO, NCIC, CCS and the Canadian Breast Cancer Foundation, and a member of the ACA Breast Cancer Translational Research Team. She is the primary investigator of three large multicentre trials investigating surgical and neoadjuvant therapy outcomes through the use of “window of opportunity” trials.
**Lung/Esophagus/Stomach Oncology**

The Division of Thoracic Surgery, which led the way in the Cancer Assessment Clinic established 7 years ago, has built on its success with the largest endeavor of its type to transform cancer delivery. **Dr. Michael Fung-Kee-Fung**, with the Division, brought together all members that had any contact or interaction with patients with possible thoracic malignancies and undertook to identify all roadblocks to the rapid delivery of care from time of referral to commencement of treatment. They have so far reduced wait time at multiple levels, created patient navigation days for one-day testing and amalgamated the referral process to one intake. The process is ongoing with continuous monitoring of wait times and quality assurance.

**Dr. Donna Maziak**, as co-chair of the Community of Practice of the lung group in the Champlain LHIN, has worked to help establish it and focus on cancer transformation and lung screening. The multidisciplinary tumour board rounds and research rounds have been quite successful and culminate in a biannual retreat, where topics are discussed in depth, practices established, and strategies solidified for the thoracic group.

**Drs. Maziak, Shamji** and **Sundaresan** continue to be active in CCO. **Dr. Maziak** has been elected to the ASCO survivorship group, CCO practice guideline initiative, lung cancer treatment pathway initiative, lung cancer disease pathway management expert panel, lung cancer follow-up pathway, Lung Cancer Canada and the Pan-Canadian Lung Screening program. She continues to serve on numerous editorial boards of peer-reviewed journals, as well as the Canadian Cancer Encyclopedia. The Division is involved in numerous multicentre thoracic surgical trials with various operating grants.
DIVISIONAL REPORTS
DIVISION OF CARDIAC SURGERY

FACULTY MEMBERS

Surgeons

» Dr. Munir Boodhwani
» Dr. Vincent Chan
» Dr. Paul Hendry
» Dr. William Goldstein
» Dr. Khanh Lam
» Dr. Roy Masters
» Dr. Gyani Maharajh
» Dr. Thierry Mesana
» Dr. Fraser Rubens
» Dr. Marc Ruel (Chair)

Laboratory Research Scientists

» Dr. Emilio Alarcon (recruited July 1, 2014)
» Dr. Rosalind Labow (retired June 30, 2014)
» Dr. Michel Labrosse (by cross-appointment)
» Dr. Marc Ruel
» Dr. Erik Suuronen (Laboratory Research Director)

Associates/Assistant Cardiac Surgeons

» Dr. Elsayed Elmistekawy (Ward Coordinator and Associate Surgeon)
» Dr. Harry Lapierre
» Dr. Ladislaus Ressler
» Dr. Simon Saito
MESSAGE FROM THE DIVISION HEAD

“2013–14 marked the beginning of my role as Head and Chair of our Division, in the Department of Surgery at the University of Ottawa. It is a humbling honour to follow the giant steps of Drs. Wilbert Keon and Thierry Mesana, and head this Division composed of outstanding surgeons and scientists. Our dedication to our patients, our quest for continually improving outcomes, our passion for research, innovation and education, and our core spirit towards each other and with our multidisciplinary colleagues have been defining features that I wish to honor and strive to move forward.”

HIGHLIGHTS OF 2013–2014

Milestones:

» Recruitment of Dr. Emilio Alarcon as Principal Investigator, Bio-nanomaterials Chemistry and Engineering Lab

» 36 successful heart transplants in one year (2013), representing the highest number ever in Ottawa and the largest program in Canada.

» Over 96 publications in 2013–14 from the Division of Cardiac Surgery, published or in press; key publications in Circulation, Annals of Thoracic Surgery, Biomaterials, as well as JAMA and others.
» Preparation (by Drs. Suuronen and Ruel, with Dr. Tiwari-Pandey as Managing Editor) of a Springer Verlag Book on "Biomaterials for Cardiac Regenration", an invited first in the field, to be published in November 2014.

» New, 5-year Operating Grant and 3-year China-Canada Joint Health Research Grant, both from the Canadian Institutes of Health Research.

» Podium research presentations at each of the 4 major cardiac surgery meetings in 2013–2014, i.e. American Association for Thoracic Surgery, Society of Thoracic Surgeons, European Association for Cardio-Thoracic Surgery, and the American Heart Association.

» Strong national presence in undergraduate, residency and fellowship level, as well as continued professional development education.

» World-renowned training centre in minimally invasive coronary surgery, with numerous cardiac surgeons visiting from Canada, the US, Japan, India, and the Middle East.

AWARDS, RECOGNITIONS, AND GRANTS

» Dr. Vincent Chan, Top 10 Abstract (American Association for Thoracic Surgery Mitral Conclave)

» Dr. Vincent Chan, Top Ranked Poster European Society of Cardiology

» Dr. Thierry Mesana, selected as President and Chief Executive Officer of the University of Ottawa Heart Institute, starting 2014. Dr. Mesana was chosen after an international, wide-scope search for the top candidate, an elaborate interview process, and after thorough review and recommendation by a multi-institutional selection committee.

» Dr. Marc Ruel, 2013 Alumnus of the Year, University of Ottawa

» Dr. Marc Ruel, Scientific Program Chair (Surgery) and Guest Editor of Circulation, the journal of the American Heart Association

» Dr. Erik Suuronen, named Director of Laboratory Research, Cardiac Surgery, and holder of Lawrence Soloway Endowed Research Fellowship, awarded by the University of Ottawa Heart Institute.

» Noteworthy Grant: $619,260 (5 years; 2013–2018) Principal Investigators: Dr. Marc Ruel and Dr. Erik Suuronen. Operating grant, Canadian Institutes of Health Research: “Optimizing signaling, cells, and host environment in matrix-based cardiac regenerative therapy: towards pre-clinical application”

» Noteworthy Grant: $210,493 (3 years; 2013–2016) Principal Investigator: Dr. Erik Suuronen. China-Canada Joint Health Research grant, Canadian Institutes of Health Research: “Cell-based therapeutic angiogenesis using novel in situ hydrogel composites containing fisetin-loaded micelles for cardiovascular regeneration”
Noteworthy Grant: $36,246 (1 year: 2014–15) Principal Investigator: Dr. Emilio Alarcon. Natural Sciences and Engineering Research Council of Canada (NSERC) IRAP grant: “Hybrid nano-electro conductive fibers for cardiac patches and myocardial regeneration”.

### RESEARCH GRANTS

<table>
<thead>
<tr>
<th>Investigator(s)</th>
<th>Title</th>
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<td>Optimizing Signaling, Cells, and Host Environment in Matrix-based Cardiac Regenerative Therapy: Towards Pre-clinical Application</td>
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<td>Stone G (PI), Ruel M (Co-I &amp; Surgical Country Leader, Canada)</td>
<td>Evaluation of Xience Prime versus Coronary Artery Bypass Surgery for Effectiveness of Left Main Revascularization (EXCEL) Trial</td>
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SURGICAL SERVICES & CLINICAL PROGRAMS

The Division offers cardiac surgery to the Champlain District, Ottawa-Carleton population and beyond. We continue to receive a significant number of patients from Western Quebec, with 20% of our caseload consisting of referrals from this region. With the reputation of our centre expanding we are receiving an increased number of referrals from across other regions of Ontario as well as from other parts of Canada. This applies in particular for procedures requiring specific expertise such as minimally invasive coronary surgery, aortic and mitral valve repair, and pulmonary thrombo-endarterectomy. The surgical volumes have increased to nearly 1,500 major open heart surgery procedures per year, making us one of the busiest centres in Canada. The UOHI performs adult congenital surgery in cooperation with the Children’s Hospital (CHEO, Dr. Maharajh), and there is an agreement between CHEO and UOHI to have UOHI perfusion team covering all perfusion services at CHEO, including ECMO.

The graph below illustrates how the caseload has shifted over the last decade. Particularly in the last 5 years with a drop in isolated CABG, and a simultaneous expansion of combined valve + CABG surgery, and mitral + aortic valve surgery. Indeed, major clinical programs have expanded, illustrating expertise in our Division. These are summarized below.
**Mitral Valve (MV) Repair**

A world-class MV repair program exists at UOHI, headed by Drs. Mesana and Chan. A MV database now including 1,300 patients has been developed, including all patients undergoing MV repair/replacement from October 2001. To date, this database includes close to 1,000 MV repairs for all kinds of etiologies operated by Dr. Thierry Mesana, including leaflet prolapse, rheumatic valve disease, valve endocarditis, functional MR due to ischemic or dilated cardiomyopathy. In addition to a large set of pre-operative and intra-operative detailed information, patients are followed longitudinally with regular echocardiograms, consultations, and telephone audits. This database has been the source of major papers on outcomes and MV repair techniques designed for MV prolapse by Drs. Mesana and Chan, including a paper in the New England Journal of Medicine. Dr. Mesana is also involved with Dr. Labinaz, Director of Interventional Cardiology at the UOHI, in the development of the Mitraclip program (percutaneous MV repair), which started in June 2012 and is highly regarded.

**Aortic Valve (AV) and Thoracic Aorta Repair**

The Thoracic Aorta Clinic has been created in 2010 under the leadership of Dr. Boodhwani with the collaboration of an expert cardiologist (Dr. K. Chan), and a part-time nurse supported by the Division. A dedicated database has been created, and already includes nearly 500 patients of whom 150 patients received surgical AV valve repair. Dr. Boodhwani is already well recognized as an expert in this field and has published several papers on aortic valve repair techniques, as well as a recent national consensus statement on the management of thoracic aortic disease.

**Minimally Invasive Coronary Artery Bypass Grafting (MICS CABG)**

Along with a close colleague in New York (Dr. J. McGinn), Dr. Ruel has successfully co-developed MICS CABG internationally. Despite coronary bypass surgery having been invented 50 years ago, Dr. Ruel’s and Dr. McGinn’s technique is the only routinely applied cardiac surgical technique that allows for the minimally invasive completion of grafts to all major territories of the heart. Understandably, there has been a considerable following and many surgeons in the world are progressively adopting the technique, which Dr. Ruel has now taught on all continents except Africa. Fellows have come from other countries to learn the technique. Dr. Ruel has led a prospective study, authored numerous papers, and led dedicated seminars on MICS CABG and its outcomes, which have been validated as excellent (equivalent in quality to regular bypass surgery) and shown lower invasiveness compared to CABG.
**TAVI Program**

Percutaneous technology (Transcatheter Aortic Valve Implantation) has irrupted into the field of aortic valve replacement as an alternative for high-risk or contra-indicated surgery and is rapidly expanding.

We had the absolute need to develop this valve program in collaboration with our colleagues of Interventional Cardiology and we created a UOHI model which would benefit our patients first, involving not only cardiologists and cardiac surgeons, but also cardiac anesthetists (Drs. Hynes, Nicholson, Dickie and Hudson) who could add their expertise in complex peri-operative management. The TAVI team, initially including Dr. Ruel and Dr. Labinaz, expanded in 2011-13 to three cardiologists (Dr. Labinaz, Dr. Glover, Dr. Dick) and three surgeons (Dr. Ruel, Dr. Lam, Dr. Boodhwani) performing TAVI as tandems of one surgeon and one cardiologist, regardless of whether the valve is deployed via a trans-femoral, direct aortic, or trans-apical approach. A world first-in-man new procedure was successfully performed by Drs. Ruel and Labinaz in fall 2013 and just published. As of July 2014, over 325 TAVI procedures have been performed, and Dr. Ruel is recognized as an expert TAVI surgeon, both nationally and internationally.

**Heart Transplant and Ventricular Assist Device Surgery**

This program, initiated decades ago by Drs. Keon, Masters and Hendry, is essential at the UOHI in that it represents the apex, last resort treatment for all cardiac care. Since the 1980s, the program has benefited from the expansion of the surgical group performing transplantation, including all surgeons recruited since 2001. The number of transplants performed in 2013-2014 continued to increase from previous years, with excellent early and long term results, and securing our position as the largest heart transplant program in Canada. Notably, 36 transplants were performed in 2013.

In the mechanical devices and mechanical heart program, after successful inception by Drs. Hendry and Masters approximately 20 years ago, the third-generation Heartmate II implantable VAD program was introduced in July 2008, with excellent results (93% survival). We also started using an even newer device called Heartware, and continue to enjoy MOH/LTC special funding for 16 VADS in the current fiscal year, being recognized as a centre of expertise in Canada.

The heart transplant and devices program is one where our close, continued collaboration with heart failure cardiologists, critical care physicians and anesthesiologists, and health care personnel (perfusionists, advanced practice nurses, physiotherapists, social workers, biomedical engineers) is particularly key. The program’s dedicated and highly proficient coordinator is Ms. Jackie Grenon, RN.
Minimally Invasive Surgical AF Ablation

With the introduction of procedures performed through mini-thoracotomy, novel approaches for stand-alone AF surgery have been used by Dr. Lam, who is recognized as a prominent national expert. This novel approach seems more effective for permanent AF, in that it replicates the classic “gold-standard” full sternotomy Cox-Maze procedure through a small right thoracotomy with peripheral bypass, using cryo-ablation and radio-frequency ablation. A collaboration with Cardiology/Electrophysiology has been established through this innovative program. Nearly 700 patients have undergone surgical ablation of atrial fibrillation at the UOHI, a very large series that Dr. Lam and his team are currently analysing.

Pulmonary Thrombo-Endarterectomy

The UOHI is a National referral centre for Pulmonary Thrombo-Endarterectomy (PTE), the program being recognized and funded for almost 15 years by the MOHLTC. Dr. Fraser Rubens is the PTE Program Director since 1995. It has been a challenging and successful program requiring large hospital resources and a multi-disciplinary approach: Cardiac Anesthesia for complex post-operative management, the cardiology Pulmonary Hypertension Clinic, and Radiology (Dr. C. Dennie). The results are excellent, especially considering that Dr. Rubens never denies any eligible patient to be offered this complex surgical procedure requiring deep hypothermic circulatory arrest.

Endowment Chairs

The UOHI and our Division are at the forefront of research and innovation, have a major impact on our community, and strong ties with the Heart Institute Foundation. Cardiac surgeons are instrumental in assisting the Foundation to respond to patients and families wishing to help the Institute grow. We currently have three $2,000,000 Endowed Chairs (the M. Pitfield Leadership Chair, the Cardiac Surgery Research Chair, and the Valve Surgery Research Chair), a $1,000,000 Endowed Fellowship (Lawrence Soloway) and two $250,000 Endowed Lectureship (Peter Foustanellas, Sheila and Don Bayne). Visiting professors in the last 5 years have come from North America, Australia, as well as Europe, including Professor Alain Carpentier, Sir Magdi Yacoub, and Dr. Tironé David, who represent 3 of the most renowned cardiac surgeons in history, as well as Drs. Frank Sellke, Nadia Rosenthal, Nancy Nussmeier, Mark Slaughter, Stefanie Dimmeler, Ottavio Alfieri, Randy Chitwood, David Adams, Nicholas Kouchoukos, David Taggart, Philippe Menasche, and Peter Kappetein. Our surgeons participate actively every year at the UOHI telethon (over $5 million raised each year) and participate on regular basis to fundraising events organized by the foundation in Ottawa and in Gatineau.
Clinical Fellowship

We attract young cardiac surgeons from many countries; Europe, Asia, Middle East, who have the strong desire to spend time as fellows with us and acquire additional skills in various fields of cardiac surgery. In 2013–2014 we had 5 fellows from Italy, the Philippines, Japan, Egypt, and Armenia. We also have within our residency program a surgeon trainee from Brunei. For more detail, see under EDUCATION below.

International Clinical Collaboration

In 2012, Dr. Mesana has established a major five-year cooperation program with China (Qingdao Hospital, University affiliated, 2,000 beds, several campuses) to develop and expand cardiac surgery as well as cardiology in China, which has the fastest growing economy and the largest biomedical market in the next decades. This is a large and well-structured program including a fellowship program, visiting professorship program and observership program. In a second phase, we will help our Chinese colleagues build a Heart Institute, named the “Qingdao-Ottawa Heart Institute”. This is a unique and exciting project, a first in Canada that we have secured while competing with prestigious US centres.

We have also historically strong ties with Saudi Arabia through our residency program, and more recently a strong connection with cardiac surgery in Japan and India (Dr. Ruel). Dr. Dai Une returned to Japan to a successful, high profile position. Further, Tohoku University, one of the most prestigious in Japan, entertains strong academic ties with our Division, and one of their young cardiac surgeons (Dr. Kay Maeda) is currently the Soloway endowed research fellow in Drs. Suuronen’s and Ruel’s labs.

RESEARCH

The Division of Cardiac Surgery has intense research activities, in both Basic Science and Clinical science. Our International reputation is demonstrated in part by our involvement in international meetings (AATS, STS, EACTS, AHA Annual Meetings) and our participation in editorial boards of national and international journals.

Basic Science Research

Drs. Ruel and Suuronen are established internationally in the field of regenerative myocardial therapy and enjoy a growing international reputation. The Basic Science Research Program in the Division of Cardiac Surgery was initiated in 2002 with research grants to Dr. Ruel, and supported by Dr. Mesana, with the vision to create a strong basic science research specific to Cardiac Surgery. The goal was to create a translational research team that would investigate
cardiac disease at a fundamental level, with the ambition of applying this knowledge for improved clinical care in the future. The program was envisioned to consist of clinician-investigators working alongside basic science researchers. In May of 2004, Dr. Suuronen joined Dr. Ruel’s lab, and set out to develop a matrix delivery approach for transplanting cells or therapy. Dr. Suuronen has now succeeded Dr. Ruel as the Director of the Laboratory Research in Cardiac Surgery, which is composed of three interlinked laboratories: The Cardiovascular Tissue Engineering lab lead by Dr. Suuronen, the Regenerative Therapies lab lead by Dr. Ruel, and the Taichman lab lead by Dr. Rosalind Labow, now replaced by the regenerative chemistry lab of Dr. Emilio Alarcon (see below). Drs. Suuronen and Ruel closely collaborate on cell-matrix delivery, and are becoming more immersed in understanding the molecular mechanisms through which matrices can confer therapeutic benefit, which constitutes the focus of their most recent 5-year CIHR grant. Such knowledge will help better optimize biomaterials for future clinical application.

Dr. Labow continued her research in cell-material interactions, looking at the role of the inflammatory response to implanted devices and tissues. In addition, her work with investigators at the University of Toronto aims to develop a small-diameter tissue engineered blood vessel. This project has expanded in recent years to include collaboration with Drs. Ruel and Suuronen, and in 2014 received renewal funding from the CIHR. Dr. Labow is now retired, and the Division has recruited Dr. Emilio Alarcon, a chemist scientist with innovative new ideas and concepts about regenerative surgical applications of biomaterials. His focus consists of bio-nanomaterials ranging from the bases of free radical chemistry to the fabrication and testing of 3D scaffolds for tissue regeneration.

With the success achieved over the last 12 years, the Basic Science Cardiac Surgery Program has evolved into a world-class research and training centre for regenerative cardiovascular medicine.

Here are a few noteworthy accomplishments for the Basic Science Research Program:

» 8 consecutive years with abstracts accepted at the AHA (world’s largest cardiovascular meeting)
» >60 presentations at the Canadian Cardiovascular Congress between 2005–2014
» >55 students at various levels (undergraduate, graduate, post-doctoral fellow, medical students, residents) in research between 2005–2014
» Nearly $5 million in research operating funds since 2002, from agencies including the CIHR, HSFC, JDRF, and CFI
» Students in the program have received over $1 million in external scholarship awards
» 3 successful new PhDs and 7 new Masters have fully trained into and graduated with their respective degree from the Cardiac Surgery laboratory research program.
Clinical Research

For Clinical Research, the Division values two main streams, which are both equally important to us:

1. Clinical trials
2. Observational studies

Trials: We have completed and published results of several randomized peer-reviewed funded trials. These are chronologically listed below:

- **Cardiotomy trial** (Dr. Rubens, Dr. Nathan), clinical Relevance of cardiotomy blood salvage during cardiopulmonary bypass. $973,000 (CIHR).
- **TRAM trial** (Dr. Rubens) feasibility of ultra-filtration during CPB in small patients $122,941 (HSF).
- **RAPS study** (Dr. Rubens, co-investigator/ PI: Dr. Fremes), Radial arterial grafts patency trial (HSF).
- **EMAT trial** (Dr. Ruel), Endothelial Modulation in Angiogenic Therapy. $149,000 (HSF).
- **Endothelial Progenitor Cell-based therapeutic Angiogenesis** (Dr. Ruel) $308,949 (CIHR).
- **CASCADE trial** (Dr. Ruel, Dr. Lemay), Vein graft patency with Plavix $473,695 (PSI).
- **The Tissue Valve Study** (Dr. Ruel, Dr. Mesana) Aspirin vs Coumadin in tissue AVR $85,000.
- **The MICS CABG Study**, on graft patency after MICS CABG (Dr. Ruel with Dr. C Dennie, radiology, as co-investigator) ($158,000)
- **The ACTIVE Study** on graft patency after CABG, according to best practice versus aggressive lipid lowering therapy (Dr. Ruel and Dr. Kulik, our previous trainee who is now in successful practice in Florida)
- **Hemodynamic Performance of the Trifecta Aortic Bioprosthesis compared to CE Perimount Aortic Valve** (Drs. Rubens and Chan)

We also have an established collaboration with the Department of Engineering, University of Ottawa (Dr. Labrosse) and obtained an NSERC peer-reviewed grant ($130,897) to develop a left heart simulator to improve heart valve research (Dr. Labrosse, Dr. Boodhwani, Dr. Chan).

We have used this tool to develop computer modeling of AV and MV repair as another translational research project, which recently led to novel publications. Finally, Dr. Boodhwani is actively involved in a prospective trial examining perioperative renal dysfunction (THRASOS, ~$100,000).

Longitudinal Studies in Valve Surgery: With regards to clinical research in Valve Surgery, we now have three valve surgery research databases, one general for follow-up (the largest, with nearly 10,000 patients), and two more specific, one for mitral valve repair (about 1,300 patients to date), and one more recent for aortic valve/thoracic aorta disease (about 500 patients). We perform telephone audit, retrieval of all clinical info and echocardiogram follow-up with patient physicians in charge. We have increased our follow-up ratio to above 90%.

**Clinical Research in Coronary Surgery:** A significant segment of our research on coronary artery disease is achieved through our Cardiac Surgery Research lab, studying different ways to improve myocardial blood supply, always driven by a translational approach towards clinical application. The EMAT trial was the first example. Such a biological approach to coronary artery disease is also well illustrated by the CASCADE Trial, which was the first to specifically focus on vein graft hyperplasia in patients. The CASCADE trial (PI Dr. Ruel) examined the effects of Clopidrogel on preventing the development of angiographic lesions and neo-intimal hyperplasia in CABG, funded by PSI foundation and a large independent research grant from Bristol-Myers. Results were presented at AHA (3 separate substudies) and AATS, and published in *Circulation* (3 different substudy papers so far), as well as in 3 other journals. The multicentre Excel trial following the Syntax trial started in 2012 in Canada with Dr. Ruel as surgical PI. The impact of Skeletonization of IMA for CABG was also reported in *Circulation* (Dr. Boodhwani, Dr. Rubens), who also reported MIDCAB vs. PCI for LAD disease (European JCTS). Dr. Ruel was recently selected as member of a small, international consensus group that defined and formulated the international guidelines and recommendations for off-pump bypass surgery, as well as the Chair, with Dr. Kulik (our previous trainee), of the new American Heart Association Scientific Statement on Secondary Prevention in Patients after Coronary Bypass Surgery.

**EDUCATION**

**Residency | Fellowship Program**  
(Dr. F. Rubens, Program Director)

The Cardiac Surgery residency program at the University of Ottawa is nationally and internationally recognized as one of the most successful of the pioneering programs in Canada. Our graduates are practicing throughout Canada and internationally and our program boasts one of the largest number of graduates to achieve chief positions in their respective institutions of any Canadian program (Winnipeg, Edmonton, Riyadh (2), Boca Raton, Ottawa, and others). The faculty is dedicated to the highest quality of surgical experience for all trainees. This focus has been facilitated by centralized regional referral for a high volume experience at a single campus. The program has also developed active collaborations with external resources for community training, for example in cardiac catheterization.

The program received full approval and accreditation from the Royal College in 2010. Since that time, level-specific rotation objectives and ITERs with a high degree of specificity have been developed to enhance resident evaluation and rotation experience. The residency program was the only program in Canada to voluntarily refrain from taking residents for 2 years due
to the national glut in graduates, however we judiciously re-initiated recruitment and we are approaching full capacity. Our cautious approach combined with a personal dedication to career placement, has successfully resulted in full employment of all of our certified graduates in the last decade. Our most recent graduates include Dr. Vincent Chan who joined the faculty at the University of Ottawa Heart Institute, and Dr. Joel Price who joined the faculty at Johns Hopkins after completing a thoracic aortic fellowship at the Cleveland Clinic.

The current complement of residents includes 5 Canadian medical graduates and one foreign medical graduate. The residents have a flexible but well-planned academic enrichment year and to date most residents have utilized this year to enroll in the MPH or MMSc programs at Harvard University. We believe that our residents have the highest per trainee productivity in the Department of Surgery in terms of manuscripts and international presentations, as reflected by the publication list and the numerous awards and distinctions they have accumulated.

The Division of Cardiac Surgery also sponsors a highly competitive parallel fellowship program. Specialized topics include minimally invasive coronary and valve surgery, complex aortic and mitral valve surgery, thoracic aortic surgery and transplantation/cardiac assist. Our current roster of fellows includes certified trainees from Japan, Egypt, the Philippines, and Italy. The Fellowship program complements the residency program to facilitate equitable service coverage and appropriate teaching distribution.

Simultaneously, the fellowship program was considerably enhanced, 1) because the Division was training less residents due to the future job restriction, and 2) we had more requests of international fellows attracted to expand their training in the Division. Residents and fellows work in a collegial way with priority given to Residents on OR scheduling and operative exposure. Financial support for fellows comes mostly from Divisional funds. One Basic Science Cardiac Surgery Endowed fellowship (Lawrence Soloway Endowed Fellowship) has been granted to the Division currently held by a post-doctoral PhD investigator (Dr. Kay Maeda, from Tohoku University), working under Dr. Ruel and Dr. Suuronen. This position was previously held by a cardiac surgeon from China, then from France (Dr. Schussler, a student of Dr. Carpentier, Paris).

**Undergraduate Program**  
*(Dr. K. Lam, Director Undergraduate Education)*

The Division of Cardiac Surgery has been involved in the education of over 160 medical students through elective placements over the last 5 years; the placement, supervision and evaluation of the students is the responsibility of the Divisional Undergraduate Director (Dr. Khanh Lam). Both national and international students have immersed themselves in the busy daily activities of the Division in 3 specific settings: operating rooms, outpatient clinics and patient wards. Under the supervision of surgeons, international fellows, residents and hospitalists, the medical students are introduced to the complexities of the surgeries and advanced preoperative and postoperative specialized patient care.
Dr. Lam is also the Director of Surgery Undergraduate Education, Faculty of Medicine, University of Ottawa; he is responsible for the implementation of the core surgical curriculum for Third and Fourth year medical students and he oversees the evaluation process related to the delivered curriculum. There are approximately 350 medical students involved in the surgical curriculum every year either as core students or elective students (national and international). It should be highlighted that Dr. Lam was awarded the 2012 UOHIAMO Undergraduate Teaching Award, University of Ottawa Heart Institute.

**Post Graduate Education**

 *(Dr. P. Hendry, Vice-Dean CME)*

Dr. Paul Hendry is Vice-Dean for Continuing Medical Education and Chair of the CPD Committee of the Canadian Cardiovascular Society. He also chairs the CPD-Ontario and CPD:COFM groups whose mandate is to provide collaborative CPD planning within Ontario. He continues to be active with the Canadian Society of Cardiac Surgery and began the CSCS Annual Spring meeting which has been held in Ottawa in conjunction with the Ottawa Heart Institute and uOttawa Simulation and Skills Centre. The program profiled some of the expertise in Ottawa including redo CABG, aortic valve sparing surgery, atrial fibrillation ablation, TAVI and mitral valve surgery. In addition to many courses developed by the Office of CME, Dr. Hendry also has worked with his Heart Institute colleagues to provide the “Update in Cardiology” for family physicians which has been successful for the last 5 years. In addition, Dr. Hendry is Chair of the Industry Relations Committee which is overseeing the development and implementation of the Faculty’s Industry Relations policy (Conflict of Interest). He has been an advocate of the policy throughout the Faculty including the Ottawa Heart Institute and is frequently consulted regarding appropriateness of relationships with industry.

**PUBLICATIONS IN 2013–2014**


61. Ngu J, Rubens FD. It is the presence to be attuned to the needs of your community and to be mentally one step ahead of any disaster that may befall the people you lead and care for. *Perfusion.* 2014; 29(1):4–5.


In Press


**Books Authored/Edited:**


Book Chapters:


DIVISION OF GENERAL SURGERY

FACULTY MEMBERS

Surgeons
» Dr. Angel Arnaout
» Dr. Rebecca Auer
» Dr. Fady Balaa (Chair)
» Dr. Audley Bodurtha (retired)
» Dr. Robin Boushey
» Dr. Christopher Chadwick
» Dr. Robin Fairfull-Smith (semi-retired)
» Dr. Martin Friedlich
» Dr. Jacinthe Lampron
» Dr. John Lorimer
» Dr. Joseph Mambaza
» Dr. Guillaume Martel
» Dr. Richard Mimeault
» Dr. Husein Moloo
» Dr. Vijay Moonje (retired)
» Dr. Carolyn Nessim
» Dr. Amy Neville
» Dr. Giuseppe Pagliarello
» Dr. Dennis Pitt
» Dr. Alfred Stedman
» Dr. Shaheer Tadros
» Dr. James Watters
» Dr. Jean-Denis Yelle

Pediatric Surgeons
» Dr. Juan Alejandro Bass
» Dr. Marcos Bettoli
» Dr. Kyle Cowan
» Dr. Ahmed Nasr
Divisional Direction

Dr. Fady Balaa was appointed as Chair of the Division of General Surgery at The Ottawa Hospital and the University of Ottawa. He will work with Division members to lay out the necessary infrastructure, such that the Division can reach goals in clinical care, surgical education and research. Initial steps will include the development of fully-integrated subspecialty units. These units will continue to work on being aligned with The Ottawa Hospital’s vision, including quality and safety initiatives, wait times initiatives and regionalization of care. These fully-integrated subspecialty services are already at various stages in development and include Acute Care, Bariatric and Foregut, Breast Surgical Oncology, Colorectal, Community General Surgery, General Surgical Oncology (including sarcoma and melanoma), Hepatobiliary and Pancreatic Surgery, and Trauma.

Along with clinical integration, the Division will work with the departmental agenda of developing a program of financial integration, aimed at facilitating both clinical and academic development.

The pediatric general surgeons are continuing to work toward their vision to create a very cohesive Division that will increase their academic productivity, while achieving good balance with clinical productivity. Their plan for the future is to continue facilitating the academic and research endeavors of all the members of the Division.
Recent Appointments

» Dr. Shaheer Tadros was recently appointed as Director of Postgraduate Education for the Division of General Surgery. He is already working on several initiatives that will improve curriculum delivery for academic day teaching as well as surgical skills training. The Division will be preparing for the internal program review, scheduled in the fall of 2014.

» Dr. Husein Moloo was recently appointed as Head of the Colorectal Surgery Service, as well as the Program Director for the Colorectal Surgery Fellowship. He has already developed a working schedule for a fully-integrated colorectal service at the Civic campus and will expand the agenda to all three campuses. Dr. Moloo was also recently appointed as site chief for the Division at the Civic Campus.

» Dr. Richard Mimeault was recently appointed as Head of the Hepatobiliary and Pancreatic Surgery Service.

» Dr. Guillaume Martel was recently appointed as Program Director for the Hepatobiliary and Pancreatic Surgery Fellowship.

» Dr. Marcos Betolli was promoted to Associate Professor.

» In August 2013, Dr. Ahmed Nasr was appointed as CHEO’s Trauma Program Director.

Recruitment

Over the last year the Division was honoured with the recruitment of three surgeons who bring a broad range of expertise to the Division.

» Dr. Amy Neville has joined the Bariatric and Foregut group at the Civic Campus. After completing General Surgery residency at McGill University, Dr. Neville completed two clinical fellowships in both Minimally Invasive Surgery and in Bariatric Surgery. She holds a Master of Science degree in clinical epidemiology and has an interest in clinical outcomes research.

» Dr. Carolyn Nessim has joined the Surgical Oncology group at the General Campus. After General Surgery residency at the University of Montreal, Dr. Nessim completed a surgical oncology fellowship at the University of Toronto. Dr. Nessim also completed clinical training at the Peter MacCallum Cancer Centre in Melbourne, Australia. She has a particular interest in treating patients with melanoma and soft tissue sarcoma. Dr. Nessim holds a Master’s degree in Biomedical Sciences from the University of Montreal.

» Dr. Guillaume Martel has joined the Hepatobiliary group at the General Campus. After completing General Surgery residency at the University of Ottawa, Dr. Martel completed clinical fellowships in HPB surgery. After a one year clinical fellowship in HPB surgery at the University of Ottawa, Dr. Martel completed a second year of HPB and Transplant training at the University of Montreal. Dr. Martel holds a Master’s degree in Clinical Epidemiology from the University of Ottawa.
Residency Training Program

Under the direction of Dr. Tadros the training program continues to improve and adapt to challenges in surgical education. Dr. Melanie Paquin-Gobeil received the Dr. Heringer’s award for her overall contribution to the program. Dr. Joel Weaver was awarded the Audley Bodurtha Teaching Recognition for his efforts as a clinical teacher and his lead for the PGY-5 exam preparation. Dr. Apoorva Balakrishnan received the CAGS award.

The program graduated nine trainees with a full pass rate on the Royal College examination. The graduates will be pursuing the spectrum of career paths including community practice, fellowship training, and research fellowships.

» Dr. Beverly Chan — fellowship in Vascular Surgery — Hamilton, Ontario
» Dr. James Masters — fellowship in Thoracic Surgery — Winnipeg, Manitoba
» Dr. Claudia Soto — community practice
» Dr. Rashmi Seth — fellowship research — Montreal, Quebec
» Dr. Melanie Paquin-Gobeil — fellowship in Hepatobiliary Surgery — Ottawa, Ontario
» Dr. Amanda Williamson — community practice
» Dr. Yvan Leblanc — community practice
» Dr. Amber Menses — fellowship in Acute Care Surgery — Vancouver, British Columbia
» Dr. Reilly Musselman — fellowship in Colorectal Surgery — Toronto, Ontario

Fellowship Training

The Division of General Surgery had another active year in postgraduate fellowship training. Across all subspecialties, fellows contributed greatly to providing clinical care as well as participation in research activity.

» Dr. Diana Losada and Dr. François Julien completed a one-year Clinical Bariatric/Minimally Invasive Surgery Fellowship.
» Dr. Maurice Ogaick completed a one-year Clinical Hepatobiliary and Pancreatic Surgery Fellowship.
» Dr. Vanessa Cranford completed a one-year Clinical Trauma Fellowship.
» Dr. Hani Redwan completed a two-year Clinical and Research Fellowship in Colorectal Surgery.
» Dr. Kathryn Martin, Chief resident (PGY 6) began her training in Pediatric Surgery in July 2013. Dr. Martin comes to the program from the General Surgery program at Western University, London Ontario. Our accredited program is a two-year fellowship in pediatric surgery.
» Dr. Taufiq Islam, Research/Clinical July, 1 2013 to June 30, 2014. Dr. Islam worked with Dr. Cowan in his research lab and did some clinical work as well.
Retirements

» In 2013, both Dr. Audley Bodurtha and Dr. Vijay Moonje retired from clinical practice. The Division acknowledged their many years of service and education at a reception held in June 2013.

RESEARCH

Special Recognition

» Dr. Auer was awarded the Canadian Cancer Society Top Research Studies for 2013 by the Canadian Cancer Society. Her research on perioperative immune stimulation with oncolytic viruses to reduce cancer metastases was named one of the top research stories of 2013. http://www.ottawasun.com/2013/12/11/local-docs-lauded-by-canadian-cancer-society-for-their-cancer-research-work.

» Dr. Arnaout was awarded $448,959 from the Canadian Breast Cancer Foundation for her research entitled The CUBIC Trial: A Window of Opportunity Trial Evaluating the Role of Chloroquine and Autophagy in Breast Cancer.

General Surgery Research Day

The Division held another very productive Research Day. Dr. Réal Lapointe from the University of Montreal served as visiting professor and guest speaker. Dr. Peter Glen and Dr. Jean-Michel Aubin received the Award of Excellence—Senior Resident Research Award, while the Award of Excellence—Junior Resident Research Award was received by Dr. Dave Carver.

Other research

Dr. Cowan is the director and principle investigator for the Pediatric Division's Translational Vascular and Tumour Biology Basic Science Research Program housed within the Apoptosis Research Centre in the CHEO Research Institute. He has received both national and international recognition for this program. Currently, his laboratory has two main focuses:

» Role of pannexins and cell communication in the regulation of skeletal muscle differentiation and tumourigenesis associated with rhabdomyosarcoma

» Role of elastases, matrix metalloproteinases, and extracellular matrix in the regulation of pulmonary vascular disease associated with congenital diaphragmatic hernia.
With the support of Dr. Willis as Chief of the Department at CHEO, the pediatric group was able to acquire a part-time research coordinator and a research assistant under the supervision of Dr. Nasr, a basic science-research associate (Dr. Langlois) and a graduate student under the supervision of Dr. Cowan, and finally a Surgical Research Fellow, in both basic science and epidemiology.

**EDUCATION**

**Divisional CME Programs**

In conjunction with the Continued Medical Education office, the Division is currently establishing a regional conference on various topics in general surgery. The program is intended to reach out to TOH surgeons, as well as the LINH Champlain region surgeons. The expected first event will be in the spring of 2015.

The trauma program held its 13th Annual Eastern Ontario Regional Trauma Conference. The trauma program offered ATLS course. They also held a Rural Trauma Team Development course to community hospitals of the Champlain LHIN in the form of a one day outreach course including didactic lectures and simulation.

Dr. Bass participated in the 38th Pediatric Refresher course held on October 25, 2013. His presentation topic was “Common Pediatric Surgical Issues”.

Dr. Martel has streamlined a regional chemotherapy program for treating primary liver cancer. This includes a multidisciplinary approach involving surgery, medical oncology, and interventional radiology. To date over 20 patients have been treated.

**AWARDS, RECOGNITION & GRANTS**

- Dr. Melanie Paquin-Gobeil received the Professionalism Award by The Medical Staff Association.
- At the Department of Surgery Collins Day, held in May 2014, three of our residents received awards: Dr. Beverley Chan and Dr. Jean-Michel Aubin were awarded with the Outstanding Resident Teaching—Best Resident Teacher award, while Dr. Janelle Rekman received the Best Poster Presentation award.
- In January 2014, Dr. Jacinthe Lampron did an interview with CBC Radio and TV on Increased Penetrating Trauma in Ottawa. She also completed her Master’s in Public Health from the London School of Hygiene and Tropical Medicine in the United Kingdom. Dr. Lampron is also working with the Medical Council of Canada in reviewing the French translation for the LMCC exams.
Dr. Mamazza was selected to take part in the External Review of the Division of General Surgery at the University of British Columbia.

Dr. Balaa has embarked with the Royal College of Physicians and Surgeons of Canada on the Peking University First Hospital (PUFH) CanMEDS virtual learning series. This will emphasize on the integration of CanMEDS role in residency training. He has also been involved with the curriculum development of Surgical Skills Training for the University of Calgary. He recently became a member of the Royal College International CanMEDS Educator program.

Dr. Nessim was granted the 2013 Detweiler Travelling Fellowship from the Royal College of Physicians and Surgeons of Canada.

Dr. Arnaout was awarded the 2014 Canadian Association of General Surgeons Research Award as well as First Prize in the Ontario Ministry of Health Cancer Care Delivery Award.

In recognition for his distinguished contributions to the practice of medicine in our community, The Academy of Medicine Ottawa selected Dr. Dennis Pitt as an Honorary Member. He was also designated as Life Member of the Ontario Medical Association.

Dr. Nasr became a laparoscopic education course instructor for the American Pediatrics Surgical Association. In July 2013, he became a member of the Ontario Trauma Advisory Committee.

Dr. Cowan has been nominated as Lead of CHEO for the Department of Surgery Simulation Centre.

Dr. Bass has been involved as an internal program accreditation reviewer with the University of Ottawa. He has performed internal reviews for Neonatology, Pediatric Nephrology and Plastic Surgery. He was also in charge of the Royal College Accreditation review of the new Pediatric Surgery training program at McMaster University in Hamilton. Over the last year as Chair of the Specialty Committee in Pediatric Surgery, Dr. Bass was a member of the ad-hoc Task force for “The future of General Surgery: Evolving to meet a changing practice”.

Dr. Boushey has organized a team of clinical researchers and clinicians from King Saud University, The Ottawa Hospital, and St. Michael’s Hospital. This will focus on gastrointestinal diseases. A full time data analyst (1FTE) working with the Institute for Clinical Evaluative Sciences (ICES) Ottawa and St. Michael’s Hospital has been funded and will work exclusively with the research group. The group will focus mainly on large population based clinical outcomes research with a focus on surgical oncology. Annual funding approximately $100,000.
## RESEARCH GRANTS

<table>
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<tr>
<th>Investigator(s)</th>
<th>Title</th>
<th>Funding Type</th>
<th>Funding Source</th>
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<td>The Pediatric Surgery and Pathology Knowledge Synergy Group</td>
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<td>CHEO Research Institute</td>
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<td>Incidence and long term outcome of Hirschsprung’s disease in Ontario. A population-based study.</td>
<td>Peer reviewed</td>
<td>ICES research grant</td>
<td>$9,934</td>
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<td>Nasr A</td>
<td>Determining Trauma Quality Indicators in Pediatrics to Improve Outcomes</td>
<td>Peer reviewed</td>
<td>Canadian Institutes of Health Research (CIHR) summer studentship award</td>
<td>$5,000</td>
<td>02/2014</td>
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<tr>
<td>Nasr A</td>
<td>Determining Trauma Quality Indicators in Pediatrics to Improve Outcomes</td>
<td>Peer reviewed</td>
<td>CHEO Research Institute</td>
<td>$26,081</td>
<td>02/2014</td>
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<td>Auer RA</td>
<td>A Translational Approach to Targeting the Perioperative Period With Innovative Cancer Therapies</td>
<td>Peer reviewed</td>
<td>Canadian Institutes of Health Research (CIHR)</td>
<td>$300,000</td>
<td>01/2014</td>
<td>12/2019</td>
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<td>Boushey RP, Wu R, Dawn S</td>
<td>The evaluation of a rectal cancer decision aid and the factors influencing its implementation in clinical practice.</td>
<td>Peer reviewed</td>
<td>Physicians Services Incorporated Foundation (PSI)</td>
<td>$20,000</td>
<td>01/2014</td>
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<td>Cowan KN</td>
<td>1) Reversal of fatal pulmonary hypertension associated with congenital diaphragmatic hernia 2) Improved treatment for rhabdomyosarcoma</td>
<td>Peer reviewed</td>
<td>CHEO Research Institute Surgery Research and Development Fund</td>
<td>$100,000 07/2013 06/2014</td>
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<td>Moloo H</td>
<td>2014 Walter C MacKenzie Fellowship in Surgery</td>
<td>Personal award</td>
<td>NSQIP</td>
<td>$15,000 07/2013 03/2014</td>
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<td>Arnaout A, Boushey RP Al-Obaid O (KSU), Al-Omran M (KSU), Mamdani M (St. Michael's Hospital), Boushey R (TOH), Fung-Kee-Fung M (TOH), Haggar F</td>
<td>Patient health outcomes and professional practice following the implementation of a breast community of practice model.</td>
<td>Non-peer reviewed</td>
<td>ICES and King Saud University</td>
<td>$20,000 04/2013 04/2015</td>
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<td>El Demellawy D, Nasr A</td>
<td>Perforated Appendicitis With Delayed Diagnosis: Laparoscopic Appendectomy vs Expectant Management. A Randomized Multi-Centre Clinical Trial</td>
<td>Peer reviewed</td>
<td>Ministry of Health Innovation AFP Grant</td>
<td>$47,272 04/2013 04/2015</td>
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<td>Auer RA</td>
<td>A Translational Approach to Targeting the Perioperative Period With Innovative Cancer Therapies</td>
<td>Peer reviewed</td>
<td>John Sealy Memorial Endowment Fun for Biomedical Research (JSMEF)</td>
<td>$160,000 01/2013 12/2015</td>
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<td>Auer RA</td>
<td>A rational approach to preventing post-operative metastatic disease by reversing perioperative immune suppression by Myeloid Derived Suppressor Cells</td>
<td>Peer reviewed</td>
<td>Cancer Research Society (The)</td>
<td>$119,872 01/2013 12/2015</td>
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<td>Mamazza J</td>
<td>A pilot study to assess the feasibility of a future randomized, double-blinded, placebo-controlled trial to investigate the role of intra-peritoneal Ropivacaine in gastric bypass surgery</td>
<td>Peer reviewed</td>
<td>Department of Surgery</td>
<td>$25,000</td>
<td>2013</td>
<td>2014</td>
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<td>Moloo H</td>
<td>Enhancing Surgical Safety Culture and Improving the Quality of Surgical Care at The Ottawa Hospital through CUSP (Comprehensive Unit Based Safety Program)</td>
<td>Non-peer reviewed</td>
<td>TOHAMO</td>
<td>$80,000</td>
<td>09/2012</td>
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<td>Diallo J-S, Arnaout A, Bell J</td>
<td>Combining chemical, genetic and in silico approaches to improve oncolytic virotherapy</td>
<td>Peer reviewed</td>
<td>Canadian Cancer Society Research Institute (CCSR)</td>
<td>$200,000</td>
<td>06/2012</td>
<td>06/2014</td>
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<tr>
<td>Arnaout A, Vieth R, Wagner D,</td>
<td>A Phase 2 Randomised, Double-blind, Window of Opportunity Trial Evaluating Clinical and Correlative Effects of Vitamin D in Patients with Breast Cancer. The ICARUS Trial</td>
<td>Peer reviewed</td>
<td>Canadian Breast Cancer Foundation (CBCF)</td>
<td>$275,050</td>
<td>05/2012</td>
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<td>(TOH Department of Surgery), Clemons M, Ramsey T, Seely D</td>
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<td>Auer RA</td>
<td>Oncolytic viruses for perioperative targeting of natural killer cells in cancer</td>
<td>Peer reviewed</td>
<td>Canadian Cancer Society Research Institute (CCSR)</td>
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<td>03/2012</td>
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<td>Carrier M, Auer RA</td>
<td>The Management of Sub segmental Pulmonary Embolism: A Prospective Cohort Study</td>
<td>Peer reviewed</td>
<td>Heart and Stroke Foundation of Ontario (The) (HSFO)</td>
<td>$440,327</td>
<td>02/2012</td>
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<td>Investigator(s)</td>
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<td>Auer RA</td>
<td>A Translational Approach to Targeting Natural Killer Cells in the Perioperative Period With Innovative Cancer Therapies</td>
<td>Peer reviewed</td>
<td>Ontario Ministry of Research and Innovation (ON)</td>
<td>$150,000</td>
<td>01/2012</td>
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<td>Auer RA</td>
<td>A Personalized Oncolytic Vaccine: Using oncolytic viruses to exploit neo-antigens derived from the tumour mutanome</td>
<td>Peer reviewed</td>
<td>Terry Fox New Investigator Award</td>
<td>$450,000</td>
<td>01/2012</td>
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<td>Seely D, Auer RA</td>
<td>Adjuvant melatonin in the prevention of recurrence and mortality following lung cancer resection (AMPLCaRe): A phase II substudy of a randomized placebo controlled clinical trial</td>
<td>Peer reviewed</td>
<td>Gateway for Cancer Research</td>
<td>$230,576</td>
<td>01/2012</td>
<td>12/2013</td>
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<td>Auer RA, Carrier M, Wells PS, Stern H, Boushey R, Moloo H, Allan D, Millar D, Mamazza J</td>
<td>The Use of Extended Perioperative Low Molecular Weight Heparin to Improve Cancer Specific Survival Following Surgical Resection of Colon Cancer: A Randomized Controlled Trial</td>
<td>Peer reviewed</td>
<td>Canadian Institute of Health Research</td>
<td>$816,167</td>
<td>03/2011</td>
<td>03/2015</td>
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<td>Auer RA, Carrier M, Wells PS, Stern H, Boushey R, Moloo H, Allan D, Millar D, Mamazza J</td>
<td>The Use of Extended Perioperative Low Molecular Weight Heparin to Improve Cancer Specific Survival Following Surgical Resection of Colon Cancer: A Randomized Controlled Trial</td>
<td>Non-peer reviewed</td>
<td>Leo Pharma Inc</td>
<td>$500,000</td>
<td>03/2011</td>
<td>03/2015</td>
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<td>Skarsgard E, Bass J (Ste Justine Hospital, University of Manitoba, BC Children’s Hospital)</td>
<td>CAPSNet (Canadian Perinatal Surgical Network)</td>
<td>Peer reviewed</td>
<td>CIHR</td>
<td>$106,170</td>
<td>03/2008</td>
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PUBLICATIONS IN 2013–2014

Publications


**In Press**


**Book chapters**


DIVISION OF NEUROSURGERY

FACULTY MEMBERS

Surgeons
» Dr. Howard Lesiuk
» Dr. Richard Moulton
» Dr. Eve Tsai
» Dr. Charles Agbi
» Dr. Vasco DaSilva
» Dr. John Sinclair
» Dr. Adam Sachs
» Dr. Fahad Alkherayf
» Dr. Mohamed Labib
» Dr. Amin Kassam
» Dr. David McAuley
» Dr. Michael Vassilyadi
» Dr. Munyao Nzau

Fellows
» Dr. Abdul Alfasi
» Dr. Walid Elghadaffi
» Dr. Mohammed Bafaquh
» Dr. Aldahash Homoud
» Dr. Chad Boulay
VISITING PROFESSORS

October 10–11, 2013, Dr. Michael T. Richard

Dr. David Stevens  MD, MPH, FRCS, FACS
Dr. Stevens is an Associate Professor of Neurosurgery, Epidemiology and Biostatistics, Western University. He is Program Director of the Neurosurgery residency program at the University of Western Ontario and co-director of the Epilepsy program.

His topic for the event was “Surgical Treatment of Epilepsy”.

April 10–11, 2014, Dr. Brien Benoit

Dr. John Kestle  MD, FRCS, FACS
Dr. Kestle is a Pediatric Neurosurgeon and clinical researcher in pediatric hydrocephalus and Head of the Department of Surgery at the University of British Columbia.

His topic for the event was “Clinical Research in Pediatric Hydrocephalus: Lessons from the Last 20 Years.”

SURGICAL SERVICES & CLINICAL PROGRAMS

Continued development of a new functional neurosurgery service with Dr. Sachs. The deep brain stimulation program was established.
PLANS FOR THE FUTURE

The anticipated retirement of Dr. DaSilva in the next 24 months, coupled with the need to replace Dr. Kassam, will require the recruitment of two new faculty over the next two years.

HIGHLIGHTS OF 2013–2014

CME Training / Courses Offered

The Division of Neurosurgery hosted the 2nd Annual Ottawa Neurosurgery Review Course.

Fund Raising Events

Dr. John Sinclair

» Ongoing fundraising for CyberKnife research and fellowship funding
» South Ottawa Race Day—funds directed to brain tumour research through the Ottawa Regional Cancer Foundation
» 5-ALA technology fundraising through the Ottawa Regional Cancer Foundation

Dr. Eve Tsai

» Spinal cord regeneration project fundraising

Dr. Adam Sachs

» Continuing fundraising activities though the Parkinson Society

Dr. Howard Lesiuk

» Engaged in ongoing canvassing of donor candidates for funding of endowed chair.
RESEARCH

Ongoing Research

Dr. Charles Agbi

» Post graduate education strategies
» Minimally invasive cranial surgery techniques

Dr. Fahad Alkherayf

» Novel techniques in skull base and related cranial surgery
   » MR spectroscopy in characterization of glioma gene mutations
   » Intraoperative monitoring techniques
   » Subdural hematoma management strategies
   » Anticoagulants in the neurosurgical population
» Advanced spinal surgery techniques
   » Novel pharmacotherapies of spinal injury

Dr. Howard Lesiuk

» Advances in Endovascular surgery
   » The use of flow diverting and conventional stent devices in management of intracranial aneurysms
   » Open surgery vs endovascular treatment trials
   » Efficacy studies of novel endovascular methods
   » Venous stenting
   » Imaging of atherosclerotic disease
» Emergency Room management of intracranial disease
   » Subarachnoid hemorrhage
   » Head injury

Dr. Adam Sachs

» Brain-computer interfaces—human studies
» Optogenetic control of basal ganglia—primate studies
Dr. John Sinclair

» Head injury management trials
» Intraoperative monitoring techniques
» Stereotactic radiosurgery trials
» Imaging / Pathology correlation in malignant gliomas

Dr. Eve Tsai

» Advanced spinal cord imaging methods including diffusion tensor imaging & tractography
» Neural Regeneration
  » Nanotechnology
  » Bioengineering methods
» Spinal cord injury repair
» Spinal injury clinical trials
» Spinal injury registry

RESEARCH GRANTS

<table>
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<tr>
<th>Investigator(s)</th>
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<th>Amount of Funding</th>
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<td>Tsai E, Wai E</td>
<td>Rick Hansen</td>
<td>Peer Review Grant</td>
<td>Rick Hansen Foundation</td>
<td>$285,000 (2009–2014)</td>
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<td>($72,000 for 2013–14)</td>
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### Investigator(s) | Title | Funding Type | Funding Source | Amount of Funding | Start Date | End Date
--- | --- | --- | --- | --- | --- | ---
Iancu D, Lum C, Santos M, Lesiuk H | Does Embolization with Larger coils lead to better Treatment of Aneurysms trial (DELTA) | Industry | DePey Synthes, Codman Neuro, Johnson & Johnson | $1,800 per enrolled | 2013 | Under contract negotiation

Iancu D, Lum C, Santos M, Lesiuk H | COAST: Coiling of Aneurysms Smaller than 5 MM with Hypersoft | Industry | Microvention | $2,500 per enrolled | 2013 | Under contract negotiation

Lesiuk H, Iancu D, Lum C, Santos M | CURES (Canadian Unruptured Aneurysm Endovascular vs. Surgery) | Peer Review Grant | CHUM | $3,000 per enrolled | 10/2013 | Ongoing

Dr. M. Santos, Dr. Lum, Dr. Chakraborty, Dr. Iancu, Dr. Stotts, Lesiuk H | CAIN (Canadian Atherosclerosis Imaging Network) Project | Peer Review Grant | CIHR | $4,350 per enrolled | 06/2013 | Ongoing

Dr. M. Santos, Dr. Quateen, Dr. H. Lesiuk, Dr. C. Lum, Dr. D. Iancu | PRET Patients prone to recurrence after endovascular treatment International | Peer Review Grant | CHUM | $800 per enrolled | 06/2009 | Open for data analysis only

Dr. Sachs | Leslois Shaw Grant | Peer Review Grant | Parkinson Research Consortium | $47,500 | 2014 | 2014

### PUBLICATIONS IN 2013–2014

**Publications**


8. Diaz Quiroz JF, Tsai E, Coyle M, Sehm T, Echeverri K. Precise control of miR-125b is required to create a regeneration-permissive environment after spinal cord injury. *Disease models & mechanisms*. Epub 2014 April 3. Open access. http://dmm.biologists.org/content/early/2014/03/27/dmm.014837.long


**Book Chapters**


2. Lee H, Alkherayf F, Tsai E. Management Induced Coagulopathy in Patient with Subdural Heamorrhage. In Neurosurgery Knowledge Update, Thieme—accepted for publication.


### Division of Orthopedic Surgery

**Faculty Members**

#### Civic Campus
- Dr. Donald Chow
- Dr. Braden Gammon
- Dr. Kathleen Gartke
- Dr. Wade Gofton
- Dr. Don Johnson
- Dr. Garth Johnson
- Dr. Stephen Kingwell
- Dr. Allan Liew
- Dr. Joseph O’Neil
- Dr. Steven Papp (Site Chief)
- Dr. Philippe Phan
- Dr. Eugene Wai
- Dr. Ross Wilkinson

#### General Campus
- Dr. Hesham Abdelbary
- Dr. Paul Beaulé
- Dr. Jacques Brunet
- Dr. Geoff Dervin
- Dr. Robert Feibel
- Dr. Paul Kim (Site Chief)
- Dr. Karl-André Lalonde
- Dr. Peter Lapner
- Dr. J Pollock
- Dr. Joel Werier

#### CHEO
- Dr. James Jarvis
- Dr. Ken Kontio
- Dr. Louis Lawton (Site Chief)
- Dr. Paul Moroz
- Dr. Baxter Willis
MESSAGE FROM THE DIVISION HEAD

It is with great pleasure that I once again submit this annual report on behalf of the Division of Orthopedic Surgery at the University of Ottawa and its participating hospitals—The Ottawa Hospital, Children’s Hospital of Eastern Ontario, and our satellite partner in Gatineau, Quebec.

Once again, the members of our Division worked tirelessly to meet the objectives of excellent patient care guided by the mission and values of the respective hospitals. We have established national leadership in education and continue to have a strong international presence in research.

It was a pleasure to welcome new staff to the Orthopedic Division this past year: Dr. Phillip Phan arrived in October having been training at the University of Montréal and completing the spine fellowship program in Boston. At the time of this writing he had successfully defended his PhD thesis entitled “The use of artificial intelligence algorithms to guide surgical treatment of adolescent idiopathic scoliosis”.

Dr. Braden Gammon officially started at the Civic campus in January establishing a focused practice in Hand and wrist pathology. He is a graduate of the Queen’s Orthopedic residency whereafter he completed a fellowship there and at the
Hand and Upper Limb Centre in London. His arrival has been welcomed as he brings expertise to fill the void left by Dr. Giachino’s retirement and undoubtedly will be of great benefit to patients in our region.

Dr. Wade Gofton was successfully promoted to Associate Professor in recognition of his outstanding contributions to surgical education. Our members were awarded 2 of the 3 research grants provided by the Department of Surgery in 2013, namely Dr. Gofton for his project on “Development of a CanMEDS Clinical Assessment Tool for Surgical Clinic” and Dr. Hesham Abdelbary for “Investigating Sarcoma Epigenetics and Susceptibility to Oncolytic Virotherapy”.

We extend our gratitude to Dr. Alan Liew on his completion of 9 years as the site chief at the Civic campus. During this time, the orthopedic trauma and spine services have been consolidated into excellent patient care units. Dr. Liew oversaw the physical transfer and realignment of the orthopedic space and clinics which have resulted in a much more favorable working environment. We look forward to the future under the able guidance of Dr. Steve Papp who now assumes this role.

Our commitment to excellence in patient care is predicated on the dedicated work of individuals within the attending staff supported by our residents and fellows. I have tremendous pride in describing their accomplishments during this past academic year.

Departures

Each year brings a new transition in human resource and this past year was particularly notable with a formal departure of 4 outstanding staff who made significant contributions to the university program.

Dr. Jean Pierre Desjardins officially retired from active surgical practice at the Ottawa Hospital in December of 2013 after having gone with our program full circle having been one of the first residents to graduate. On a clinical note, he was very active in MSK Oncology before it became the subspecialty it is. He also had a large arthroplasty practice which then evolved to an outpatient surgical practice in the latter 15 years. He also held many administrative duties such as chairman
of the OR day care and Surgical Finance committees and was a member of the Hospital Medical Advisory committee for many years and our Division and Hospital were well served by his efforts.

**Dr. Alan Giachino** retired from the Ottawa Hospital in July 2013 after a long and distinguished career which included his tenure as Chairman from 1997 – 2003. During those years, he helped to reshape the Division into more formal subspecialties which set the stage for what is now nationally recognized expertise in these areas. A superb clinician and caring physician, he was consistently the patients’ strongest advocate. This in turn made him a terrific teacher earning accolades from many residents and fellows over his career. He was a multitalented Orthopedic surgeon who handled all types of cases in his career. He eventually specialized in the hand and wrist, where he was a member of the prestigious International Wrist investigators group. He had a passion for volunteer work and under surface areas in the north of Canada and particularly remote areas of the world where he traveled extensively to volunteer his expertise in local communities. This was remarkable and inspiring enough that he was ultimately named to the Order of Canada in recognition of this lifelong pursuit. He has left all who crossed his path with a terrific example of the complete orthopedic surgeon.

**Dr. Donald Johnson** began his career in medicine in 1969 and has practiced in the city of Ottawa for his entire career, while affiliated with the University of Ottawa and the Orthopedic surgery residency training program since 1973. He introduced arthroscopy to the city and sought out training elsewhere when it was not available here. He was considered one of the leading international experts on major knee ligament reconstruction right up until his retirement in October of 2013.

He trained Canadian and international residents and fellows for over 30 years and his fellowship was consistently regarded as the most sought after in orthopedics. As any excellent mentor would, his training extended much beyond the clinical work, to his behaviour as a role model outside of the hospital. He was a strong contributing member of the Arthroscopy Association of North America and this culminated with his presidency of that Association.

**Dr. Garth Johnson** joined the then Civic Hospital in 1992 where he became the chief of orthopedic surgery at that site. It is a position he held for over 10 years before turning it over to Dr. Liew after the hospital had amalgamated. He had a distinguished career in the treatment of both traumatic and metastatic spine pathology. He had a strong interest in orthopedic medical education and was recipient of the Orthopedic Teacher of the Year on 2 occasions. He was also a distinguished physician winner within the Ottawa Hospital who worked to a full schedule right up until his retirement in September of 2013. He has left the legacy of excellence in spine care. A visiting Professorship that bears his name was scheduled for September 2014.
In memoriam

The Division of Orthopedic Surgery and The Ottawa Hospital suffered a great loss with the sudden passing of our colleague Dr. Peter Thurston on Feb. 26, 2014.

Dr. Thurston joined the Division of Orthopedic Surgery in 1999 following amalgamation with the former Riverside Hospital. He had been at the Riverside since 1981 where he had a full practice in Orthopedic surgery and served in a number of administrative positions, including Chief of Staff and, ultimately, acting Chief Executive Officer.

At The Ottawa Hospital, he distinguished himself as a caring clinician and took great pride in providing compassionate patient care. He received a number of Guardian Angel pins that substantiate this. It was obvious that he had a keen interest in teaching and mentoring medical students and residents. He directed Orthopedic surgery undergraduate education and was ultimately nominated for a Canadian undergraduate surgical education award.

Dr. Thurston provided numerous resident workshops on the transition to professional practice. Outside the hospital, he worked as a peer assessor for the College of Physicians and Surgeons and helped mentor a number of practising Orthopedic surgeons in Ontario.

He is best remembered for his constant good humour and consistent demeanor and was appreciated by his colleagues and staff alike. He was a wonderful partner and a team player who is sorely missed. Our condolences and thoughts remain with his wife, Diane, and their three children: Alex, Susan and Madelaine.

POSTGRADUATE ORTHOPEDIC EDUCATION

Program Director: Dr. Joel Werier

The Post Graduate residency program is the core of the academic environment for the Division of Orthopedic Surgery. We currently have 30 residents and mark the graduation from the program of Drs. Bradley Meulenkamp, Marie-France Rancourt, Geoff Wilkin, Natasha Holder, and Cai Wadden. Dr. Bradley Meulenkamp demonstrated strong leadership in his role as Chief Resident.

The Division continues to attract both Canadian and International fellows to various subspecialties. The 2013–14 academic year saw 8 fellows distributed among the subspecialties
of adult reconstruction, upper extremity, trauma, spine, oncology, comprehensive knee, and foot and ankle.

A vibrant academic program continues under the guidance of a dedicated postgraduate education committee. In addition to the academic half-day program there are daily teaching rounds at both the Civic and General Campuses covering all subspecialty areas, as well as an ongoing teaching program at CHEO. Dr. Braden Gammon has been recruited as a dedicated hand surgeon and has rounded out our subspecialty rotations.

In addition there are monthly journal clubs and there are four visiting professors a year. The 2013–14 visiting professor invitees were Dr. Donald Garbuz (adult reconstruction), Dr. George Athwal (upper extremity and research), Dr. Kishore Mulpuri (Pediatrics), and Dr. James Andrews (sports medicine).

We continue to run a series of innovative surgical skills labs at the Skills and Simulation Centre to enhance the academic curriculum. The purchase of a new knee arthroscopy simulator will enhance our surgical skills program.

The Ottawa Orthopedic Orientation (Boot Camp) is an innovative program for PGY 1 residents accelerating core competencies and skills. This program continues to evolve and has been very well received. Dr. Peter Lapner continues as Director of Research for the 2013-2014 academic year guiding our resident research program.

The culmination of our academic year was the presentation of the resident research papers at Hans K. Uhthoff Research Day April 24, 2014. Dr. Perry L. Schoenecker from the St. Louis Shriner’s Hospital for Children was the visiting professor and moderator for the event. Many of the research presentations were accepted to national and international meetings, and are en route to peer reviewed publication.

Our residents continue to secure prestigious fellowships and have taken leadership roles at both academic and community practices around the continent. A program is defined by its human resources, and we are fortunate to have attracted top quality individuals who are engaged learners and teachers, who enhance our educational and academic programs at every level.

Respectfully submitted,

Dr. Joel Werier
Residency Training Committee
Residency Training Program

Our training program is a source of great pride for the Division. Under the tireless work of Dr. Joel Werier, the Residency Training Committee and the very capable Johanne Samson, the program continues to attract the brightest residents and fellows from Canada and abroad.

Faculty Representatives

» Dr. Wade Gofton
» Dr. Ken Kontio
» Dr. Karl-André Lalonde
» Dr. Peter Lapner (ad hoc member)
» Dr. Louis Lawton
» Dr. Allan Liew
» Dr. Wadih Matar
» Dr. Peter Thurston

Resident Representatives

» Dr. Bradley Meulenkamp
» Dr. Andrew Tice

Director of Research

» Dr. Peter Lapner

Residents

» PGY-5
  » Dr. Natasha Holder
  » Dr. Bradley Meulenkamp
  » Dr. Marie-France Rancourt
  » Dr. Cai Wadden
  » Dr. Geoffrey Wilkin

» PGY-4
  » Dr. Gillian Bayley
  » Dr. Kelly Hynes
  » Dr. Matthew MacEwan
  » Dr. Ian MacNiven
  » Dr. Travis Marion
  » Dr. Scott McGuffin
  » Dr. Markian Pahuta

» PGY-3
  » Dr. Christopher Dowding
  » Dr. Heathcliff D’Sa
  » Dr. Adrian Huang
  » Dr. Brian Le
  » Dr. Andrew Tice
  » Dr. Kristi Wood

» PGY-2
  » Dr. Mitchel Armstrong
  » Dr. Aaron Frombach
  » Dr. John Morellato
  » Dr. Caleb Netting
  » Dr. Shawn Verma
VISITING PROFESSORS

Arthroplasty Visiting Professor November 27, 2013

Dr. Donald Garbuz MD
Head, Division of Lower Limb Reconstruction and Oncology,
Department of Orthopedics, University of British Columbia
Associate Professor, University of British Columbia

Research Day Visiting Professor December 12, 2013

Dr. George Athwal MD, FRCSC
Orthopedic Surgeon, Upper Extremity, The Hand and Upper Limb Centre, University of Western Ontario
Associate Professor, University of Western Ontario

» PGY-1
  » Dr. Andrew Bodrogi
  » Dr. Paul Jamieson
  » Dr. Bogdan Matache
  » Dr. Kevin Rasuli
  » Dr. Akshay Seth
  » Dr. Andrew Stewart

» Fellows
  » Dr. Abdullah Arab
    Spine Fellowship
  » Dr. Randa Berdusco
    Upper Extremity Fellowship
  » Dr. Derek Butterwick
    Trauma Fellowship
  » Dr. Philippe Hugo Champagne
    Foot and Ankle Fellowship
  » Dr. Luca Gala
    Adult Reconstruction Fellowship
  » Dr. Christopher Kennedy
    Trauma Fellowship
  » Dr. Sadegh Saberi
    Musculoskeletal Fellowship
  » Dr. Pascale Thibaudeau
    Comprehensive Knee Fellowship
Pediatric Orthopedics Visiting Professor February 27, 2014

Dr. Kishore Mulpuri MBBS, MSc (ortho), MHSc (Epi)
Associate Clinician Scientist, CFRI
Assistant Professor, Division of Pediatric Orthopedics,
Department of Orthopedics, University of British Columbia

Sports Medicine Visiting Professor March 27, 2014

Dr. James Andrews MD
Orthopedic Surgeon, Sports Medicine, Andrews Sports Medicine and Orthopedic Center
Senior Consultant, Washington Redskins Football Team
Medical Director, Tampa Bay Rays Baseball Team
Medical Director, Ladies Professional Golf Association

Annual Research Day

The Division’s highlight is the Annual Research Day where all staff and residents share their
research progress with a special distinguished guest Visiting Professor.

Division of Orthopedic Surgery
University of Ottawa
H.K. Uhthoff Annual Research Day Program
Thursday, April 24, 2014

Visiting Professor:
Dr. Perry L. Schoenecker MD
Professor of Orthopedic Surgery, Washington University
Chief, Pediatric Orthopedics, St. Louis Shriners Hospital for Children

Dr. Schoenecker received his medical degree from the University of Wisconsin in 1968, completed
his internship in 1969 at Parkland Memorial Hospital in Dallas, Texas and in 1970–71 was Assistant
Resident in General Surgery at Strong Memorial Hospital in Rochester, New York. He completed
his Orthopedic Surgery residency in 1975 at Washington University School of Medicine in St. Louis,
Missouri. Dr. Schoenecker served as Interim Chairman and Program Director of the Division of
Orthopedic Surgery at Washington University School of Medicine in 1980-1983. In 1995,
Dr. Schoenecker became a full Professor of Orthopedic Surgery at Washington University.
He has been Acting Surgeon in Chief in Pediatric Orthopedics at St. Louis Children’s Hospital
from 1991–1996, and again in 1999 to the present. Dr. Schoenecker has been the Chief of Staff
at Shriners Hospital in St. Louis from 1977 to the present.

In 1995, 1998 and 2010, Dr. Schoenecker received the Palma Chironis Award for Excellence in Teaching
presented by the Department of Orthopedic Surgery at Washington University School of Medicine.
In 1999 and 2009, he received the Jerome J. Gilden, M.D. Distinguished Physician Award (in appreciation for commitment, skill and passion for patient care) presented by the Department of Orthopedic Surgery, Washington University School of Medicine. He was recognized as the Outstanding Teacher of the Year at the University of Kansas School of Medicine, Wichita in 2010 and in February 2012 he received the Distinguished Clinician Award from the Washington University School of Medicine.

Dr. Schoenecker’s CV contains 155 articles (52 pertinent to hip pathology in patients of all ages) in peer reviewed journals and 18 book chapters.

Hans K. Uhthoff Graduate Fellowship Surpasses $1 Million Mark

This fund was established in September 2005 in honour of Dr. Hans K. Uhthoff, MD emeritus professor in the Department of Surgery, Division of Orthopedic Surgery, and founder of The Bone and Joint Research Laboratory, University of Ottawa.

Dr. Uhthoff was born at Koblenz on the Rhine on November 21, 1925. He obtained his medical degree from the University of Marburg, Germany in 1951. Following an internship in postgraduate surgery in Germany he immigrated to Canada and pursued a residency in Orthopedic surgery at the University of Montreal, obtaining fellowship at the Royal College of Physicians and Surgeons in 1958. In 1971 he was appointed to the Department of Surgery at the University of Montreal where he developed an interest in fracture fixation and fracture healing. In 1973, he accepted an appointment at the University of Ottawa as Associate Professor in the Department of Surgery and it was here that his major research endeavours blossomed as he developed his fracture research laboratory in bone biomechanics and histology. In 1976, he was appointed Head of the Division of Orthopedic Surgery, a position he held until 1991.

He remains actively involved in research and continues to be a regular contributor to the Annual Research Day that bears his name. He is an exemplary individual who has been able to combine a very significant research track record in conjunction with his clinical, academic and administrative responsibilities to the University of Ottawa.

The fund now has over 1 million dollars in an endowed chair whereby interest earned is the funding source of many recipients. Dr. Mark Pahuta was the recipient of the award this past year.
SURGICAL SERVICES & CLINICAL PROGRAMS

The Division is proud to provide the highest quality in standard of care that our patients deserve. Furthermore many of our colleagues are national leaders in their respective subspecialties which is a result of this focused care strategy that has been in place for over 15 years. Below are some updated reports on activities within these groups in the past year.

**Adult Reconstruction**

This year we had again a very productive year in regards to scientific presentation at our major Orthopedic meetings at AAOS, ORS, COA with over 20 presentations as well as 20 publications (See Appendix). We continued our Annual Visiting Professor which this year was Professor Donald Garbuz from UBC. Dr. Garbuz gave us a scientific presentation on the cycle of innovation in Orthopedic practice relating to both surgical techniques as well as implant designs and the lessons we have learned. He also taught the residents and fellows by case discussions as well as presenting UBC’s experience in complex revision hip replacement. This concluded with a Journal Club dinner at the Rideau Club. We continue our multiple multi-centre collaborations examining regimens of DVT prophylaxis with the EPCAT II study as well as new bearing designs (i.e. dual mobility) with two separate studies—one supported by Stryker and one by MEDACTA. In another prospective RCT sponsored by Depuy-Synthes we are examining how implant design may affect bone remodeling after total hip replacement. On the knee side Dr. Dervin is continuing his collaboration with Professor Mario Lamontagne looking at knee function pre and post knee replacement surgery. We have also instituted an outpatient total knee program under the leadership of Dr. Dervin and now more recently we have began an outpatient total hip program. Both are in their early infancies but are showing great promise in minimizing patient recovery as well as decreasing our cost in performing joint replacement at The Ottawa Hospital. Dr. Feibel has initiated with Dr. Guy Trudel the Ottawa Capsular Bank Group examining the role of capsular tissues in arthritis as well as post traumatic pathology. Finally in collaboration with the data warehouse we are prospectively collecting our complications both in and as well as readmissions. This will lead to better patient care and this is reported to our Patient Quality Safety Committee at the Divisional level.

Sincerely,

Paul Beaulé
Head, Adult Reconstruction
Foot and Ankle

The Foot and Ankle group continues to provide excellent clinical care while developing its research program and maintaining its educational mission.

On the clinical front, the group provides a comprehensive tertiary level program for foot and ankle pathologies ranging from foot deformities to neuropathic ankle fractures. The ankle arthroplasty program is growing and attracting patients from across Ontario. The role of ankle arthroscopy has also been evolving and our group continues to offer this expertise to our community. The demand for Foot and Ankle surgical services in the Eastern Ontario region is sustained and timely care of these patients continues to be a challenge, both locally and nationally.

On the research front, collaborative efforts continue with the Canadian Orthopedic Foot and Ankle Surgeons (COFAS). Ankle arthroplasty and ankle fusion patients continue to be enrolled in a national prospective study comparing outcomes of both procedures. Studies are also ongoing comparing various bone graft substitute alternatives to autologous bone graft for hindfoot and ankle fusions.

Finally, over the last year, we have begun enrolling patients in a study assessing optimal treatment of patients with osteochondral fractures of the talus.

The group also welcomed Dr. Philippe-Hugo Champagne from Sherbrooke as a clinical fellow for the 2013-2014 academic year. Dr. Champagne was a positive role-model for the resident group and his contribution to the service has been recognized as outstanding by patients, nursing staff and housestaff alike.

Resident education continues to be a focus for the group. Bi-weekly Foot and Ankle conferences are held at the General Campus. The group also contributes to the half-day academic sessions and runs a successful journal club with the residents and local community Foot and Ankle surgeons.

On the national stage, both Drs. Brunet and Lalonde have been involved in teaching at the Annual COFAS Foot and Ankle Symposium. Dr. Lalonde also continues his involvement as a Royal College Examination Chair for Orthopedic Surgery.

Overall, the group has noted an increasing interest in foot and ankle surgery amongst the resident group, with many finishing residents seeking fellowship opportunities in this area.

Respectfully submitted,

Dr. Karl-André Lalonde
Head, Foot and Ankle
**Musculoskeletal Oncology**

The Musculoskeletal Oncology Unit at the University of Ottawa provides comprehensive tertiary care for patients with sarcoma and related musculoskeletal tumours from Ottawa and Eastern Ontario, including the Pediatric population at the Children's Hospital of Eastern Ontario. Our multidisciplinary sarcoma unit has been actively involved with Cancer Care Ontario’s reorganization of Sarcoma services in Ontario and has been designated as one of three Sarcoma Centres of Excellence in Ontario. The program is involved with teaching at the graduate and undergraduate level and has fostered academic research collaborations with other Canadian oncology centres as well as the Departments of Diagnostic Imaging and Medical Oncology at the Ottawa Hospital.

**Clinical Care:** The Musculoskeletal Oncology program continues to maintain a prospective database of functional and oncological outcomes on all sarcoma patients. A dedicated sarcoma tumour-banking program maintains tumour samples on all sarcoma patients to complement the database.

**Research:** Dr. Hesham Abdelbary has been recruited as an Orthopedic oncologist and a clinical investigator at the OHRI. Dr. Abdelbary will enhance an active collaborative basic science research program at the Ottawa Hospital Research Institute investigating the role of oncolytic virus for the treatment of musculoskeletal neoplasm.

The Ottawa Bone Oncology Program (OBOP) is a new collaborative effort with Dr. Mark Clemons and Christina Addison focusing on the study of metastatic carcinoma to bone.

**Education:** There are weekly teleconferenced sarcoma teaching rounds as well as weekly multidisciplinary sarcoma conferences and bi-weekly Pediatric tumour review boards. There is an annual MSK oncology journal club for Orthopedic residents as well as multidisciplinary journal clubs. Residents are exposed to multidisciplinary clinics at the Ottawa Hospital Cancer Centre and the Children’s Hospital of Eastern Ontario. An Orthopedic Oncology fellowship program continues to be a very positive addition to the unit. Dr. Sadegh Saberi was the 2013–14 musculoskeletal oncology fellow. We have had the privilege and pleasure of training superb fellows over the last several years.

Dr. Joel Werier is Chair of the University of Ottawa Musculoskeletal Oncology Unit.

Respectfully submitted,

**Dr. Joel Werier**
Orthopedic Trauma

The Orthopedic Trauma Service continues its mandate as a centre of excellence in the treatment of traumatic musculoskeletal injuries with multiple areas of activity.

Clinical care: The volume of patients treated through the “Walking Wounded” program has steadily increased, allowing for the surgical treatment of acute musculoskeletal injuries expediently while allowing patients all the benefits of out-patient care. The provincial mandate of expedient treatment of hip fractures is not only being met, the completion rate is above the provincial average.

Research: The group is involved in several multicentre randomized clinical trials in conjunction with the Canadian Orthopedic Trauma Society (COTS), including operative vs non-operative treatment of fractures of the humeral shaft, ulnar shaft, distal clavicle, and flail chest rib fractures, as well as decompression vs transposition of the ulnar nerve in distal humerus fractures.

Julia Foxall remains in her role as research assistant, has helped keep these studies on track and has managed the trauma database well.

Education: Drs. Derek Butterwick and Chris Kennedy successfully completed their trauma fellowships, and both are following with further post-graduate subspecialty training. The current fellows are Dr. Khalid Alsheikh and Dr. Wil Desloges, both of whom are contributing well to our trauma resident education. The staff members have been actively involved as teaching faculty at national and international courses, as well as presenting symposiums at trauma society meetings.

Respectfully submitted,

Dr. Allan Liew

Pediatric Orthopedic Surgery

Dr. R. Baxter Willis is Chief of the Department of Surgery at the Children’s Hospital of Eastern Ontario. He has clinical interests in the hip and deformity of the lower extremity. He is active in international teaching.

Dr. Lou Lawton is the Division Chief of Pediatric Orthopedics. His clinical interest is in Sports Medicine and neuromuscular diseases. He has been active in teaching at the Medical school, and participating in ePortfolio and the Mentorship program.

Dr. J Jarvis continues to pursue his interest in advanced spine surgery. He is participating in three multicentre trials related to spinal deformity treatment, with grant funding of approximately $900,000. He had 6 peer reviewed publications this year, as the principal or collaborating author. He continues to do medical outreach work in Ecuador with CAMTA.
Dr. Ken Kontio has clinical interests in sports medicine, club foot and limb deformities. He is heavily involved in academic education. He was invited to Saudi Arabia to assist them with implementation of CanMeds competencies in their curriculum. He is the Chair of the Surgery Test Committee for the Medical Council of Canada. He is active in ePortfolio teaching and the Mentorship program at the University.

Dr. Paul Moroz has clinical interests in spine surgery and international surgery. He is a co-investigator in a CIHR-funded multicenter trial in fracture management, grant of $500,000. He has co-authored three peer-reviewed publications, including one that won the Otto Aufranc award from the Hip Society.

Pediatric Orthopedics will welcome a new colleague, Dr. Sasha Carsen, on July 1, 2015. He has had excellent fellowship experiences in Boston and Vancouver. He was the first author on the Otto Aufranc award paper at the Hip Society last year.

Respectfully submitted,

Dr. Lou Lawton

Spinal Surgery

The Spinal Surgery Program (SSP) is based at the Ottawa Hospital (TOH) Civic Campus and provides all spinal surgical care (assessment, surgery, postoperative followup) for degenerative, traumatic, infectious, and neoplastic spinal conditions for the Champlain LHIN. Services are provided by surgeons from the Divisions of Neurosurgery and Orthopedic Surgery and includes 6 fellowship trained advanced spinal surgeons, 2 research assistants, and 1 physician assistant.

The SSP is sad to see the retirement of Dr. Garth Johnson this year. He is considered a legend in spinal surgery across Canada and has been an exemplary role model for all clinicians in Ottawa and nationally. He finished his final year with the prestigious Clinician of the Year Award at TOH. But as one door closes, another door opens. The SSP welcomes Dr. Phillipe Phan to TOH. Dr. Phan completed his Orthopedic residency at the University of Montreal, and spinal surgical fellowships at the University of Ottawa, Harvard University, and Beijing, with sub-specialty interest in deformity correction. He has just submitted his PhD on Neural Networks and Artificial Intelligence. Dr. Phan brings an energy and expertise to the SSP that will help propel it further for many years to come.

Clinical Care: The SSP continues to be the sole site for acute and elective spinal surgical care in the Champlain LHIN (population of 1.2 million). Approximately 1,000 spinal surgeries, ranging from minimally invasive day surgery cases to complex multi-stage procedures were performed at TOH over the past year. Complex spinal surgical procedures include: Minimally invasive, En-bloc tumour resection, Deformity correction.
Over 3,000 patients were seen last year for spinal consultation. However, the wait time for consultation is well above the provincial average and remains one of the biggest challenges currently facing the Spinal Surgery program. In order to address this issue, a Physician Assistant Triage Clinic has been created and has actually begun to reduce the wait times. As well, the SSP is in the final stages of a prospective RCT validating a patient-administered screening tool, which has shown promising results and more accuracy at identifying surgical candidates.

**Research:** The SSP has developed a national to international reputation in research, with 3 staff with PhD; 1 with a PhD submitted and 2 with MScs (Drs. Wai and Alkerayf) performing basic science and clinical research. Over the past 7 years, the members have authored or co-authored over 100 peer-reviewed publications - including supervision of a number of first authored papers by residents, medical students and fellows. Primary research interest over the past year include: health services evaluation to improve wait list issues, systematic reviews, spinal cord regeneration and neural networks / artificial intelligence analysis of databases.

**Education:** The SSP is fully involved with Orthopedic and Neurosurgical resident training with regular rotations onto the program as well as organizing weekly didactic combined rounds. The SSP has trained 1–2 fellows per year over the past 10 years. A weekly peer-reviewed fellows-led case-based conference has been established this year. This past January, members of the spinal program helped organize and participate in the first annual Neurosurgical Review and Exam Preparation course for Canadian Residents. In October, the SSP will host a cadaver based CME course on Advanced Minimally Invasive Spinal Surgical Techniques.

Respectfully submitted,

Dr. Eugene K. Wai
**Upper Extremity Service**

Dr. Bradon Gammon is a welcome addition to the Upper Extremity Service. Dr. Gammon joined the Service in January 2014. He specializes in Surgery of the Hand and Wrist and now joins the ranks of Dr. Steve Papp, Dr. J. Pollock, and Dr. Peter Lapner.

Since its inception in March 2009, the Upper Extremity Service at The Ottawa Hospital has been very productive both clinically and academically, and has had representation at the local, national, and international levels. Local initiatives in education include undergraduate and postgraduate teaching with a comprehensive schedule that includes weekly specialty-specific teaching rounds in addition to other regular clinical activities and continuing medical education sessions. The service offers a fellowship-training program in shoulder and elbow surgery. At the provincial level, Dr. Lapner is a member of the Health Quality Ontario expert panel on degenerative diseases of the shoulder. This panel will set provincial guidelines to define the most efficacious way of delivering treatment for shoulder pathology including rotator cuff disease and shoulder osteoarthritis.

The Upper Extremity Service hosted the national JOINTS Shoulder course, held at the University of Ottawa Skills and Simulation Centre in January 2014. This intensive two-day course was directed at senior Orthopedics residents and fellows. It featured plenary sessions, small groups case-based sessions as well as wet lab shoulder arthroscopy and arthroplasty sessions.

In 2013, the Upper Extremity Service had approximately 5,500 patient visits and performed more than 1,200 surgical procedures. In addition, members of our service treated a significant number of patients with complex upper extremity trauma, having been referred to our Service from within the Champlain LHIN. We continue to maintain a prospective database on the functional and quality of life outcomes of upper extremity surgical procedures including data on procedures related to the rotator cuff, instability, shoulder arthroplasty, and shoulder fractures.

We are advancing our objectives in clinical outcomes research with a number of ongoing prospective trials on rotator cuff healing, surgical approaches to instability, shoulder fracture management and arthroplasty infections. We continue to collaborate with researchers in the Department of Epidemiology, the Department of Biochemistry, Microbiology, and Immunology, and the Department of Rehabilitation Medicine at The Ottawa Hospital.

Dr. J Pollock has been named head of the Orthopedics Biomechanics Laboratory, where he will supervise all basic science research carried out in the lab. Among other studies, the optimal surgical exposure for open elbow and open shoulder procedures is currently being investigated.

Respectfully submitted,

**Dr. Peter Lapner**
Orthopedic Biomechanics Laboratory (OBL)

The Orthopedic Biomechanics Laboratory (OBL) is a unique research facility at The Ottawa Hospital, uniting clinicians and engineers dedicated to basic science and applied research of the musculoskeletal system. Hakim Louati, M Eng expertly manages the day to day operations within the lab. He is mentored by Dr. J Pollock who recently assumed the medical directorship of the lab after a successful term under the guidance of Dr. Peter Lapner. The laboratory is equipped with state of the art research tools aimed at measuring biomechanical properties of musculoskeletal tissues, articular joints and Orthopedic devices.

During the past year, our research efforts have focused on improving surgical techniques, tendon repair, as well as implant evaluation and joint biomechanics. Some of the highlights for 2013–2014 include:

Dr. Deslodges’ work on characterizing lateral elbow surgical approaches, done under the supervision of Dr. Pollock and Dr. Papp, was published this year. The novel methods and tools developed for the study at the OBL were adapted for follow up work in the shoulder, which was presented at this year’s Canadian Orthopedic Association’s annual meeting.

Dr. Dervin’s work on the anatomy and biomechanics of the insertion of the patella tendon was published this year, while follow up work on patella repair techniques nears completion.

Dr. Paul Beaulé, with industry support, is investigating the effects of surgical methods and modular femoral component design on implant failure, wear and corrosion. The study is done in collaboration with Professors Michel Nganbe and Isabelle Catelas from the University of Ottawa and conducted at the OBL. The results of the first phase of the study were presented at this year’s Canadian Biomaterials Society Annual Meeting.

The collaborative efforts with the University of Ottawa and Carleton University have produced two completed master’s thesis projects at the OBL this year.

Hakim Louati presented his work on the development of the OBL in-vitro elbow simulator and its use to study the mechanics of the radial tuberosity under the supervision of Professor Hanspeter Frei and Dr. Pollock. Paul Gauthier presented his work on validation of the OBL in-vitro knee simulator and investigated the effects of simulated ligament injury under the supervision of Professor Dan Benoit and Dr. Dervin.

Respectfully submitted,

Dr. Hakim Louati
# RESEARCH GRANTS

<table>
<thead>
<tr>
<th>Investigator(s)</th>
<th>Title</th>
<th>Funding Type</th>
<th>Funding Source</th>
<th>Amount of Funding</th>
<th>Start Date</th>
<th>End Date</th>
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<tbody>
<tr>
<td>Beaulé, Paul, PI</td>
<td>Do MRI Findings Correlate with Hip Pain and Radiographic Findings: Development of a Better Diagnostic Tool for Surgical Intervention</td>
<td>Competitive</td>
<td>Department of Surgery</td>
<td>$25,000</td>
<td>09/2009</td>
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<td>Beaulé, Paul, Co-I</td>
<td>Detection and Simulation of Femoroacetabular Impingement</td>
<td>Competitive</td>
<td>CIHR/NSERC/IMHA</td>
<td>$507,300</td>
<td>04/2011</td>
<td>03/2014</td>
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<td>Beaulé, Paul, PI</td>
<td>A Randomized Clinical Trial of a Modular Cementless Acetabular Metal on Poly Component versus a Monoblock Cementless Titanium Shell with Ceramic on Ceramic Bearing and CORAIL Stem: A Bone Mineral Density Study</td>
<td>Industry</td>
<td>Johnson and Johnson Medical Products</td>
<td>$311,064</td>
<td>04/2011</td>
<td>Ongoing</td>
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<td>Beaulé, Paul; Co-PI</td>
<td>Mobility Assessment of a Dual Mobility Hip Arthroplasty for Osteoarthritic Hip: Feasibility for a Prospective Randomized Controlled Trial</td>
<td>Industry</td>
<td>Medacta International SA, Strada Regina</td>
<td>$96,687</td>
<td>01/2010</td>
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<td>Beaulé, Paul; PI</td>
<td>Analysis of Clinical Outcome and Implant Migration of the Cementless Tri-Fit Total Hip Replacement System</td>
<td>Industry</td>
<td>CORIN</td>
<td>$87,425</td>
<td>09/2014</td>
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<td>Beaulé, Paul; Pi; Kim, Paul; Co-PI; Feibel, Robert; Co-PI</td>
<td>Post Market Clinical Follow-up Study Protocol for DYNASTY BioFoam Acetabular Components</td>
<td>Industry</td>
<td>MicroPort</td>
<td>$333,354</td>
<td>09/2014</td>
<td>09/2027</td>
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<td>Dervin, Geoff, PI</td>
<td>Feasibility of outpatient Total Knee Arthroplasty</td>
<td>Competitive</td>
<td>The Ottawa Hospital Academic Medical Organization (TOHAMO)</td>
<td>$89,500</td>
<td>06/2010</td>
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<tr>
<td>Feibel, Robert, Co-I</td>
<td>A Randomized Clinical Trial of a Modular Cementless Acetabular Metal on Poly Component versus a Monoblock Cementless Titanium Shell with Ceramic on Ceramic Bearing and CORAIL Stem: A Bone Mineral Density Study</td>
<td>Competitive</td>
<td>Johnson and Johnson Medical Products</td>
<td>$311,064</td>
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<td>Ongoing</td>
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<td>Gartke, Kathleen, Co-I</td>
<td>Improving physician hand hygiene compliance using behavioral theories</td>
<td>Competitive</td>
<td>TOHAMO Innovation Fund</td>
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<td>Gofton, Wade, Co-PI</td>
<td>Improving intra-operative perception through deliberate practice</td>
<td>Competitive</td>
<td>University of Ottawa</td>
<td>$42,000</td>
<td>09/2012</td>
<td>Ongoing</td>
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<td>Gofton, Wade, Co-PI</td>
<td>Intensive orthopedic orientation course</td>
<td>Competitive</td>
<td>The Selection Committee for the Education Initiatives in Residency Education Fund</td>
<td>$8,500</td>
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<td>Gofton, Wade, Pl or Co-PI</td>
<td>Grants to Support the Employment of Graduating Physician Assistants</td>
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<td>Ministry of Health Ontario</td>
<td>$90,000</td>
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<td>Gofton, Wade, Pl or Co-PI</td>
<td>Grants to Support the Employment of Graduating Physician Assistants</td>
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<td>Gofton, Wade, PI or Co-PI</td>
<td>The Development of an Electronic Competency Based Procedure Log – linking the Ottawa Surgical Competency Operating Room Evaluation (O-SCORE) with a Procedure Log (Phase 2,3 &amp; 4)</td>
<td>Competitive</td>
<td>TOHAMO</td>
<td>$113,250</td>
<td>09/2012</td>
<td>On-going</td>
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<td>Gofton, Wade, PI or Co-PI</td>
<td>Fellowship in Education Grant – Effect of Simulation on the learning of surgical skills</td>
<td>Competitive</td>
<td>Royal College of Physicians and Surgeons of Canada (The)</td>
<td>$45,000</td>
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<td>Jarvis, James, PI or Co-PI</td>
<td>Spine Care</td>
<td>Competitive</td>
<td>Orthopedic Research and Education Foundation (OREF)</td>
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<td>09/2012</td>
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<td>Jarvis, James, Collaborator</td>
<td>Pain at Home in Children Following Major Surgery: Physical, Psychological, and Economic Consequences</td>
<td>Competitive</td>
<td>Canadian Institute of Health Research (CIHR)</td>
<td>$878,775</td>
<td>09/2012</td>
<td>On-going</td>
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<td>Jarvis, James, PI or Co-PI</td>
<td>Long Term Follow-up of Spinal Instrumentation in Spina Bifida Scoliosis</td>
<td>Competitive</td>
<td>CIHR The Hospital for Sick Children, Sick Kids Foundation</td>
<td>$17,500</td>
<td>09/2012</td>
<td>On-going</td>
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<td>Kim, Paul, PI; Gofton, Wade, PI</td>
<td>Extended Venous Thromboembolism Prophylaxis Comparing Rivaroxaban to Aspirin Following Total Hip and Knee Arthroplasty (EPCAT II)</td>
<td>Competitive</td>
<td>CIHR</td>
<td>$3,044,876</td>
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<td>Kim, Paul, PI</td>
<td>Restoration Anatomic Dual Mobility (ADM) X3 Acetabular System Outcomes Study</td>
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<td>Stryker</td>
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<td>Lalonde, Karl-Andre, PI</td>
<td>A Multi-Center, Randomized, Pilot Study Evaluating Amplex Compared To Autograft Bone In Foot and Ankle Fusion Surgery</td>
<td>Industry</td>
<td>BioSET</td>
<td>$6,700 US per patient</td>
<td>02/2011</td>
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<td>Lalonde, Karl-Andre, PI</td>
<td>Prospective, Randomized, Multi-Center Clinical Evaluation of the Open Wedge Osteotomy and Low Profile Plate &amp; Screw (LPS) System Compared to the Proximal Chevron Osteotomy for the Treatment of Hallux Valgus with an Increased Intermetatarsal Angle</td>
<td>Industry</td>
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<td>$3,000 start up and $380 per patient</td>
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<td>Lalonde, Karl-Andre, PI or Co-PI</td>
<td>Augment Injectable Bone Graft vs Autologous Graft RCT for hindfoot fusions</td>
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<td>Biomimetics</td>
<td>$23,000</td>
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<td>Lapner, Peter, Co-PI</td>
<td>Autologous Bone Marrow-Derived Cellular Augmentation in Rotator Cuff Repair</td>
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<td>Trephination in rotator cuff repair: a randomized, controlled, study</td>
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<td>$865,000</td>
<td>10/2010</td>
<td>09/2015</td>
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<td>Papp, Steve, PI or Co-PI</td>
<td>The Development of an Electronic Competency Based Procedure Log Linking the Ottawa Surgical Competency Operating Room Evaluation (O-S CORE) with a Procedure Log (Phase 2, 3 &amp; 4)</td>
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<td>Werier, Joel, PI</td>
<td>Smoking Cessation within the Fracture Clinic</td>
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</tr>
</tbody>
</table>
PUBLICATIONS IN 2013–2014


**In Press**


DIVISION OF PLASTIC SURGERY

FACULTY MEMBERS

Civic Campus
» Dr. Murray Allen
» Dr. Nicolas Guay (departed January 2014)
» Dr. Danny Peters
» Dr. Kirsty Boyd
» Dr. Jing Zhang

General Campus
» Dr. Gloria Rockwell
» Dr. Ronnie Borsuk
» Dr. Mario Jarmuske

Riverside Campus
» Dr. Lloyd Van Wyck

CHEO
» Dr. Mary Jean Duncan
  Pediatric Division Head
» Dr. Yvonne Ying
» Dr. Claudia Malic

Private Office
» Dr. Stan Labow

Fellows
» Dr. Othman Ramadan
  Shared hand fellow with the Division of Orthopedics
» Dr. Colin White
  Breast reconstruction fellow under Dr. Guay
HIGHLIGHTS OF 2013–2014

Dr. Mary Jean Duncan, who has been the architect of our residency program and its first Program Director, has stepped down in favour of Dr. Danny Peters, as of April 1, 2013. Although this does not mark the end of Dr. Duncan’s involvement in the program, it does give us an opportunity to thank her for the exceptional effort she contributed to build a new residency program from the ground up.

Dr. Mario Jarmuske finished his five year term in 2012, as the second ever chief of the combined University and TOH Division of Plastic Surgery. His contributions were acknowledged at the 2013 Annual Collins Day dinner.

Dr. Yvonne Ying has taken over control of the Surgical Foundations course for all of the surgical specialties. This is the preparatory course for the Principles of Surgery examination for the Royal College certification.

Dr. Howard Silverman has developed and implemented the first resident aesthetic surgery clinic in Ottawa. This opened in October of 2013 and represents our dedication to teaching, the art and science of aesthetic surgery to our residents.

Dr. Kirsty Boyd has established the first nerve transfer program in Ottawa with the cooperation of Dr. Gerald Wolf from the Division of Physiatry. This new combined clinic is located at the Civic campus.

Dr. Ronnie Borsuk has developed a new Plastic Surgery service at the Winchester Hospital, and is now providing both local and general anesthetic procedures.

Dr. Murray Allen
Chair, Division of Plastic Surgery, University of Ottawa
Head, Division of Plastic Surgery, The Ottawa Hospital
A MESSAGE FROM THE PROGRAM DIRECTOR

The Plastic Surgery residency program has grown significantly over the past year. From its inception in 2010, the program now includes 10 residents at all stages of training. Our first resident completed the Royal College examinations in 2014 marking the first graduate from a new plastic surgery training program in over 25 years! This marks a significant milestone for Dr. Ashley Ignatiuk who continues his training in upper extremity reconstruction as a Fellow at the University of Texas Southwestern in Dallas. Plastic surgery residents have become a cornerstone of clinical care, providing service through our rapid access clinic, emergency department, wards and operating rooms. The training program has also enhanced interdisciplinary relationships with many services including neurosurgery, ophthalmology, ENT, oral-maxillofacial surgery, wound care, hand therapy and orthopedics.

The residency program has also supported growth of research within the Division. During the last two academic years, every resident presented a paper at a major national or international meeting. Plastic surgery was well represented at Collins Day. Our residents were responsible for 9 podium presentations, 6 published abstracts and 3 peer reviewed publications. This represents a significant increase in productivity over the very short duration of the program.

In 2014 we were proud to welcome two new residents to the training program. Amara Ghumman is a graduate of the University of Western Ontario. Aisling Fitzpatrick is a graduate of Queen’s University. Both are strong, smart and eager new additions to the team. We have no doubt that as the residency grows they will continue to make us proud.

Respectfully submitted,

Dr. Danny Peters

VISITING PROFESSORS

We were pleased to welcome Dr. Oleh Anonyshyn from Toronto and Dr Susan Mackinnon from St Louis to Ottawa. They are world experts in craniofacial surgery and peripheral nerve surgery respectively. They were mentors to Drs. Peters and Boyd in those areas. Each generously spent a half day with our residents and lectured. Dr Mackinnon was also the honoured guest at the Department of Surgery Collins Day event. Dr Don Lalonde gave TOH Grand rounds in June of 2014 and educated our residents in the techniques of local anesthetic hand surgery to our residents.
SURGICAL SERVICES & CLINICAL PROGRAMS

Existing programs have gone on to receive national recognition at the annual Canadian Society of Plastics Surgery meeting held in Calgary in 2013 and in Montreal this year.

Dr Gloria Rockwell, through medical student Nathalie Cho, presented our service’s successful effort to improve outcomes in breast reduction surgery. This follows our standardization of practice in breast surgery using the NSQIP model.

Dr. Mario Jarmuske (left) awarded the Department of Surgery Leadership Award
PUBLICATIONS IN 2013–2014


4. Peters DA, McKay DR. To Corp or not to Corp: Strategic Tax considerations for investing. Can J Plast Surg. 2013 Apr; 21(1).


**Book Chapters**


**Patents**

DIVISION OF THORACIC SURGERY

FACULTY MEMBERS

Faculty

» Dr. Sebastien Gilbert
» Dr. Sudhir Sundaresan
» Dr. Farid Shamji
» Dr. Donna Maziak
» Dr. Andrew Seely
» Dr. Patrick James Villeneuve

Fellows

» Dr. Anas Al-Shuhayeb
» Dr. Ramzi Addas
HIGHLIGHTS OF 2013–2014

In collaboration with TOH foundation, we have designed a comprehensive and focused summary of our research efforts to familiarize our patient population with the scientific endeavors of the Division of Thoracic Surgery.

In 2008, TOH’s Division of Thoracic Surgery developed a standardized system to identify both presence and severity of Thoracic Morbidity & Mortality (TM&M). The TM&M classification system was developed in accordance to the Clavien-Dindo classification schema, and aims to capture 100% AEs after 100% surgeries. Supporting studies have shown that the TM&M classification system is feasible, reliable and reproducible, facilitates objective comparison, identifies burden of illness of individual complications, provides an effective method for continuous surgical quality assessment, and serves as a complement to the gold standard, the National Surgical Quality Improvement Program (NSQIP). More recently, the TM&M classification system has been adopted by numerous surgical groups internationally.

Paper-based forms that were originally used to support AE reporting were cumbersome and inefficient, with potential for data entry error. Monthly data review, discussions, and iterative software refinements led to an evolution of a real-time, web-based, iPad-optimized Thoracic Surgery Quality monitoring, Information management, and Clinical documentation (TSQIC) system. The TSQIC system is a software solution that enables bedside clinical data recording (including clinical data, operative data, post-operative TM&M, and outcomes), clinical documentation of the clinical encounter, data storage, and automated dynamic analysis and reporting of surgical volume and quality of care. The TM&M classification schema offers prospective, standardized, and reliable definitions to accurately report all postoperative AEs, while the complementary web-based software application, TSQIC, provides an effective method for data entry, and review. Together, they have afforded powerful quality assessment and improvement opportunities within the Division of Thoracic Surgery.

The divisional M&M conference, for instance, has greatly been enhanced by the improved quality of statistical reporting of all post-operative AEs. Each M&M conference starts with an overview of surgical case volume and quality reporting for the preceding month. A summary of outcomes of
interest displayed over time using standard tabular methodology is displayed for the audience to review. These analyses have allowed the Division to follow trends over time and to distinguish between random variation and a significant increase or decrease in the rate of post-operative AEs. Following this overview, the chief thoracic surgical fellow then identifies specific cases for discussion using a structured presentation format.

Using the TM&M classification schema of AEs and the TSQIC software platform, TOHs Division of Thoracic Surgery has also developed novel and dynamic thoracic surgeon-specific outcome reports (SSORs) for reporting information on multiple quality indicators. By monitoring individual outcomes and providing feedback, SSORs allow surgeons to compare their current performance to their previous performance and to that of their colleagues. They provide automated, real-time, and risk-adjusted data monitoring, and are a fundamental part of current efforts to improve the quality of surgical care. Unique to this effort, is an attempt to tie performance results with continuous quality improvement (CQI) seminars, so as to provide an additional forum for discussion and reinforcement of trust in ones’ colleagues. A major theme that has emerged from these discussions has been the use of positive deviance and the identification of best practice measures to improve procedure-specific AEs. Whether SSORs and a complementary program of CQI can lead to improvements in rates of post-operative AEs is a matter of ongoing research.

Dr. Sudhir Sundaresan (right) awarded the Department of Surgery Leadership Award
PLANS FOR THE FUTURE

The Division of Thoracic Surgery has been fortunate to be part of major institutional initiatives to provide world-class care. We will continue to collaborate with the operating room team to develop solutions targeted at improving efficiency in the utilization of valuable operating resources. Along the same lines, we will remain active participants and leaders in the transformation of lung cancer care at The Ottawa Hospital. Our ultimate goal is for patients to receive care that is compassionate, timely and state-of-the-art. We will continue to invest time and energy to further integrate our Divisional team and streamline our clinical and administrative processes so as to provide competitive thoracic surgical services on a North American scale. We have been actively pursuing the evolution of our surgical practice through the integration of newer operative techniques (e.g., Per Oral Esophageal Myotomy (POEM), Single-Port Thoracoscopic Pulmonary Resection), and the development of novel approaches to surgery of the chest (e.g., transcervical and transxyphoid thoracoscopy).

VISITING PROFESSORS

The Division had the honor of hosting two noted Thoracic Surgeons in May 2014. Dr. Bill Putnam, Chief of Thoracic Surgery at Vanderbilt University Medical Center in Nashville, Tennessee as visiting professor for Collins Surgical Day. We also had the pleasure of hosting Dr. Jean Deslauriers for our Thoracic Surgery Grand Rounds.

RESEARCH GRANTS

<table>
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<tr>
<th>Investigator(s)</th>
<th>Title</th>
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<th>Amount of Funding</th>
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<th>End Date</th>
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<td>Andrew Seely</td>
<td>Temperature, Heart and Respiratory Rate Investigation along with Variability Evaluation and Serum Biomarkers</td>
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<td>THRRIVES</td>
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<td>Andrew Seely</td>
<td>TryCYCLE (Critical Care Cycling to Improve Extremity Strength): A Single-Center, Prospective Pilot Study of the Safety and Feasibility of Early Rehabilitation using Cycle Ergometry in Mechanically Ventilated Patients.</td>
<td>Operating (Research)</td>
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<td>Andrew Seely</td>
<td>Improving patient care through the implementation and evaluation of the Thoracic Surgery Quality monitoring, Information management and Clinic documentation.</td>
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<td>Jim Dimitroulakos, Patrick James Villeneuve</td>
<td>Evaluating Novel Therapeutic Approaches in Ex-Vivo Tumour Tissues Ottawa Tumour Tissue Resource Core Facility (OTTR)</td>
<td>Group/ Program (Research)</td>
<td>The Faculty of Medicine and OHRI</td>
<td>$32,500</td>
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**PUBLICATIONS IN 2013–2014**

**Publications**


DIVISION OF UROLOGY

FACULTY MEMBERS

Civic Campus
» Dr. Anthony J. Bella
» Dr. Filemon DeJesus
» Dr. Ronald G. Gerridzen
» Dr. Duane Hickling
» Dr. J. Stuart Oake (Site Chief)
» Dr. Matthew T. Roberts
» Dr. M. Eric Saltel

General Campus
» Dr. Brian D.M. Blew
» Dr. Rodney H. Breau
» Dr. Ilias Cagiannos
» Dr. John E. Mahoney
» Dr. Christopher G.L. Morash (Site Chief)
» Dr. Jeffrey Warren
» Dr. James D. Watterson

CHEO
» Dr. Luis A. Guerra (Site Chief)
» Dr. Michael P. Leonard
» Dr. Melise Keays

Residents
» PGY 5
  » Dr. Christopher Zappavigna
  » Dr. Darren Desantis
  » Dr. Jonathan Moles
» PGY 4
  » Dr. Daniel Costa
  » Dr. Vitor da Silva
  » Dr. Paul Hartman
  » Dr. Preveshen Moodley
» PGY 3
  » Dr. Laura Nguyen
  » Dr. Marat Rafikov
  » Dr. Mark Spurrell
» PGY 2
  » Dr. Ehab Elzayat
  » Dr. Luke Reynolds
  » Dr. Jeremy Setterfield
  » Dr. Humberto Vigil
» PGY 1
  » Dr. Ravin Bastiampillai
  » Dr. Octav Cristea
  » Dr. Chris Rediger
HIGHLIGHTS OF 2013–2014

The Division of Urology prides itself on excellence in all three outputs of clinical care, education and research. The year 2013–2014 has seen growth and development in each of these categories.

Clinical care: The Division has expanded its clinical offerings and research within the category of female pelvic medicine and reconstructive surgery with the return of Dr. Duane Hickling, having completed a 3-year fellowship at NYU with Dr. Victor Nitti. There also has been growth within Pediatric Urology with the successful recruitment of Dr. Melise Keays, who will be joining Dr. Luis Guerra and Dr. Michael Leonard at the Children’s Hospital of Eastern Ontario. Several of our Division members have expanded their clinical skill sets by learning and offering state-of-the-art surgery.

Education: The Division of Urology has joined the Department of Surgery Postgraduate Education Office and will be intricately involved in developing the concept of collaboration with our sister programs within the Department. The Urological Oncology Fellowship position was filled by Dr. Luke Lavallee, a former resident within our program. The groundwork is being set for a Renal Transplant Fellowship, with a first Fellow beginning in the next 12 months. Our Residency Program continues to be a leading national program, possessing full accreditation status and is led by Dr. Jim Watterson.

Research: This has been a robust year from a publication perspective. Our residents are heavily involved in on-going studies with continued proliferation of our publication rate. Dr. Ilias Cagiannos, Resident Research Director, continues to develop this important aspect of our program with outstanding success. Our Division has been successful in developing “the Department of Surgery Chair in Urological Oncology” which has been awarded to Dr. Rodney Breau. This is in addition to the Greta and John Hansen Men’s Health Chair held by Dr. Tony Bella.
2013–2014 marked the end of Dr. Ron Gerridzen’s term as Head of Urology. His leadership during the 10 years changed the landscape of our Division to its current outstanding level. This report will outline many accomplishments within our Division of which Dr. Gerridzen has been an integral part. The faculty has expanded to its current breadth of academics due to his vision.

**Volunteer Work**

Dr. Michael Leonard: works with Physicians for Peace. Two weeks spent in Dominican Republic conducting hypospadias surgery.

**Fellowships and Fellows**

Dr. Luke Lavallee was appointed as the Uro-Oncology Fellow beginning in 2013. This is a two year fellowship.

Dr. Ramanathapura Haricharan completed his Pediatric Fellowship on June 30, 2014.

**VISITING PROFESSORS**

On April 8, 2014 the Division of Urology’s Annual Resident Research Day was held at the Fairmont Chateau Laurier. Dr. Victor Nitti, Vice-Chair of Urology at NYU Langone Medical Center and Director of Female Pelvic Medicine & Reconstructive Surgery was our esteemed guest. Dr. Nitti is an international opinion leader in incontinence, overactive bladder, pelvic organ prolapse and surgical correction of these conditions. He had 3 hours with all residents & fellows reviewing cases, followed by adjudicating our annual Resident Research Day, and giving a closing address “Bladder Emptying Problems in Females”.

**PROMOTIONS & APPOINTMENTS**

- Dr. Christopher Morash was promoted to Associate Professor, Faculty of Medicine, University of Ottawa.
- Dr. Ilias Cagiannos was promoted to Associate Professor, Faculty of Medicine, University of Ottawa.
- Drs. Rodney Breau and Anthony Bella were appointed Co-Chairs of Canadian Urological Association Scientific Meeting, June 2015.
- Dr. Stuart Oake was appointed Clinical Scientist, OHRI, June 2014.
SPECIAL EVENTS

In collaboration with the Department of Surgery, the Division of Urology is the first Division within the Department to develop a term Chair for the purposes of encouraging high quality research. This Chair is officially termed “The Department of Surgery Chair in Urological Oncology” and has been awarded to Dr. Rodney Breau.

SURGICAL SERVICES & CLINICAL PROGRAMS

There has been a milestone expansion by our Division into the realm of Female Pelvic Medicine and Reconstructive Surgery. Dr. Duane Hickling has completed a 3-year Basic Science Fellowship with Dr. Victor Nitti at NYU. Dr. Hickling will be providing care to complex conditions involving female pelvic reconstructive surgery. Further, he will be utilizing his cross-appointment at OHRI to perform bench research in relationship to his sub-specialty.

Our Transplant Urologists have been very active in collaborating with our nephrological colleagues with Donation After Cardiac Death Donors, and this is serving to treat the population of Ontario in an up-to-date manner.

Our Division has developed an innovative and novel concept which relates to the delivery of Men’s Health. In collaboration with The Ottawa Hospital, the Ottawa Hospital Men’s Health Centre will be launched between 2015 and 2016. Real estate has been assigned and the business proposal has been approved by The Ottawa Hospital.

In October 2011, the first Robotic Radical Prostatectomy was completed at the General Campus of The Ottawa Hospital. This was the launching pad for a comprehensive team-approach program that would begin to offer our patients this robotic service. The plan was based on team assignments, thereby facilitating completion of the surgeon’s learning curve. Since the launch date, and in the preceding year, 350 robotic radical prostatectomies have been completed. This is a testament to the commitment of all those involved.
AWARDS, RECOGNITIONS & GRANTS


» Dr. Matthew Roberts: John P Collins Award for Teaching Excellence, University of Ottawa, 2013.

» Dr. Luis Guerra: Best Paper in Pediatric Anesthesia, awarded by the Canadian Anesthesiologists’ Society, 2014 June, Trendelenburg position on respiratory mechanics in pediatric laparoscopic surgery.

» Dr. Ron Gerridzen was nominated for the 2014 Department of Surgery Leadership Award, The Ottawa Hospital.

» Dr. Ron Gerridzen: Awarded The Ottawa Hospital 2014 Physician Clinician Recognition Award, The Ottawa Hospital, May 2013.

» Dr. Rodney Breau: Summer Student Research Seminar Bronze, Silver and Gold Awards, the Ottawa Hospital Research Institute, June 2013.

» Dr. Stuart Oake: University of Ottawa, Department of Surgery: Excellence in Teaching Award, Postgraduate Surgical Education, May 2014.

» Dr. Oake: Also elected to serve as the President of the Canadian Urological Association in 2014–2015.
Dr. Jeff Warren was the co-director of the national based Urological Review course (QUEST) for Canadian residents based in Kingston. Both a historic and time-honoured event for Canadian Urology.

Dr. Rodney Breau has been appointed co-lead of the Ontario Health Study Urology working group, the largest prospective cohort study with the goal of recruiting almost 10 million Ontarians with findings anticipated to transform our current knowledge of urinary and sexual function.

## RESEARCH GRANTS

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<th>Funding Source</th>
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<td>Bella AJ</td>
<td>Prospective Registry of Outcomes with Penile Prosthesis for Erectile Restoration (PROPPER)</td>
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<td>American Medical Systems (Endo Pharmaceuticals)</td>
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<td>Bella AJ</td>
<td>Effects of exercise, alone and in combination with intermittent caloric restriction, on the structural and functional cavernous nerve recovery after radical prostatectomy</td>
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<td>Canadian Male Sexual Health Council</td>
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<td>Guerra L</td>
<td>RCT on Pelvic Floor Biofeedback Retraining for Treatment of Dysfunctional Elimination Syndrome in Children</td>
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<td>AHSC Innovation Fund</td>
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<td>Keays M</td>
<td>Improving Outcomes in Children with Hypospadias: Focus on What Matters to Patients and Families</td>
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<td>Canadian Urological Association Scholarship Foundation</td>
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<td>Breau RH,</td>
<td>Tranexamic acid in cystectomy trial (TACT) pilot study</td>
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<td>Cagiannos I,</td>
<td>A randomized controlled trial of renal hypothermia during partial nephrectomy.</td>
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<td>Breau RH</td>
<td>Improving Quality of Prostate Cancer Surgery by Providing Feedback to Surgeons: A Pilot Study</td>
<td>Prostate Cancer Canada</td>
<td>$194,776</td>
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<td>Breau RH</td>
<td>Improving Quality of Prostate Cancer Surgery by Providing Feedback to Surgeons at TOH: A Pilot Study</td>
<td>The Ottawa Hospital Academic Medical Organization (TOHAMO)</td>
<td>$99,769</td>
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<td>Breau RH</td>
<td>Knowledge Translation for Renal Cell Carcinoma Care in Canada</td>
<td>Pfizer Canada Inc.</td>
<td>$150,850</td>
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<td>Breau RH</td>
<td>Stage Stratified Surgical Management of Clinically Localized Renal Tumours</td>
<td>Kidney Cancer Research Network of Canada</td>
<td>$15,000</td>
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**PUBLICATIONS IN 2013–2014**

**Publications**


   Benign penile skin anomalies in children: a primer for Pediatricians. 


   PubMed PMID: 24282454; PubMed Central PMCID: PMC3840506.


**In Press**


**Book Chapters**

1. Brant WO, Bella AJ, Lue TF. Peyronie’s Disease: Diagnosis and Medical Management. In: Up To Date, O’Leary MP (ed), UpToDate, Waltham, Ma March 2014 revision.

2. Leonard MP. Renal Duplication Anomalies. in Pediatric Urology for the Primary Care Physician. 2014, in press.
DIVISION OF VASCULAR SURGERY

FACULTY MEMBERS

Faculty
» Dr. Sudhir Nagpal
» Dr. Tim Brandys
» Dr. George Hajjar
» Dr. Andrew Hill
» Dr. Prasad Jetty
» Dr. Dalibor Kubelik

Fellows
» Dr. Mireille Methot
» Dr. Paul Cantle
HIGHLIGHTS OF 2013–2014

The Division of Vascular Surgery at the University of Ottawa provides comprehensive vascular care for the patients of eastern Ontario and parts of western Quebec. The Ottawa Hospital has the largest vascular service in the country that is housed in one institution. We continue to be the busiest after-hours vascular surgery centre in Ontario. Essentially, all patients in the Champlain LHIN are treated at The Ottawa Hospital for their vascular surgical needs.

The Division is delighted with the ability to recruit Dr. Dalibor Kubelik to our team. Dr. Kubelik brings impressive clinical and academic credentials to the Department of Surgery. His medical training includes stints in McGill, Western Ontario and the University of Ottawa. He obtained fellowships in General Surgery, Vascular Surgery, and Critical Care Medicine. He has completed a Master’s degree in Patient Safety which aligns specifically with the Hospital’s mission. He has been appointed Assistant Professor in the Departments of Critical Care and Surgery. His addition to the Division increases our compliment to six surgeons.

The Vascular Division was pleased to have a pioneer in Canadian vascular surgery as a visiting professor this past year. Dr. K Wayne Johnston, former president of the prestigious Society of Vascular Surgery, and former Chair, Division of Vascular Surgery at the University Toronto, spent 2 days with the staff and residents. He presented a well-received Grand Rounds, “Practice, Academic, and Career Insights from a Senior Surgeon”; he also chaired a Journal Club and provided a teaching session for our residents and fellows—an educational and enjoyable experience for our entire Division.

The Vascular residency and fellowships program continues to be one of the strengths of our Division. Dr. Tim Brandys has led the educational component of our Division with great skill and passion for the past 10 years, but his tenure as Program Director was completed in July of 2014. The results of his hard work and leadership are evident in the respect that our program receives across the country. We are regarded as a top program that provides a balanced approach to vascular care with exceptional experience in both open and endovascular surgery. His commitment to resident and student education is known throughout the Faculty as he has received 2 Surgical Teacher awards from the Department. He will continue the role of educator in his position as Surgical Lead at the
Skills and Simulation Centre. We are delighted that Dr. Dal Kubelik will assume the role of Program Director. The training paradigm for vascular surgery has shifted from a fellowship based program to one of a primary residency. This transition has been remarkably smooth because of our outstanding candidates and planning by the Education Committee.

**SURGICAL SERVICES & CLINICAL PROGRAMS**

On the clinical side, we have formed collaborative relationships with several divisions that have improved patient care as well as reduced costs. Partnership with the Division of Infectious Disease has led to a combined Rounds concept leading to earlier discharge and decreased antibiotic errors and delays. Linking with the Thrombosis Division steered us in ways to manage patients as outpatient much earlier with no adverse outcomes. In the upcoming year we will be partnering with internal medicine and cardiology to start a much needed vascular risk clinic for vascular surgical patients. Improving vascular risk factors has been proven to save lives. Our continuing collaboration with the Nephrology Division has led to a concept for vascular access clinics and dedicated operating time which is being emulated throughout the province and indeed around the country.

The Ottawa Hospital’s plan to build a hybrid Endo-suite for vascular surgery is in full swing. Construction has started and the plans finalized. We expect to be operating in this state of the art Endo-suite by the spring of 2015. Funding for this Endo-suite requires collaboration between The Ottawa Hospital, The Ottawa Hospital Foundation and the Vascular Division. There will be events in the upcoming year to bring awareness of vascular disease to the public and to raise funds to support this advanced technology.

**EDUCATION**

Continuing medical education remains a strong component of our Division. We maintain peer to peer courses that allow practicing surgeons to develop new skills, particularly in endovascular therapy. Our Division, with help from the Continuing Medical Education Office, hosted the conference “National Vascular Symposium: PVD” in May of 2014. This symposium consisted of leading international and national faculty members and had attendees from the United States and across Canada. We were delighted with the response from our attendees and are considering making this an annual event.
RESEARCH

The Division had another successful research year. Research Committee Chair, Dr. Jetty and others, have incubated several projects that are coming to fruition with our new residents.

Current research endeavours in our Division include but are not limited to: projects involving maximizing clinical response in claudicants, best treatment for ruptured abdominal aortic aneurysms, minimizing pelvic ischemia during endovascular aneurysm surgery, online vascular learning. The Division was well represented at the Canadian Society Vascular Surgical National Meeting in Edmonton with 2 podium presentations and publications in diverse journals.

AWARDS, RECOGNITIONS & GRANTS

In 2013 our Division received 2 major awards. Dr. George Hajjar received the Clinical Recognition Award which is bestowed by his colleagues for his exceptional patient care and professionalism. Dr. Andrew Hill received the Hospital Leadership Award for his successful term as the Chief of Vascular Surgery from 2000–2012.

RESEARCH GRANTS

<table>
<thead>
<tr>
<th>Investigator(s)</th>
<th>Title</th>
<th>Funding Type</th>
<th>Funding Source</th>
<th>Amount of Funding</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gandara E (PI), Nagpal S (Co-Investigator)</td>
<td>Development and implementation of the &quot;Ottawa Hospital Acute Limb Thrombosis and Embolism Outpatient Anticoagulation Program (OHALIP)&quot;</td>
<td>Peer-reviewed</td>
<td>TOHAMO</td>
<td>$79,000</td>
<td>04/2014</td>
<td>Ongoing</td>
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<tr>
<td>Jetty P (PI), Gandara E (PI)</td>
<td>Rivaroxaban for the Prevention of Restenosis after Infringuinal Percutaneous Transluminal Angioplasty for Critical Limb Ischemia: The RIFLE study</td>
<td>Peer-reviewed</td>
<td>Department of Surgery</td>
<td>$25,000</td>
<td>09/2013</td>
<td>Ongoing</td>
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<tr>
<td>Investigator(s)</td>
<td>Title</td>
<td>Funding Type</td>
<td>Funding Source</td>
<td>Amount of Funding</td>
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<td>End Date</td>
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</tr>
<tr>
<td>Kubelik D (PI)</td>
<td>Application of System Safety Process to Eliminate Patient Identification Errors due to Physical and Virtual Proximity</td>
<td>Peer-reviewed</td>
<td>Department of Medicine</td>
<td>$10,000</td>
<td>2013</td>
<td>Ongoing</td>
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<tr>
<td>Nagpal S (PI), Hill A, Hajjar G, Brandys T, Jetty P (Collaborators)</td>
<td>EUCLID-A randomised, double-blind, parallel group, multicentre phase IIIb study to compare ticagrelor with clopidogrel treatment on the risk of cardiovascular death, myocardial infarction and ischaemic stroke in patients with established Peripheral Artery Disease</td>
<td>Non Peer-reviewed</td>
<td>Industry</td>
<td>$45,000 (Approx)</td>
<td>07/2013</td>
<td>Ongoing</td>
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<tr>
<td>Hill A (PI), Hajjar G, Brandys T, Nagpal S, Jetty P (Collaborators)</td>
<td>Curcumin to prevent acute kidney injury from elective abdominal aortic aneurysm repair, Vanguard Phase I</td>
<td>Peer-reviewed</td>
<td>CIHR</td>
<td>$364,929</td>
<td>06/2012</td>
<td>Ongoing</td>
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<tr>
<td>Brandys T (PI)</td>
<td>The Use of Visualization in Surgical Simulation Training to Evaluate Performance of Vascular Anastomosis on a High-Fidelity In-Vivo Model</td>
<td>Peer-reviewed</td>
<td>Department of Surgery</td>
<td>$25,000</td>
<td>2012</td>
<td>Ongoing</td>
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<tr>
<td>Hill A (PI), Hajjar G, Brandys T, Nagpal S, Jetty P (Collaborators)</td>
<td>Genetic Sub-study Curcumin to Prevent Acute Kidney Injury from Elective Abdominal Aortic Aneurysm Repair</td>
<td>Peer-reviewed</td>
<td>CIHR</td>
<td>$300,000 (Approx)</td>
<td>06/2012</td>
<td>Ongoing</td>
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<tr>
<td>Nagpal S (PI), Hill A, Hajjar G, Brandys T, Jetty P (Collaborators)</td>
<td>VASCUTEK ANACONDA™ STENT GRAFT SYSTEM PHASE II IDE STUDY</td>
<td>Non Peer-reviewed</td>
<td>Industry</td>
<td>$110,000</td>
<td>06/2010</td>
<td>Ongoing</td>
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PUBLICATIONS IN 2013–2014

Publications


DEPARTMENT OF SURGERY
CHILDREN’S HOSPITAL OF EASTERN ONTARIO
The Division of Cardiovascular Surgery continues to operate on between 95–100 patients per year with a total surgical case volume of about 120–140 cases (See Appendix A for full report).

<table>
<thead>
<tr>
<th>Surgeon</th>
<th>Cardiac Service</th>
</tr>
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<tr>
<td>Hospital</td>
<td>Children’s Hospital of Eastern Ontario (CHEO)</td>
</tr>
<tr>
<td>Op Min Date</td>
<td>2013/07/01</td>
</tr>
<tr>
<td>Op Max Date</td>
<td>2014/06/30</td>
</tr>
<tr>
<td>Op Max Date</td>
<td>Title</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General Statistics</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique Patients</td>
<td>96</td>
</tr>
<tr>
<td>Index Operations</td>
<td>98</td>
</tr>
<tr>
<td>Index Deaths</td>
<td>5</td>
</tr>
<tr>
<td>Index Mortality</td>
<td>5.10 %</td>
</tr>
<tr>
<td>Total Operations</td>
<td>110</td>
</tr>
<tr>
<td>Total Deaths</td>
<td>5</td>
</tr>
<tr>
<td>Average post-op stay (days)</td>
<td>23.62</td>
</tr>
<tr>
<td>Re-ops this admission</td>
<td>12</td>
</tr>
<tr>
<td>Count number of patients</td>
<td>96</td>
</tr>
</tbody>
</table>
The Division supplements the CHEO surgical experience with surgical exposure at the Ottawa Heart Institute where Dr. Maharajh is the lead congenital cardiac surgeon. This entails another roughly 30 cases per year. Complex cases that are deemed to be too clinically complex for post-operative management at CHEO are carried out at the Hospital for Sick Children. This volume is roughly 5–10 cases per year. The Division is also involved with undertaking pediatric cardiac surgery in the Caribbean, particularly in Trinidad and Tobago, where Dr. Maharajh does an additional 20–30 cases per year.

A new International Outreach Program with The Ministry of Health—Trinidad and Tobago (MOHTT) to provide cardiac surgery for children of Trinidad and Tobago whom have been approved for cardiac surgical care out of country is under development. This should bring an additional 40 cases to CHEO.

Unique to our Division and in-line with the CVS review recommendation (March 2012) is the recent establishment of the Cardiovascular Surgical Program (CVSP). The Division of Cardiovascular Surgery has been extensively involved in the development and organization of the Cardiovascular Surgical Program (CVSP) to its current Governance Model and Operational Structure within The Division of Corporate Patients Services. The Division of Cardiovascular Surgery will return to within its original umbrella of Perioperative Services which is scheduled to occur July 1, 2014. The revised Governance Model and Operational structure of the CVSP is planned to be implemented within the next few months.

Tara Girolamo, CVS RN, has been assigned the additional role of Quality Care Coordinator for CV Surgery and Cardiology. This has vastly improved the ongoing patient management and Cardiac program M&M process and brings a patient centered perspective to the provision of cardiac services here at CHEO. Cardiac program M&M’s will be held on a monthly recurring basis.

A new initiative implemented is the Post-Ecmo Quality Improvement Team. The team members meet within 24–48 hours of a patient initiation of ecmo and again, 24–48 hours after decannulation. This meeting is QCIPA protected to allow for in-depth discussions and recommendations. A total of 7 patients were placed on ECMO from July 1, 2013 to June 30, 2014.

### General Statistics

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient re-ops vs. index op</td>
<td>8.16 %</td>
</tr>
<tr>
<td>Re-ops for post-op bleeding</td>
<td>0</td>
</tr>
<tr>
<td>Percent re-ops for bleeding</td>
<td>0.00 %</td>
</tr>
</tbody>
</table>
To assist and support the team in their work, the Division of Cardiovascular Surgery employs a pediatric cardiovascular surgical nurse, a dedicated CVS Social Worker, CHEO cardiac OR nurses and CHEO cardiac perfusionists.

The team's extensive surgical experience provides the solid foundation for growth of the Cardiovascular Surgical Program. Our Division members collaborate with a number of provincial, national and international cardiothoracic surgeons and institutions. The collaboration and sharing of resources through these networks significantly increase patient care, research and productivity of our group.

With a new One Team Philosophy approach to care, significant structures and processes have been established and embedded with activities in existing operations to ensure continued success.

**RESEARCH**

Due to the intense clinical involvement of the service and limitations of personnel, i.e., one surgeon for many years, the research productivity of the Division has been lacking. It was one of the intentions of bringing a second surgeon on-board so that things would be further streamlined and organized so that we would be able to undertake some clinical research. This impetus has been further assisted by the addition of Ms. Darlene Myers-Savard who should be able to provide us with significant organizational stabilities so that we are hoping, within the next 2–3 years, to undertake first authorship clinical research including studies on cell saved blood product as well as cardioplegia studies on myocardial viability. There are broader opportunities to undertake this research either within the institution or over the broader category of here and at the Cardiac Unit at the Hospital for Sick Children. In spite of this we have been able to be involved in other research interests involving cardiac surgical patients as delineated on the next page.
**Major Research and Clinical Interests:**

- Cardiac Surgery
- Cholecalciferol
- Metabolism
- HIV
- Cell Saved Blood
- Database and outcomes research

<table>
<thead>
<tr>
<th>Investigator(s)</th>
<th>Title</th>
<th>Funding Source</th>
<th>Amount of Funding</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maharajh, G (Co-Investigator)</td>
<td>Vitamin D – parathyroid axis abnormalities in children with congenital heart defects: Prevalence and association with post-operative hypocalcemia, cardiovascular dysfunction, and inflammation</td>
<td>Pilot Study—Department of Anesthesiology, CHEO</td>
<td>$11,000</td>
<td>2009</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Maharajh, G (Co-Investigator)</td>
<td>Prevention of post-operative vitamin D deficiency in children with congenital heart disease: a dose evaluation trial.</td>
<td>Heart and Stroke Foundation of Canada</td>
<td>$138,000</td>
<td>2009</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Maharajh, G (Primary Site Investigator)</td>
<td>IL-7 Receptor expression in developing thymocytes and the effect of HIV Infection.</td>
<td>Ottawa Hospital Research Institute (OHRI)</td>
<td>$161,000</td>
<td>2002</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Shanmugam, Ganesh</td>
<td>Pediatric Cardiac Surgery Morbidity Database. Maintained prospectively. The database comprehensively tracks surgical complications in our patient cohort and serves as an important tool for quality assurance. Surgical procedures are risk stratified using the RACHS and the ARISTOTLE scoring systems. Database research is ongoing. The CHEO Cardiovascular Surgery Database is designed to track and analyze not only mortality, but also major and minor non-fatal complications. This will provide a tool for a systematic evaluation of pediatric cardiac surgery outcomes. In addition, it will create a 1) baseline dataset for morbidity and 2) a benchmark to compare and improve upon our own morbidity outcomes.</td>
<td>Children's Hospital of Eastern Ontario (CHEO)</td>
<td>N/A</td>
<td>2012</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>
PUBLICATIONS IN 2013–2014

DIVISION OF DENTISTRY

ORGANIZATION

The Dental Service at the Children’s Hospital of Eastern Ontario is a full division within the Department of Surgery. The Chief of Dentistry reports to the Chief of Surgery, and is responsible for the Dental Division members of the professional staff. The Director of Dental Clinics reports to the Chief of Dentistry and supervises clinic operations.

The dental clinic falls under the Ambulatory Care umbrella and reports to the Operations Director. The clinic manager works with the Director and Chief to oversee day to day functions of the dental clinic and is responsible for administrative issues regarding the auxiliary dental staff. There is a liaison with the Operations Director of Perioperative Services on the surgical side.

Dental services are provided in the outpatient clinic which consists of a large reception/business area, waiting room, laboratory, sterilization room, 5 large fully equipped operatories, a quiet room /consultation room, 5 offices (two shared), staff/meeting room, change room and lockers. Dental services utilizing general anesthesia are provided in the operating room. Emergencies are managed in the clinic during regular hours. After hours dental emergencies can also be managed in the ER where a shared suite has been equipped for this purpose, allowing for nursing support and sedation if required. In many cases, after-hours emergencies are treated in the dental clinic.

The dental clinic and dental hygiene operate five days per week. The O.R. for Pediatric dentistry operates 5 days per week and the O.R. for Oral/Maxillofacial Surgery operates 1 day every second week. Orthodontic clinics are held 3 to 4 mornings per week for patients in the Cleft Lip/Palate Craniofacial Dental program and medically compromised patients best treated in the hospital setting. Specialty clinics for Oral and Maxillofacial Surgery, Endodontics, Prosthodontics and Periodontics are scheduled approximately once per month.
SERVICE

The Dental Division is a well recognized and regularly consulted service within the Hospital. Our service is integral in overall care for oncology/hematology, cardiac and complex medical patients as well as children and youth with craniofacial anomalies. All of the dental specialties are represented in the professional staff and, as such, we are able to provide comprehensive and interdisciplinary care.

The professional staff consists of:

» 5 active specialists in Pediatric Dentistry:
  » Dr. Carol Janik
  » Dr. Stephanie Lauziere
  » Dr. Joel Ublansky
  » Dr. Ngoc Luong
  » Dr. Mandana Nikoui

» 1 consulting Pediatric Dentist:
  » Dr. Ian McConnachie

» 2 active General Dentists:
  General Dentists on staff all have specific training in hospital dentistry.
  » Dr. Ernst Jacobsen
  » Dr. Steven Fremeth

» 1 consulting General Dentist:
  » Dr. Brian Eckert

» 2 active Oral & Maxillofacial surgeons with admitting privileges:
  » Dr. Kevin Butterfield
  » Dr. Sam Kucey

» 1 consulting Oral & Maxillofacial surgeon:
  » Dr. Richard Biewald

» 3 active Orthodontists:
  » Dr. Mark Luden
  » Dr. Jessica Tan
  » Dr. Sharleen Tan
1 consulting Prosthodontist:
   Dr. John Cox

1 consulting Endodontist:
   Dr. Lyon Hamburg

1 Periodontist:
   Dr. Eugenie MacKay

The professional staff new recruits with temporary privileges consists of:

1 General Dentist:
   Dr. Richard Anderson

1 Orthodontist:
   Dr. Carolyne Thain

1 Oral & Maxillofacial surgeon:
   Dr. Taylor McGuire

2 Endodontists:
   Dr. John Odai
   Dr. Mike Thompson

Full-time support staff consists of 3.4 dental assistants, 2.2 dental hygienists, 1.8 treatment co-ordinators, 2.0 patient service clerks, 0.4 finance clerk, 1.0 administrative assistant, 1 part-time registered nurse coordinator for cleft lip/palate.

The dental treatment coordinators work with case managers on the medical side to facilitate and track patient care. Our surgical administrative assistant schedules and books O.R. cases and work with the treatment co-ordinators to coordinate complex cases.

Canadian Pediatric Surgical Wait Times Project (CPSWT) data collection is ongoing for Wait Time 2. Our wait list remains relatively steady with an expected wait of eleven months for routine non-urgent cases. The Wait Time 1 triage tool for tracking time of referral to time of initial assessment has been used for the past two years. We continue to be challenged by the overwhelming volume of referrals to clinic and surgical wait-list management. Over the past several years, we have clearly defined our age and eligibility criteria in order to manage wait-times and align with the Hospital mandate of tertiary care.
The mandate of the Dental Division is to provide specialty services for those children whose needs are best met in a tertiary care health facility. General criteria for new patient referral is:

» Medically compromised/developmentally challenged 0–18 years of age;
» Emergency care 0–18 years of age;
» Cleft Lip/Palate Craniofacial patients 0–22 years of age;
» Extensive caries/management, and no medical co-morbidity 0–6 years of age

The dental treatment coordinators assist our patients from their first visit until end of treatment to ensure the family has a full understanding of the treatment needs, cost of treatment and insurance, and their responsibilities regarding appointments and finance.

Service statistics for dental O.R. include:


» Dental / Oral Surgery cases on wait list at 2014 Mar 31 = 551
  (Dental / Oral Surgery cases on wait list at 2013 Mar 31 = 630)

The dental clinic provides a full recall and hygiene program to serve patients with medical/behavioural challenges who would have difficulty accessing care in the community or who are patients in other CHEO clinics and best served in a comprehensive care environment.

The CHEO Dental Clinic is the regional centre for the Ontario Ministry of Health and Long Term Care Cleft Lip and Palate/Craniofacial Dental Program. All patients are assessed by the Chief of Dentistry for eligibility and registration. The dental treatment coordinators work with the treatment teams internally and externally to facilitate clinical care and to monitor case volumes and finances.

24-hour emergency on-call is provided by Division Members for Pediatric Dentistry on a weekly rotation and Oral Surgery on a monthly rotation.

**TEACHING**

Several Division Members are lecturers/tutors in the Oral Health component of the undergraduate medical curriculum, University of Ottawa Faculty of Medicine. This combined Oral Health/ENT unit was implemented in 2009 and taught in Year-2. It includes lectures in basic functional anatomy of the oral cavity and dentition, dental pathology with a focus on Early Childhood Caries (ECC), periodontal pathology, a self-learning module (SLM) on dental trauma and dental emergencies, a case-based learning module (CBL) on oral pathology/odontogenic infection, a Cleft Lip/Palate multidisciplinary session, and an Oral Health/ENT integrative lecture.
The Dental Clinic accommodates medical students and medical residents for rotations. We also provide opportunities for students in dental assisting and dental hygiene to gain clinical exposure.

Dentistry Division Members give lectures and presentations in the hospital and in the greater community, raising awareness of Pediatric oral health issues.

**BUDGET**

The majority of revenue for the Dental Division is generated through fee for service treatment in the clinic and operating room. We receive administrative and treatment dollars from the Ministry of Health allocated for CL/CP program. We are pleased to report that Dentistry has increased our staff to better meet our needs, and there have been no reductions in our budget.

Remuneration for Staff Dentists is by hourly rate for clinic, O.R. and on-call service. There is one O.R. day per week designated as private O.R. that is shared among the members for their private practice patients. The private O.R. allocation is managed by the Chief of Dentistry and reflects service to CHEO.

Many of the children we treat are on social services dental support. Remuneration for services provided through these plans is significantly less and impacts on our productivity. There is a percentage of pro bono treatment, but we are not currently tracking these statistics.

**HIGHLIGHTS OF 2013–2014**

A business plan was developed and supported by the Chief of Surgery and the Division members for one additional full-time Pediatric Dentist position to assist with provision of patient care as well as the teaching/research aspects of our mandate. With the support of Senior Administration, a new full-time Pediatric Dentist position (Director of Dental Clinics) was created this year. Since the only full time position at CHEO has been the Chief of Dentistry, a second full time Staff Pediatric Dentist to share in clinical and administrative duties will be a tremendous benefit to our service.

We have implemented a protocol for instrument reprocessing through central sterilization. A good relationship and workflow has been achieved.
PLANS FOR THE FUTURE

The Dental Division is preparing for Accreditation renewal in 2015 with the Commission on Dental Accreditation of Canada (CDAC). We continue to review and update Divisional Policies and Procedures and plan to have them available on-line for easy access by professional and support staff. We aim to complete the CHEO Dental Division Website to provide information to referring dentists, physicians and our families regarding our services as well as access to educational reference information.

The main focus for the Division for the next few years will be on maintaining the range of dental specialties, succession planning, and new staff recruitment.

With the additional support of our new Director of Dental Clinics, we plan to re-visit the establishment of a Pediatric Dental Residency (GPR) program affiliated with a Faculty of Dentistry. In addition to moving the Division forward in the areas of education and research, this would allow us to adjust our eligibility criteria and improve access to care for community patients.

Respectfully Submitted,

B. Carol Janik  B.Sc., D.D.S., MS, FRCD(C), Diplomate ABPD  
Chief, Division of Dentistry  
Children’s Hospital of Eastern Ontario
DIVISION OF PEDIATRIC SURGERY

FACULTY MEMBERS

Faculty

» Dr. Juan Bass
» Dr. Kyle Cowan
» Dr. Ahmed Nasr
» Dr. Marcos Bettolli

Fellows

» Dr. Kathryn Martin
» Dr. Taufiq Islam

VISITING PROFESSORS

Dr. Paul Wales, a Pediatric Surgeon from the Hospital for Sick Children in Toronto, Ontario, was invited as a guest professor at the CHEO Pediatric Surgical Symposium June 18th, 2014.

PLANS FOR THE FUTURE

Over the last few years the Division of Pediatric Surgery underwent a radical transformation. I was in an enviable position in that I was asked to be Acting Chair and then Chair and I had the opportunity to recruit two new members that fulfill my future vision of our Division, that being the increased academic productivity and achieving a good balance with clinical productivity.

Each of us is equally responsible for the clinical services and each of us contributes in a different way to the academic productivity of our Division.

In order to be able to achieve this balance we as a group decided to change the way we deliver care. We decided that the elective clinical responsibilities (outpatient clinics and elective operating room)
will be delivered by two surgeons at a time. Simultaneously, the third surgeon is on-call with no other responsibilities other than that of acute care thus maximizing availability to urgent/emergency O.R. time that is required in about 45% of our surgical cases, while the fourth surgeon has free time for academic endeavors. This has allowed us to have protected time for education, as well as clinical and basic research. I purposely distribute more academic time to Drs. Cowan and Nasr in order to enhance their research productivity.

With the support of Dr. Willis as Chief of the Department, we have:

- A part time research coordinator and a research assistant under the supervision of Dr. Nasr.
- A basic science-research associate (Dr. Langlois) and a graduate student under the supervision of Dr. Cowan.
- A Surgical Research fellow, in both basic science and epidemiology, who also provides clinical on-call coverage.

Our plans for the future are to continue facilitating the academic and research endeavors of all the members of the Division.

Respectfully Submitted,

B. Juan Bass  
MD, FRCSC,  
Chief, Division of Pediatric Surgery  
Children’s Hospital of Eastern Ontario

EDUCATION

CME Training

Dr. Bass, lecturer, 38th Pediatric Refresher course, October 25, 2013.  
Topic: Common Pediatric Surgical issues.

AWARDS, RECOGNITIONS & GRANTS

Dr. Marcos Bettolli received a promotion to Associate Professor, University of Ottawa—July 2014.
DIVISIONAL MEMBERS

Dr. Juan Bass

The main priority over the last few years was to create a very cohesive Division, to be able to increase the clinical and academic productivity within an environment of collegiality and cooperation. Dr. Bass believes this has been accomplished.

Dr. Bass contributes in clinical research projects with his colleagues and tries to facilitate their academic endeavors.

Dr. Bass has been asked to be external peer reviewer for the *Journal of Pediatric Surgery* on several occasions. He is the CAPSNet local site research coordinator as well as the CHEO Surgical Representative, Children’s Oncology Group (COG).

Over the last few years, Dr. Bass has been closely involved with the changes and transformation of the operating room dynamics at CHEO, originating from a Lean initiative.

Dr. Bass has been involved as an internal program accreditation reviewer with the University of Ottawa. He has performed internal reviews for Neonatology, Pediatric Nephrology and Plastic Surgery. He was also in charge of the Royal College Accreditation review of the new Pediatric Surgery training program at McMaster University, in Hamilton, Ontario.

Since 2012, and for a period up to six years, Dr. Bass was selected as Chair of the Royal College Specialty Committee in Pediatric Surgery. The current task and challenge is the development of the Pediatric pilot project of Surgery Milestones and CanMeds 2015 Competence by Design. As chair, Dr. Bass is responsible for coordinating the activities of the Specialty Committee, which have Regional representatives as well as Program Directors.

Over the last year, as Chair of the Specialty Committee in Pediatric Surgery, Dr. Bass was a member of the ad-hoc Task force for “The Future of General Surgery: Evolving to meet a changing practice”.

Dr. Kyle Cowan

Dr. Cowan completed his medical studies at the University of Toronto followed by residency in General Surgery at the University of Western Ontario and his Pediatric Surgical training with us here at CHEO. He joined our Division in July 2011.

Dr. Cowan is also the director and principle investigator for the Division’s translational vascular and tumour biology basic science research program, housed within the Apoptosis Research Centre in the CHEO Research Institute, for which he has received both national and international recognition.

Dr. Cowan completed a PhD in cardiovascular research under the supervision of Dr. Marlene Rabinovitch at the Hospital for Sick Children, Department of Laboratory Medicine.
and Pathobiology, University of Toronto where he studied the pathophysiology of primary arterial hypertension and approaches to its reversal. Dr. Cowan continued his basic science training with the completion of a post-doctoral fellowship in the area of cell communication and tumour biology in the laboratory of Dr. Dale W. Laird at the University of Western Ontario, Department of Anatomy and Cell Biology. As a scientist of the CHEO Research Institute with cross-appointment to the Department of Cellular and Molecular Medicine at the University of Ottawa and Faculty of Graduate and Post-graduate Studies affiliation, Dr. Cowan’s translational vascular and tumour biology research program is readily expanding to include undergraduate, graduate (MSc and PhD) and post-graduate students as well as trainees in the surgeon scientist tract. Thus far, since the laboratory opened, Dr. Cowan has supervised eight undergraduate research students, three graduate students and two surgical research fellows.

Currently the laboratory has two main focuses:

» Role of pannexins and cell communication in the regulation of skeletal muscle differentiation and tumourigenesis associated with rhabdomyosarcoma

» Role of elastases, matrix metalloproteinases, and extracellular matrix in the regulation of pulmonary vascular disease associated with congenital diaphragmatic hernia.

Dr. Cowan is also actively involved in education, being the Program Director for our Pediatric Surgery Fellowship Training program. He is the Academic Planning Committee Chair, member of the Postgraduate Medical Education Committee as well as the Postgraduate Surgical Education Committee at the University of Ottawa. In this capacity, Dr. Cowan is also a member of the American Pediatric Surgical Association Training Program Director Committee as well as both the Canadian Association of Pediatric Surgeons Training Program Director Committee and the Royal College Specialty Committee on Pediatric Surgery. Through this last involvement, Dr. Cowan is actively participating in curriculum development and examination with the creation and institution of the Pediatric Surgery Milestones and CanMeds 2015 Competence by Design pilot project.

The Pediatric Surgery Fellowship Trainees during Dr. Cowan’s Tenure as Program Director thus far include:

» 2013–2015: Kathryn Martin

» 2011–2013: Ramanath Haricharan (working in West Virginia, USA)

Aside from these commitments, Dr. Cowan also extensively participates in the education of medical learners at all levels both on our clinical service as well as formally in many venues. These venues include annual GI block lectures to medical students, annual Principles Of Surgery lectures to surgery residents, academic half day lectures to general surgery residents and pediatric emergency medicine fellows, as well as extensive teaching of residents and faculty through Advanced Trauma Life Support (ATLS) instruction, being the only American College of Surgery ATLS certified instructor at CHEO. Dr. Cowan is also the CHEO Simulation Centre Lead for the Department of Surgery at CHEO.
Dr. Cowan is also an examiner for the Medical Council of Canada, University of Ottawa undergraduate medical education, a thesis committee member from graduate students in the Faculty of Graduate and Postgraduate Studies, as well as an examination chair for the Department of Cellular and Molecular Medicine and invited external examiner for graduate theses defenses. Dr. Cowan is a residency program reviewer for the University of Ottawa Postgraduate Medical Education Office and is also an invited manuscript reviewer for journals such as the Journal of Pediatric Surgery, Diseases of the Esophagus, Expert Opinion in Therapeutic Targets, PLoS One, etc.

**Dr. Ahmed Nasr**

Dr. Nasr did his medical studies, general surgery training and a PhD in Egypt. Upon arrival to Canada he redid his training in General Surgery in Toronto, where he also finished Pediatric Surgical fellowship as well as a NICU fellowship. During this time he also obtained a master’s in clinical Epidemiology. Dr. Nasr joined our Division in September 2011. He has a cross-appointment with the Department of Clinical epidemiology at the University of Ottawa.

Dr. Nasr has been very productive in clinical research with national recognition with the Canadian Association of Pediatric Surgeons (CAPS). He is currently the vice-chair of the CAPS research committee and a member of the CAPS education committee. He has developed an Evidence-Based resource for Pediatric Surgeons based on the CAPS website and has been invited by the Cochrane Colloquium to present this project. Dr. Nasr established a partnership with the Ontario Ministry of Health towards promoting evidence-based practices.

He is the Pediatric Surgery representative for the Canadian Medical Association, working toward improving quality of care across the country. He is also heavily involved with the Choosing Wisely Canada campaign launched by the Ministry of Health. Dr Nasr recently became a member (as the pediatric surgery representative) of the Ontario Congenital Anomalies Committee, looking at prevalence and management of congenital anomalies in the province. Dr Nasr is also a member of the Ontario Trauma Advisory Committee. He is one of the organizers of the Regional Annual Trauma Conference for Eastern Ontario.

Dr. Nasr is currently supervising two students towards their Master’s degree in Population Health at the University of Ottawa.

Dr. Nasr has developed a pediatric laparoscopic simulator and was invited to the American Pediatric Surgical Association to contribute, organize and teach a laparoscopic course during their annual meeting.

As of 2013, Dr. Nasr has been appointed as the CHEO trauma Program Director. He is also responsible for the coordination of the Academic half day for General Surgery residents at the University of Ottawa.
Dr. Marcos Bettolli

Dr. Bettolli did his pediatric surgical training in Argentina. He first came to CHEO years ago, initially as an observer then as a research fellow and joined us as staff in 2006. During his research time, he made impressive research in the area of Hirschsprung’s Disease (HD), developing two advanced immunostaining histopathology procedures for post-operative and intraoperative assessment of HD Disease pathology that includes a FAST protocol for neuronal assessment in HD.

Dr. Bettolli has an academic license and has submitted his application for promotion to Associate Professor.

He has been innovative in different areas. He has popularized the Vandenbos procedure for ingrown toenails. In the last 4 years Dr. Bettolli has taken the lead in our Division, in the treatment of Chest Wall Deformities (Pectus Carinatum and Excavatum). He initiated and coordinated the Chest Wall Deformity Clinic at CHEO in July 2012, offering 8 clinics per year. He started Bracing Therapy (non-operative treatment) for Pectus Carinatum that was not available in the Ottawa region. He was an early advocate of this technique, pioneering its use at CHEO. Similarly, Vacuum Bell Therapy (non-operative treatment) for Pectus Excavatum is widely available in Europe but not in North America. Dr. Bettolli obtained permission (December 2012) from Health Canada to bring this treatment to Canada for the first time. Both the Brace and the Vacuum Bell therapy are now available at CHEO.

As a teacher, he is a good role model for the trainees. He has taken a leadership role in MIS teaching and training staff colleagues and postgraduates trainees. He has trained and supervised seven physicians and five fellows and over 80 postgraduates in MIS at CHEO. He routinely participates in the MIS simulation sessions at the LOEB centre. Dr. Bettolli is also responsible for most of the undergraduate pediatric surgical formal lectures at the University.

FELLOWS FOR 2013–2014

Dr. Kathryn Martin: Chief resident (PGY7 as of July 1 2014) began her training in Pediatric Surgery July 2013. Dr. Martin comes to the program from the General Surgery program at Western University, London, Ontario. Our accredited program is a two-year fellowship in Pediatric Surgery.

Dr. Taufiq Islam: Research / Clinical July 1, 2013 to June 30, 2014. Dr. Islam worked with Dr. Cowan in his research lab and did some clinical work as well.
DIVISION OF NEUROSURGERY

DIVISIONAL MEMBERS & SPECIALTIES

Dr. David McAuley MB, BCh, BAO, FRCSI, FRCS (Neuro.Surg), FRCSC (Division Chief), New appointment, November 2013, is a graduate of Queen’s University Belfast with Neurosurgical training at the Royal Victoria Hospital, Belfast and the National Centre of Neurology/Neurosurgery, Dublin, Ireland. He completed a Pediatric Neurosurgical Fellowship through the University of British Columbia at BC Children’s Hospital and has been a Consultant Neurosurgeon in Oxford and Belfast before appointment to CHEO in 2013. He was appointed Assistant Professor of Surgery at the University of Ottawa also in 2013. Subspecialty interests are the management of spina bifida and hydrocephalus, neuroendoscopy, neurooncology and craniofacial neurosurgery.

Dr. Michael Vassilyadi MD, CM, MSc, FRCS(C), FAANS, FACS, FAAP, is a graduate of McGill University, Montreal where he completed Neurosurgical Residency and Pediatric Neurosurgery Fellowship training. He was appointed as Associate Professor of Surgery and Pediatrics, University of Ottawa in 2003 and has special interest in head and spine injury prevention and management of concussion. His work in this field extends well beyond the hospital with collaborative work in schools and the community with education in injury prevention. He is the Director of the Ottawa Chapter of the Think First National Injury Prevention Foundation. He is on the Editorial Board for the journal, Pediatric Neurosurgery.

Dr. Munyao Nzau MD, FRCSC, is a graduate of St. Petersburg State Medical Institute with subsequent residency at the University of Helsinki, Finland and Pediatric Neurosurgery Fellowship through the University of Ottawa at CHEO. He was appointed Assistant Professor of Surgery as Clinician-Investigator, University of Ottawa in 2006 and has a clinical interest in epilepsy and neurooncology. Research topics are the Pathophysiology of cerebral microvascular disease, Neurovascular unit remodelling and protection and the Mechanisms of neuroregeneration/remodelling after stroke and brain injury. He is a Principal Investigator at the OHRI.
Fellowships and Fellows for 2013–2014

» The Division has been able to support a CHEO / uOttawa Fellowship in Pediatric Neurosurgery with our current fellow, Dr. Sarmad Al-Karawi from Riyadh, Saudi Arabia, completing in June 2014.

SURGICAL SERVICES & CLINICAL PROGRAMS

» Endoscope-assisted Synostosis Surgery

APPOINTMENTS & PROMOTIONS

» Dr. D McAuley appointed Assistant Professor of Surgery at the University of Ottawa

PLANS FOR THE FUTURE

» CHEO Concussion Clinic to commence Fall 2014 alongside Dr. K Goulet, Department of Pediatric Medicine
» Development of combined Craniofacial Service alongside Dr. D Peters, Division of Plastic Surgery
» Integration of Epic EHR to Ambulatory Care Setting (CHEO program)

AWARDS, RECOGNITIONS & GRANTS

» The Division’s Nurse Practitioner, Gail Macartney awarded PhD in nursing with a thesis entitled “Symptom experience and quality of life in children who have survived a brain tumor”.
» Dr. Vassilyadi and his wife Tassy Lyras were presented with the Ontario Trial Lawyers Association Safety Leadership Award in Toronto on May 29, 2014
RESEARCH

Ongoing research

» Dr. Nzau’s Laboratory Research into Blood-Brain-Barrier Function
   Review of Early Childhood Skull Fractures
   Institutional Review of Pituitary Abnormalities in Children

Prospective projects

» Comparison of MR spectroscopy and lipid mass spectrometry for prediction of tumor grade in Pediatric brain tumors. Collaborative Project with Dr. Abdeen N (PI), Radiology CHEO

RESEARCH GRANTS

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<th>Investigator(s)</th>
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<th>Funding Type</th>
<th>Funding Source</th>
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<tr>
<td>Nzau M</td>
<td>Research Technical Support Grant for Rodent BBB Study</td>
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<td>$1,114,530</td>
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<td>Predicting persistent postconcussive problems in Pediatrics (SP)</td>
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<td>Vassilyadi M (Co-investigator)</td>
<td>Guidelines for the management of pediatric concussion/</td>
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<td>$88,398</td>
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<td>MTBI and persistent symptoms</td>
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<td>Division of Neurosurgery</td>
<td>Risk of brain cancer from exposure to radiofrequency fields from</td>
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<td>2010</td>
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<td>wireless telecommunication devices in childhood and adolescence</td>
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PUBLICATIONS IN 2013–2014

Publications


2. Vassilyadi M. Commentary on "Patterns of care for craniopharyngioma: survey of members of the American Association of Neurological Surgeons". Pediatr Neurosurg. 2014. Published online prior to press: DOI: 10.1159/000358129


5. Wall SA, Thomas GP, Johnson D, Byren JC, Jayamohan J, Magdum S, McAuley D, Richards PG. The pre operative incidence of raised intracranial pressure in non syndromic sagittal craniosynostosis is markedly underestimated in the literature. (Submitted: J. Neurosurgery, Pediatrics)


**In Press**


**Book Chapters**


DIVISION OF PLASTIC SURGERY

HIGHLIGHTS OF 2013–2014

Plastic Surgery Division members include 2 full-time and 2 part-time: Drs. Duncan and Ying, and Drs. Jarmuske and Peters, respectively. Dr. Peters’ practice at CHEO is primarily craniofacial.

We are pleased to have recruited Dr. Claudia Malic to join the Division as a full-time surgeon as of July 1, 2014. She will by then have completed a Pediatric Plastic Surgery Fellowship in Vancouver followed by a Burn Fellowship at the Ross Tilley Burn Centre in Toronto.

We are fortunate to work closely with dedicated nursing and administrative colleagues, as well as occupational and physiotherapists, without whom our Division would not be able to provide the same quality of care nor be able to attract and retain the same quality of physicians.

Drs. Duncan and Ying share a passion for overseas volunteer work in developing countries.

Dr. Duncan participated in a mission to Tanzania in October 2013, under the auspices of CACHA (Canada Africa Community Health Alliance).

Dr. Ying participated in cleft missions to India in September 2013 and to Uganda/Burundi in January 2014. A PGY 4 Plastic Surgery Resident, Justyn Lutfy, accompanied Yvonne on part of the January mission, continuing a tradition that began with the inception of the Plastic Surgery residency program 3 years ago.

Dr. Ying’s Uganda mission is an annual event, under the auspices of Smile Train, where she works consistently with the same Ugandan colleague, Sister Najuka. Sister Najuka was the recipient of the Canadian Society of Plastic Surgeon’s Travelling Fellowship in May–June 2014, and was our guest here during part of that time.

Dr. Peters welcomed the arrival of our new neurosurgeon, Dr. David McAuley, as he continues to work at building a Craniofacial program at CHEO to complement our Cleft program, recently accredited by the ACPA (American Cleft Palate Association).
He is also an Associate Editor of the Canadian journal Plastic Surgery, a member of the Surgical Foundations Committee of the RCPS(C), and sits on the RCPS(C) Speciality Committee on Plastic Surgery. He is co-director of the National In-Training Course for final year plastic surgery residents.

Dr. Ying attended the International Vascular Anomalies Meeting in Melbourne, Australia in the spring. She has organized a new multi-disciplinary Vascular Anomalies Clinic which now runs monthly in the Plastic Surgery Clinic. It is attended by ENT, Dermatology, Interventional Radiology and General Surgery as well as Plastic Surgery.

Dr. Ying continues as Director of RATS (Residents as Teachers) and as Program Director for Surgical Foundations. In this latter capacity she has been awarded the AMS Phoenix Fellowship for 2014–2015.

Dr. Peters has taken over from Dr. Duncan as Program Director of the Plastic Surgery residency program, which graduated its first resident in the spring of 2014. We congratulate Dr. Ashley Ignatiuk on his achievement and wish him well in his Hand and Wrist Fellowship in Dallas. We now have a full complement of residents, which means that there will regularly be senior plastic surgery residents rotating through CHEO. We will also continue to participate actively in the training program for the Pediatric Emergency Fellows.

Dr. Duncan’s retirement plans are delayed by a year and she is continuing as Division Chief. She was honored to receive the Order of the Scalpel Award from the Department of Surgery at CHEO in June 2014.
DIVISION OF PEDIATRIC UROLOGY

FACULTY & STAFF

Pediatric Urologists Staff
» Dr. Luis Guerra
   (Division Chief)
» Dr. Michael Leonard
» Dr. Melise Keays
   (New recruitment starting July 2014)

Fellows
» Dr. Ramanath Haricharan
» Dr. Yasser Jamalalail

Staff
» Jennifer Vincent (research coordinator)
» Claude Dubois (urodynamics nurse)
» Julie Lemieux (clinic nurse)
» Lina Montigny (admin secretary)
» Sacha Bertrand (booking clerk services)
Clinical Areas of Expertise

» Uro-neurology unit
» Reflux nephropathy clinic (in conjunction with Nephrology)
» Minimally-invasive surgery program in Pediatric urology (Laparoscopy and Endo-urology)
» Stone surgical program (MIS stone program will be implemented with Dr Keays’ recruitment)
» Clinical epidemiology and clinical trials
» Hypospadias

Services Provided by the Division of Pediatric Urology

» Pediatric Urology
» Urodynamics lab
» Intermittent catheterization teaching for children, parents, community/school
» Biofeedback retraining of the pelvic floor muscles
» Neuromodulation for children with dysfunction elimination syndrome
» Non-invasive observational assessment of bladder function in non-toilet trained infants
» Urological care for patients with spina bifida

HIGHLIGHTS OF 2013–2014

The medical staff of the Division of Urology is currently comprised of two urologists. Dr. Guerra is Associate Professor and Chief of the Division and Dr. Michael Leonard is Full Professor, both are affiliated with the Department of Surgery, Division of Urology, University of Ottawa. Dr. Melise Keays has been recruited and will start full time job in July 2014. She has a completed her Urology residency at the University of Toronto and is currently finishing her Pediatric Urology Fellowship in Dallas, Texas.

We have been actively engaged in practice with a significant clinical research component. The Divisions of Urology and Nephrology initiated a specialized clinic for children with reflux nephropathy in 2012. This collaboration aims to deliver better patient care and to expand the opportunities for research in this field.

The minimally invasive component of urological surgical practice (laparoscopy) has flourished in our Division in the last 5 years.

We have a well-equipped Neuro-urology unit with capability to provide diagnosis (urodynamics, uroflowmetry, video-urodynamics and rectal manometry) and treatment (biofeedback and neuromodulation) for children with neurogenic bladder and dysfunctional voiding.
Two clinical fellows and a rotating urology resident assist the urologists in the delivery of patient care. Our Division has two medical students rotating (3rd and 4th year) every two weeks and on a regular basis. Currently, the urologists run 4 clinic days and operate 2 days per week, but with the addition of Dr. Keays in July 2014, this will increase to 6 clinics and 3 O.R.’s per week. Our clinical support staff provides us with excellent help in accomplishing the delivery of our clinical mission. We have a designated urology nurse in the operating room who works behind the scenes to ensure the urology surgical service runs smoothly. We continue to work to upgrade our equipment in the operating room. We have recently bought equipment for provision of Pediatric stone care such as rigid and flexible ureteroscopes, and with Dr. Keays’ recruitment, we are waiting on the purchase of a holmium-YAG laser in order to efficiently deliver care for this growing number of Pediatric patients with stones. With the new CHEO policy of having available at least two sets of each surgical equipment, we doubled the number of endoscopic sets such as rigid and flexible cystoscopes, urethroscopes, resectoscopes and ureteroscopes.

SURGICAL SERVICES & CLINICAL PROGRAMS

Initiation of a New Clinical Program on Neuromodulation

This new modality of treatment is now available at the CHEO Pediatric Urology clinic and it is used for the management of children with persistent overactive bladder and urinary incontinence. The Urodynamics Unit has a stationary machine for and 6 portable devices which give the capacity of performing outpatient and in-home treatments.

Scientific Committee and Editorial Boards

1. Dr. Guerra: Member of the Editorial Board for the “Frontiers in Pediatric Urology”.
2. Dr. Guerra: Member of the Scientific Committee for the Canadian Urological Association Scholarship Foundation.
3. Dr. Guerra: Member of the Scientific Committee for the CHEO Research Institute.
5. Dr. Leonard: Journal Editorial Board or Associate Editor for the Urology Times.
6. Dr. Leonard: Vice-President, Executive Committee, Canadian Urological Association, 2013
International Mission Participation

Dr Michael Leonard participated in the last 5 years in a yearly surgical mission in Moca, Espillat, Dominican Republic: “Hypospadias surgery in underprivileged children under auspices of Physicians for Peace”. This mission also included teaching of local medical students, residents and practitioners in the operating theatre regarding the surgical techniques used.

TEACHING ACTIVITIES

Undergraduate Teaching

The Division is assigned interactive teaching sessions with 3rd year medical students at the University of Ottawa, which occurs six times annually and each session is two hours in duration. We also teach the 4th year students in preparation for the LMCC exam.

Post-graduate Teaching

The Division provides ongoing instruction to residents from the University of Ottawa and Queen’s University Urology programs. This takes the format of teaching in clinics, on the wards and in the operating rooms. In addition, Pediatric residents from the University of Ottawa attend our clinics for instruction in common Pediatric urology problems. Furthermore, a didactic teaching component within the University of Ottawa Urology program comprises:

» Pediatric Urology Journal Club monthly September–June
» Pediatric Urology Research Rounds prn—to become monthly in September
» Pediatric Urology Presentation at OGH monthly September–June
» Radiology, Urology, Nephrology Rounds twice-monthly September–June
» The Division also participates in the Urology Divisional Journal Club (monthly Sept-June) and is involved with six two-hour urology resident seminars annually and “Hot Seat Rounds” for review of clinical cases.
Fellows in Pediatric Urology (Last 5 Years)

1. Dr. Claudio deCarli 2008–2009
2. Dr. Ihsan Yousif Al-Sudani 2009–2010
3. Dr. Antonio Baltazar 2010–2011
4. Dr. Yasser Jamalalail 2011–2013
5. Dr. Ramanath Haricharan 2013–present

Invited Professor and Guest Speakers (Last 5 Years)

1. Dr. Melise Keays University of Texas October 2013
2. Dr. Konrad Szymanski Indiana University November 2013
3. Dr. Joao Luis Pippi Salle University of Toronto May 2012
4. Dr. Bryce Weber Fellow, Hospital for Sick Kids March 31, 2010
5. Dr. David Quinlan Ireland April 8, 2009
6. Dr. John Gearhart June 17, 2009

PLANS FOR THE FUTURE

The Division will continue to be productive in the field of clinical research. With the addition of Dr. Keays to our team, we have an added skill in clinical study / trial design and outcome qualitative analysis in Pediatric Urology. We will increase our research productivity to allow our Division to advance further in the realm of academic productivity and maintain our role as national opinion leaders in the field of Pediatric Urology. The recruitment of a third urologist will allow us to reach our potential.

AWARDS, RECOGNITIONS & GRANTS

1. Drs. Michael Leonard and Luis Guerra (with Harvey D and Yousif I) were awarded “5-Star Poster Presentation” for their presentation entitled “Primary care physicians and their use of ultrasound for the palpable undescended testis—a wasteful practice?” at the Canadian Urological Association Meeting, in June 2011.


3. Dr. Luis Guerra was received the “Teaching Award Certificate of Honor” from Urology Residents of the University of Ottawa in May 2011.
RESEARCH

Current Non-funded Research Projects

1. Multicystic Dysplastic Kidney in Children: Is long-term follow-up necessary?
2. Watchful Waiting For Antenatally Detected Ureteroceles
3. The effect of an educational intervention on parental anxiety following a diagnosis of antenatal hydronephrosis: a before-after pilot study
4. Are we overfilling bladders during cytograms in children?
5. Long term outcomes for hypospadias repair – Prospective metacentric database
6. Wilms’ tumor, is ipsilateral adrenalectomy necessary?
7. Urachal remnant in children: Systematic review and meta-analysis
8. Ultrasound in non-palpable undescended testis
9. Are we underestimating bladder capacity in children less than one year of age?

RESEARCH GRANTS

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<thead>
<tr>
<th>Investigator(s)</th>
<th>Title</th>
<th>Funding Type</th>
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<tr>
<td>Guerra L (PI), Leonard M (Co-PI), Barrowman N (Co-investigator)</td>
<td>RCT on Pelvic Floor Biofeedback Retraining for Treatment of Dysfunctional Elimination Syndrome in Children</td>
<td>Peer-reviewed</td>
<td>AHSC Innovation Fund—Ministry of Health and Long Term Care (MOHLTC)</td>
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<td>Guerra L (Collaborator), Nasr A (PI), Guerra L, Leonard M, Bass J, Keays M, de Nanassy J, El Demellawy D (Co-investigators)</td>
<td>The Pediatric Surgery and Pathology Knowledge Synergy Group (PSP-KSG) Research Unit</td>
<td>Peer-reviewed</td>
<td>CHEO RI/CRU—Clinical Research Capacity Building Award Results</td>
<td>$120,000</td>
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<td>Luis Guerra: Collaborator</td>
<td>The addition of clonidine to 0.2% ropivacaine for wound instillation after minor lower abdominal surgery in children</td>
<td>Peer-reviewed</td>
<td>University of Ottawa Department of Anesthesia Chairman's Fund</td>
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### PUBLICATIONS IN 2013–2014

**Publications**


**In Press**


**Book Chapters**
