



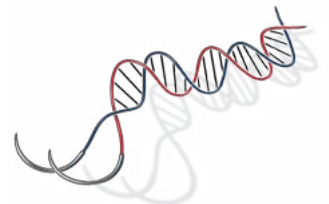
Surgery  
UNIVERSITY OF TORONTO



# FIVE YEAR REVIEW

2009-2014

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# SURGERY BY THE NUMBERS 2009-2014



**275**  
FULL-TIME  
FACULTY



**250**  
RESIDENTS



**200**  
CLINICAL  
FELLOWS

## FUNDING AT A GLANCE

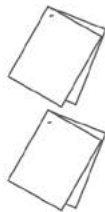


**43M** ANNUAL RESEARCH FUNDING

**150M** ENDOWED CHAIR FUNDING

**22M** IN TRUST FUNDS

**3M** ANNUAL ADVANCEMENT FUNDING



**7000** TOTAL PUBLICATIONS

**1.54** CITATION IMPACT



**120** CONTINUING PROFESSIONAL DEVELOPMENT EVENTS



**10** CANADA RESEARCH CHAIRS

**63** ENDOWED UNIVERSITY HOSPITAL CHAIRS



*This report is respectfully submitted by:*

**Dr. James T. Rutka**

RS McLaughlin Professor and Chair of Surgery

[www.surgery.utoronto.ca](http://www.surgery.utoronto.ca)



**VISION STATEMENT:**

International leadership in health research, education and patient care.

**MISSION STATEMENT:**

Through the discovery, application and communication of knowledge, we prepare future surgeon leaders, contribute to our communities and improve the health of individuals and populations locally and globally.

**CORE VALUES:**

- Innovation, critical inquiry and self-evaluation
- Respect for diversity in culture and perspectives
- Integration, partnership and collaboration
- A supportive and collegial environment
- Accountability to our community of scholars and to the public
- Social responsibility as an academic responsibility



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# MAIN ABBREVIATIONS USED:

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**AAP:** Annual assessment of productivity

**AEF:** Academic enrichment fund

**AFP:** Alternated funding plan

**BPIGS:** Best practices in general surgery

**CACMS:** Committee on accreditation of Canadian medical schools

**CAR:** Continuing appointment review

**CaRMS:** Canadian resident matching service

**CBC:** Competency based curriculum

**CGQ:** Canadian graduate questionnaire

**CPD:** Continuing professional development

**CRC:** Canada research chair

**FEAC:** Fellowship education advisory committee

**IDEAS:** Improving and driving excellence across sectors

**LCME:** Liason committee on medical education

**LHIN:** Local health integration network

**LInC:** Longitudinal integrated curriculum

**MAM:** Medical academy of Mississauga

**MOHLTC:** Ministry of health and longterm care

**MOU:** Memorandum of understanding

**NBME:** National board of medical examiners

**NEAL:** New and emerging leaders

**PCC:** Patient centred care

**PGME:** Postgraduate medical education

**Q/BP:** Quality and best practices

**RCPSC:** Royal college of physicians and surgeons

**SEAD:** Surgery exploration and discovery

**SIC:** Surgeon-in-Chief

**SLUE:** Surgical leader of undergraduate education

**SSTP:** Surgeon scientist training program

**TES:** Teaching effectiveness score

# 1. EXECUTIVE SUMMARY:

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The Department of Surgery is steeped in a rich tradition of surgical innovations which have had enormous impact on the health of mankind. Contemporary innovations in surgical education including the development of the *Surgeon Scientist Training Program (SSTP)*, the *Surgical Skills Centre (SSC)*, and a *Competency Based Curriculum (CBC)* have further solidified the Department's global reputation.

The Department is the largest across Canada with 275 full-time faculty members, 250 residents, 200 clinical fellows, and 40 scientists. There are 7 direct entry Royal College of Physicians and Surgeons training programs (Cardiac Surgery, General Surgery, Neurosurgery, Orthopaedics, Plastic and Reconstructive Surgery, Urology, Vascular Surgery) and 4 sub-specialty programs (Pediatric General Surgery, Colorectal Surgery, Surgical Oncology, and Thoracic Surgery). Interestingly, the Division of Anatomy is housed within the Department of Surgery in a relationship that has been mutually productive and beneficial for over a Members of the faculty are distributed at 6 major teaching hospitals: St Michael's Hospital, Mount Sinai Hospital, Sunnybrook Health Sciences Centre, Women's College Hospital, University Health Network, and the Hospital for Sick Children. Part time and adjunct faculty members are found in an ever expanding array of community-affiliated hospitals in and around the Greater Toronto Area (GTA). Residents, fellows and medical students on surgical rotations receive excellent surgical instruction in particular at North York General Hospital, Toronto East General Hospital, St Joseph's Hospital, and Trillium Health Partners.

The Department is a research-intensive, and academically productive unit in which the faculty generate approximately \$35-45 Million per annum in research funding, publish more

than 1,000 peer-reviewed publications per year, and receive numerous prestigious national and international awards.

Funding for the Department is derived from multiple sources including: Base funds from the University and the Ministry of Health and Longterm Care (MOHLTC); revenue from Continuing Professional Development (CPD) courses; advancement funds; and endowment funds. Advancement efforts within the Department of Surgery, the University Divisions and the Hospitals have led to the creation of a myriad of endowed chairs held by surgeons totaling over \$150 Million per year of funds that are used to support the academic mission. The Department also lays claim to 10 Canada Research Chair holders.

The Department has developed an ambitious Strategic Plan entitled: "Transforming Surgery: Beyond the Cutting Edge". Within this plan, there are 5 well-defined planks of activity including: 1) Education; 2) Research; 3) Best practices/Quality; 4) Faculty Development; and 5) Integration/Global impact. Progress that has been made along each plank is described in detail within the body of this 5 year report. The plan and its component parts align well with the Faculty of Medicine's Strategic Plan – Integration, Innovation, Impact.

From 2009-14, the Department has recruited 63 new faculty members, appointed 5 new University Division Chairs, and supported the appointments of 7 new program directors, and 4 new Surgeons-in-Chief at the various hospitals. There were 62 faculty who successfully completed their Continuing Appointment Reviews (CARs). And finally, the Department celebrated in the promotion of 95 faculty members to higher academic ranks.

# KEY MESSAGE

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In the past 5 years, some notable “firsts” for the Department include:

- Establishment of the Surgical Exploration and Discovery (SEAD) Course
- Creation of Faculty Development Day to assist faculty in need of improving their teaching, research, and creative professional activity scores
- Producing and funding the Department of Surgery “Prep Camp” for all PGY1 residents held at the SSC.
- Establishment of the Best Practices in Surgery Workgroup
- Writing of the “Late Career Transition Guidelines”
- Establishment of the Surgeon: Global Surgery Academic Role and job description
- Harmonization of Departmental Academic Salaries according to Academic Role and Job Description
- Competency Based Curriculum initiated in the Division of Orthopaedics, and now being applied incrementally to other specialties in Surgery
- Establishment of the University of Toronto City-Wide Brain Tumour Banking initiative
- Creation of a Resident course in Practice Management and Financial Planning
- Establishment of three new Departmental Lectureships
- Hiring of a Departmental Strategic Planning Implementation Co-ordinator
- Hiring of a Departmental Communications Co-ordinator
- These and several other notable firsts outlined in the pages of this 5 year report serve to illustrate the new directions taken within the Department based on its strategic priorities.





I am most proud of the commitment to academic excellence which is demonstrated consistently by all members of the Department. Academic excellence is fostered within a supportive environment that is provided by the University, hospitals, and research institutes in which the faculty conduct their clinical practice and research efforts, and in which learners are educated. The organization of the Department with its Executive Committee and Senior Advisory

Committee working synchronously with the University Division Chairs and Program Directors, Surgeons-in-Chief, and Hospital Division Heads, ensures that adequate infrastructure and support can be provided to the exceptionally talented members of the Department to maintain its prized ranking in Canadian surgery, and beyond, and to provide leadership in academic surgery with global impact.



## 2. INTRODUCTION

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The Department of Surgery is comprised of a strong network of faculty and learners, and traverses six fully-affiliated hospitals and an expanding number of community-affiliated hospitals. The Department is home to 275 full-time faculty, 40 part-time faculty, 75 adjunct faculty and 40 research scientists. The Department is responsible for surgical teaching of 225 medical students throughout the four years of their undergraduate curriculum, and for overseeing the welfare of eleven residency programs with a total enrollment of over 250 resident trainees. The Department's clinical fellowship program is the largest across Canada with over 200 fellows from 40 countries around the globe coming each year to learn highly specialized surgical care and techniques from our surgeons.

The Department is a research-intensive enterprise which is academically productive and well funded. Over 1,000 peer reviewed papers are

published annually by Departmental members, and the annual grant capture ranges from \$35-45 Million in external funding from peer reviewed regional, provincial, and national agencies. The Surgeon Scientist Training Program (SSTP) is a unique element of the research training for residents in the Department, and has been a highly successful program in training the next generation of Surgeon Scientists. The range of scholarly work has been wide including formal training in fundamental biology, clinical epidemiology, medical education, business administration and ethics.

From an educational perspective, in the past 5 years, the Department has contributed to the successful accreditations of the medical school in the Faculty of Medicine in 2012, and the Royal College of Physicians and Surgeons review of the various residency training programs. The University of Toronto

Surgical Skills Centre at Mount Sinai Hospital provides a laboratory setting where basic and complex surgical procedures can be learned and practiced in a simulated, non-threatening environment. The Centre's continued use by the University community underscores the increasing recognition of the value and need for technical skills training outside the clinical setting. In addition, it serves as a platform for skills related research. Finally, the Department offers a myriad of Continuing Professional Development (CPD) programs annually, and these are embedded within all Divisions and benefit medical students, residents, clinical fellows and faculty alike.

The Department's new Strategic Plan for 2012-17 – *Transforming Surgery: Beyond the Cutting Edge* – is a bold blueprint for taking the Department to a higher station. Significant progress has been made along each of the **Strategic Directions** which have taken the Department into wholly new areas previously unexplored. These directions are identified as follows:

1. Foster excellence in teaching through new program development
2. Create and translate novel research findings into surgical practice
3. Drive quality and best practices across all surgical divisions
4. Engage and value the contributions of the faculty
5. Consolidate our expertise for global impact

Enabling and supporting strategies for the plan include enhancing the supporting infrastructure; strengthening communications; and establishing inspiring advancement initiatives.



The Department of Surgery works in close collaboration with the Faculty of Medicine, the hospitals and their research institutes, the various Divisions of Surgery and their practice plans, and in many instances, the Ministry of Health and Longterm Care (MOHLTC). The Chair of the Department of Surgery exerts influence through the building of interactive networks with the Dean of the Faculty of Medicine, Vice Deans, Surgeons-in-Chief, Research Institute Directors, University Division Chairs, Hospital Division Heads, hospital VP's of Medical Affairs, Chief Executive Officers, and individual faculty members. While such dependency on agreement with others may seem unwieldy in some environments, this spirit of cooperativity and collaboration works quite well for the Department of Surgery in the Faculty of Medicine at the University of Toronto, as it is hoped the pages of this five year review document will clearly illustrate.

### 3. KEY FINDINGS FROM THE 2007 EXTERNAL REVIEW:

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The previous review of the Department of Surgery was undertaken in 2007 while Professor Richard Reznick was Chair of the Department of Surgery. On balance, the review by Professor Jonathan Meekins and Garth Warnock was highly laudatory of Dr Reznick's leadership, and the quality of the programs in the Department of Surgery. There were several key suggestions made to improve the operations of the Department of Surgery in all of its facets. These can be broken down into the following component parts:

#### **Undergraduate Medical Education:**

Some concern was raised over the exposure of students to specialty and subspecialty focus over a broader range of relevant community surgery. The "crash course" was considered an innovative educational offering to students, but the standard of teaching was variable depending on resident and fellow availability during the rotations. Concern was raised over the addition of the Mississauga Academy to student education. It was recommended that the Department of Surgery increase the preparation of residents towards their interactions with students during formal course offerings, such as the "resident as a teacher" course; that the expansion of medical student teaching to additional campuses, such as the Mississauga Academy, will require considerable Departmental oversight; and that the Department work closely with the Faculty of Medicine Undergraduate Education Committee to focus on innovative pathways to preserve surgical teaching and exposure to surgical specialists.

#### **Response:**

The Department has continued to refine the structure and content of the "crash course" for medical students. The Mississauga Academy has graduated its first pool of medical students, and the staff surgeon teachers are engaged more than ever before. Special emphasis is now being placed on recognizing outstanding resident teachers at the end of each academic year.

#### **Postgraduate Medical Education:**

The Reviewers noted the innovation occurring in postgraduate medical education (PGME) in the Department and commented on the development of the Competency Based Curriculum (CBC) in Orthopaedics, a first of its kind in North America. Concern was expressed over the diverse array of rotation assignments in some Divisions, and the lack of preparedness for community based practice. The difficulties with establishing a "case log" system were noted. Mention was made of the fragmentation of surgical simulation training across the different hospital sites, even though it was recognized that the Surgical Skills Centre at Mt Sinai Hospital remained a most impressive facility. Residents were concerned about their interactions with the numerous fellows on service at any given time, and what their roles were regarding operative cases in particular, and service work in general.

#### **Response:**

The Department has continued to support the laudable efforts of the CBC in Orthopaedics which has gone on to receive full Royal College approval in 2015. Now, the Royal College is requesting that all residency programs follow

a competency based assessment program, and the Department is already well established in this area. Residents continue to evaluate their rotations. Rotations with minimal educational value are now eliminated from the pool of assigned rotations. Many Divisions now are offering community-based rotations in surgery so that they can acquire the experience of a community based practice before taking their Royal College Examinations. A case log system has now been implemented thanks to the efforts of the PGME office and the Department of Surgery. The Department is examining ways in which it can support the integration of all surgical simulation sites at the different hospitals with a burgeoning Faculty of Medicine task force which is set to improve this feature. And finally, the interaction of residents with fellows continues to be carefully monitored. Faculty and residents know that the primary mandate of the Department is to support resident education.

### **Continuing Professional Development (CPD):**

The Reviewers recommended the expansion of Departmental CPD to foster research development in knowledge translation through continued efforts to provide education offerings to learners at all levels, including community-based surgical practitioners.

### **Response:**

The number of CPD offerings in the Department has increased substantially since the Review in 2007. Virtually all Divisions now have annual CPD courses which are targeted at residents, fellows, faculty, and the community. Surplus funds from these CPD courses are shared with the Divisions. The Departmental aliquot of surplus funds is used to support the academic mission, and the strategic plan. In recent times, the Departmental CPD program

was aided by having the Vice Dean of CPD at the University, Professor Dimitri Anastakis, as one of surgeons on the Departmental faculty.

### **Research:**

The Reviewers acknowledged the strong research tradition in the Department, and were impressed with the support of the Surgeon Scientist Training Program (SSTP), and the research accomplishments of the Surgeon-Scientists and –Investigators at all levels of appointment. That said, the Reviewers recommended: 1) Increased funding to sustain the SSTP; 2) Restructuring of the academic point system to recognize the accomplishments of mid-career investigators; 3) Establishment of greater support for the Department’s scientists on hospital research institutes; 4) Improve the tracking of attributions of grants derived from the Department’s faculty in the University’s research service database; and 5) New hirings to the Division of Anatomy to off-set the intense teaching load of faculty, and to protect time for anatomists performing investigative work.

### **Response:**

The Department has enhanced its support of the SSTP on an annual basis. That said, this is a costly undertaking for the Department at a time when resident research fellowship applications are not reaching funding level status. The academic point system has been restructured to take into account the relative contributions of Surgeon-Scientists, -Investigators, and –Teachers to the academic mission. The issue of a greater voice at the hospital research institute committees is a difficult one that the Department is continuing to troubleshoot. The Department Chair has been meeting with the hospital CEO’s and the Research Institute Directors on a routine basis to try to accomplish this. The Faculty of Medicine’s Vice Dean of Research has worked

hard these past several years to improve the attribution of Surgeon's grant capture in their database. And finally, the Division of Anatomy has hired new faculty members as teachers primarily to balance the requirement for teaching versus investigative inquiry.

### **Morale:**

The Reviewers commented that in general morale was at a high level in the Department. Processes such as the provision of Critical Illness Insurance, and Day Care allowances have helped engender this high regard for the Department. The mandatory search process was considered a transparent and effective tool to bring on new faculty. It was noted that there was a considerable bolus of new faculty recruitments in the past 5 years such that a highly developed mentoring program was recommended. In addition, in the absence of an age restriction for retirement, it was recommended that the Department examine new ways to help transition faculty to new roles in the Department at the late career vantage point.

### **Response:**

The Critical Illness Insurance, Day Care allowances, and Life Insurance policy options continue for new faculty recruits. The mandatory

search process continues to be refined, but is recognized by all to be extremely important for all new faculty hirings. The Department has recently produced guidelines for Late Career Transitioning of surgeons which are in the process of being implemented.

### **Organizational Structure:**

The Reviewers recommended improving the Departmental relationship with the Surgeons in Chief at all hospitals. It was suggested that support for teaching be also extended to community-based hospitals. The Reviewers commented that the Department could leverage opportunities of funding surgical services through the Local Health Integration Networks (LHINs).

### **Response:**

The Department Chair meets with the Surgeons-in-Chiefs on an ongoing basis quarterly to discuss management and operational issues. Teaching support has been extended now to community-based hospitals, including the Mississauga Academic. Several surgeons in leadership positions, including the Department Chair, have had opportunities to interface with the LHINs over resource allocation policies which have benefitted the Department.

## **4. CHAIR'S STATEMENT:**

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### *a) Historical Perspective:*

The Department of Surgery at the University is steeped in a rich tradition of academic excellence and innovation dating back to 1843. Dr. Clarence L. Starr became the first full-time Professor of Surgery in 1921, which was the first appointment of its kind in Canada. Following Dr. Starr there were several luminary

Professors of the Department of Surgery surgery beginning with Dr W.E. Gallie (1929 – 1947), Dr Robert Janes (1947 – 1957), Dr Frederick Kergin (1957 – 1966), and Dr William Drucker (1966 – 1972). In more recent times, Dr Donald L. Wilson, (Chair from 1972 – 82), helped to establish the RS McLaughlin Chair in Surgery in 1978, the first endowed Chair in Surgery in

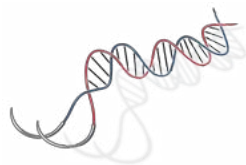
Canada. Dr Bernard Langer (1982-92) developed the guidelines for surgical practice plans in the Department of Surgery, and established the Surgeon Scientist Training Program. Dr John Wedge served as Chair from 1992-2002 and established the Surgical Skills Centre at Mount Sinai Hospital in 1998. Dr. Richard Reznick served as Chair from 2002 – 2010, and was instrumental in creating the Wilson Centre for Education at the

Toronto General Hospital, The Toronto Bariatric Collaborative, and the Competency Based Curriculum in Orthopaedics. Upon Dr Reznick's departure from the University of Toronto to become Dean of Medicine at Queen's University, David Latter was installed as interim Chair from 2010-11, before James Rutka was announced as the RS McLaughlin Chair of Surgery in April 2011.



*Chairs from left to right: James Rutka, Richard Reznick, Donald Wilson, John Wedge, Bernard Langer, David Latter*

### ***b) Developing the Brand:***



As part of the new Strategic Plan for the Department of Surgery, it was strongly recommended by former Dean Catharine Whiteside to begin branding the Department in ways which would enhance our visibility on the global stage, increase our ranking on the continent, and promote our ability for advancement across all of our Divisions.

In creating a new image for the Department of Surgery, efforts were made to underscore our core values which are: 1) Surgery in all of its facets including technical innovation, and education; and 2) Science, given our rich history of accomplishments amongst our faculty, and the emphasis that has traditionally been placed

on our surgeon scientist training program, which dates back to Dr William Gallie's tenure as Chairman.

In this image, you will see two suture needles that are slightly offset, one to the other, in space. The suture needles represent our emphasis and focus on the art and practice of surgery. The suture threads are actually depicted by a double helix of double stranded deoxyribonucleic acid (DNA) with appropriate nucleotide base pair cross - linking strands. The DNA represents our focus on surgical science and includes our research work from molecule to man.

As we created the logo in its final form, it did not escape our notice that the colours of the DNA strands, red and blue, were connected by cross linking bands that were white, making

the logo highly reminiscent of the colours of the archetypal “barber pole” from antiquity where blue represented the veins, red represented the arteries, and white was the background that accentuated the spiral of the red and blue stripes.

**c) Strategic Plan:**

The Department of Surgery embarked on a strategic planning process in October 2011, with the aim of developing a robust roadmap and well defined priorities to guide the Department’s efforts over the next five years. The planning process was timely given the recent release of the new Faculty of Medicine Strategic Academic Plan. Our new Strategic Plan for 2012 to 2017 – *Transforming Surgery: Beyond the Cutting Edge* -- acknowledges the Department’s position as one of Canada’s leading Departments of Surgery and one of the top tier Departments in the world (<http://surgery.utoronto.ca/about/strategic-plan.htm>). This plan builds on a strong history of excellence in patient care and surgical innovation. It challenges us to push to new frontiers in surgical practice, education and research. There are five major goals of the Department’s Strategic Plan as follows:



i) **Education:** To foster excellence in teaching through new program development. The Department of Surgery is heavily invested in

its focus on education with advanced programs in undergraduate, postgraduate, fellowship and graduate education.

**Faculty Lead  
David Latter**



**Significant Developmental  
Milestones in Education:**

- We have strengthened the recruitment, development, and support of surgeon teachers by increasing offerings in faculty development for teachers, identifying and nurturing surgical educators in undergraduate and postgraduate education, providing stipendiary support for teachers with leadership positions, and consistently acknowledging the importance of teaching in annual assessments of productivity (AAP), and giving awards to teachers at the Departmental/Divisional/Hospital/Faculty of Medicine levels.
- We have refined the core undergraduate surgery curriculum to outline the essential learning elements for surgery clerkship, and expanded the range of learning sites. A “crash course” in surgery has been developed for clinical clerks, together with a well defined compendium of essential surgical information for students.
- We have expanded novel teaching approaches and methods, and capitalized on communications technologies and advances in simulation. With the assistance of the Postgraduate Medical Education (PGME) office, our residents are now required to log all operative cases they are involved in on a mobile app program. Learners at all levels can now benefit from simulation centre experience at the Surgical Skills Centre at Mt Sinai Hospital, the Li Ka Shing Knowledge Centre at St Michael’s Hospital, the centre for Surgical Simulation at Sunnybrook Health Sciences Centre, the Temerty-Chang Simulation Centre at the Toronto Western Hospital, and the Hospital For Sick Children. Simulated surgical skills are now assessed

routinely for laparoscopic cholecystectomy, fracture fixation, spinal fusion, uro- and neuro-endoscopy, among many other skills.

- We have pioneered the use of a completely competency-based curriculum (CBC) for residency training in Orthopaedics; and we are embarking on extending competency-based assessment programs for all residency programs, in part mandated by the Royal College of Physicians and Surgeons. The CBC in Orthopaedics was the first of its kind across North America, and has garnered tremendous attention and accolades by virtue of its ability to demonstrate that orthopedists could be trained in a shorter period of time while undergoing the CBC than while pursuing a conventional orthopedics residency curriculum. This novel program was supported by the Ministry of Health and Longterm Care in the Province of Ontario.
- We have enhanced career development for residents, and have provided needed career assistance to graduates. Dr Barry Rubin, Vascular Surgery, teaches the residents a course on “Practice management and financial planning” complete with information on hiring staff, performing accurate billings, practice incorporation, and finding the best job. Across all Divisions, the University Division Chair and Program Director meet with their graduating residents routinely to navigate the job market



in a highly advantageous and beneficial way.

- We have provided a robust array of continuing professional development (CPD) opportunities in Surgery for residents, fellows, and faculty. Virtually every Division hosts specific CPD courses for learners, faculty, and visitors who benefit enormously from the teaching of our talented faculty. This has all been aided by Dimitri Anastakis, Professor, Division of Plastic and Reconstructive Surgery, and Vice Dean CPD, who has helped to make these offerings as informative and as profitable as possible. The full report on CPD can be found on page 86 of the 5 year review.

ii. **Research:** Create and translate novel findings into surgical practice.

**Faculty Lead**

**Michael Fehlings**



**Significant Developmental Milestones:**

- We have pursued stable funding for research through the identification of new sources of revenue. In collaboration with the Office of Advancement at the University of Toronto, donations to the Department of Surgery have averaged close to \$3 Million/year to support the academic mission. These monies have been in the form of alumni gifts, industry support, and philanthropic donations. Numerous University/Hospital Chair funds have also helped to support key research leaders in the Department of Surgery. A major gift to the Department of Surgery came from Amira and Michael Dan (\$2 Million in 2013) to support the creation of a university-wide brain tumour bio bank in which all hospitals where neurosurgery is performed add patient data and specimens (tumour, blood, DNA, RNA, protein, stem cells) to a centralized data base (<http://surgery>).



utoronto.ca/research/University\_of\_Toronto\_Brain\_Tumour\_Bank.htm).

- We have instituted new policies to support the success of scientists in the Department of Surgery. These include financial support for new recruits from the Department of Surgery, Hospitals, Divisions, and Research Institutes, the creation of the Roscoe Graham Reid Scholarship as salary support for scientists within their first 5 years of practice, an internal review of grants program, a mentorship program, and a biennial retreat of scientists within the Department of Surgery.
- We have sustained and enhanced the training of residents within the Surgeon Scientist Training Program (SSTP). The SSTP is the flagship program of the Department's postgraduate training program (see research report). It costs approximately \$1.5 Million/year of Departmental funds to ensure that all residents enrolled in the SSTP can receive funding at their appropriate PGY-level, and can have their tuition covered (approximately \$8 K/year). In 2014, there were 33 residents enrolled in the SSTP across all the Divisions in Surgery.
- We have pursued greater integration of research across disciplines, sites, and types of researchers. This can be demonstrated by the formation of the Toronto Aortic Collaborative, the Cardiac database, the Trauma program, the Spine program, the Hand program, and the Brain Tumour Bio-banking initiative, as some examples.
- We have enhanced knowledge translation and commercialization of surgical inventions through important relationships with key partners at the Medical and Related Sciences (MaRS) Discovery Site, Techna, and the University of Toronto Research Office. Faculty who have demonstrated high level IP and knowledge translation projects include Shaf Keshavjee and the EX VIVO organ repair initiative, Michael Tymianski and the

development of No No Inc with the production of a drug for stroke prevention, and Victor Yang in the design of a new surgical navigation platform based on real time imaging.

- We are becoming a world leader in surgical innovation across all Divisions. Further information in surgical innovation and knowledge translation is found in the Surgical Innovation prospectus at: <http://surgery.utoronto.ca/news/groups.htm>

iii) **Quality and Best Practices:** To drive quality and best practices across surgical practice and education.

**Faculty Lead**  
**Robin McLeod**



**Significant Developmental Milestones:**

- We have instituted a robust quality and best practice (Q/BP) program across all Divisions of the Department of Surgery. A Departmental Q/BP Committee has formed with representation from all Divisions, and Chaired by Robin McLeod. This Q/BP individual also sits on all Divisional Executive Committees. One of the first projects tackled by the Departmental Q/BP Committee is the readmission rates following index surgical procedures across all Divisions (e.g. CABG, pulmonary lobectomy, colectomy, knee and hip arthroplasty). It is hoped that information from such a project, among others, will inform the Hospitals how to prevent such readmissions, and will lead to information of benefit to the province, and MOHLTC at large. We have just embarked on a unique Person (Patient) Centered Care (PCC) initiative to increase patient experience and satisfaction, as well as reduce health care costs.
- We have built capacity to advance the science of Q/BP in the Department of Surgery. • Funding has been received from all UofT Hospitals to support the Best Practices in General Surgery

(BPiGS) program. Dr Rutka and Dr McLeod are meeting with all Hospital CEO's and VP Medical Affairs in all units to foster support of the newly formed Best Practices in Surgery (BPS) program. Several faculty have taken advantage of the Improving and Driving Excellence Across Sectors (IDEAS) program from the Institute of Health Policy, Management and Evaluation (IHPME). IDEAS is a comprehensive, and province-wide initiative to enhance Ontario's health system performance by increasing quality improvement, leadership, and change management capacity across all health sectors (<http://www.ideasontario.ca/about-ideas/>).

- We have begun to integrate quality across the educational programs in the Department of Surgery. Najib Safieddine, Tim Jackson, and Giuseppe Papia have worked with the Center for Quality Improvement and Patient Safety to develop a Q/BP curriculum for all residents in the Department of Surgery at the PGY1-2 levels in the Foundations Course. At the Annual Faculty Development Day in November, Q/BP lectures and seminars are provided to faculty throughout the one day course.

iv) **Faculty Development and Mentoring:** To engage and value the contributions of the faculty in the Department of Surgery.

#### **Faculty Lead**

**Ori Rotstein**



#### **Significant Developmental Milestones:**

- We have established a mentoring program in the Department of Surgery through the efforts of Ori Rotstein and Paul Grieg ([http://utoronto.ca/faculty/Mentoring\\_Program.htm](http://utoronto.ca/faculty/Mentoring_Program.htm)). They have worked closely with the Faculty of Medicine's Centre for Faculty Development (<https://cfd.utoronto.ca>). As the literature continues to illustrate the increased productivity and

success of faculty members who receive formal mentoring from senior colleagues, our program is designed to ensure transparency around job descriptions and expectations, supports career advancement, and strengthens camaraderie across the Department. Mentors are now named for both clinical and research domains on a new faculty member's Letter of Appointment (LOA), and the mentor is invited to attend the Continuing Appointment Review (CAR) of the faculty member at 3-5 years. We plan to track the success of this mentoring program annually and longitudinally. Mentoring awards are being established in the Department of Surgery to recognize outstanding mentors who have supported newly recruited faculty members.

- We have fostered and developed the nurturing of leaders across the Department of Surgery. Several faculty members have been funded through the Department of Surgery to attend the New and Emerging Leaders (NEAL) course in the Centre for Faculty Development (<https://cfd.utoronto.ca/neal>).
- We have strengthened the Department's processes for academic support, appointment reviews, assessments of academic performance and promotions. Through the efforts of Ori Rotstein, the CARs have become a robust review effort which tracks faculty achievements and accomplishments in the first 3-5 years of practice. Faculty passing their CARs are acknowledged in the Department of Surgery e-newsletters, the Spotlight, and the Annual Address. For Annual Assessments of Academic Productivity (AAPs), scores are sought and entered by the University Department and Division Chairs, The Hospital Head, the Surgeon in Chief, and the Vice Chairs of Education and Research. The scores are then averaged by the Department Chair, and the total score is used to inform the practice plans for redistribution of Academic Enrichment Fund (AEF) and Alternate Funding Plan (AFP) monies.



- In the absence of a defined retirement age, the Department of Surgery has developed Guidelines for Late Career Transition. These guidelines state that Department members should develop a transition plan as they approach the end of their surgical careers; they should consult with the Surgeon-in-Chief, Hospital Division Head, and University Division Chair in establishing such a plan; they should be encouraged to seek other academic opportunities such as teaching and mentoring junior colleagues during this phase of their careers; and they should move forward with plans for transition as they come off the active on-call roster at the hospital.

v) **Integration and Outreach:** We will consolidate our expertise in global impact.

**Faculty Lead**  
**Avery Nathens**



**Significant Developmental Milestones:**

- We have empowered University Division Chairs to promote integration across their hospital sites. An example of this initiative is the cross-credentialing effort of members of the Division of Vascular Surgery in which vascular surgeons will be able to share expertise readily across the different vascular units by being credentialed across all hospitals. Another example is the development of the Toronto Aortic Collaborative and fellowship initiative

in which the University Division Chairs of Vascular and Cardiac Surgery have come together to establish a clinical, research and fellowship program to provide state-of-the-art care for patients with mid to upper complex aortic pathologies.

- We have built on existing collaboratives to strengthen infrastructure required for great success. Examples include collaboratives with the Spine, Hand, Surgical Oncology, Trauma, Burn and Sports Medicine Programs which have all grown stronger through increasing infrastructure and priority to each. An example of a developing program is the Breast Surgery Program which involves surgeons and health care workers at Sunnybrook Health Sciences Centre, St Michael's Hospital, and Princess Margaret Hospitals.
- We have built on our international outreach program, and strengthen partnerships with health care systems regionally, national and globally. Examples of our outreach to distant regions include a cleft lip and palate care program with "Operation Smile" (Greg Borschel, David Fisher, Ronald Zuker); burn treatment in Bangladesh (Toni Zhong), and in Kenya (Leila Kasrai); and a Ukraine pediatric neurosurgical fellowship program (James Rutka and Mark Bernstein).
- Examples of capacity building in different regions include Georges Azzie and laparoscopic simulation training in Botswana; Peter Chu and surgeon training in Niger; Ted Gerstle and educational development in Addis Ababa; Mojgan Hodaie and neurosurgical online education in Ghana and Iran; and John Hagen and laparoscopic training in China.
- Thanks to the generosity of Mr. Ash Prakash, we have established annual Prakash Foundation fellowships for surgeons from low income countries who come to the University of Toronto to take part in active clinical surgical



fellowships. Some of the countries where fellows have previously come from include Nigeria, Indonesia, and Ethiopia.

- Finally, we have established a new academic role in the Department of Surgery entitled: “Surgeon: Global Health”. A job description has been prepared for this academic role, and the first surgical faculty have entered this newly designated academic stream.

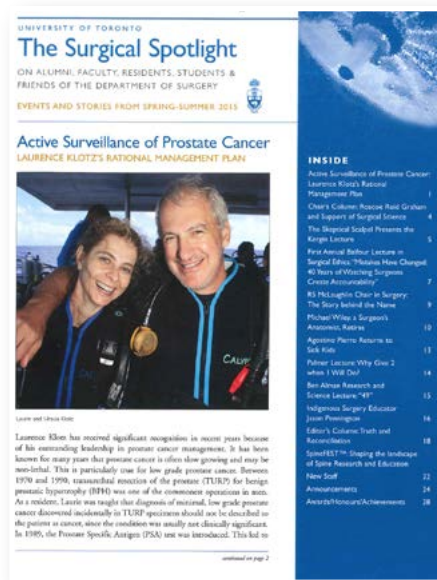
As mentioned, we are well along the way with our goals in the Department of Surgery Strategic Plan. Enabling and supporting strategies include advancement and fundraising; building on the supporting infrastructure; and delivering rapid and timely communications to all constituents. The Executive Committee of the Department of Surgery provides the implementation oversight and guidance for the plan, and has developed measures and key performance indicators for all pillars of the plan. We have been very fortunate to have hired a full-time strategic planning implementation coordinator in Joanna Giddens who has helped us stay on course with the plan.

#### **d) Communications:**

In 2011, a full-time communications expert was hired in the Department to prepare and send out timely information to all faculty, residents, fellows and students; to maintain our website in an up-to-date fashion; to create

a monthly e-newsletter of communications (known as **Excelsior**); to engage the Department in social media including Facebook pages and a Twitter feed; and to prepare a rapid e-news communication vehicle (known as **e-clips**). Accordingly, Ms Stephanie Neilson was assigned to these communications tasks which have truly assisted in our ability to reach out to faculty and to maintain their engagement with the Department of Surgery.

To engage faculty and alumni further, we have added dimensions to the “Surgical Spotlight”, a bi-annual print newsletter started by Dr Richard Reznick which is mailed to all present and former members of the Department. The Surgical Spotlight is a highly newsworthy newsletter which includes information on new faculty recruits, achievements by faculty members, columns from the Editor-in-Chief, Martin McKneally and Chair James Rutka.



#### **e) Academic Performance:**

The Department of Surgery lays claim to hundreds of publications and grant awards – too numerous to mention here – and these can be found in the Supplementary Materials of this 5 year review (page 321-336). Suffice it to say that the Department of Surgery publishes on

Several faculty members have communicated their expertise to the world via the popular “Ted Talk” series found on You-Tube. Examples of faculty who have delivered **Ted Talks include:**

- a) Dr Shaf Keshavjee on in vivo lung repair and regeneration  
<https://www.youtube.com/watch?v=T2EmuyHoMAI>
- b) Dr Andres Lozano on deep brain stimulation for depression and Alzheimer’s Disease  
[http://www.ted.com/talks/andres\\_lozano\\_parkinson\\_s\\_depression\\_and\\_the\\_switch\\_that\\_might\\_turn\\_them\\_off?language=en](http://www.ted.com/talks/andres_lozano_parkinson_s_depression_and_the_switch_that_might_turn_them_off?language=en)
- c) Dr Ori Rotstein on multiorgan trauma and resuscitation  
[https://www.youtube.com/watch?v=wLAoykZBA\\_g](https://www.youtube.com/watch?v=wLAoykZBA_g) ; and
- d) Dr James Rutka for his research work on pediatric brain tumours  
<https://www.youtube.com/watch?v=P21CeQGIB1w>

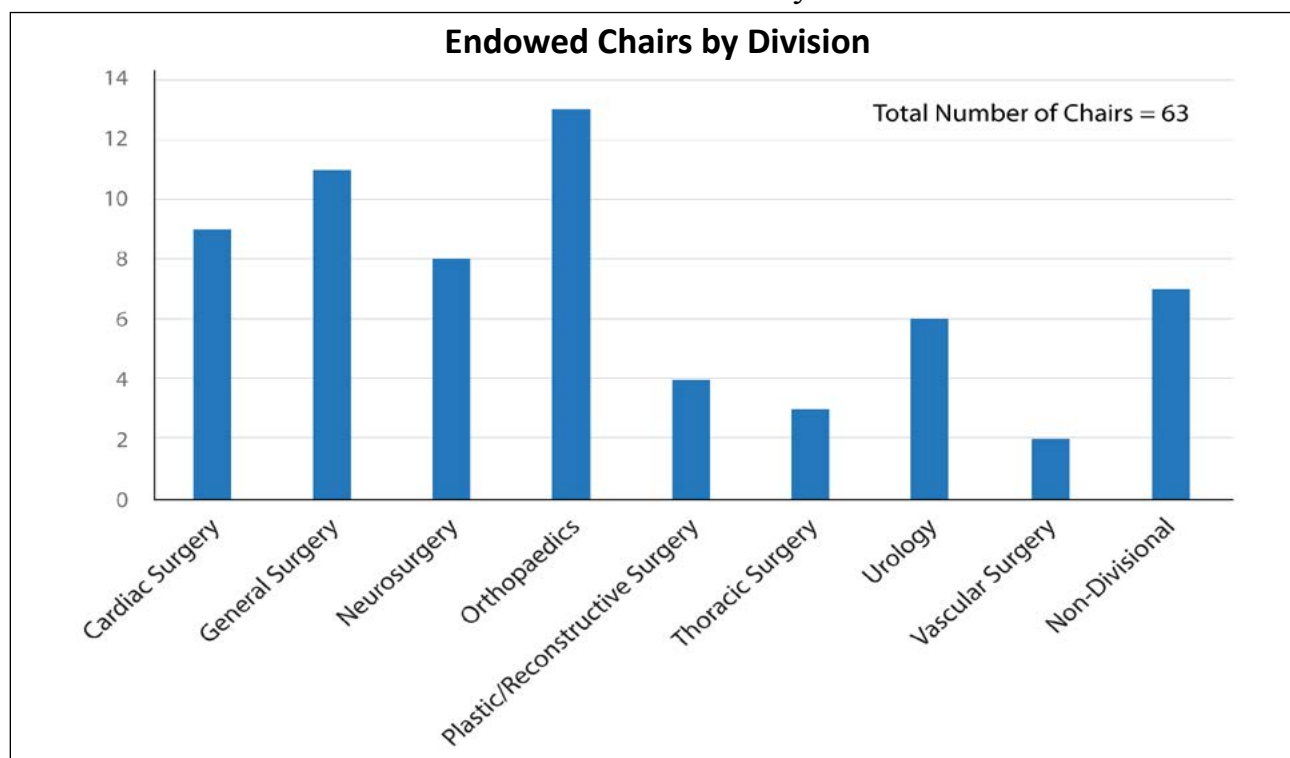
average 1,400 papers in peer reviewed journals each year, with a total of 7,000 papers from 2009 – 14. While the vast majority occur in good to excellent specialty journals in surgery, there are numerous examples of faculty members who have published as first or senior author in high impact journals such as *Nature*, *New England Journal of Medicine*, *Cell*, *Science Translational Medicine*, *Lancet*, and *JAMA*.

Grant capture in the Department of Surgery has averaged \$43,117,754.56/year with a total of \$215,588,772.78 million from 2009 – 14. Grants have been earned by faculty from major peer review funding agencies such as CIHR, NSERC, Heart and Stroke, Canadian Cancer Society, and Canadian Foundation for Innovation.

#### **f) Chairs and Chairholders:**

The Department of Surgery is well endowed with Chairs that have been established at the University, at the various fully affiliated hospitals, and jointly between the two. On average, each endowed chair is valued at \$3 Million, and supports the academic efforts of the chairholder towards enhanced research, teaching, creative professional activity, and surgical innovation. There are currently 3 endowed University Chairs (Langer Chair, General Surgery; Dan Family Chair, Neurosurgery; and Barkin Chair, Urology). There are 4 Joint University – Hospital Chairs; 36 Hospital – University Affiliated Chairs; and 20 Hospital Chairs, making a total of 63 endowed Chair position for members of the Department of Surgery, for a total value of over \$150 Million to support the Academic Mission in the Department. The distribution of the various Chair positions across all the Divisions is shown in Table 1.

**Table 1. Endowed Chairs by Position**



Needless to say, the establishment of these Chair positions becomes a very positive and strong recruitment and retention strategy within the Department, and enables devotion to research and innovation which otherwise would not be possible.

The Department of Surgery has 10 Canada Research Chairholders (CRC's) (Table 2). CRCs are highly competitive research support mechanisms to ensure that faculty surgeons can have sufficient protected time for their research.

**Table 2. Canada Research Chairs**

Name	Research	Tier
Alman, Ben	Canada Research Chair in Musculoskeletal Research	2
Cypel, Marcelo	Canada Research Chair in Lung Transplantation	2
Davis, Karen	Canada Research Chair in Brain and Behaviour	2
Grantcharov, Teodor	Canada Research Chair in Simulation and Surgical Safety	2
Li, Ren-Ke	Canadian Research Chair in Cardiac Regeneration	1
Lozano, Andres	Canada Research Chair in Neuroscience	1
Nathens, Avery	Canada Research Chair in Systems of Trauma Care	2
Tymianski, Michael	Canada Research Chair in Translational Stroke Research	1
Verma, Subodh	Canada Research Chair in Atherosclerosis	2
Yang, Victor	Canada Research Chair in Biophotonics and Bioengineering	2

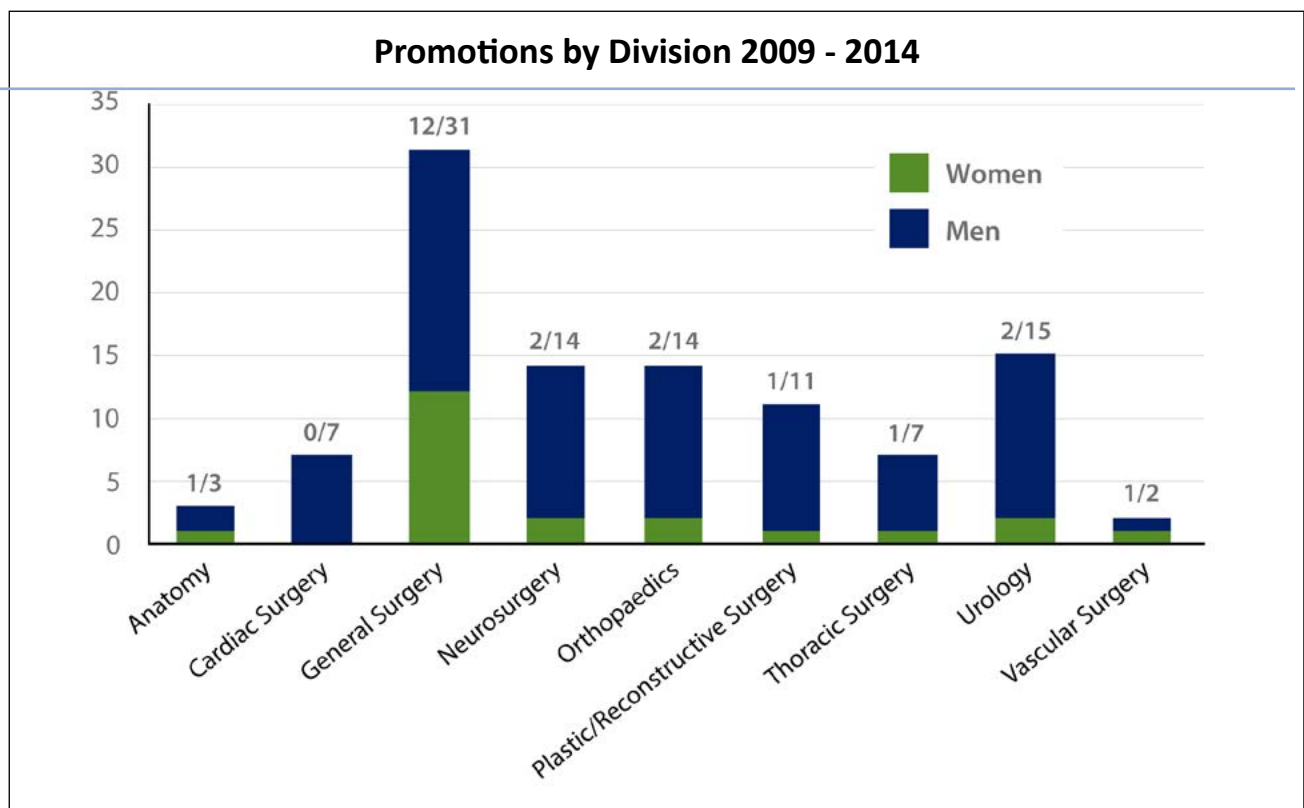
**g) Promotions:**

Academic promotion remains a cornerstone institution in the Department of Surgery in the Faculty of Medicine at the University of Toronto, and all faculty members strive to be promoted up the ranks towards full professor status. The Department of Surgery’s Promotions Committee has stakeholder membership across all Divisions, and reviews applications for promotion in the fall of each academic year. The applications of those surgeons whose accomplishments are deemed

worthy of promotion are then forwarded to the Decanal Committee in the Faculty of Medicine for adjudication.

We have indeed been fortunate with those members of the Department who have successfully gone forward for promotion. From 2009-14, we have had 77 successful applications and 4 unsuccessful applications. The distribution of faculty members who were promoted in the Department across the Divisions over all years can be found in Table 3.

**Table 3. Promotions by Division 2009-2014**



**h) Appointments:**

**i) Recruitment New Faculty:**

Unlike many of the Clinical Departments in the Faculty of Medicine, the Department of Surgery is one of the few which mandates that all new recruits to the Department are the product of active, open, and external, search processes. While this can pose some logistical issues in terms of gathering all relevant stakeholders together at search committee meetings, the

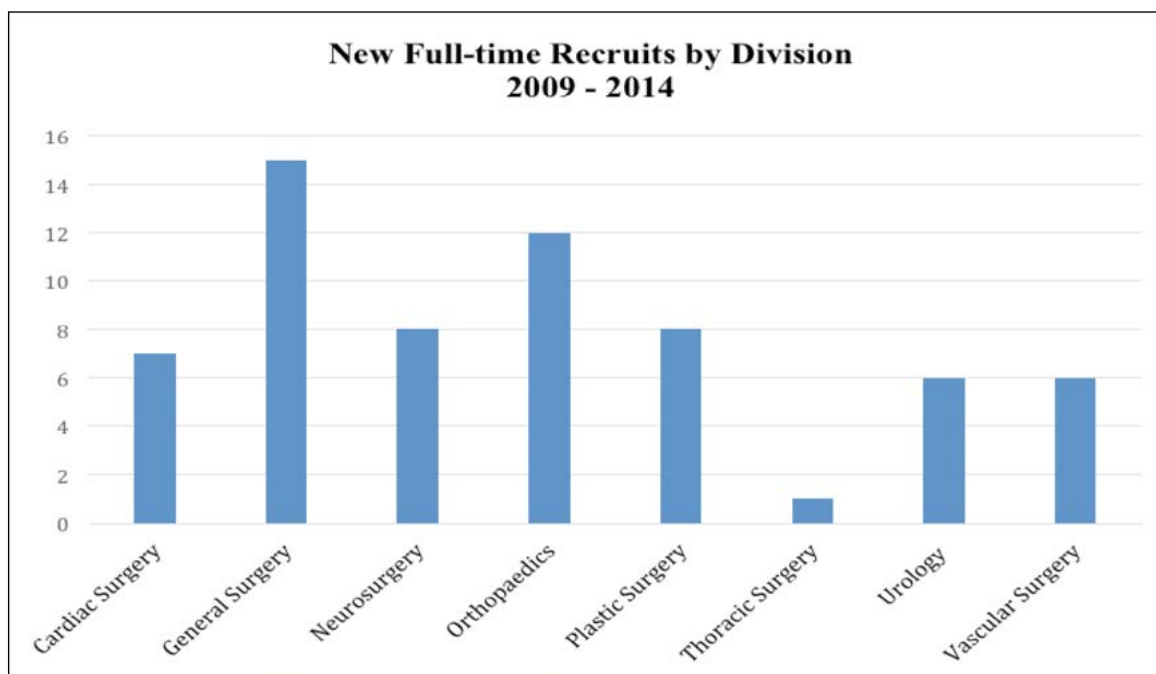
process is deemed fair and transparent by all. The composition of such Search Committees typically includes the Department Chair, University Division Chair, Hospital Division Head, Divisional Faculty Members, Vice Chair Research, Hospital Research Institute representative, Hospital Vice President Medical Affairs, and Surgeon-in-Chief (see Appendix A–(page 316) Personnel on Search Committees).

From 2009-14, there were 63 new recruits to the Department of Surgery. Of these, 53 were first time faculty appointments in the different University Divisions. Ten were appointees at mid- to senior levels. The number of new recruits as a function of year is shown in Table 4; the distribution of new recruits over time across the different Divisions is shown in Table 5.

**Table 4.** New Full-time Recruits by Year 2009-2014

Year	#
2009 - 2010	8
2010 - 2011	7
2011 - 2012	8
2012 - 2013	16
2013 - 2014	9

**Table 5.** New Full-time Recruits by Division 2009-2014



A concern which has been expressed in the Review of the School of Medicine Accreditation document from 2012 (Committee on Accreditation of Canadian Medical Schools and the Liason Committee on Medical Education (LCME) in the US ) (<https://www.afmc.ca/accreditation/committee-accreditation-canadian-medical-schools-cacms>) is the incomplete degree of diversity noted amongst the faculty in many of the Clinical and Basic Science Departments. While the Department of Surgery has not been singled out in this

regard, we are in the process of developing best practices in the conduction of Search Committee Processes to include definitions of diversity and implementation of strategies to ensure that adequate diversity is achieved in such searches.

**ii) Appointment of University Division**

**Chairs:**

As is customary in the Clinical Departments at the University of Toronto, University Division Chairs in the Department of Surgery serve at the discretion of the Department Chair for a



period of 5 years, renewable upon successful completion of a 5 year term, for an additional 5 years. Under exceptional circumstances, a University Division Chair who has completed two 5 year terms may be asked to remain in the position for an additional year or two, or for another term depending on circumstances. The Department Chair leads all University Division Chair searches, with broad representation across the Division serving on the Committee.

From 2009-14, external searches were held for 13 number of University Chair positions. Andres Lozano was appointed as Chair of the Division of Neurosurgery in 2009; Tom Waddell was appointed as Chair of Thoracic Surgery in 2010; Neil Fleshner was appointed as Chair of Urology in 2012; Tom Forbes was appointed as Chair of Vascular Surgery, 2014; Peter Ferguson was appointed as Chair of Orthopaedics, 2014; and Carol Swallow was appointed as Chair of General Surgery, 2014.

### **iii) Appointment of Hospital Surgeon-in-Chiefs:**

The appointment of Surgeon-in-Chiefs (SICs) at the Hospitals is a process conducted by the Vice President of Medical Affairs at each of the hospitals with input from a large hospital-based stakeholder group, and representation by the University by the Department of Surgery Chair. As with the University Division Chair appointments, the SICs are typically appointed for a 5 year term, renewable once upon satisfactory review for another 5 years.

From 2009-2014, the following SIC appointments occurred: Shaf Keshajee was appointed as SIC of the University Health Network (2010); Carmine Simone was appointed as SIC at Toronto East General Hospital (TEGH) 2012; Avery Nathens was appointed as SIC at St Michael's Hospital (SMH) 2012; Chris Compeau

was appointed SIC at St Joseph's Hospital in 2013;

### **iv) Other Leadership Appointments:**

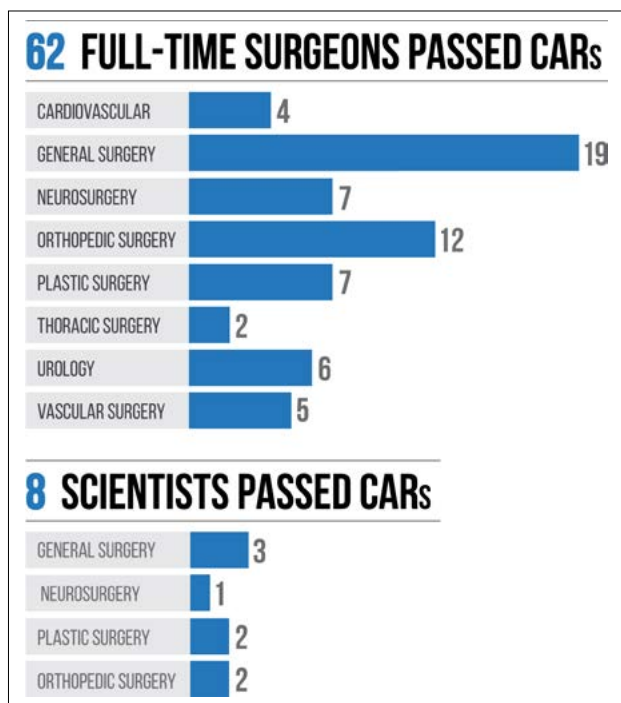
Oleg Safir was appointed as Director of the Surgical Skills Centre (2012); George Christakis as Director of Undergraduate Medical Education; Sender Herschorn as Director of the Departmental Promotions Committee; Andrew Pierre, Program Director of Thoracic Surgery; Abhaya Kulkarni, Program Director of Neurosurgery; George Oreopoulos, Program Director of Vascular Surgery; Helen MacRae, Program Director, Colorectal Surgery; Bob Bell, Deputy Minister of Health, Ministry of Health and Longterm Care; Andy Smith, VP medical affairs, Sunnybrook Health Sciences Centre; Mauric Blitz was appointed as the Director of the Surgical Foundations Course, 2013; Michael Fehlings was appointed as the Vice-Chair Research in the Department of Surgery, 2014.

### ***i) Continuing Appointment Reviews:***

While too numerous by name here, many faculty appointees underwent their Continuing Appointment Reviews (CARs) in the Department of Surgery from 2009-14. The CAR is considered an equivalent to tenure at the University for clinical faculty. The CAR is typically performed in years 3 – 5 following a faculty appointment. Failure to pass the CAR could lead to grounds for dismissal from the Hospital, and from the University. Thankfully, this has not been an issue over the past 5 years.

From 2009-14, there were 70 who successfully underwent their CARs. The distribution across the various specialty sections of Surgery is found in table 6. Special thanks are given to Ori Rotstein, Associate Chair Surgery, who adjudicated over all CARs in the Department of Surgery.

**Table 6. Successful CARs by Division**



***j) Retention:***

At any given time, the Department faces the challenges of losing distinguished and accomplished faculty to other jurisdictions. Where appropriate, the Department Chair works assiduously with the University Division Chair, the Surgeon-in-Chief, the Hospital Division Head, and the hospital research institute to produce a “retention package” for highly valued surgeons. This approach has been used on several occasions in the past 5 years to the great benefit of the Department. Given the Department’s evanescent budget, however, contributions from the Department may wane unless further strategies are employed to increase the amount of funding available.

***k) Transition:***

The Department has now developed guidelines for Late Career Transition planning for all surgeons. Ideally, the conversation begins many years before retirement. The dialogue is initiated with the University Division Chair,

the Surgeon in Chief, and the Hospital Division Head. The Department is generating new ways in which its Late Career Faculty can become engaged in Hospital/Departmental activities that are both meaningful and productive to all parties.

***l) Education:***

In the past 5 years, the Department of Surgery has participated in the accreditation cycles of the Medical School by the LMCE/CACMS for undergraduate medical education in May 2012, and the Royal College of Physicians and Surgeons accreditation of residency programs in April 2013. Both accreditations were successful for the Department. For the accreditation of the Medical School, the Department worked diligently with the Faculty of Medicine to ensure that the core curriculum in surgery, and student evaluations were at the highest level possible. For the Royal College Review, all programs in Surgery were accredited, with General Surgery and Urology requiring mandated external reviews in September-October 2015.

The Department is grateful to the time, energy and effort expended by David Latter, Departmental Vice-Chair of Education, Ronald Levine, Director of PGME, and George Christakis, Direct of UME. Their detailed reports are found on page 60 of this 5 year review document.

***m) Research:***

One of the main goals of the Department since 2011 was to work towards a ranking within the top 5 of all Departments of Surgery worldwide as measured by peer-reviewed publications, grant capture, and exemplary clinical practice. The Department has worked steadily towards this goal. Special thanks is given to Michael Fehlings current Vice Chair of Research, and Benjamin Alman, past Vice Chair

of Research for all they have done to support the Departmental mission for accomplishment in research.

An analysis of the publications within the Faculty of Medicine in the University of Toronto between 2010 – 2014 revealed a total number of publications of 35,705 (data courtesy Elizabeth



Perill, Executive Publisher, Surgery, STM Journals, Elsevier, New York, and SciVal and Scopus). The “Surgery” journal category accounts for approximately 5% (2,447 publications) of the entire University’s publication output. The Field Weighted Citation Impact for Surgery output is 1.54. The world average citation impact is 1. If an institute’s citation impact output is below 1 the institute is performing below the world average. If an institute’s citation impact output is above 1 the institute is performing above the world average.

Of the top 50 most prolific authors/investigators in the Faculty of Medicine at the University of Toronto, 10 (20%) are within the Department of Surgery. When ranked against some of the other major institutions in North America, the Department of Surgery at the University of Toronto compares favourably with Harvard Medical College, Duke University, University of Washington, UCSF, and University of Pittsburgh.

The Department is engaged in all areas of research endeavor including translationally oriented basic and pre-clinical science, clinical epidemiology, health outcomes and policy research, and research into state-of-the-art educational initiatives.

The Surgeon Scientist Training Program (SSTP) remains the signature initiative within the Department that continues to train residents in scholarly research and towards higher degrees each year. It is remarkable that since its inception in 1983, the SSTP has trained over 350 residents of whom almost 100 have enrolled in doctoral programs. The SSTP requires almost \$1.5 Million annually of support to run effectively. Sources of support are being actively sought each year.

More than 200 faculty are engaged in research at some level in the Department. Since 2009, more than 7,000 publications have emanated from the hands and hard work of Departmental members engaged in research. Over the past 5 years, research funding has grown from \$38.7 Million in 2009, to \$43.2 million in 2014.

Department of Surgery members celebrate their research accomplishments each year at Gallie Day during which faculty, residents, fellows, scientists, and trainees present their work.

The full report of Research from the Department of Surgery can be found on pg. 74.

#### ***n) Major Awards Recipients:***

Each year, Department of Surgery Faculty, Residents and Fellows distinguish themselves by receiving numerous awards which bring credit to the standing of the Department within the University, Provincially, and across Canada. The Department gives out several awards annually at Gallie Day. The Departmental faculty receives awards from the Faculty of Medicine, Postgraduate Medical Education Office, Undergraduate Medical Education Office, and the University of Toronto. In addition, there are numerous Divisional awards for education, research, and exemplary clinical practice.



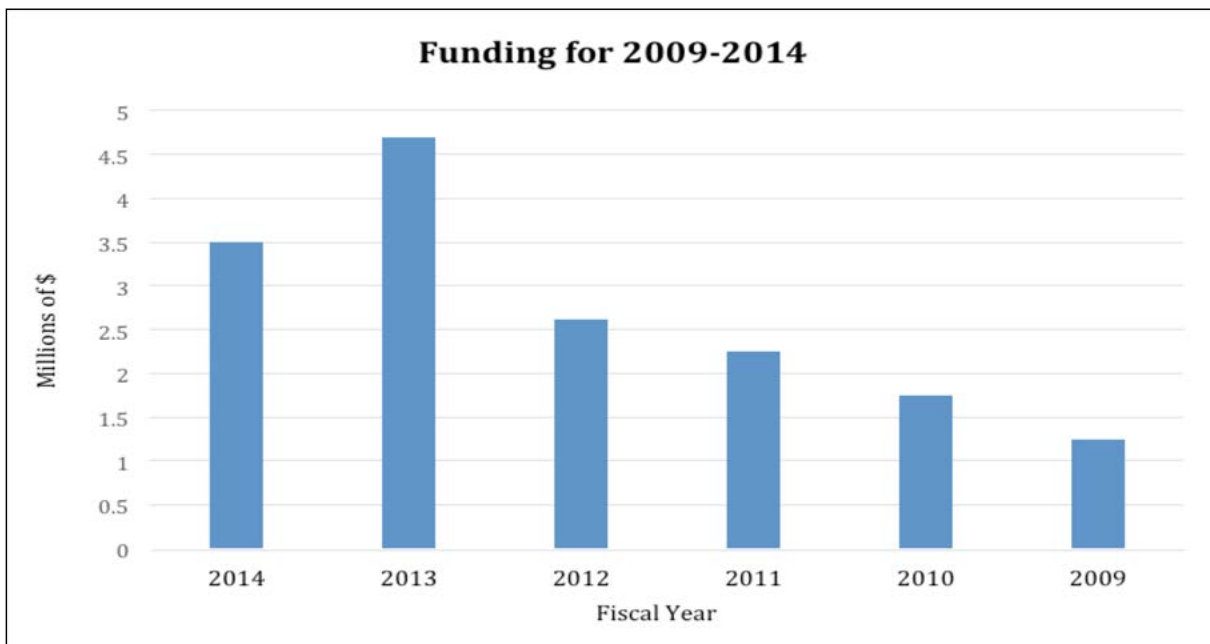
Department of Surgery Faculty are worthy recipients of some of Ontario's and Canada's top awards and honours such as Canada Research Chairs, Induction into the Canadian Medical Hall of Fame, Royal College of Physicians and Surgeons, Canadian Institutes of Health Research, Order of Ontario, Order of Canada, Canadian Cancer Society, and Heart and Stroke Foundation. A listing of the major awards recipients from 2009-14 can be found in the supplementary information at: [http://surgery.utoronto.ca/about/Gallie\\_Day\\_Award\\_Recipients.htm](http://surgery.utoronto.ca/about/Gallie_Day_Award_Recipients.htm)

***o) Advancement:***

The Department of Surgery employs a full-time Senior Development Officer (SDO) from the Faculty of Medicine who assists the Department Chair, and Divisions Chairs, among others with fundraising strategic goals. Ms. Darina Landa was the appointed SDO from 2009-14, and with her help, and assistance from the University Division Chairs, a total of \$16.1 Million was raised in the Department of Surgery. Advancement funds take the form of direct donations, alumni appeals, support from Industry, fellowship funds, support of endowed Chairs, and others.

The Department has built lasting relationships with donors, volunteers and alumni.

**Table 7. Advancement Funding for 2009-2014**



In 2011, the Department spearheaded what has now become an annual alumni mailing, which has strengthened relationships with alumni around the world and to date has raised a total of \$200,000, increasing and elevating advancement activities for the Department. Furthermore, the Department has led a concerted effort to more meaningfully engage with the Department's alumni by reviving and re-invigorated the Surgical Alumni Committee, and recruiting a new Chair to this position.

As part of the \$2 Billion Boundless campaign at the University of Toronto, the Department supported the creation of a campaign video and case for support (<https://www.youtube.com/watch?v=qDnpgizz3Oo>), which were not only extremely effective fundraising tools, and the first of their kind for any Department within the Faculty of Medicine, but also an inspiration and model for other Departments to create similar marketing and campaign fundraising tools.

The Department has been focused on strengthening relationships with our fully affiliated hospitals; ensuring Departmental priorities are strategically supported, while creating a foundation of collaboration on which productive fundraising activity can take place. Examples of this activity include: 1) Support for the Surgical Skills Centre, for which an updated MOU with Mt Sinai Hospital and joint-fundraising agreement with the University of Toronto and Mt. Sinai Hospital Foundation was created; and 2) The creation of the city-wide Brain Tumour Bank Network, which led to developing partnerships between four hospitals and securing a \$2 million philanthropic donation for this project.



***p) Departmental Firsts:***

From 2009-14, several new initiatives were put into place within the Department of Surgery to help support its vision and mission, and to reach its strategic goals. Some of the more important and interesting ones are enumerated here as follows:

## MEDICAL STUDENT EDUCATION

- Breakfast with the Chairman, students are invited to breakfast sessions throughout the year with the Department Chair to discuss a career path in surgery
- Surgical Exploration and Discovery (SEAD) Course, 2 week intensive exposure course to develop fundamental surgical skills (see: J Surg Education 70: 487-494, 2013)
- Suture tying workshops, where medical students are taught the fundamentals of suturing by faculty with instruments that are purchased and sponsored by the Department
- A Life in Surgery Seminar Series, in which faculty present topical discussion points to medical students regarding work-life balance, gender sensitivity, professionalism in the workplace, and reaching academic milestones

## RESIDENT EDUCATION

- Resident course in Practice Management and Financial Planning, organized and instructed by Barry Rubin
- Department of Surgery "Prep Camp" held the first 2 weeks of July where all PGY1 residents attend an intense training course in fundamental operative skills at the Surgical Skills Centres. This course is completely funded by the Department of Surgery.

## FACULTY DEVELOPMENT

- Faculty Development Day, where faculty attend in attempts to improve their teaching, research, and creative professional activity scores
- Department of Surgery Book Club, where faculty meet to discuss books in which medical ethics feature prominently
- Best Practices in Surgery Workgroup, in which representatives from all Divisions meet to discuss ways to investigate issues which cut across all specialties (e.g. readmission rates)
- Late Career Transition Guidelines to assist senior faculty in the plans to exit clinical practice

## ACADEMIC GROWTH

- Competency Based Curriculum initiated in the Division of Orthopaedics, and now being applied incrementally to other specialties in Surgery
- Establishment of the Surgeon: Global Surgery Academic Role and job description
- Harmonization of Academic Salaries, in which all faculty are paid Departmental stipends according to their Academic Role and Job Description
- Establishment of the Ben Alman Lectureship in Surgical Science
- Establishment of the Robin McLeod Lectureship in Clinical Epidemiology
- Establishment of the Balfour Lecture in Surgical Ethics

## DEPARTMENT GROWTH

- American Burn Association (ABA) accreditation status for the Ross Tilley Burn Centre at Sunnybrook Health Sciences Centre
- Best Practices in General Surgery (BPiGS) provincial funding for the Enhanced Recovery after Surgery (ERAS) project
- Establishment of the University of Toronto City-Wide Brain Tumour Banking initiative made possible through a \$2 Million philanthropic donation
- Hiring of a Departmental Strategic Planning Implementation Co-ordinator
- Hiring of a Departmental Communications Co-Ordinator
- Annual Department of Surgery Hockey Tournament in which the different Divisions play against one another each winter

### *q) Strengths and Challenges:*

#### **Strengths:**

The Department of Surgery is the largest of its kind across Canada when one considers the numbers of medical students, residents, fellows, and faculty who are a part of its programs. By virtue of its size and talent pool, the Department lays claim annually to an enormous number of high impact peer reviewed publications, grants, honours and awards. Innovation is evident at a high level in virtually all pillars of the strategic plan. For Education, an example is the highly touted CBC in Orthopaedics; for Research, there is the highly successful and sought after SSTP; for Quality and Best Practices, there are the achievements of the Best Practices in General Surgery (BPiGs) collaborative across the city; for

Faculty Development, there is the annual Faculty Development Day and the Mentoring Program; and in Integration, there is the establishment of the Surgeon:Global Surgery Academic Role. With size and demonstrated strengths, there are definitely challenges that are faced.

#### **Challenges:**

Given the size and the complexity of the Department of Surgery, Departmental organization continues to be a challenge. The Chair works in synchrony with the Executive Committee and the Senior Advisory Committee to ensure that the Department remains operational and synergistic.

Learners are fearful of the dire job market in General Surgery and all surgical specialties.

This has prevented talented medical students from considering career paths in surgery, and has created significant angst for residents who are about to enter the job market. In 2013, the Royal College of Physicians and Surgeons produced a report which has examined employment issues in specialties across Canada ([http://www.royalcollege.ca/portal/page/portal/rc/common/documents/policy/employment\\_report\\_2013\\_e.pdf](http://www.royalcollege.ca/portal/page/portal/rc/common/documents/policy/employment_report_2013_e.pdf)). It was noted that employment issues are most pronounced for resource-intensive specialists such as surgeons. Perhaps as part of the perception that there may be too many underemployed specialists in Ontario, the MOHLTC is reducing the number of residency positions in surgery over the next 5 – 10 years. While not an immediate challenge, the impact of these reductions will be felt within a few years.

Because the Department has traditionally been a highly academic enterprise that values and supports surgeons conducting research and who are academically productive, there is a concern and perception that the role of the Surgeon:Teacher may be under-appreciated or devalued. Restoring the importance and value in the large cohort of educators in the Department, and providing them with support they need to be successful will be a core mission of the Department.

Recent changes in health research funding has created risks for all surgeons and scientists in their careers. The creation of alternate funding streams and mechanisms will thus be an important goal for the Department in the years ahead.

The SSTP is currently in risk of being inadequately funded. This is in part due to the numbers of residents who are enrolled in the program, and the reality that a higher percentage of residents are not receiving externally funded awards as they did in the past. Here again, alternate revenue streams will be essential to

continue to offer and run this program which has been so successful for the Department.

Ongoing financial constraints present significant challenges for the Department. At this time, the Department of Surgery is the only Clinical Department that pays a stipend to all full-time faculty, a practice that was based on “historic hard dollars” which were allocated to individual faculty members many years ago without significant accountabilities. Given the large number of new recruits to the faculty in the Department, the various retention packages that have been offered to valued faculty members, the health care benefits that have been offered to faculty, the expenses associated with successfully implementing the goals of the strategic plan, and the reduction in the support from the Faculty of Medicine, the Department will need to contrive an alternate means of business modeling to stay financially solvent over the next 5 years.

#### *r) Future Directions:*

Despite the fiscal concerns that face all academic Departments at the University of Toronto, and perhaps across all Universities in Canada, the future of the Department continues to look bright and promising given the tremendous talent pool and academic achievements of individual faculty members, and the programs that are in existence, and ones that continue to evolve.

There is no question that identification of alternate revenue streams will be an extremely important future direction of the Department to support research endeavours, such as the SSTP, education, faculty development, and BP/Q initiatives. Some of these revenue streams will come from additional efforts in advancement directed by the Department and by the various Divisions; some will come from industry partnerships in the form of unrestricted educational gifts; and some will be derived from



the offering of new CPD courses by the Divisions under a new business model for CPD.

It also seems clear that a new model for providing stipendiary support for faculty in the Department will need to be developed. The practice of providing historic hard dollars to all faculty members irrespective of their contributions to Departmental activities now seems antiquated and untenable, especially when one considers that the Department of Surgery is the only Department to do this in the Faculty of Medicine. Rather, a system of “pay for performance” within or “pay for contributions” to Department of Surgery seems more appropriate. Such a system could be devised by the Finance Committee of the Department with stakeholder approval across the various institutions.

There is an opportunity for the Department to be a leader in future simulation efforts in the Faculty of Medicine. With the assistance of the Dean, and with collaboration of other Departments (e.g. Anesthesiology, Medicine, Obstetrics/Gynecology), the Department has much to give to this effort with ongoing projects at the Surgical Skills Centre, the Li Ka Shing Knowledge Institute, Sunnybrook Health Sciences Centre, Sick Kids, and UHN.

There can be no question that based on its major investment in competency based training, the Department can be a leader in assisting all Divisions in Surgery and other Departments in achieving a competency based assessment curriculum. The work already established in the Division of Orthopaedics heralds considerable excitement across the country.

The Department is eager to implement its “Late Career Transition” Guidelines as part of its efforts in Faculty Development. There have already been some good examples of “graceful” transitions to retirement in several Divisions. To accomplish such successful transitions will require an early dialogue with all faculty members, and with clear cut expectations about planning for exiting clinical practice by increasing teaching or research or mentoring opportunities while one’s clinical practice is diminishing by design.

The Department will continue to explore the use of communications and social media opportunities to advance its global outreach and impact. Promulgation of the Department’s core values through the activities and accomplishments of its talented faculty members has already



begun, and will be continued. The hiring of a Medial Artist has recently been accomplished to assist with Departmental branding, packaging of content, and providing professionalism to all communications.

Finally, the Department will continue to leverage its proximity to Queen’s Park and the Ministry of Health and Longterm Care to help set the agenda for surgical care of Ontarians through adherence to Q/BP initiatives that have been led by Departmental Faculty members.

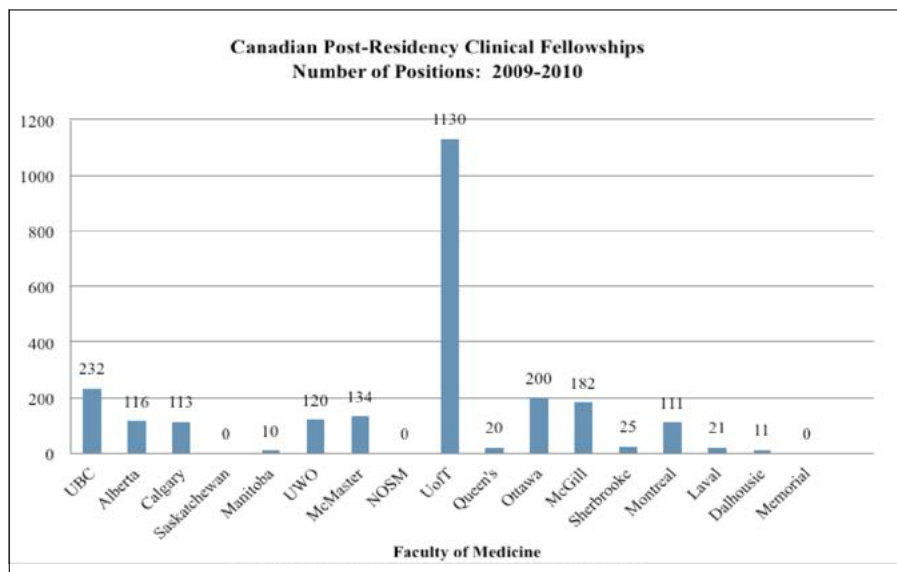
## 5. ORGANIZATION AND FINANCIAL STRUCTURE:

### 1. Organization

The Department of Surgery is comprised of a strong network of faculty and learners, and traverses six fully-affiliated hospitals and an expanding number of community-affiliated hospitals. We have 268 full-time clinical faculty, 100 part-time clinical faculty, 170 adjunct clinical faculty, 7 anatomists and 42 research scientists. We are responsible for the surgical teaching of our 225 medical students throughout the four years of the undergraduate curriculum. We oversee eleven residency programs including 7 CaRMS entry Royal College of Physicians and Surgeons (RCPSC) programs (Cardiac Surgery, General Surgery, Neurosurgery, Orthopaedics, Plastic and Reconstructive Surgery, Urology,

Vascular Surgery) and 4 sub-specialty entry programs (Pediatric General Surgery, Colorectal Surgery, Surgical Oncology, and Thoracic Surgery) with a total enrollment of 204 trainees. The Department of Surgery has the largest fellowship training program across Canada with 250 fellows from over 15 countries coming each year to learn the nuances of specialty surgery. There are more surgical fellows who train in Toronto than collectively are trained across the rest of Canada (Table 8). Interestingly, the Division of Anatomy is housed within the Department of Surgery in a relationship that has been mutually productive and beneficial for over a decade.

**Table 8.** Number of Clinical Fellowships vs. Other Universities 2009-2010



Clinical faculty members in the Department of Surgery hold concurrent appointments in either fully-affiliated or community-affiliated hospitals. The faculty are also organized into eight Department-wide specialties (Cardiac Surgery, General Surgery, Neurosurgery, Orthopaedics, Plastic and Reconstructive Surgery, Thoracic Surgery, Urology, and Vascular Surgery). There is a close working relationship between the University Department of Surgery and the Hospital Departments of Surgery. Faculty members are accountable to their University Division Chair and Department Chair for their academic activities and to their Hospital Division Head and Surgeon-in-Chief for their clinical activities. Each full-time clinical faculty member is assigned an academic role with a corresponding job description. The job description is developed jointly by the Surgeon-in-Chief, Hospital Division Head, University Division Chair and Department

Chair, and determines the distribution of time between clinical care, education, research and administration. At present, there are four academic roles from which faculty members can choose. They include: Surgeon-Scientist (55 faculty); Surgeon-Investigator (115 faculty); Surgeon-Teacher (96 faculty); and Surgeon-Global Surgery (2 faculty).

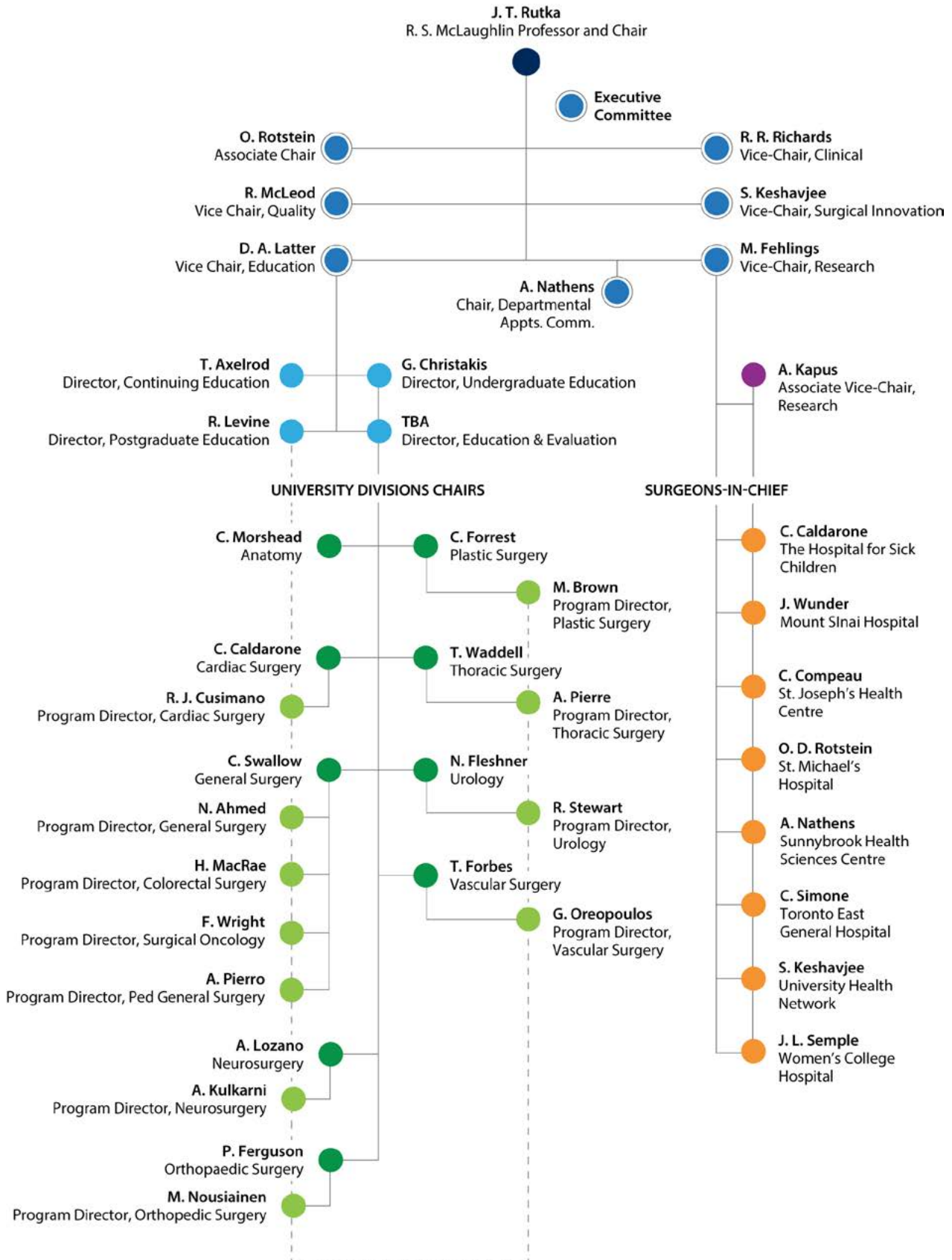
Each year, the full-time clinical faculty are reviewed and assigned an academic score based on their activities for the calendar year in review. The domains in which surgeons score points include research, teaching, creative professional activity, administration, academic rank, and citizenship. Each category is assessed on a point scale of 0-3, as per Table 9 below, with the exception of the citizenship category. This score is then weighted in a variable fashion in each category depending on an individual's academic role. For example, a Surgeon-Scientist will be given a score in research and that score will be multiplied by a factor of 3, whereas his/her score in teaching will be multiplied by a factor of 1.

**Table 9. Academic Point System**

Academic Role	Research	Teaching	Creative Professional Activity	Admin	Rank	Citizenship	Max Total
Surgeon-Scientist	0-3 x 3	0-3 x 1	0-3 x 2	0-3 x .5	0-3 x .5	0-0.5	21.5
Surgeon-Investigator	0-3 x 2	0-3 x 2	0-3 x 2	0-3 x .5	0-3 x .5	0-0.5	21.5
Surgeon-Teacher	0-3 x 1	0-3 x 3	0-3 x 2	0-3 x .5	0-3 x .5	0-0.5	21.5

- 0 - Below Expectations
- 1 - Meets Expectations\*
- 2 - Exceeds Expectations
- 3 - Markedly Exceeds Expectations

**Table 10. Department of Surgery Organizational Chart**



With such a large Department including multiple hospitals and large numbers of faculty and students, the governance structure that has evolved is one of a matrix authority. The Department leadership consists of the Chair; Associate Chair; Vice-Chairs of Research, Education, Clinical, Innovation, Global Outreach/Integration and Quality/Best Practices; Chairs of all nine divisions (including Anatomy); Directors of Undergraduate, Postgraduate and Continuing Professional Development; Surgeons-in-Chief; and Hospital Heads (Table 10, previous page).

All major decisions made in the Department stem from broad consultation across our leadership team. To assist with the implementation of a fairly flat hierarchical organization, the Department has developed several organizational structures. These include a number of main committees: an **Executive Committee** consisting of the Chair, Associate Chair and Vice-Chairs; a **Senior Advisory Committee** consisting of approximately 25 individuals in key leadership positions in the Department of Surgery (Table 11); a **Finance Committee** and a **Departmental Appointments Committee**. In addition to these committees, every four months, the Chair meets individually with each of the 25 members of the senior leadership team.

**Table 11. Senior Advisory Committee**

Dr. James Rutka (Chair)	Dr. Ronald Levine
Dr. Terry Axelrod	Dr. Andres Lozano
Dr. Christopher Caldarone	Dr. Robin McLeod
Dr. George Christakis	Dr. Cindi Morshead
Dr. Christopher Campeau	Dr. Avery Nathens
Dr. Michael Fehlings	Dr. Robin Richards
Dr. Peter Ferguson	Dr. Ori Rotstein
Dr. Neil Fleshner	Dr. John Semple
Dr. Thomas Forbes	Dr. Carmine Simone
Dr. Christopher Forrest	Dr. Lloyd Smith
Dr. Marc Jeschke	Dr. Carol Swallow
Dr. Andras Kapas	Dr. Thomas Waddell
Dr. Shaf Keshavjee	Dr. Jay Wunder
Dr. David Latter	

The Department administrative staff consists of 10 full-time employees of the University. These individuals oversee the following areas of administration: Finance, human resources, academic appointments, faculty promotions, postgraduate education, undergraduate education, communications, and strategic initiatives. The administrative staff is located in the Stewart Building at 149 College Street West, 5<sup>th</sup> floor, along with the senior academic administrative leaders.

## 2. Financial Structure

The Department's operating budget consists of University base funds specifically earmarked for Departmental expenditures and the Division of Anatomy; T&R (teaching and rehabilitation) funds received from the Ministry of Health and Long Term Care (MOHLTC); and postgraduate expansion funds (Pool A), international medical graduates (IMG's) (Pool B), and funds received for Visa-sponsored trainees (Pool C). These funds are used to administer the operational expenses and for academic stipends paid to full-time clinical faculty with specific academic job descriptions.

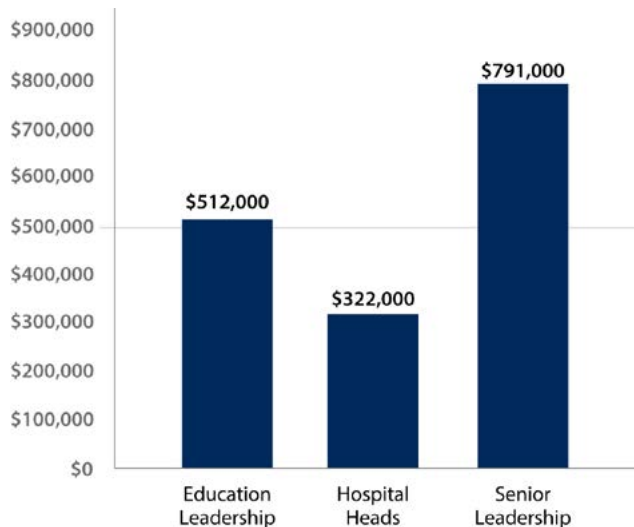
In 2013-14, the budget for the Department of Surgery, considering all sources of revenue, was \$5.8 million.

Please note that unlike other Departments of Surgery in other jurisdictions, at the University of Toronto, the Department of Surgery does not tax practice plan/clinical earnings in any of its Divisions.

Stipendiary support is provided to all members of the Executive Committee for their efforts in steering the strategic directions of the Department; in addition, leaders in Surgical Education and Research, University Division Chairs, Surgeons-in-Chief and Hospital Division Heads receive stipends commensurate with the

time commitment involved with their positions. The amount of funding going to Senior Leadership, Hospital Heads and Educational Leads is shown in Table 12 (next page).

**Table 12. Stipendiary Support 2014-2015**



Notwithstanding the diminution in base budget funding each year, the Department has used these funds to:

1. Strengthen, support and renew faculty development
2. Enhance teaching and enrich the student experience
3. Enhance productivity and impact of research
4. Promote innovation in research, teaching and clinical practice
5. Build international outreach and strengthen partnerships nationally and globally
6. Integrate best practices and quality across departmental programs
7. Explore and establish alternative sources of revenue

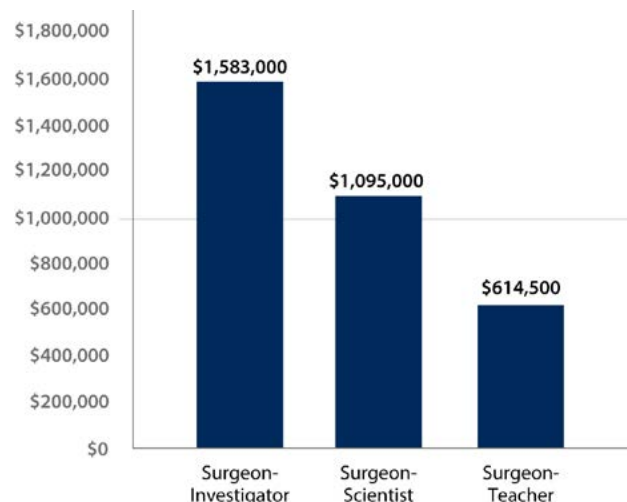
To achieve this, funds are re-allocated from within the Departmental budget on an annual basis to reflect the above priorities. For example, in July 2014, all academic stipends paid to clinical faculty were re-allocated according to a compensation formula which was

based on an individual’s academic role. The decision to do this was suggested and approved by the Departmental Finance Committee and was based on an opportunity to harmonize Departmental salaries, and to offset significant budget decreases.

The realignment of funds allows the Department to implement programs and initiatives according to our strategic plan. The Department continues to invest efforts in increasing endowment funding, working collaboratively and appropriately with industry, and identifying new philanthropic donor pools of funding.

At this time, the Department of Surgery is the only clinical Department in the Faculty of Medicine which provides a salary stipend to **all** full-time faculty members which is based on historic salary allocations. These stipends are paid to faculty according to their academic role. Surgeon-Scientists receive \$20,000 for the first 5 years, after which they receive \$14,000/year; Surgeon-Investigators receive \$15,000/year for the first 4 years, after which they receive \$7,000/year; and Surgeon-Teachers receive \$2,000/year on an ongoing basis. Table 13 (next page) outlines the distribution of funding by academic role.

**Table 13. Remuneration by Academic Role 2014-2015**

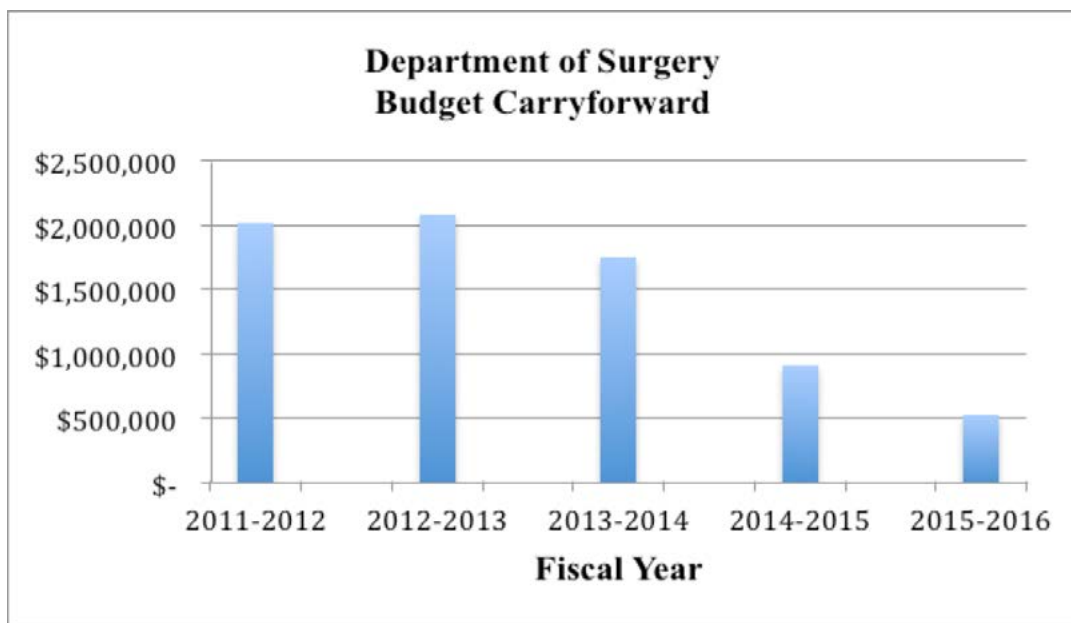


While the Department of Surgery has had, and continues to have a carryforward amount at the end of each fiscal year (see Table 14), it can be seen that this amount is being reduced annually. The reasons for the reduction in annual carryforward is multifactorial, but include the following: 1) recent high level recruitment packages for new faculty; 2) expenditures for new strategic goals and directions; 3) fluctuations in funding for the Surgeon Scientist Training Program; 4) annual increases in administrative staff salaries; 5) retention packages for key Department of Surgery faculty members; 6) increased cost of benefits to faculty members (e.g. critical care insurance, day care subsidy and health care); and 7) reduced central budget allocation from the Faculty of Medicine.

Practice plans are instrumental to the viability of the academic surgical mission. Every

full-time faculty member in the Department of Surgery must belong to a conforming practice plan of one of the fully-affiliated hospitals and approved by the Department Chair. All funding flowing through the practice plans at the hospitals are taxed by the hospital based practice plan. It is the practice plan that provides the base salary support for members of the Department of Surgery. The purpose of these practice plan agreements is to ensure transfer of funding to an Academic Enrichment Fund (AEF) to offset the clinical income loss for those surgeons who are actively participating in research and teaching roles in the Department of Surgery. To help support the educational mission in the Department of Surgery, the practice plans annually receive funding from the MOHLTC Alternate Funding Plan arrangement.

**Table 14. Budget Carryforward**



## 6. RESOURCES AND INFRASTRUCTURE

In 2013, the administrative offices of the Department of Surgery were relocated to the Stewart Building (149 College Street) after having been in the Banting Institute (100 College Street) for over 80 years. Renovation and refurbishing of the space was generously provided by the Faculty of Medicine who also provides funding to pay for the rental fees on an annual basis. The Chair, the Departmental administrative staff, the University Divisional offices for General Surgery, Orthopaedics, Plastic and Reconstructive Surgery and Urology, along with the Educational Directors are located on the 5<sup>th</sup> floor of the Stewart Building. The office space is comprised of 4,210 square feet that is primarily open-concept for the administrative staff, with enclosed offices for the Chair, Business Manager, and Divisional Offices. Semi-private work-modules exist for the Education and Research leads.

A state-of-the-art conference room has been fully equipped for telephone and video-conferencing, and is the location for all Executive and Senior Advisory Committee Meetings, along with meetings for Continuing Appointment Reviews, Departmental Searches, and Strategic Planning Committee among several others. All Divisions in the Department of Surgery have access to booking the conference room as required for their activities.



In 2011, with the appointment of Dr. Rutka as Chair of the Department, a decision was made to convert all computer workstations to Macintosh products. As these computers are nearing the end of their life-cycle, they will need to be replaced in the next 1-2 years.

As the Department continues to grow, we will require more space for offices and document storage.

The Department is constantly reviewing their financial structure in order to deal with the significant budget reductions each year.





# 7. EDUCATION

*Report Provided by David Latter, Vice-Chair Education; George Christakis, Director, Undergraduate Education; and Ronald Levine, Director, Postgraduate Education*

Education and educating learners remain a core business of the Department of Surgery. Each year, members of the Department, including faculty, residents and fellow, garner a significant number of teaching awards across the Faculty of Medicine. Educational scholarship remains a

career path that several faculty members pursue in order to be promoted to higher academic ranks. The goals of the Educational pillar of the 2012-2017 Strategic Plan – *Transforming Surgery Beyond the Cutting Edge* – include the following:

## EDUCATIONAL GOALS

- 1 Strengthen the recruitment, development, and support of surgeon teachers.
- 2 Refine the core undergraduate surgery curriculum that outlines the essential learning elements for surgery clerkship, the learning objectives, and an expanded range of learning sites.
- 3 Expand novel teaching approaches and methods, and capitalize on communications technologies and advances in simulation.
- 4 Develop a competency-based assessment program for residency training.
- 5 Enhance the career development for residents and provide career assistance to our graduates.
- 6 Promote a robust array of continuing medical education opportunities in surgery.

With these goals in mind, the Department has advanced its curriculum and training across the spectrum of learners.

### **Report on Undergraduate Medical Education:**

The Department of Surgery's Undergraduate Education Office oversees and coordinates various surgery-related programs, initiatives and courses over the University of Toronto's 4-year MD/Ph.D. program as well as to medical students from within Canada and various parts of the world. The Office of

Undergraduate Education is headed by the Director of Undergraduate Education and is supported by a full-time coordinator as well as several other hospital site administrative staff. The Undergraduate Education Committee has representation across the various Divisions and welcomes participation of medical students. In addition, the office is complemented by the Director of Pre-clerkship as well as faculty support at various levels.

Undergraduate Education is an important and integral part of the Department of Surgery's Education portfolio and looks to provide the highest levels of surgical instruction and exposure to the brightest minds that make up the medical students within Canada and across the world.

Education is an exciting and dynamic field that needs to change along with the needs of society, new learning techniques and teaching styles as well as constant advancements in technology. From 2009-14, a number of innovations and new programs have been introduced into the curriculum, and Undergraduate education in the Department reflects these changes.

In May 2012, the Department of Surgery participated in the accreditation cycle of the Medical School by the LMCE/CACMS for undergraduate medical education in May 2012. Prior to the review, it was clear that the Department had issues in undergraduate medical education which potentially threatened a successful accreditation of the Medical School. The Department worked diligently with the Faculty of Medicine to ensure that the curriculum and training in surgical education was met with strong evaluations by the students. This indeed proved to be the case, and some of the reasons why the Department contributed to the successful review of the Medical School can be enumerated as follows:

- 1) In 2010, the surgery clerkship course expanded to include St. Joseph's Health Centre and Humber River Hospital. The inclusion of these two community affiliated sites provided third year students with valuable "community" experiences.
- 2) The implementation of a new clerkship curriculum commenced in September of 2010. These curricular changes included:
  - A reduction in the length of the Surgical Clerkship from two 6-week rotations to a single

8-week experience.

- The implementation of a combined Medicine-Surgery OSCE, run centrally by the Faculty of Medicine.
  - The elimination of phase I and phase II rotations with completion of all rotations, by all students, prior to the CaRMS period. The latter portion of the fourth medical school year is used to focus on synthesis of information and performance of "selectives."
- 3) A surgical clerkship was initiated in 2011 in which the 8-week clerkship begins with a week long 'Crash Course in Surgery,' a series of seminars and hands-on technical skills sessions, designed to provide students with an overview of the surgical specialties and an opportunity to learn fundamental procedures. Following the Crash Course, students complete three sub-rotations. One two-week rotation followed by another two-week rotation and end with a three-week rotation. Students have input into their choice of rotation and the Surgical Education offices do their best to accommodate. Additionally, General Surgery was mandated as a mandatory rotation. It was the opinion of the Undergraduate Education Committee that there are certain experiences that the General Surgery rotation most reliably provides.
  - 4) Evaluation of the new clerkship changed in 2011 to include a performance-based examination; observed directed history and physical examination; three structured oral questions; and the written NBME shelf examination to serve as the equivalent to the "MCQ" exam. Here, UofT students excelled on the surgical questions when compared against international benchmarks for this exam.
  - 5) A mini retreat for undergraduate education headed by Drs. Rutka and Latter took place in late September 2011. Information provided

by the student questionnaire in preparation for the medical school accreditation in May 2012, was helpful in creating new ideas as well as promoting the goals and objectives for education in surgery. The conclusions from the mini retreat were that undergraduate surgical education will continue to be valued as an important contributor to the Department of Surgery and will be recognized through promotions, practice plan points as well as financial reimbursement. The strength of this support for undergraduate education was further reinforced in the Department's Strategic Plan meeting in Jan 2012.

- 6) T-Res was introduced at the Undergraduate Education office as an electronic submission system that students use to track the various case logs of clinical activity that they are required to perform. If a lapse or lack of progress is observed, actions are instituted to ensure that the student is offered the opportunity to achieve these mandatory experiences. There has been 100% compliance in the completion of T-Res requirements in the Department.
- 7) The Undergraduate Education Committee was expanded by 75% in order to allow for more site representation. The Committee also created a larger committee for undergraduate education known as the Surgical Leaders of Undergraduate Education (SLUEs). Each surgical division has appointed a divisional director for undergraduate education who will collaborate with other SLUEs in their division. There is now a SLUE from every division at every hospital. In this way there will be a facilitator for undergraduate education representing every division at every hospital site. These committed and enthusiastic surgeon/ educators will facilitate every clerk's sub-rotation.
- 8) Recognizing the important role of residents in educating medical students, in 2012 the "Resident Leaders of Undergraduate Education" role was established in the Department. With the help of the Director, Postgraduate Education and the Program Directors, a core cadre of committed and enthusiastic teacher residents has been identified to form the 'Resident Leaders in Undergraduate Education.' Their responsibilities will include, formalizing a handbook on how to teach clerks as well as taking responsibility for education of their resident colleagues in the methodology and organizational aspects of teaching clerks. Two representatives from this group are also part of the Undergraduate Education Committee.
- 9) In 2013, The Surgery Clerkship website (portal) was comprehensively reorganized and revamped. Content for the crash course sessions were updated and organized with relevant readings posted for students to review in preparation for each session. Several other learning resources, including videos and access to relevant library materials are included. A mobile app was also created to enable students to access relevant information "on-the-go."
- 10) In 2013, several clinical clerks completed their rotations at the Medical Academy of Mississauga (MAM). Student feedback has been extremely encouraging.
- 11) To further the goal of delivering consistent and cohesive undergraduate education across all sites, in 2014 the position of Division Director in Undergraduate Education was established. This person is the spokesperson and Division lead on all things related to Undergraduate Education. This person is responsible for undergraduate teaching activities, teaching assignments, and education-related communication

within their Division, as well as to bring all the Surgical Leaders in Undergraduate Education (SLUE) in the Division for regular meetings.

- 12) The Longitudinal Integrated Curriculum (LInC) project was initiated in clerkship in the Department of Surgery in 2014. The purpose of LInC is to provide a select group of students an opportunity to remain on a particular service for an extended period of time throughout the year to enable them to gain experience in one discipline, build relationships with team members, and to follow patients through their journey in hospitals from admission, to work up, to surgery, to recovery.
- 13) From 2009-14, the Undergraduate Education Committee continued to provide oversight to several highly successful pre-clerkship programs including the Surgical Education And Discovery (SEAD) program for first year medical students ([http://surgery.utoronto.ca/education/undergraduate/SEAD\\_Program.htm](http://surgery.utoronto.ca/education/undergraduate/SEAD_Program.htm)), the Surgical Longitudinal Experience (SurgicLE), Student Surgical Skills Development (S3D) and the activities of the Surgical Interest Groups (SiG), to name a few.



There is no question that Undergraduate Medical Education in the Department will continue to evolve and improve. The vision is to continue to provide students with quality of education and instruction that is among the best in the world.

#### **Report on Postgraduate Medical Education:**

Dr. Richard Reznick stepped down as chairman after 8 years to become the Dean at Queen's University in 2010. Dr. David Latter was the interim chairman for approximately one year until our current chairman, Dr. James Rutka, assumed the role in April 2011. Dr. Rutka has been an excellent leader for all postgraduate activities in both time and financial support for new initiatives.

The Department of Surgery at the postgraduate level is the largest in Canada with approximately 280 residents in total. There are 11 surgical programs; 7 CaRMS entry and 4 sub-specialty programs. The backbone of the 11 surgical programs is the dedicated Program Directors and their administrative assistants.

Our surgical positions for all of our CaRMS entry specialty programs are sought after by medical students from across Canada. All CaRMS entry surgical positions have been filled in the first iteration between 2009 to 2014 and most residents matched to our programs are the top-ranked applicants. Many of the surgical specialties also take international medical graduates (IMGs) and visa trainees from around the world.

Over the 5 years there have been several search committees and appointment of new chairpersons. These search committees have all been chaired and organized by Dr. Rutka. These newly appoint chairs have all been excellent and taken the Department of Surgery to the next level:

**Dr. Carol Swallow** - General Surgery

**Dr. Christopher Forrest** - Plastic and Reconstructive Surgery

**Dr. Tom Forbes** - Vascular Surgery

**Dr. Peter Ferguson** - Orthopaedic Surgery

**Dr. Agostino Pierro** - Paediatric General Surgery

**Dr. Neil Fleshner** - Urology

The Program Directors and their administrative assistant coordinate the everyday running of the different specialties. There have been a number of changes to the Program Directors over the past 5 years:

**Dr. George Oreopoulos** - Vascular Surgery

**Dr. Markku Nousiainen** - Orthopaedic Surgery

**Dr. Abhaya Kulkarni** - Neurosurgery

**Dr. Gideon Cohen** - Cardiac Surgery

**Dr. Frances Wright** - Surgical Oncology

**Dr. Helen MacRae** - Colorectal Surgery

**Dr. Andrew Pierre** - Thoracic Surgery

The first two years of training in surgery is known as Surgical Foundations. Besides attending the specialty-specific academic endeavors, the Surgical Foundations residents attend a series of didactic lectures to prepare them for Royal College Surgical Foundations exam and to make them better surgeons overall. These didactic lectures are every Tuesday between 7:30am – 9:00am. In September 2013 the organization of these lectures was taken over by Dr. Maurice Blitz. There have been a number of initiatives in Surgical Foundations. The didactic lecture series has been changed from a 2-year program to a one-year program. Dr. Blitz has developed a national in-service exam for Surgical Foundations and this exam is written by all residents across Canada. There are also three competencies that each resident has to achieve to pass Surgical Foundations: 1) 75% attendance at the didactic lectures; 2) passing the in-service exam; and 3) passing the Prep Camp.

All of the PGY1 residents attend a surgical skills course in the fall. Each of the surgical specialties also runs their own courses where surgical skills specific to their specialty are taught. Lisa Satterthwaite is the Senior Manager of this unique lab and Dr. Oleg Safir took over as the Director of the Surgical Skills Lab from Dr. Helen MacRae and he has brought many new changes to the lab. Our surgical skills lab is one of the largest in Canada (see Surgical Skills Centre page 95).

There have been a number of new academic initiatives over the past 5 years that have continued to improve the delivery of an outstanding curriculum to residents in the Department. They include:

- 1) The Department of Surgery Prep Camp was introduced in July 2013 that was hugely successful. This Prep Camp is mandatory for all PGY1 surgical residents and runs for the first two weeks in July. It is an intense program of didactic lectures and learning fundamental surgical skills. There is an exam at the end of Prep Camp. Several of the surgical specialties have their own Prep Camp after the surgical Prep Camp.

The introduction of Competency Based Teaching and Assessment within all Divisions in the Department of Surgery. A retreat was held in the Department of Surgery in January 2012 where one of the priorities for Postgraduate surgery was to introduce Competency Based Teaching and Assessment. There were several educational meetings on how to introduce competency-based teaching for all program directors. We have now initiated competency based teaching and assessment for all specialties and in the future will coordinate this with “Competency by Design” as it is rolled out by the Royal College.

The offering of a number of didactic seminars, journal clubs, M&M rounds, professor rounds and teaching courses at the Surgical Skills Lab within each of the Divisions in the Department.

The “Surgeon in Society” Course taught each July to the PGY1’s and 2’s in which medicolegal issues are discussed. This is run by Dr. John Bohnen and Dr. Ron Levine.

The Resident as Teacher Day for the PGY1 and PGY3 residents taught by Dr John Murnaghan, which is a workshop to teach residents how to be better teachers.

A Resident Orientation Day organized by Dr. Ronald Levine for all of our new first year residents.

ATLS training which is mandated for all first year residents and coordinated by Dr. Jameel Ali at St. Michael’s hospital.

The establishment of a “Women in Surgery” group which was started in order to attract female medical students into the surgical specialties. This has been led by Dr. Carol-Anne Moulton and has now become a balance and lifestyle group called “Life in Surgery” which meets several times a year to deal with the balance and lifestyle issues in surgery. It is open to all medical students, residents, fellows and faculty.

Case log tracking on POWER is now mandatory for all surgical residents. The Program Directors can monitor the operating experience of the resident at each hospital and can compare the experience from one hospital to another using the data from POWER case logging.

Postgraduate Core Education (PGCoreEd) is a series of interactive modules based on the CanMEDS roles. There are 8 modules including end of life care. These modules are

mandatory for all PGY1 and PGY2 residents and all 8 modules must be completed by the end of the PGY2 year. Each module takes 4 – 5 hours to complete and there is an exam at the end of each module. The results of the exam are provided to the resident, Program Director and the Director of Postgraduate Education.



All teachers in the Department of Surgery are evaluated by the residents on POWER and a teaching effectiveness score (TES) is generated. These scores are released to the faculty, Program Directors, Chairperson, Surgeons-in-Chief at the specific hospital, Director of Postgraduate Surgery and the Chairman of the Department of Surgery. Faculty with chronically poor scores meet with the Departmental Chair and PGME Director to discuss strategies to improve teaching performance.

A Faculty Development Day was introduced in 2011 and it is held annually in the spring. It is directed by Dr. David Latter and all faculty with low TES scores are highly encouraged to attend. Faculty Development Day is open for all other faculty members that wish to attend as the purpose is to improve the teaching skills of the surgical faculty.

The University of Toronto, Royal College of Physicians and Surgeons and the Ministry of Health have all mandated an increased

community experience for our residents. This mandate is known as Distributed Medical Education and the Department of Surgery has been very supportive of this initiative. To meet this mandate, the Department of Surgery has increased the number of residents going to our community hospital affiliates. The feedback from residents rotating through these community hospitals has been excellent.

There are many awards in Postgraduate teaching to recognize excellence in surgical teaching. There is an awards committee chaired by Dr. Robin Richards that meets regularly to nominate surgeons for different awards. Specifically in postgraduate teaching there are the Bruce Tovee Award for excellence in teaching by an attending and the D.R. Wilson Award for excellence in teaching by a resident.

### **Report on Clinical Fellows Education:**

The Department offers training to over 250 clinical fellows each year across all different specialty areas in Surgery. The Department is indeed fortunate to have David Latter lead efforts in clinical fellowship training, as he is also the Chair of the Fellowship Education Advisory Committee (FEAC) within the Faculty Medicine at the University of Toronto (<http://www.pgme.utoronto.ca/content/fellowship-education-advisory-committee>). Under Dr Latter's leadership of FEAC, clinical fellowship training goals and objectives have advanced enormously. The different Clinical Departments have adapted the policies espoused by FEAC on such important topics as the Guidelines for Educational Responsibilities in Clinical Fellowships; Evaluations of Clinical Fellows; Remuneration of Clinical Fellows; Offer Letters to Clinical Fellows; Access to Primary Care for New Clinical Fellows; and Workplace Safety and Insurance Board Coverage for Clinical Fellows.

The Department has developed its own website of information on Clinical Fellowships (<http://surgery.utoronto.ca/education/fellowships.htm>). Links to all Divisions which offer Clinical Fellowships are found on this site.

Survey data from 2014 are available from Clinical Fellows within the Department. There were 105 Respondents to the Survey (40%). Several challenges were faced by Clinical Fellows applying to Surgical Programs. These included difficulties with licensing, credentialing, and registration, levels of fellowship funding, finding suitable access to primary care, and finding affordable housing. The majority of fellows received between \$50-75K per annum as remuneration. The majority of clinical fellows ranked their educational experience as above expectation or outstanding in the fields of mix and diversity of cases, quality of patient care experiences, quality of teaching, and availability of procedures. When asked why they considered a Clinical Fellowship in the Department, the majority stated that it was a unique training opportunity; that the clinical experience would help them gain employment advantage; and that they received highly advanced clinical training.

Naturally, the Clinical Fellowship experience is both Hospital and Mentor dependent as the survey data indicated. The relationship between Residents and Clinical Fellows is one that is constantly being monitored by the Department. Data from the most recent Royal College accreditation in 2013 suggested that on balance this relationship was a healthy one, although at times the two groups can come into areas of conflict. The Department is continuing to improve all aspects of Clinical Fellowship training, and is pleased to work with FEAC to ensure that standards are maintained across all Clinical Departments.

# 8. RESEARCH REPORT

*Prepared by Michael G. Fehlings MD PhD FRCSC FACS FRSC FCAHS, Vice Chair Research, Department of Surgery*

Research is a key cornerstone which contributes to the excellence in the Department of Surgery at the University of Toronto (<http://surgery.utoronto.ca/research.htm>). The achievements in research contributes to the international impact that this Department and the Faculty of Medicine have achieved. Areas of research focus in the Department of Surgery include translationally oriented basic and pre-clinical science, clinical epidemiology and clinical trials research, health outcomes and policy research and research into cutting edge educational initiatives.

The Surgeon Scientist Training Program (SSTP) in the Department of Surgery is arguably the jewel in the crown of our research portfolio. Since its inception in 1983, the SSTP has facilitated formal graduate research training for

352 residents of whom 98 have been enrolled in doctoral programs. The current enrollment in the SSTP is 32 of whom 24 are enrolled in Master degree programs and 8 are pursuing a PhD. The SSTP is closely linked with the Royal College of Physicians and Surgeons Clinician Investigator Program. Resident trainees take time out of their clinical training to pursue at least two (2) years of thesis-based research training. The salary support for members of the SSTP is close to \$1.5 million per year. This is financed through salary support scholarships which are topped up by the Department to enable residents to continue receiving funding at the appropriate PGY level. Of the over 350 graduates of the SSTP from 1983-2014, roughly 70% of surgeons are in academic positions and over 60% have continued research commitment.

**Table 14. Surgeon Scientist Training Program 2002-2014**





Despite the successes of the SSTP we are faced with a number of challenges. Having a dedicated endowed source of funding to support the SSTP is a major challenge. This has been identified as a high priority for fundraising efforts which are being undertaken in collaboration with the Faculty of Medicine's Advancement Office. In addition, it is increasingly recognized that the career path for surgeon scientists can be challenging. Recently, the Department of Surgery Research Committee at the University of Toronto undertook a research retreat in which the opportunities and challenges related to the developmental path of a surgeon scientist (from initiating the residency program through completion of the SSTP to the initial faculty appointment and subsequent promotion to mid-career level) was discussed in detail. Several initiatives from this research retreat will arise. These include a formal linkage with the mentoring program which has been initiated through the Department of Surgery. Another initiative will be the establishment of a career counseling night for surgeon scientist trainees nearing completion of their research training. In the fall of 2014, the Department inaugurated an annual "Town Hall" meeting for the PGY1 and PGY2 surgical residents to introduce them to the opportunities of research training and a career in research in the Department of Surgery.

As a complement to the SSTP, the Department of Surgery has also established a Scholarship in Surgery Program (SIS). The Department has recognized that academic scholarship can occur in heterogeneous ways. Accordingly, there is an increasing need for alternatives to thesis-based research training as embodied by the SSTP. The SIS Program thus supports graduate training in academic areas which do not involve thesis-based programs. In the past, trainees in this program have focused on various aspects of business or public health.

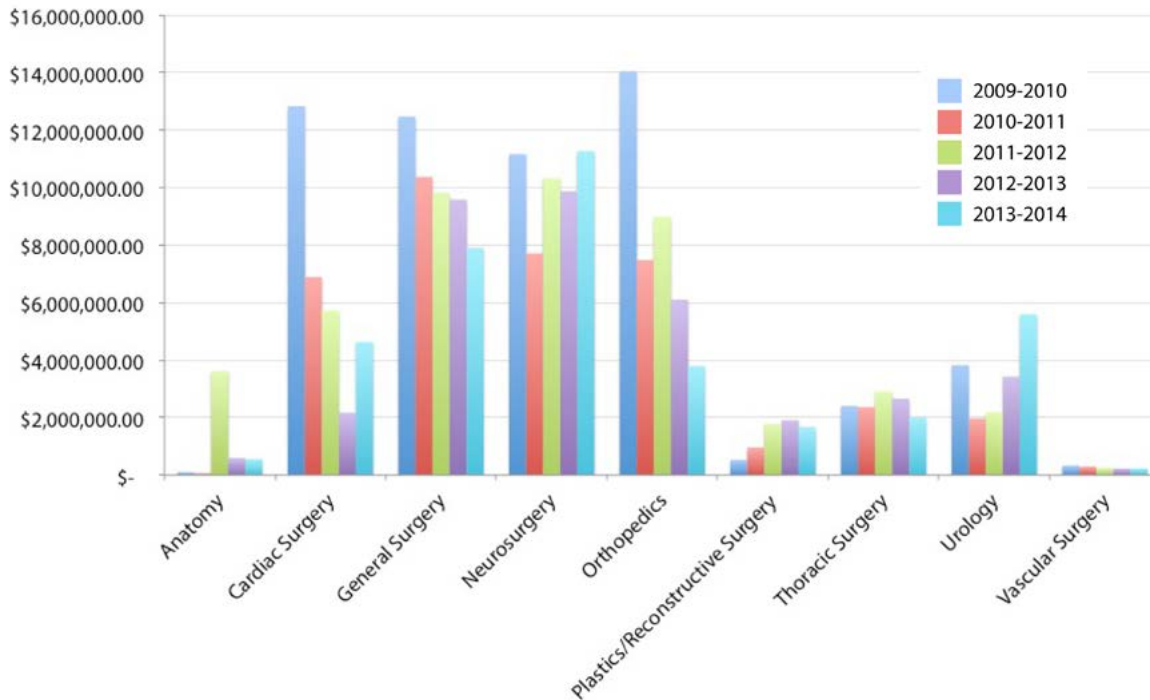
In the future, it is likely that these areas of academic activity will continue; however, it is also expected that a number of surgeons and surgical trainees will consider the option of enrolling in new graduate training programs in translational research which are being offered at the University.

A key to the success of research efforts in the Department of Surgery lies in the excellence of the faculty. Currently, over 200 faculty in the Department include research as a major area of priority focus. These faculty include 117 surgeon investigators, 56 surgeon scientists and 48 full-time faculty scientists. Collectively, these faculty truly represent a translational powerhouse in research. The importance of full-time scientists in the Department of Surgery who do not engage in clinical activity has been formally recognized in several ways. These initiatives include the appointment of an Associate Vice Chair of Research who is a full-time scientist not engaged in clinical activities. In addition, full-time scientists and their trainees are now an active part of the Annual Gallie Day.

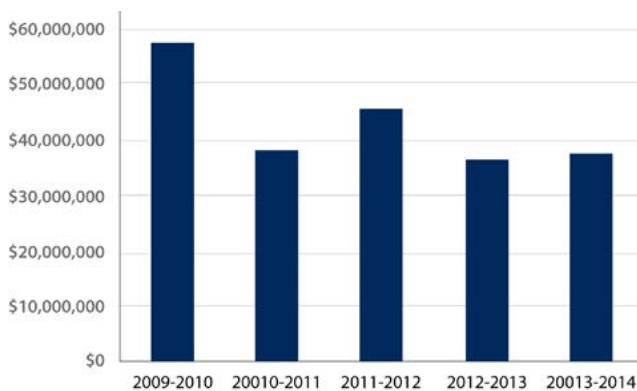
The research excellence in the Department of Surgery is reflected by a prolific level of productivity related to peer-reviewed research publications. Since February 2010, surgeon scientists and surgeon investigators in the Department of Surgery have published over 7,000 peer-reviewed papers – many of which are in the highest impact journals.

The impact of research in the Department of Surgery is further reflected by the levels of external funding which faculty attract. Faculty in the Department of Surgery have increased the level of external funding support from \$38.7 million in 2009 to \$43.2 million in 2014.

**Table 15A. Grant Funding by Division 2009-2014**



**Table 15B. Grant Funding Total 2009-2014**



This increase in external funding is largely reflected by an increase in competitive external peer-reviewed grants from the Canadian Institutes of Health Research (CIHR). CIHR funding by Departmental investigators increased from \$18.8 million in 2009 to \$23.4 million in 2014. This is a remarkable accomplishment given the increasing challenges and complexity in landing external peer-reviewed grant support.

The academic research excellence in the Department of Surgery is celebrated annually at

Gallie Day. Gallie Day reflects the excellence of the surgeon scientist trainees, graduate students, postdoctoral fellows and full-time faculty scientists. Annually, over 80 research presentations are presented in either podium or poster format. The 2014 Gallie Day Symposium and Gordon Murray Lecture focused on innovation and commercial translation of research. The translation of cutting-edge research into practical applications to benefit patients and society is truly at the heart of excellence in the Department of Surgery.

In summary, research is a key cornerstone of excellence in the Department of Surgery. The commitment by the Department to research activities is very strong and is reflected by the excellence of faculty and trainees in the Department. A major challenge and opportunity for the future will be to fundraise to achieve a substantial endowment to support research training and innovative translational research into the future.



## 9. QUALITY AND BEST PRACTICES

*Prepared by Robin McLeod, MD, FRCSC, Vice Chair Quality and Best Practices*

The Department of Surgery's Quality and Best Practices (Q/BP) committee has made significant progress over the past several years. Below you will find an in-depth look at these milestones in the domains of quality improvement and best practices.

### **Unplanned Readmissions and Emergency Room Visits**

The Q/BP committee decided to undertake a quality initiative that would be pertinent to all Divisions in our Department. We thus, decided that we would analyze unplanned readmissions and emergency department visits following surgery for a common index procedure performed in each Division. We now have data for coronary artery bypass grafts, and will soon have data on pulmonary lobectomy, colectomy and knee arthroplasty. We will then complete the

review of the remaining procedures. While the committee will look at the readmission and ER rates, it is hoped that each Division will further analyze the data to understand the reasons why patients return to the ER or are readmitted and develop initiatives to decrease ER visits and readmissions. We will look at the data by hospital and if there are differences amongst the various hospital divisions, hopefully it will lead to collaboration and learning from each other.

### **Guideline Development**

The Division of General Surgery initiated *Best Practice in General Surgery* (BPIGS) in 2006 and it has been very successful in developing guidelines and other quality initiatives which have had good uptake at all of the hospital divisions. In addition, BPIGS has been supported by most of the hospitals and we have also been

able to receive external funding. Our proposal is to transition BPIGS to Best Practice in Surgery (BPS) and develop guidelines and initiatives that are relevant to a larger audience. While there are some guidelines and protocols that have been developed at the hospital level, we have found that BPIGS has been well received because of the clinician engagement and the collaborations we have developed with other stakeholders.

We also see that there is an opportunity to promote the University of Toronto Department of Surgery in the quality sphere. The Canadian Patient and Safety Institute (CPSI) recently asked us to share our guidelines and partner with them in developing surgical safety initiatives.

### **Person (Patient) Centered Care (PCC) Initiative**

Engaging patients in their care has been shown to increase patient experience and satisfaction as well as reduce health care costs. We have formed a subcommittee of individuals who have an interest in PCC to develop a PCC strategy for our Department. As a first initiative, we have planned a workshop where we will bring surgeons, residents, nurses and patients together to understand what is important to patients, prioritize these initiatives and develop strategies on how these can be implemented.

### **Resident Curriculum**

Faculty members Najib Safieddine, Tim Jackson and Joe Pappia have been working in partnership with the Centre for Quality Improvement and Patient Safety to develop a QI

curriculum for our residents. This will be a small-group seminar based course that will launch this coming academic year (2015-2016). All PGY-1 residents in the various divisions within the Department of Surgery will participate. Residents will be expected to identify an area where there is a gap in care and as a team, develop a quality initiative to address it. The program will extend over the year and each small group will be mentored by one of our surgical faculty. At the end of the year, we will try to organize a forum where the protocols can be presented.

### **Faculty Development Day**

Each year the Departments of Anaesthesia and Surgery sponsor Faculty Development workshops. This year, there will be a combined event. David Latter has asked us to do one of the breakout groups focused on quality initiatives. We are planning to have a session of interest to both surgeons and anesthesiologists focused on quality initiatives in the perioperative period (ie: pain control, fluid management etc). This will be led by Stuart McCluskey from Anaesthesia and Robin McLeod.

### **IDEAS Program**

This year, faculty members Graham Nagle Roche, Tim Jackson and Najib Safieddine and one of our residents (Reilley Musselman) completed The IDEAs program. This program is offered by HPME and provides training in developing and implementing a quality improvement initiative.

# 10. FACULTY DEVELOPMENT

## “ENGAGE AND VALUE CONTRIBUTIONS OF THE FACULTY”

*As Prepared by: Dr. Ori D. Rotstein, Associate Chair of the Department of Surgery*

This pillar focuses on developing a culture in which all faculty members have equal opportunity to achieve their academic potential. Performance measures and accomplishments since 2012 include the following:

### **Leadership training:**

The Vice Chair and a faculty lead have introduced the basic structure for a Leadership Training Program in which formal mentoring will be provided to those on a leadership track in their careers. Chair support has allowed for the opportunity to partner with the Rotman School of Business and a major financial institution for assistance in program design.

### **Mentorship:**

Chair support of a surgery-specific mentoring program has allowed for the selection of a career-specific mentor in addition to the academic mentor specified in the Memorandums of Agreement, for the inclusion of this mentor in the MOA, and for the design of a new clause altogether. It has also granted four sessions with the Centre of Faculty Development in which mentors and mentees received hands-on skills training for mediating effective mentoring relationships. The Vice Chair and mentoring committee have completed the program’s official infrastructure, mentor-mentee pairings, and the development of mechanisms for monitoring the relationships throughout the year.

### **Looking Ahead**

Leadership training program: Program development will continue, with expected implementation in the upcoming year with select individuals in a pilot program.



**Mentoring:** The first year of the mentoring program will require attentive monitoring in order to make the necessary adjustments for an effective program. Chair funding will allow for ongoing training sessions and access to valuable teaching resources, as well as an online portal in which mentors and mentees can communicate and log their career goal progression. It is the Strategic Plan’s expectation that the Department may be able to utilize the data from its evaluations to contribute to the academic literature on surgical mentoring.

**Later-career transitioning program:** An identified faculty member will be collaborating with the Vice Chair to develop a program for facilitating later-career opportunities. The program will include seminars, workshops, and informative lectures, all of which will rely on Chair support for their implementation.

# 11. CONTINUING PROFESSIONAL DEVELOPMENT

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*Report prepared by Terry Axelrod MD MSc, Director, CPD*

## **Status report, July 1, 2009- June 30, 2014**

### **Overall CPD Goals**

- Promote best practices in continuing education and professional development (including Faculty Development, CE, and Professional Development)
- Foster scholarship and research in continuing education
- Broaden the scope and inclusiveness of continuing education (including international, interprofessional)
- Work closely with CPD office in the Faculty of Medicine at the University of Toronto to implement a new model of partnership, including funding and advertising of CE programmes

### **2009-2014 Activities**

- 120 CPD events in the Department run through the CPD office at the University, with 85 fully managed, the remainder with sponsorship for accreditation only
- Approximately 75% are live meetings, 20% faculty development, 5% Web based
- Superb success with enrollment in the hundreds for several of the annual courses, such as the Update in General Surgery 2013 (435 participants), 2014 (381 participants); Urology Update 2012 (222 participants), 2013 (192 participants)
- New programmes including the First Annual Pediatric Wound Care Symposium, 2014 (Joel Fish and Irene Lara-Corrales) and the Hand and Upper Extremity Update 2014 (Steve McCabe)

- Many faculty members involved as Chair and faculty in CPD events nationally and internationally outside of the CE jurisdiction

### **New Model for the relationship between the University CE Office and the Department of Surgery:**

- The Department of Surgery has been selected by the Vice Dean for Continuing Education to be the Test Department for the implementation of a new model outlining a partnership between the CPD office at the University and the Department for promotion of and full management of our CPD events. This is an exciting development that should rapidly expand many aspects involved in CPD, including promotion of events, expanding target audiences, financial modeling, and innovation in other areas such as Web based education, simulation and hands on programmes.

### **Objectives for the next 5 years:**

- Encourage all Divisions to run or accredit courses through CPD office.
- Catalogue the National and International CPD that is done outside of the CPD office
- Continue to encourage the development of more Web based programmes.
- Promote the value of CPD to the Faculty of Medicine vis a vis promotion and advancement of faculty through partnership with the Vice Dean of Continuing Professional Development
- Establish a working committee within the Department for CPD, to promote events, explore various opportunities and to reach into Web based educational events

# 12. GLOBAL SURGERY

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*Report prepared by Andrew Howard, MD, FRCSC, Director Office of International Surgery*

## **Overview:**

The University of Toronto was ahead of its time in establishing an Office of International Surgery in 1999. The mandate of the Office is to support and promote scholarly work aimed at reducing the morbidity and mortality from surgical diseases in low and middle income countries.

By 2009, International Surgery or Global Surgery had become formally established in academic departments of surgery across Canada. The Bethune Round Table, an annual meeting initiated by University of Toronto, was instrumental in creating such other departments as it moved from city to city in Canada. Strong north-south collaborations have been initiated and fostered through this academic meeting.

In 2014, Global Surgery is receiving increasing attention particularly due to findings of the Lancet Commission on Global Surgery. The best estimates to date show 3.6 billion to 5 billion people effectively lack access to surgical care. Correcting this would relieve 30% of the world's burden of morbidity and mortality. An ambitious plan envisioned by the Lancet commission would see surgical care for all by 2030.

The current departmental strategic plan envisions a bold transformation of the way University of Toronto engages in International Surgery during the next five years. The success that our department has enjoyed as a world class centre for surgical research and surgical education sets a high standard for attainment of this transformation. A broad approach engaging and enabling faculty, residents and medical students is being designed and implemented. People, projects, and partnerships need substantial support to have substantial impact,

and a business plan for major philanthropic support is under way.

During these five years two major philanthropic donations are notable. First is the establishment at Toronto Western Hospital of the Greg Wilkins Barrick chair in international neurosurgery. Professor Mark Bernstein is the inaugural holder of this key chair. Second is the establishment of the Prakash Foundation scholarships in 2013. These scholarships open up fellowship training at U of T to surgeons from low income countries who otherwise may not have an opportunity to receive subspecialized clinical, scientific, and educational training.

## **Specific Projects:**

### **Bethune Round Table on International Surgery**

This national meeting is now in its 15<sup>th</sup> year and has become a fixture in the Canadian surgical calendar. 150 to 200 delegates discuss and advance the field of international surgery. A unique feature of the meeting is that travel scholarships are offered to low income country delegates whose abstracts are accepted. The meeting was held in Calgary in 2010, Montreal in 2011, Toronto in 2012, Vancouver in 2013, and Hamilton in 2014. Toronto has hosted 8 of the 14 meetings so far. In 2012 we raised money to support 13 scholarship recipients, and we welcomed 150 delegates to discuss the theme "Filling the Gap" in health human resources. For the first time, our residents ran their own post meeting workshop, focused on developing skills to be a social entrepreneur. The Bethune Meeting will return to Toronto in 2017, after Calgary 2015 and Halifax 2016. Andrew Howard is a permanent member of the oversight committee for this meeting.

## **Ptolemy Project**

Surgeons training or practicing in low income countries can register for online full text access to the University of Toronto library. This project has continually operated for 15 years and has served millions of downloads. The project is now managed by Sandra Kendall and colleagues at the Sidney Liswood library at Mount Sinai hospital. Bi-annual workshops continue to be held in Africa to aid new participants in maximizing their use of this complex but valuable resource.

## **Surgery in Africa**

This project provides online educational materials created specifically for surgical trainees in East Africa. Our new editor, Tara Aird, who is a doctor with an MPH in Global Health, has completely revamped the project in 2015. We are now running a ten module fully interactive online journal club for COSECSA trainees using a Moodle platform within the COSECSA website. Collaborators include the Royal College of Surgeons of Ireland, and Dr. Brian Cameron from McMaster University. Early response has been encouraging with over 70 active participants. Content creators have been enlisted from Canada, the UK, and Africa thanks to the energy and connections of our new editor.



The recent Surgery in Africa series on critical care for surgeons has been published as a standalone electronic and print book edited by Dr. Fanus Dreyer of Scotland and Dr. Abebe Bekele of Ethiopia. This book is the text for a critical care course which is taught twice annually in Africa as a collaboration between COSECSA and UK.

## **Prakash Foundation Fellowships**

Since 2013 we have awarded \$70,000 scholarships to low income country applicants accepted for fellowship training by a surgical division in Toronto. Many countries cannot provide clinical training for this type of surgeon but Canada can. This has allowed us to attract stellar applicants who will be future leaders in their countries of origin. So far we have hosted Faith Mchemwe, a plastic surgeon from Zimbabwe; James Balogun, neurosurgery from Nigeria; Tihituena and Hanna Getachew, paediatric general surgeons from Ethiopia; and Samuel Hailu, an orthopaedic surgeon from Ethiopia. We anticipate continuing and expanding this program indefinitely.

## **Bethune Fellowships**

Our inaugural Bethune Fellow, Maryse Bouchard, received funding to complete her surgical scientist training program Master's degree in 2010 2011. She studied availability of surgical implants in Uganda using a framework established by supervisor Jillian Kohler of pharmacy who is an expert in international trade law and policy surrounding pharmaceutical availability. Maryse has now completed clinical training in paediatric orthopaedics and is pursuing an academic career in the United States.

## **Greg Wilkins Barrick Scholarships**

Toronto medical students are supported financially with up to \$5000 bursaries allowing



them to travel to low income countries and experience surgery in a resource constrained setting. These experiences are supervised by University of Toronto faculty and often reinforce existing inter-institutional relationships.

### **Global Health Education Initiative**

A module on international surgery, anaesthesia, burden of injury and surgical workforce is taught annually as a three seminar series. Core faculty include Dr. Andrew Howard, Dr. Greg Silverman, and Dr. Mark Bernstein.

### **Faculty Led Activities**

Numerous U of T surgical faculty lead or participate in clinical educational projects in every continent.

**Mark Bernstein** and **James Rutka** are teaching neurosurgical techniques in Lviv, Ukraine. **Leila Kasrai** teaches about burn prevention and treatment in Ethiopia, Kenya, and Nepal. **Toni Zhong** (Plastics, TGH) is a dedicated member of Women for Women (WFW) and the Emirates Floating Hotel, which provides essential medical care to the residents of Chilmari, Bangladesh. **Christopher Forrest** (Plastics, HSC) and a team from SickKids were invited by Transforming Faces Worldwide to oversee an extensive needs assessment of the provision of cleft lip care in Ethiopia. Several faculty members are also involved with cleft lip and palate care through **Operation Smile**, including **Gregory Borschel** (Plastics, HSC), **David Fisher** (Plastics, HSC), **Ron Zuker** (Plastics, HSC), and **Howard Clarke** (Plastics, HSC). **Georges Azzie** (GenSurg, SickKids) annually travels to Botswana to train local specialists in laparoscopic simulation, as well as to establish contextualized training programs. **Ted Gerstle** (GenSurg, SickKids) focuses on capacity-building in healthcare providers in Ethiopia, through his partnerships with Tikur Anbessa Hospital and Addis Ababa University. **Andrew**

**Howard** (Orthopaedics, Sickkids) is establishing resident curricula and a fellowship training program in paediatric orthopaedics at CURE Hospital and Black Lion Hospital in Ethiopia, and is examining for COSECSA annually. **Allan Okrainec** (GenSurg, TWH) leads innovative training techniques, particularly laparoscopic skills, for surgeons overseas through the use of telesimulation. His work has allowed for the development of curriculums and assessment tools in remote regions of South America, Africa, Asia, and Eastern Europe. **Peter Chu** (GenSurg, SHSC) annually travels to the Galmi Hospital in Niger to train African surgeons, while simultaneously supervising elective residents from Canada who wish to pursue globally-focused surgical careers. **Mojgan Hodaie** (NeuroSurg, TWH) has pioneered neurosurgical education in developing countries, focusing on structured online learning. Her efforts are well underway in Ghana and are currently expanding within Africa. She is also an Affiliated Global Faculty for [www.BIHE.org](http://www.BIHE.org), an online university created in response to the lack of available post-secondary education in Bahrain, Iran. **Christine Novak** (Plastics, TWH) utilizes her clinical practices as a physical therapist and rehabilitation scientist through her work with the Guatemala Healing Hands Foundation. **John Hagen** (GenSurg, HRRH) travels to China to provide laparoscopic surgical care, followed by interactive learning sessions with the Chinese surgeons. He also travels to remote areas in the mountains Guatemala with HELPS International with a team of surgeons and volunteers to provide primary surgical care to locals in need.

### **Future Plans:**

Transformation of our approach to international/global surgery is integral to the second half of our current strategic plan. Key steps include:

- Formalizing evaluation of international surgery activity for career progression

- Recruiting faculty whose academic career is dedicated to global surgery
- Obtaining major philanthropic support
- Enabling and Engaging faculty, fellows, residents and medical students in projects of their own design
- Financially supporting time devoted to international surgery within divisional practice plans
- Increasing the number of low income country fellows training in Toronto
- Increasing the number of U of T faculty supporting in-country formal training programs
- Strategically partnering with Universities, NGOs,

and donor agencies to forward mutual goals

Achieving universal access to surgical care by 2030 as envisioned by the Lancet commission is an ambitious vision. It will likely fail. However, the payoff of partial progress is enormous and the human cost of ignoring the problem is completely unacceptable. Achieving universal access is an important unsolved problem that will require creative academic input in a collegial network of institutions. The University of Toronto can and will emerge as a world leader in this important effort over the next five years.

## 13. SURGICAL SKILLS CENTRE REPORT 2009-15

*As Prepared by Oleg Safir, Director. Lisa Satterthwaite, Manager, Surgical Skills Centre Mount Sinai Hospital, Department of Surgery, University of Toronto*

Since 2009 the University of Toronto Surgical Skills Centre at Mount Sinai Hospital (<http://sites.utoronto.ca/ssc/>) has continued to grow and thrive under the umbrella of the University Of Toronto Department Of Surgery. The centre continues to play an integral role in simulation education, training and research for surgical and medical students, residents and faculty as well as a wide array of health care affiliates. Currently the centre supports more than 10,000 clients per year that include focused training events, continuing professional development courses, U of T departmental programs, international meetings, outreach sessions and a wide collection of visitors from around the world who are interested in developing a centre similar to ours as a result of our international reputation for both innovative and quality driven programming and assessment.

In July 2015 we celebrated our 3<sup>rd</sup> iteration of the U of T Department of Surgery PREP

camp. This program was developed for all incoming PYG1 surgical residents from the departments of surgery, OHNS, Obstetrics and Gynecology and the Northern Ontario School of Medicine (NOSM). In 2013 our inaugural program was delivered to 54 residents moving to a total of 64 residents in our 2015 program. The program included basic skills acquisition as per required topics from the Royal College Surgical Foundations outline and a full lecture series on variable topics such as Electro surgery Anatomy of the Suture, Difficult Communications ect that concluded with a final MCQ test. The 2 week program was stringently evaluated and concluded with overall favorable comments by residents and program directors. Of note within the evaluations were comments on the comradery developed amongst residence many of whom were new to Toronto as well as the opportunity to learn pearls of wisdom from peers teaching the sessions. In the end, PREP camp

demonstrated the need for a focused program at the start of surgical residency as opposed to our original delivery of a 2 hr weekly distributed program over the academic year. In year 2 (2014) of the PREP camp a pre OSATS exam was introduced to the program to find out what residents baseline knowledge in technical skills were as well as to help drive the training program in those areas of need as demonstrated by exam results. The OSATS exam was then repeated at the end of the program for comparisons. As predicted residents technical skills exam results moved from a lower than expected outcome to nearly perfect scores within the 2 week PREP camp training period. This same learning trend was once again apparent in our 2015 PREP camp exam results. Each fall PREP camp is followed up with a 10 week distributed Phase II program. The 2 hour sessions enhance skills learned during summer PREP camp by using higher fidelity models, faculty educators and introducing more focused technical skills such as laparoscopic and microsurgical training.

In order to attain the most effective teacher / student ratio required for PREP camp, a Residents as Educators program was developed in conjunction with the Post Graduate Medical Education office. This evening workshop allowed volunteer residents from all PGY levels to learn about the art of teaching through pre readings, didactic session, focus group discussion and full class dialogue. The program enhanced, motivated and prepared resident educators to deliver exceptional teaching sessions as reflected in our post course evaluations.

In conjunction with the PREP camp a yearly increase in the number of divisional specific summer boot camps have been developed that include neurosurgery, vascular, plastics, ortho spine, and the general surgery Fundamentals of Laparoscopic Surgery program. Many of these divisional and departmental programs continue

throughout the academic year with focused technical skill courses for all levels of PGY residents.

We now enter year 6 of our award winning Toronto Orthopedic Boot Camp (TOBC) and Orthopedic Competency Based Program. In 2013 the TOBC was the first recipient of the Excellence in Innovations Award given by The Association for Surgical Education. The competency based program remains a highly recognized program throughout the international surgical community attracting educators, administrators, and faculty to learn about the delivery and maintenance of this new educational delivery model. The program began with only 3 residents in increasing to the full complement of approximately 12 residents by year 3. Developed within the program was the notion of the Exit Exam and Deficiency Day. The Exit Exam combines all of the TOBC modules into a continuum exam testing residents on their ability to develop "start to end" surgical technical skill and decision making processes. The exam is followed by a Deficiency Day program that reviews results from the Exit Exam allowing residents to correct errors and demonstrate competency through active dialogue and feedback from faculty and senior resident mentors.

Programs for our medical undergraduate groups continue at the skills lab and include



the General Surgery Crash Course, Emergency Medicine Longitudinal Program and SEAD – Surgical Exploration and Discovery Program for year 1 medical students interested in pursuing careers in surgery. SEAD which is a “taste of surgery” has increased in popularity each year moving from 20 to 30 medical students attending a variety of select intro to surgery sessions that include vascular anastomosis, craniotomies, casting, bone fixation and cardiac surgery. It is hoped that this opportunity allows students in their early medical career years to make informed decisions on the surgical direction that they may choose to pursue. Those students unequivocally decided in a surgical career find this early introductory program highly motivating.

As part of our commitment to educational research, we have been deeply involved for the past 3 years with the development and delivery of the Colorectal Objective Structured Assessment of Technical Skills (COSATS). The COSATS was developed by the Surgical Skills Centre in conjunction with the American Society of Colon and Rectal Surgeons (ASCRS) and the American Board of Colon and Rectal Surgery (ABCRS). It is a performance based technical skills exam, with the hope and purpose of the COSATS becoming the new standard for colorectal board certification. The project was led by Drs Helen MacRae and Sandra de Montbrun, with the model design and creation being heavily the responsibility of the skills centre staff. The inaugural COSATS exam took place in June of 2011, with 20 residents from the United States taking part. The initial project demonstrated that this specific method of testing was reliable in discriminating between graduating colorectal residents and graduating general surgery residents. In September 2012, a second ACRS funded study. This 2nd study compared the COSATS results of newly graduated colorectal surgeons to the results from their colorectal surgery examinations.



The September 2012 COSATS exam was held in Chicago at Northwestern University, with a total of 40 surgeons being examined over 2 days. The exam was repeated for a 3<sup>rd</sup> time in September 2014 in Chicago with a compliment of 70 colorectal fellows. Statistical analysis of the project is now underway with submissions to major journals in progress.

Allied health care programs continue to thrive within the centre and include comprehensive training programs for cardiology, nephrology, respirology, family medicine and emerg med. Development of these programs is very synergistic with those for the department of surgery and encourages interdisciplinary training and education.

The Departments of OHNS, Obstetrics and Gynecology remain a solid fixture at the Surgical Skills Centre and include core curriculum programs as well as major CPD events. Spring 2012 was our inaugural endoscopic ear program for the Department of OHNS led by Dr. Pothier and has continued annually since then gaining international recognition as a premier training program.

In June 2012 a 24 hour practice room was developed within the Surgical Skills Centre to allow residents the opportunity to rehearse and or enhance surgical technical skills in their off hours. This independent practice room has been extremely popular with residents especially in the areas of microsurgery and laparoscopic surgery training. Our weekly sign in average for the room is 15 residents. Future plans include expansion of the space to be able to support an even more diverse array of skill training.

In December 2015 we will continue our accreditation application with the American College of Surgeons. Our first accreditation took place in 2006 and continues to be an integral part of our grounding within the Accredited Educational Institutes globally. 2013 marked

the Surgical Skills lab 15<sup>th</sup> anniversary since inception. In this time period the lab has grown exponentially doubling in size, staff, programs and usage. We are proud to continue on this journey continually challenging our abilities and dedication to surgical and medical education and research.

Under the Direct leadership of our D.H. Gales Director, Dr. Oleg Safir the lab has been able to continue its journey of excellence but would be remiss if recognition was not given to the our dedicated staff, volunteers, faculty, students and residents who continue to make our journey so worthwhile.

# 14. REPORT OF FACULTY MEMBERS:

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*Report by James T Rutka, RS McLaughlin Chair, Department of Surgery*

The Department performed a survey of faculty members in 2011 in conjunction with its strategic planning process, and received input from faculty that was both highly informative and interesting in terms of faculty satisfaction levels and expectations. The survey was sent to all active faculty members, and the response rate was 48%.

The majority of faculty thought that emphasis in the Department should be placed on Postgraduate education (68.4%), Fellowship Education (57.3%), Surgical Simulation (56.4%), Surgical Innovation (64.1%) and Best Practices (65%). Just less than the majority replied that Undergraduate Medical Education (47.9%), the Surgeon Scientist Training Program (47%), and Faculty Development (45.3%) should be considered as top priorities.

When the faculty were asked if they would value a well organized faculty mentoring program, 80.5% indicated that they would. In response to the question about the benefit of a competitive pension plan if offered by the Department of Surgery, 59.8% of faculty stated yes.

When asked about the positive value of the new positions in the Department of Surgery, the following affirmative responses were given: Webmaster for website assistance (34.7%); Editorial Assistant for manuscript preparation (44.9%); Medical Illustrator (37.8%).

In determining a surgeon's ability to participate in collaborative clinical trials across all hospitals, the ability to take part in these trials was graded as follows: Not difficult (9.7%); Somewhat difficult (24.8%); Very difficult (29.2%); and Unknown (36.3%).

When asked about the single most important issue to be considered in the Department of

Surgery over the next 5 years, the following answers were given:

- Job shortage for surgeons
- Integration of academic activity between hospitals
- Faculty recruitment and retention
- Knowledge translation, and translational research
- Education at all levels
- Global Surgery
- Retirement planning
- Surgical Innovation
- Career planning for residents
- Support of Surgeon Scientists
- Advancement (Fundraising)

## **Survey of Faculty in First 5 years of Appointment:**

In order for faculty members in the Department to retain their University appointments longterm, they must successfully undergo and pass a Continuing Appointment Review (CAR) within the first 3-5 years of their initial appointment. This interview-based process is an integral part of faculty development. Accordingly, under the auspices of Ori Rotstein, Associate Chair of the Department, in 2014, a survey was taken of all surgeons who have undertaken their CAR in the past 5 years. There were 30 respondents. All respondents successfully completed their CAR. When asked if they had anxiety about the CAR process, 20.7% were extremely anxious, 62.1% were somewhat anxious. All respondents had undergone formal 1 and 2 year reviews, and felt reasonably well prepared for their CAR, as it prepared them for the benchmarks they were required to meet, and it reinforced their tracking towards a successful CAR.

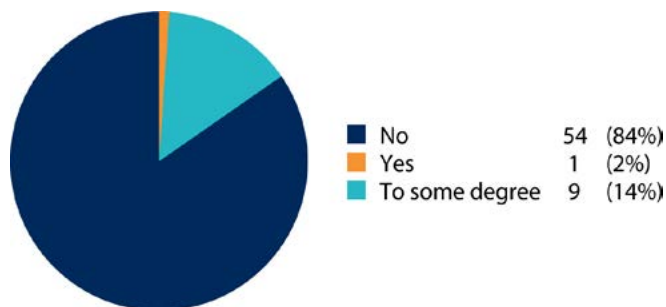
The table below shows the responses to a question about satisfaction with clinical practice, education and teaching, work life balance, and support.

**Table 16. Faculty Survey Response**

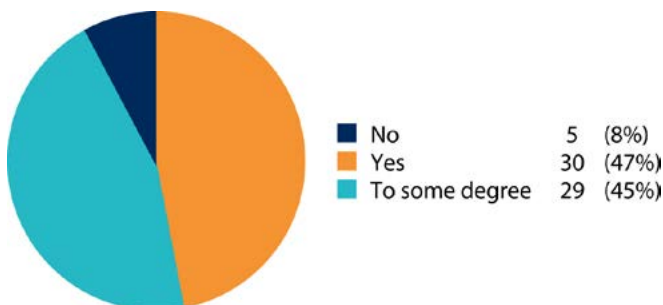
In my first three years on Faculty, I felt satisfied with:				
	YES	NO	SOMEWHAT	Rating Count
My clinical practice:	80.0% (24)	3.3% (1)	16.7% (5)	30
My education scores:	53.3% (16)	23.3% (7)	23.3% (7)	30
My work life balance:	26.7% (8)	33.3% (10)	40.0% (12)	30
The support I received from my Division and Hospital leadership for academic advancement:	70.0% (21)	6.7% (2)	23.3% (7)	30
My understanding of my relationship with UofT:	46.7% (14)	23.3% (7)	30.0% (9)	30
Answered questions:				30
Skipped questions:				0

If there were unmet needs in the first 3-5 years, junior faculty knew that they could approach their Surgeon-in-Chief, Division Head, Clinical partners, or mentors to help sort out the gaps in support.

*In response to the question, “Do you feel your Continuing Appointment Review comes at too early a time in your development as an academic surgeon?”*



*In response to the question, “Are you getting adequate personal time for yourself and family?”*



### Qualitative Data on Faculty Satisfaction:

Each year, each faculty member is likely to have at least one or more interviews with the Surgeon-in-Chief, the Hospital Division Head, the University Division Chair, or the Department Chair. During these interviews, the satisfaction of faculty is gauged regarding their clinical practices, financial remuneration,

research productivity, teaching responsibilities, and creative professional activities.

Letters from these interviews are kept within faculty files in the Department of Surgery, and reviewed by the Department Chair. Issues that arise during these interviews are managed in a multitude of ways, both within the hospital, and the Department as the case requires.

## 15. REPORT OF LEARNERS

*Prepared by David Latter, Vice-Chair Education; George Christakis, Director Undergraduate Medical Education; and Ronal Levine, Director Postgraduate Medical Education*

### Undergraduate Medical Education:

Results from the Canadian Graduate Questionnaire (CGQ 2009-14) were used to generate this report in part. It should be noted that the CGQ only specifies general surgery, so the results may not reflect experiences obtained on the specialty clerkship rotations in the Department. In general, the overall percentage acceptable ratings by the medical students of the surgical rotations ranged between 73 – 80% from 2010 – 14. There was a trend towards increasing percentage acceptable ratings until 2014 at which time the scores dropped from 80% to 73%.

**Table 17.** Overall Percentage Acceptable Ratings General Surgery 2010-14

Year	% Acceptable Rating
2010	73
2011	75
2012	79
2013	80
2014	73

The Reasons for the drop in scores from 2013 to 2014 are likely multifactorial, but the Offices of Evaluations in the Faculty of Medicine have performed an indepth analysis of some of the questions asked in the CGQ, and compared the results between these two years. Interestingly, for some questions, scores were higher in 2013 than 2014. For example, “Rate the quality of your educational experience” 2013 (80% acceptable) vs 2014 (73% acceptable); and “My time spent in the operating room was beneficial” 2013 (66% acceptable) vs 2014 (63% acceptable). Whereas for other questions, the 2014 scores were higher than 2013. For example, “A faculty member observed me taking a patient history and gave me feedback” 2014 (59%) vs 2013 (43%); and “I received mid-rotation feedback on my performance”, 2014 (66%) vs 2013 (64%). It is interesting that there is considerable variability in the percentage acceptable scoring from one Academy to another at the different Hospitals. The Department is currently performing an indepth analysis of these data.



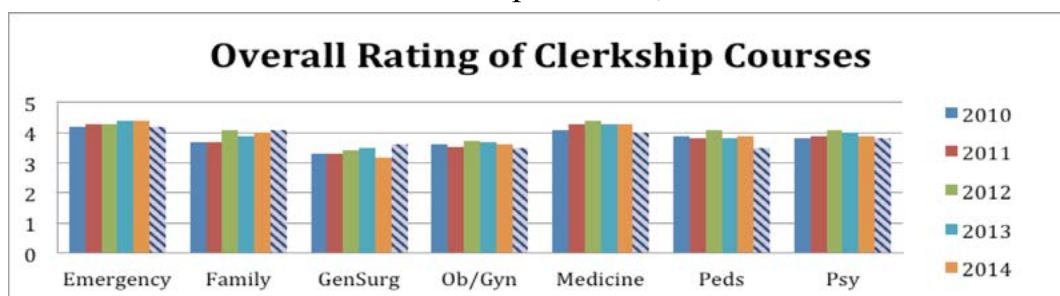
Analysis of some of the qualitative data between 2013 and 2014 has revealed some themes which are worth showing here:

**Table 18.** Qualitative data analysis of questions from 2013 and 2014 CGQ:

2013 STRENGTHS	2014 STRENGTHS
<ul style="list-style-type: none"> <li>• Curriculum organization (crash course)</li> <li>• Excellent faculty teacher</li> <li>• Excellent resident teaching</li> <li>• Given responsibility especially at community sites</li> <li>• Outpatient clinics</li> <li>• Variety of experiences including trauma</li> </ul>	<ul style="list-style-type: none"> <li>• High quality teaching especially from residents</li> <li>• Clinic and on-call experience viewed positively</li> <li>• Flexibility in selecting sub-rotations</li> <li>• Increased hands-on opportunities in the community sites</li> <li>• Crash course</li> </ul>
2013 WEAKNESSES	2014 WEAKNESSES
<ul style="list-style-type: none"> <li>• Service&gt;learning, long hours</li> <li>• Lack of teaching</li> <li>• NBME shelf exam</li> <li>• Lack of time in clinics</li> <li>• Not involved enough especially in OR</li> <li>• -ve Learning environment</li> <li>• Learner overcrowding</li> <li>• Lack of direct staff involvement</li> <li>• Too specialized/not enough 'bread &amp; butter'</li> </ul>	<ul style="list-style-type: none"> <li>• OR not seen as useful largely due to crowding of learners</li> <li>• Service&gt;learning especially in light of long hours</li> <li>• Lack of hands-on opportunities</li> <li>• OR experience too specialized, not enough variety or "bread &amp; butter"</li> <li>• Negative learning environment at times</li> <li>• Some faculty/residents uninterested in teaching</li> <li>• Not enough structured teaching outside of Crash course</li> </ul>

When compared against other clerkship courses in other Departments from 2010-14, the Department does not fare as well, although the mean results have not deteriorated in a significant manner from one year to another.

**Table 19.** Comparison of General Surgery ratings (0 -5) with other Departments, 2010-14



Several themes emerge in the qualitative data that may be useful in developing strategies to improve student satisfaction.

- More faculty need to be encouraged to be more directly involved in teaching students and providing them with a positive learning environment
- The learning needs of students may be better met doing consultations in the Emergency Department and in the ambulatory clinics

- Community sites should be utilized as much as feasible to reduce the effects of learner crowding and to expose students to procedures that they may have a more prominent role in

Interestingly, internal data from the Faculty of Medicine reveal that the Surgeon Teachers are scoring relatively well on the evaluations by the medical students. These data have been fairly consistent on an annual basis, and are somewhat at odds with the overall results of the CGQ.

**Table 20.** Internal Evaluation Data of Teaching Scores in Clinical Clerkship 2013-2014 (0 – 5)

Surgery Core Clinical Clerkship Staff Teaching Evaluation:	Avg. Score
Clarity of teaching	4.2
Challenges and stimulates learner to think	4.2
Is an effective professional role model	4.3
Enthusiasm for teaching	4.2
Contributes to a positive learning environment	4.3
Ensures learner takes appropriate responsibility for patient care	4.1
Available to learners	4.1
Provides feedback	4.0
Overall teaching ability	4.2

Some of the comments of the medical students during clerkship provide additional qualitative data which are useful for the Department to base decisions on. These can be divided into both perceived strengths and weaknesses as follows:

### **Strengths:**

- Access to highly specialized procedures
- Enthusiastic teachers, on call was reasonable, saw lots of trauma cases
- Excellent teaching from faculty, and junior and senior residents
- Excellent experience at a community hospital site in general surgery
- I had a lot of opportunity to assist in surgical procedures
- Exceptional variety and breadth. Surgeons cared about teaching
- High volume centre, residents are great teachers, staff accessible and friendly, surgical skills lab in first week of rotation very useful
- I felt like an important part of the team. I got to scrub in on cases and assist with surgery.
- I felt that I was part of the team with enough responsibilities
- The procedural skills lab was very good

Clearly, the clerkship experience between the different hospitals and between medical students is uneven. The Department has been working progressively to “smoothen out” the experience by assigning Division Directors for Undergraduate Medical Education in each surgical specialty. This is a work in progress, but the Department is committed to improving the clerkship experience for all medical students at all levels of training.

### **Postgraduate Medical Education (PGME):**

The Department prides itself with excellent residency training programs where resident education and research experience are given

### **Weaknesses:**

- I did not get a chance to scrub in much as there were a lot of residents and fellows
- Too much time in the OR for a student not interested in surgery
- A somewhat tense/unfriendly general surgery culture
- A lot of scut work, and very little responsibility
- Poor teaching by faculty who often did not show up for lectures
- I felt lost sometimes during my general surgery rotation; no expectations were given at the start of the rotation
- The surgical procedures were too specialized with little to gain from knowing about them
- The NBME exam is irrelevant
- Not enough ambulatory care patient experience
- Patient management on the ward was rushed, and not a good learning environment
- I saw Whipple’s procedures from a distance, but no appendectomies

a high priority. The Department considers graduates of its residency programs to be among the best in Canada in terms of being masters of the CanMEDS roles. That said, it is extremely important for the Department to learn from the residency experience. Accordingly, the following is an analysis of the resident learning experience upon exiting their specific training programs. The Department thanks the PGME office for providing these data for this 5 year report.

# EXITING RESIDENTS IN SURGERY:

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## What do they have to say?

**July 1, 2009 - June 30, 2014**

**Resident Exit Survey**

A Detailed Review of Surgery Exiting Residents

*Prepared by the Policy and Analysis Unit*

*PGME Office, University of Toronto*

*August 2015*

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The Postgraduate Medical Education (PGME) office at the University of Toronto conducts a yearly survey of exiting residents. The survey measures exiting residents' satisfaction with education quality, resident well-being, intimidation and harassment, their readiness for practice and future plans.

This report examines residents' responses from the Department of Surgery and compares them to responses from all departments for the five academic years between July 1, 2009 and June 30, 2014.

## EDUCATION RATINGS

### Education Experience:

Overall, Surgery residents seem to be satisfied with their education experience. A large majority rate their mix and diversity of cases and quality of patient care experiences 'very good' or 'excellent' over the five years. A smaller proportion of surgery residents seem as satisfied

with other areas of their educational experience such as the amount of protected educational time they receive and the availability of time to attend professional meetings and elective educational activities.

**Figure 1:** % of those who rated their education experience 'very good' or 'excellent' (4 or 5 out of 5)

Please rate your EDUCATION experience in your program:	2009-10		2010-11		2011-12		2012-13		2013-14	
	Surg. n=44	All n=227	Surg. n=18	All n=215	Surg. n=34	All n=282	Surg. n=23	All n=304	Surg. n=32	All n=352
Amount of protected educational time	52	67	33	75	56	73	74	79	50	70
Amount of service work*	61	70	39	75	56	73				
Balance of cases/procedures with Fellows**							74	60	40	53
Availability of procedures	93	58	78	61	88	59	96	56	84	53
Availability of time to attend professional meetings and elective educational activities	68	72	33	71	71	79	65	81	72	76
Clarity of educational objectives	84	81	61	77	85	82	74	83	78	80
Graduated professional responsibility	82	83	78	89	82	86	78	84	75	82
Mix and diversity of cases	100	88	89	87	97	88	100	90	94	85
Quality of patient care experiences	98	91	89	91	94	92	96	90	94	85
Quality of teaching	89	82	61	83	88	87	83	87	84	36
<b>OVERALL EDUCATIONAL EXPERIENCE</b>	95	87	72	87	88	88	83	90	75	82

\*question asked 2009-10 to 2011-12

\*\*new question in 2012-13

## Program Director:

Surgery residents also rate their Program Directors favourably. A large majority say their PDs are an advocate for their program and they're available to residents. A smaller proportion is

satisfied with the counselling/guidance they receive from their PDs.

**Figure 2:** % of those who rated their Program Director 'very good' or 'excellent' (4 or 5 out of 5)

Please rate your PROGRAM DIRECTOR regarding the following characteristics:	2009-10		2010-11		2011-12		2012-13		2013-14	
	Surg. n=44	All n=227	Surg. n=18	All n=215	Surg. n=34	All n=282	Surg. n=23	All n=304	Surg. n=32	All n=352
Advocate for program	80	82	67	84	79	81	91	87	77	77
Advocate for residents	68	77	67	81	68	74	87	82	73	72
Availability to resident	82	85	83	88	76	84	96	87	80	81
Counselling/Guidance	68	72	56	74	68	71	83	76	53	69
Effectiveness of program leadership	75	76	67	80	79	79	87	79	73	75
Organization of program	77	78	61	80	79	78	91	80	73	75
PROGRAM DIRECTOR OVERALL PERFORMANCE	77	80	67	81	76	80	91	83	77	76

## Work Environment:

Ratings of 'very good' and 'excellent' for overall work environment has fluctuated over the five years for Surgery residents. Most years, Surgery residents rate their work environment less favourably than residents from all departments.

Ratings from 2010-11 are consistently lower, but due to the low number of responses (n=18), caution should be exercised when interpreting responses from this year.

**Figure 3:** % of those who rated their work environment 'very good' or 'excellent' (4 or 5 out of 5)

Please rate the QUALITY OF YOUR WORK ENVIRONMENT THROUGHOUT YOUR RESIDENCY:	2009-10		2010-11		2011-12		2012-13		2013-14	
	Surg. n=44	All n=227	Surg. n=18	All n=215	Surg. n=34	All n=282	Surg. n=23	All n=304	Surg. n=32	All n=352
Adequacy of call facilities	45	54	61	61	50	57	39	63	48	57
Amount of "scut" service work	48	50	33	64	44	59	48	60	35	55
Availability of information technology (computers, internet library)	73	78	72	82	59	77	61	82	69	78
Educational clinical workload	77	81	61	82	82	82	87	84	68	75
Quality of dedicated room/lounge for residents	40	44	28	56	41	55	35	59	38	59
Safety and security	81	85	72	87	88	89	87	89	93	86
Your call schedule	59	69	56	73	59	72	61	73	45	69
OVERALL WORK ENVIRONMENT	64	73	50	76	76	79	74	82	55	76

## Learning Environment:

Overall ratings of learning environment for Surgery residents vary over the five years. With the exception of 2009-10, a smaller proportion of Surgery residents than residents

from all departments, rate their overall learning environment ‘very good’ or ‘excellent’.

**Figure 4:** % of those who rated their learning environment ‘very good’ or ‘excellent’ (4 or 5 out of 5)

Please rate the QUALITY OF YOUR LEARNING ENVIRONMENT THROUGHOUT YOUR RESIDENCY:	2009-10		2010-11		2011-12		2012-13		2013-14	
	Surg. n=44	All n=227	Surg. n=18	All n=215	Surg. n=34	All n=282	Surg. n=23	All n=304	Surg. n=32	All n=352
Face to face time with teachers/supervisors and senior residents	86	81	72	82	68	86	78	84	68	79
Interactions with mentors	76	71	61	73	65	75	70	72	65	71
Personal Support For Stress	63	60	28	65	60	67	61	69	52	66
Resident Morale	64	63	33	67	65	71	52	69	35	61
Supportive environment	61	69	39	77	68	75	57	74	55	71
University Protection Against Intimidation and Harassment	92	63	50	75	77	77	81	80	87	77
Your ability to balance residency and life commitments	57	63	33	66	71	72	57	74	45	59
Your ability to Manage Financial Issues	60	61	39	64	67	72	52	66	31	64
<b>OVERALL LEARNING ENVIRONMENT THROUGHOUT RESIDENCY</b>	<b>89</b>	<b>77</b>	<b>39</b>	<b>77</b>	<b>74</b>	<b>82</b>	<b>74</b>	<b>81</b>	<b>68</b>	<b>74</b>

## CanMEDS:

A large majority of Surgery residents say the adequacy of their education in preparing them for practice in terms of the CanMEDS Roles is ‘very high’ or ‘excellent’. In most of the five years, a larger proportion of Surgery residents than

residents from all departments appear satisfied with their preparation with respect to the Scholar and Manager Roles in particular.

**Figure 5:** % of those who rated their preparation with respect to CanMEDS Roles ‘very good’ or ‘excellent’ (4 or 5 out of 5)

Please rate the adequacy of your education in preparing you for practice with respect to each of the CanMEDS Roles	2009-10		2010-11		2011-12		2012-13		2013-14	
	Surg.	All	Surg.	All	Surg.	All	Surg.	All	Surg.	All
	n=44	n=227	n=18	n=215	n=34	n=282	n=23	n=304	n=32	n=352
Collaborator	80	79	83	84	88	82	87	84	87	79
Communicator	82	82	72	83	88	82	87	85	80	82
Health Advocate	75	74	83	69	79	70	77	78	77	71
Manager	82	69	72	68	82	68	70	72	77	67
Medical Expert	89	85	72	81	85	83	96	87	83	80
Professional	86	85	83	85	88	86	91	86	90	81
Scholar	89	82	67	73	88	80	96	82	87	75

## Preparing for Certification:

With the exception of 2013-14 (and 2010-11 which seems to be an anomaly year with few respondents), a larger proportion of Surgery

residents than residents from all departments rate their preparation for certification ‘very good’ or ‘excellent’.

**Figure 6:** % of those who rated their preparation for certification ‘very good’ or ‘excellent’ (4 or 5 out of 5)

Please rate your experience in your residency program in relation to PREPARING FOR CERTIFICATION:	2009-10		2010-11		2011-12		2012-13		2013-14	
	Surg.	All	Surg.	All	Surg.	All	Surg.	All	Surg.	All
	n=44	n=227	n=18	n=215	n=34	n=282	n=23	n=304	n=32	n=352
Coaching and Mentorship	71	59	39	57	60	53	52	56	52	54
Practice oral/clinical exam	80	74	78	78	74	77	74	77	68	75
Practice written exam	40	48	39	60	63	62	62	61	52	61
Study groups	80	59	63	57	85	61	70	66	83	59
OVERALL PREPARATION FOR CERTIFICATION	77	66	28	65	74	66	78	68	58	63



## Preparing for Practice:

Over the years, residents from all departments rate their preparation for practice lower than other aspects of their training. With the exception of 2011-12, Surgery residents rate this area lower than residents from all

departments. Surgery residents are least satisfied with the assistance they receive in finding employment and support for preparation for obtaining IP license and billing number.

**Figure 7:** % of those who rated their preparation for practice ‘very good’ or ‘excellent’ (4 or 5 out of 5)

Please rate your experience in your residency program in relation to PREPARING FOR PRACTICE:	2009-10		2010-11		2011-12		2012-13		2013-14	
	Surg. n=44	All n=227	Surg. n=18	All n=215	Surg. n=34	All n=282	Surg. n=23	All n=304	Surg. n=32	All n=352
Assistance in finding employment	8	22	29	37	18	35	19	36	21	32
Bioethics	53	40	39	47	54	48	33	52	33	47
Career guidance	39	40	28	49	41	47	48	46	23	41
Communication Skills	59	68	33	69	77	71	57	75	67	71
Critical appraisal and re-search skills	75	65	56	64	79	67	83	69	57	63
Information on Continuing Medical Education	50	46	33	51	37	49	48	47	32	41
Legal Issues	23	31	25	47	50	44	30	51	20	43
Practice management seminar	35	45	33	53	50	44	53	50	35	47
Resource utilization	48	55	39	57	54	50	43	62	47	56
Support for preparation for obtaining IP license and billing number	8	27	30	37	25	56	30	64	15	56
Managing challenges to your wellbeing throughout your career	34	42	19	54	33	35	48	41	27	33
<b>OVERALL PREPARATION FOR PRACTICE</b>	<b>32</b>	<b>40</b>	<b>28</b>	<b>45</b>	<b>44</b>	<b>44</b>	<b>35</b>	<b>49</b>	<b>23</b>	<b>44</b>

## Wellness

### Professional or Personal Well-being (New in 2010-11):

**Figure 7:** % of those who said were given formal training for maintaining professional and/or personal well-being

During your residency training were you given formal instruction or coaching on effective coping skills for maintaining professional and/or personal well-being?	2010-11		2011-12		2012-13		2013-14	
	Surg. n=18	All n=215	Surg. n=34	All n=282	Surg. n=23	All n=304	Surg. n=32	All n=352
Yes	83	46	65	51	52	56	50	57

**Office of Resident Wellness Services Awareness (New in 2010-2011):**

**Figure 8:** % of those who said they are aware of the services offered by the Office or Resident Wellness

Are you aware of the services offered to residents and fellows by the Office of Resident Wellness?	2010-11		2011-12		2012-13		2013-14	
	Surg. n=18	All n=215	Surg. n=34	All n=282	Surg. n=23	All n=304	Surg. n=32	All n=352
Yes	89	80	74	80	83	79	80	82

**Intimidation/Harassment**

**Figure 9:** % of those who said are aware of policy on intimidation/harassment and who said were harassed/intimidated during their residency

	2009-10		2010-11		2011-12		2012-13		2013-14	
	Surg. n=44	All n=227	Surg. n=18	All n=215	Surg. n=34	All n=282	Surg. n=23	All n=304	Surg. n=32	All n=352
Aware of policy on intimidation/harassment	91	82	83	75	88	81	78	83	80	83
Harassed or intimidated during residency	25	21	28	12	44	20	30	18	30	22

**Future Plans**

**Post-Residency Plans (New in 2011-12):**

**Figure 10:** Plans after residency (%)

What are your plans when you've completed your residency?	2011-12		2012-13		2013-14	
	Surg. n=34	All n=282	Surg. n=23	All n=304	Surg. n=32	All n=352
Join or set up a permanent practice	15	40	9	30	17	39
Locum	12	57	13	60	17	69
Clinical or Research Fellowship	71	14	74	24	59	12
Subspecialty training as a PGY (accredited training)	18	27	13	19	17	20
Clinical Associate/ Contract Position	3	7	4	7	10	8
Graduate Studies	9	1	9	7	14	8
Don't know	0	13	9	16	0	8

### Concerns about Securing a Position:

Concern about securing a position is consistently higher among Surgery residents. Concern peaked in 2011-12 with 88% of surgery residents saying they're concerned.

**Figure 12:** % who says they have concerns about securing a position in their chosen specialty

Do you have concerns about securing a position in your chosen specialty?	2009-10		2010-11		2011-12		2012-13		2013-14	
	Surg. n=44	All n=227	Surg. n=18	All n=215	Surg. n=34	All n=282	Surg. n=23	All n=304	Surg. n=32	All n=352
Yes	75	35	67	26	88	34	83	40	87	35

### PGME and Healthforce Ontario Marketing & Recruitment Agency

**Figure 13:** % who are aware of Healthforce Ontario services and have used or intend to use their services

	2009-10		2010-11		2011-12		2012-13		2013-14	
	Surg. n=44	All n=227	Surg. n=18	All n=215	Surg. n=34	All n=282	Surg. n=23	All n=304	Surg. n=32	All n=352
Aware of career planning services offered by PGME in partnership with Healthforce Ontario	45	45	61	53	56	69	48	65	63	60
Have used or intend to use these services	50	54	36	58	47	63	64	67	74	63

*What have we learned from these data from the exit survey?*

### In comparison to other Departments in the Faculty of Medicine:

- residents are generally satisfied with their educational experience
- residents are generally satisfied with the support received from the Program Directors
- the work environment (e.g. amount of “scut”, call room quality, call schedule) likely needs some attention
- residents are very satisfied with their instruction of the CanMEDS roles
- residents are very satisfied with their preparation for the Royal College Examination
- residents are somewhat less satisfied for their preparation for independent practice after residency
- residents are somewhat more concerned about finding employment after residency
- there were no major concerns about resident wellness programs, harassment or intimidation

In addition, in debriefing with the Director of PGME for the Department who interviews all residents throughout their years of training, the following points were made clear:

**Job situation:**

Overall this is the major concern of the graduating residents. There are not all that many jobs and because of this the majority of residents, almost 100%, are doing fellowships. They are doing fellowships whether they are doing an academic career or a community career. They are very frustrated by this and they do not know if the situation is going to improve. The group of residents that are being interviewed have all setup their fellowships and are at least 18 months from trying to find a job.

**Protected Downtime:**

All of the surgical specialties have protected downtime. This is indeed protected and residents are freed up and allowed to attend their sessions. There is almost 100% attendance and this has not come up as an issue. All of these protected downtimes are in the morning and very in length and how often they are carried out. The residents find these sessions extremely beneficial and the sessions are well organized.

**Operating Experience:**

All of these residents are in their last year and they have done 5 – 6 years of operating. Overall they feel that their operating experience has been very good and they feel they have covered the full spectrum of their specialty.

**Interaction with Fellows:**

This comes up as a concern occasionally. The majority of the graduating residents see the fellows as value-adding. Occasionally it is brought up that there is an issue with fellows taking cases but this has not been brought up as a major concern.

**Fellows:**

Survey data from 2014 are available from Clinical Fellows within the Department. There were 105 Respondents to the Survey (40%). Several challenges were faced by Clinical Fellows applying to Surgical Programs. These included difficulties with licensing, credentialing, and registration, levels of fellowship funding, finding suitable access to primary care, and finding affordable housing. The majority of fellows received between \$50-75K per annum as remuneration. The majority of clinical fellows ranked their educational experience as above expectation or outstanding in the fields of mix and diversity of cases, quality of patient care experiences, quality of teaching, and availability of procedures. When asked why they considered a Clinical Fellowship in the Department, the majority stated that it was a unique training opportunity; that the clinical experience would help them gain employment advantage; and that they received highly advanced clinical training.

Information regarding the Clinical Fellowship Experience was received from the University, and the survey information is found on the accompanying pages:

**Report from the PGME Office on Clinical Fellows:**

The Postgraduate Medical Education (PGME) office at the University of Toronto conducts a survey every two years of Clinical Fellows. Respondents are asked about their interaction with residents only once in this survey with respect to education experience. Fellows are asked to rate the balance of available cases and/or procedures with residents and other learners. When comparing the top two ratings (Outstanding or Above Expectations), Surgery Fellows' ratings are similar to those of Fellows from all departments (40% - 43%) in 2012 and 2014, and are slightly lower in 2010 (26% vs.

34%). However, a larger proportion of Surgery Fellows rate the balance ‘Unsatisfactory’ or ‘Below Expectations’ all three years.

**Figure 1:** Please rate your EDUCATION experience in your program by selecting one response for each of the 8 items. All responses (%)

Balance of available cases/procedures with residents and other learners (%)	2010		2012		2014	
	Surg. n=87	All n=558	Surg. n=92	All n=514	Surg. n=112	All n=540
Outstanding	9	10	17	16	17	14
Above Expectations	17	24	26	27	23	29
Meets Expectations	49	51	32	45	40	43
Below Expectations	20	12	15	10	15	12
Unsatisfactory	5	4	10	3	5	2

**Figure 2:** Please rate your EDUCATION experience in your program by selecting one response for each of the 8 items. Top 2 and Bottom 2 responses (%)

Balance of available cases/procedures with residents and other learners (%)	2010		2012		2014	
	Surg. n=87	All n=558	Surg. n=92	All n=514	Surg. n=112	All n=540
Top two ratings (Outstanding or Above Expectations)	26	34	43	43	40	43
Bottom two ratings (Unsatisfactory or Below Expectations)	25	16	25	13	20	14

Although they weren’t specifically asked about the relationship with residents in other sections of the survey, some Surgery respondents discussed this topic in their responses to two open-ended questions. Surgery fellows’ responses to “Would you recommend fellowship training at the University of Toronto to your

colleagues? Explain below” and “Please tell us any additional information that you feel would be useful for us to know about your fellowship experience at the University of Toronto” that mention residents are included below.

*Would you recommend fellowship training at the University of Toronto to your colleagues?  
Explain below.*

### **2010 Survey**

“I think the fellowship programme is not like I expect: in the hospital :where I do my fellowship they are caring of residents more than fellows especially in OR , Ii feel my hands getting stiff. Yes I am good observers (seeing more than doing) it’s like an observership not clinical fellowship I am feeling lose my skills,just less than one case per week????? Imagine we should set the clear goals for fellowship (like number of cases, type of cases ) I am feeling below the resident while I suppose above him thanks”

“Many fellowships give specialist training. Residents do the majority of basic procedures - not a place to learn basic skills.”

### **2012 Survey**

“Has to know that priority is given to residents”

“Surgery wise the chief residents operate and fellows are second assistants - very disappointing”

“The remuneration is unnecessarily low for fellows who are eligible to bill. On my service, fellows are required to do in-hospital first call whereas senior residents on the same service do not do first call and only have to do second call. There will therefore be times when an FRCSC fellow or equivalent is being “backed up” by a resident who has not passed his or her fellowship exam. This has also led to some fellows being forced to do staff call and first call during the same on-call shift.”

“Every case was given to the resident to perform and I assisted. I was only the primary surgeon when the resident was away, or incapable of performing the operation, or the case was bilateral so I got to do one side. This was highly unsatisfactory to me, not at all what I expected and absolutely not how Fellows are treated in other parts of the world so while I saw a large number of cases, I would add a very strong warning to any future Fellow that they will be playing second fiddle to the resident for their entire time. I felt this was completely unacceptable.”

“lack of operating when resident available”

### **2014 Survey**

“The hands-on experience of the fellowship is a little less than expected because most of the cases seem to be performed by the residents. However, the opportunity to teach residents and guide them through the surgery is great.”

“All the procedures in operating room were done by staff or residents, I as a fellow were not considered at all, even though I had my residency training in Canada, program is totally biased toward residency, no sharing of surgical cases with fellow, they treat fellow like they are observers and only remember them when there is scut work, only department in Canada that force fellows to do junior calls.”

“Awareness that residents take priority to be trained over fellows”

*Please tell us any additional information that you feel would be useful for us to know about your fellowship experience at the University of Toronto.*

### **2012 Survey**

“The X division at X hospital has to figure out how to divide operations between fellows and residents in a way that will insure that future fellows can recommend this fellowship to future prospective fellows.”

“Currently since staff evaluation by residents is the main goal for staff, all priorities and ORs just going to residents. Not enough OR exposure for fellows is what can be described for UofT surgical Fellowships.”

### **2014 Survey**

“There should be a clear goal /agenda for fellows as regards to number of surgeries per week/month/3months etc. If that criteria isn’t met, changes should be done to the fellow’s exposure from time to time. The balance between a resident and fellow training should be nicely managed and I feel that balance at the U of T is tilted towards residents much more than it should have been.”

“Fellow should have their own log book at the end of rotation. This contains minimum required operations numbers and types. It is the responsibility of the supervisor to give the opportunity to fellows to complete this log book and to sign it. It is his role to give them the opportunity to operate according to minimum requirement and then can turn the wheel toward the residents as they are supervisor responsibility too.”





# **DIVISION REPORTS**

# DIVISION OF ANATOMY

*Department of Surgery, University of Toronto  
As Prepared by Dr Cindi Morshead,  
Professor of Surgery  
July 1, 2009 – June 30, 2014*

Anne Agur, Professor  
Barbara Ann Ballyk, Sr. Lecturer  
Judi Laprade, Sr. Lecturer  
Paulo D. Koeberle, Associate Professor  
Cindi M. Morshead, Professor  
Hong-Shuo Sun, Assistant Professor  
Mike Wiley, Professor  
Ian Taylor, Professor

This past five year saw a number of important changes that have moved the Division forward and set the stage for future years. Dr. Michael Wiley completed his term as Division Chair in January 2011. His outstanding leadership and commitment to the division throughout his 10 years as Chair were highly regarded by all. Dr. Cindi Morshead was recruited as the Chair of the Anatomy Division. Professor Morshead completed her Ph.D. in the Department of Anatomy and Cell Biology at the University of Toronto in 1994 and after postdoctoral training in Toronto and Calgary, she joined the Division of Anatomy in 2003. Her expertise is in neural stem cell biology, and she continues has an active research program in the field of neuroregenerative medicine.

We were pleased to have Dr. Hong-Shuo Sun join the Division in July 2010 in the capacity of Assistant Professor (tenure stream). Dr. Sun received his MD from Sun Yat-Sen University and his PhD from the University of Calgary, and followed this with postdoctoral training under the supervision of Michael Tymianski and John MacDonald at the Toronto Western Hospital Research Institute. Since his appointment Dr. Sun has developed an active research group with complementary focus to the research programs within Anatomy, looking at neuroprotection and regeneration in models of stroke.

Our Division faculty has been incredibly successful at acquiring external funding for research and academic endeavours. Collectively, four research programs in the Division have garnered over \$9,000,000 in funding to support their research and trainees. Our faculty are highly collaborative and attract award winning trainees to their respective research teams.

The Division has maintained and excelled meeting the diverse educational needs of students from many programs across numerous faculties including Medicine, Residents, Dentistry, Physical Therapy, Occupational Therapy, Speech and Language Pathology, Pharmacy, Physicians Assistant Program, Biomedical Communications, School of Graduate studies, Kinesiology and Physical Education, and Arts & Science. We have continued to develop innovative approaches to teaching, launching an online Anatomy course in collaboration with the Department of Physiology and developing online teaching tools for the Physicians Assistant Program. We have integrated substantial revisions to the undergraduate medical curriculum which continues to be a challenge as we attempt to meet the growing demands of increased class sizes across all faculties with no room for expansion of the facilities. Each year the faculty teach and train the over 2500 students that are enrolled in courses provided by the

Division. We have seen an enormous demand on the Division resources and recognize a very real challenge for medical training in the future. Most notable is the increasing demand for cadaveric material. The University of Toronto is the largest willed body programs in Canada. The Division receives over 200 body donations each year yet we are still not able to keep up with the demand for cadaveric specimens. The donated bodies are used for teaching of undergraduate and graduate students as well as for surgical and resident training and research. The generosity of the donors is not a limiting factor but instead, we face the challenge that there is a need to expand the capacity of the Division in order to allow us to accept more donations. We need to look at ways to expand our capacity to ensure that we can continue to excel in the education and training of students and researchers. At this time the Division is preparing for some big changes as the undergraduate medical curriculum is being redesigned. The proposed changes will impact all aspects of our facilities and we are continuing to work closely with the curriculum directors, Deans and facilities management. Undoubtedly these changes will have a positive impact on medical training.

### **Promotions:**

**2012** Dr. Paulo Koeberle was awarded tenure and promoted to Associate Professor.

**2013** Dr. Judi Laprade was promoted to Senior Lecturer. Dr. Laprade is the course director for anatomy in the Faculty of Physical Education and Kinesiology and the Faculty of Dentistry. She also contributes to the undergraduate medical curriculum. Her significant contribution to these programs is well received and appreciated by students and faculty alike.

**2013** Dr. Cindi Morshead was promoted to the rank of full Professor.

### **Trainees and Awards**

The Division faculty have had more than 50 trainees in the past 5 years including graduate students, postdoctoral fellows, undergraduate research students, lab technicians, visiting scientists and research associates. Our graduates and award winning trainees are highlighted below:

#### **Graduates:**

Christine Bae (Sun, supervisor) MSc

Nadia Sachewsky (Morshead, supervisor) PhD  
*Awards:* CIHR-TPRM scholarship  
Travel Award to the International Society for Stem Cell Research

Philip Donofrio (Agur&Koeberle, co-supervisors) MSc

Shoeb Ahsan (Morshead, Supervisor) MSc  
*Awards:* IMS Entrance Scholarship

#### **Graduates:**

Dave Piccin (Morshead, supervisor) PhD  
*Awards:* *Eureka's 4th Annual International Certificate Program*  
Alan Wu award at IMS Research Day  
CIHR PhD Fellowship (4 years)

Andrew Chow (Morshead, supervisor) MSc  
*Awards:* Ontario Graduate Scholarship  
IMS entrance scholarship.

#### **Trainees:**

Wenjun Xu (Morshead, supervisor) PhD candidate  
*Awards:* James H. Richardson Fellowship in Anatomy;  
Carlton and Marguerite Smith Medical Research Fellowship

Robert Babona-Pilipos (Morshead, supervisor)  
PhD candidate  
*Awards:* NSERC-CREATE CARE  
studentship.

Kristina Wakimoto (Anne Agur, Supervisor)  
PhD candidate  
*Awards:* SIRF grant from Humber  
College (\$7,032)  
Opportunities to Innovate,  
Higher Education Quality  
Council of Ontario (\$8,323)

Parvati Dadwal (Morshead, supervisor) MSc  
candidate  
*Awards:* CIHR Training Program  
in Regenerative Medicine  
Fellowship (2 years)  
IMS entrance Scholarship.  
Till and McCulloch abstract  
competition – First Place (>400  
abstracts)  
Heart and Stroke Foundation  
training fellowship

Labeeba Nusrat (Morshead, supervisor) MSc  
candidate  
*Awards:* Ontario Graduate Student  
Fellowship.

Ashkan Azimi (Morshead, supervisor) Summer  
Fellowship  
*Award:* Undergraduate Summer  
Research Fellowships

Kate Sauks (Anne Agur, supervisor) PhD  
candidate  
*Awards:* Carlton and Marguerite Smith  
Medical Research Fellowship.

Ekaterina Turlova (Sun, supervisor) PhD  
candidate  
*Awards:* CIHR MSc trainee award.

## **Faculty Research:**

### ***Patents filed***

P Koeberle – Novel Peptides and methods and  
uses thereof for preventing retinal disorders

CM Morshead and 2 others – Inducing Directed  
Migration (Translocation) of Neural Precursor  
Cells Using Assymmetric Balanced Biphasic  
Electric Fields

## **Faculty Awards**

### ***Dr. Anne Agur:***

Longstanding Academic Contribution and  
Collaboration from an External Partner Award.  
Division of Physiatry, Department of Medicine,  
Faculty of Medicine, University of Toronto.  
Excellence in Teaching Award, Department  
of Occupational Science and Occupational  
Therapy  
Excellence in Undergraduate Life Sciences  
Teaching Awards, Faculty of Medicine,  
University of Toronto.

### ***Dr. Barbara Ballyk:***

Excellence in Undergraduate Teaching in Life  
Sciences, Faculty of Medicine, University of  
Toronto.  
*Aikens Award*, Faculty of Medicine's,  
University of Toronto

### ***Dr. Mike Wiley:***

E. Mary Hollington Excellence in Pre-Clinical  
Teaching Award.  
Harry Whittaker Memorial Teaching Award,  
Faculty of Medicine  
Aikins Award for Large Group Teaching ,  
Faculty of Medicine  
President's Teaching Award, University of  
Toronto  
Ontario Council of University Faculty  
Associations Teaching Award, Province of  
Ontario

***Dr. Ian Taylor:***

E. Mary Hollington Excellent in Pre-clinical Teaching Award, Faculty of Medicine (13th time))

***Dr. Hong Sun:***

Outstanding Professional Alumni Award from Sun Yet-Sen Univ ZhongShan Med School.

**Faculty Appointments:**

Anne Agur was appointed President of the American Association of Clinical Anatomists.

Hong Sun was Guest Editor for Acta Pharmacologica Sinica on Special Topic of Stroke.

Cindi Morshead (Anatomy Chair) was appointed Graduate Coordinator in the Institute of Medical Science

Cindi Morshead (Anatomy Chair) was appointed University of Toronto delegate to the CIHR.

# DIVISION OF CARDIAC SURGERY

*Department of Surgery, University of Toronto  
As Prepared by Dr Christopher Caldarone,  
Professor of Surgery  
July 1, 2009 – June 30, 2014*

## Overview

The Division of Cardiac Surgery continues to thrive in its international presence of high-quality clinical care, research, and teaching. The Division has established itself as a clinical innovator in mechanical support/heart failure, complex aortic reconstruction, mitral valve repair, and congenital heart surgery. Research programs focus on translational research with direct clinical application, and are led by investigators at St. Michael's Hospital, Sunnybrook Health Sciences Center, and the Hospital for Sick Children. Trillium Health Center has also become an important leader in the teaching of cardiac surgery residents.

## Divisional Activity

### Clinical Activity

With over 4000 cases per year, the Division of Cardiac Surgery continues to provide clinical excellence with one of the highest case volumes in North America, making strong advances in the development of new surgical strategies.

**Mark Peterson** and **Maral Ouzounian** have led Division-wide initiatives to improve complex aortic pathology care. Mark Peterson assembled a multi-disciplinary team at St. Michael's Hospital to perform hybrid procedures and high complex aortic reconstructions. The team implanted a novel transcatheter mitral valve through a left ventricular apical incision, which was the first implantation of this device in North America. At the Toronto General Hospital, Maral Ouzounian leads in the development of complex aortic surgery.

At the Toronto General Hospital, **Tirone David** continues to lead in his mastery of mitral repair and complex aortomitral reconstructions.

**Vivek Rao, Terry Yao, and RJ Cusimano** are developing innovative therapies for heart failure using stem cells.

At Sunnybrook, **Gideon Cohen** and **Steve Fremes** developed a high-volume Transcatheter Aortic Valve Implantation (TAVI) program. Gideon Cohen also developed expertise in deploying MitraClip technology.

**George Christakis** has developed expertise in rapid deployment Percival aortic valves.

**Glen Van Arsdell** continues to lead the Congenital Heart Surgery Program at the Labatt Family Heart Center. The program has reduced mortality for single ventricle management to top-tier levels in comparison to other programs. The program is also developing ventricle management techniques pulmonary vein stenosis.

- Surgeons at the Hospital for Sick Children lead the Adult Congenital Heart Disease (ACHD) program at the Toronto General Hospital, one of the largest of its kinds in North America.

## Research Activity

The Division continues to enjoy a high level of research productivity at all participating hospitals thanks to external peer-reviewed funding, journal publication, and notable leaders.

In the past five years, the Division has achieved funding of 143 grants, with funding totaling over \$9.5 M in the 2013-14 academic

year, publication of 378 articles, and a journal impact factor of 1792.045.

**Ren-Ke Li** and **Richard Wiesel** (Toronto General Hospital) maintain lab funding and support for residents during their enrichment programs.

**Steve Fremes** (Sunnybrook) maintains funding for multiple prospective trials.

**Terry Yao** and **Vivek Rao** lead investigations into cell-based therapies for heart failure.

**Tirone David** produces a high volume of clinical outcomes research and analyses.

**Subodh Verma** (St. Michael's Hospital) has received many CIHR and Heart & Stroke Foundations, and holds a Tier 2 Canada Research Chair in Atherosclerosis that was renewed in 2012. He led the creation of the CARDIOLINK platform, which serves as a critical hub for developing and executing surgical trials by connecting the broader Canadian cardiac surgical community.

At the Hospital for Sick Children, **Richard Weisel** was also formally appointed as the Research Guide for the entire group in order to promote the strategic pursuit of funding proposals. His leadership has led to outcomes such as CIHR funding for **Christopher Caldarone** and the development of a collaborative program for promoting tissues engineering in congenital heart surgery in conjunction with the University's Institute of Biomaterials and Biomechanical Engineering, **Glen Van Arsdell** and **Edward Hickey**'s innovative work in the identification and characterization of errors during congenital surgery, and **Osami Hanjo**'s transplant and mechanical support programs.

The Division also co-hosts the annual International Heart Valve Summit.

### **Cardiovascular Data Management Center**

In 2011, the Division created the Cardiovascular Data Management Center (CVDMC) in order to encourage university-wide integration of quality improvement and clinical research activities. Housed at the Hospital for Sick Children and managed by a team of statistical and publication support personnel, the CVDMC aggregates all clinical data on patients with cardiovascular disease into a single linkage-rich environment through the removal of clinical and translational research barriers. The ongoing sharing agreement across the four hospitals is a first in the history of the University of Toronto for a freestanding data management entity. The Heart & Stroke Richard Leward Centre of Excellence in Cardiovascular Research, as well as operational funds and the recent large gift from the Rogers family generously funds the CVDMC.

### **Toronto Aortic Collaborative**

In 2011, the Toronto Aortic Collaborative (TAC) was formed as a group dedicated to the provision of excellence in the clinical care of patients with complex aortic pathology, as well as promoting research and education in aortic diseases. The TAC has established a data module within the CVDMC by developing a biobank of aortic tissues, housed at the Toronto General Hospital. Another major achievement of the TAC has been the TAC-Call Initiative led by the Division's **Maral Ouzounian** and **Mark Peterson**, and Vascular Surgery's **Andrew Dueck**. The initiative is working to create a no-refusal and single point of access for CitiCall referrals for patients with acute aortic syndromes. Looking ahead, the TAC plans to establish regular and effective citywide Aortic Disease Rounds as a mechanism for a shared clinical decision-making model.

### **Teaching and Training**

The Division of Cardiac Surgery participates in teaching for medical students, cardiac surgery residents, and cardiac surgery fellows. George

Christakis serves as Director of Undergraduate Education for the Department of Surgery at the University of Toronto, Gideon Cohen serves as the Program Director for Residency Training, and Stephanie Brister served as Director of Fellowship training for the Division of Cardiac Surgery.

To promote exposure to new ideas outside the University of Toronto, the Division hosts annual named lectures, supported the Terrence Donnelly Day at St. Michael's Hospital, and supports numerous additional lectureships. These include the Bigelow Lectures, the Heimbecker Lectures, and several visiting professors. Unfortunately, the Terrence Donnelly Day was discontinued in 2014 after 17 years.

## **Residency Training**

The Division's residency training program has undergone many changes over the past five years. The position of Program Director was taken over by Gideon Cohen in 2010-2011, after previously being held by David Latter. During this time, the Division successfully underwent an internal review in 2011 and an external review in 2013.

In 2011, a resident coordinator position at UHN was introduced to ensure continuity across teaching sites. Extra efforts were made to ensure that rotating residents were only exposed to those with an affinity for teaching, which was reflected in the improved feedback of residents rotating through the UHN sites. To further advance the quality of teaching, the Division introduced alternate training sites at Trillium Health Sciences Center for cardiac rotations, as well as St. Joseph's, Humber, Toronto East General, and Credit Valley Hospital for thoracic rotations. To this end, affiliate memberships are now granted to various institution members at the University level and a permanent position was made available at the RPC for a surgeon member to represent the Trillium group in 2011.

Training continues to improve not only in the operating theater, but outside as well. Simulation training has been significantly enhanced over the past five years in several aspects. Residents now receive starter sets of castro needle drivers, fine

forceps, and pocket simulators. The Divisional Wet Lab and purchase of two Chamberlain heart model simulators ensures that residents have opportunities to practice at any time. Residents also attend an annual CPB simulator course at the Michener Institute and a catheter-based skills simulator course held by Medtronic Canada.

In response to the growing need for counseling, a mentoring program was established in 2011 for personal and professional guidance. An Academic Enrichment Committee was also established in an effort to prepare residents with guidance for research endeavors.

To complement the improved training, improved evaluation methods were also introduced. Over the past five years, several new evaluation tools have been developed including a Clinical Encounter tool, an Academic Encounter tool, a NOTTS evaluation tool, a STACER tool, and a 360-feedback tool. Residents also undergo structured technical skills evaluations in the wet lab and operating theater, as well as oral exams with a written (TSDA) exam. Finally, in advance of the development of a competency-based curriculum model, competency-based evaluations have been recently adopted with a focus on the annual examination process that will ultimately facilitate the promotions process from one PGY year to the next.

The Division of Cardiac Surgery introduced two new and fully funded awards over the past five years, including the Shafie Fazel Outstanding Resident Award and the Heimbecker Award. Four additional Divisional awards were also established in order to incentivize quality teaching and recognize the top faculty teachers at each of the four academic sites.

## **Fellowship Training**

The 2010-2011 introduction of the post of Fellowship Director with Stephanie Brister was valuable in the improvement of quality fellowships at the four hospitals. Teaching Effectiveness Scores (TES) have been in the excellent range (> 4.0) over the last six years, with an average TES of 4.55 for clinical fellows in 2013-2014.



## Recruitment

**Osami Hanjo** was recruited as staff cardiovascular surgeon at the Hospital for Sick Children (2010-11).

**Fuad Moussa** was recruited as staff cardiovascular surgeon at Sunnybrook Health Sciences (2010-11).

**Edward Hickey** was recruited as staff cardiovascular surgeon at the Hospital for Sick Children (2011-12).

**Maral Ouzounian** was recruited as staff cardiovascular surgeon at the Toronto General Hospital (2012-13).

**William Stansfield** was recruited as staff cardiovascular surgeon at the Toronto General Hospital (2012-13).

**Mitesh Badiwala** was recruited as staff cardiovascular surgeon at the Toronto General Hospital (2012-13).

## Promotions

**Osman Al-Radi** was promoted to Assistant Professor at the Department of Surgery (2009-10).

**Christopher Caldarone** was promoted to Professor at the Department of Surgery (2009-10) and as Senior Associate Scientist at the Hospital for Sick Children Research Institute (2010-11).

**Gideon Cohen** was promoted to Associate Professor as well as Program Director for the Cardiac Surgery Residency Program at the Department of Surgery (2009-10).

**Osami Honjo** was promoted to Associate Scientist at the Hospital for Sick Children Research Institute (2010-11).

**David Latter** was appointed as Chief of the Division of Cardiovascular Surgery at St. Michael's Hospital (2010-11).

**Vivek Rao** was appointed as Director of the Cardiovascular Business Unit at the Peter Munk Cardiac Center/UHN and Chair of the Physician

Payment Review Board at the Ministry of Health (2011-12). He was appointed as Head of the Division of Cardiac Surgery at University Health Network (2011-12).

**George Christakis** was appointed as Director of Undergraduate Medical Education for Surgery at the University of Toronto (2011-12).

**Edward Hickey** was appointed as Director of Undergraduate Education for the Division of Cardiac Surgery at the University of Toronto (2011-12).

**Fuad Moussa** was promoted to Assistant Professor at the Department of Surgery, as well as Director of Undergraduate Surgical Education at Sunnybrook Hospital (2012-13).

**Lee Errett** was appointed as the Wilfred G. Bigelow Professor of Cardiac Surgery (2013-14).

**Subodh Verma** was promoted Full Professor at the Department of Surgery, and was appointed as Co-chair of the Toronto Acute Coronary Syndrome Summit and the State of the Heart Symposium (2013-14).

## Visiting Professors

The Bigelow Lecture is an annual lectureship in which the Division has been fortunate to host many exceptional lecturers, including **Matthew Howard** (Chief of the Division of Neurosurgery at the University of Iowa) in 2009-10, **Gregory Hirsch** (Cardiovascular Surgery, Queen Elizabeth II Health Sciences Centre, Dalhousie University) in 2010-11, **Sidney Levitsky** (Beth Israel Deaconess Medical Center) in 2011-12, and **Kenneth W. Kizer** (Former Director of the US Department of Veterans Affairs and founding President and CEO of the National Quality Forum) in 2013-14.

**Keith Horvath** (Director of Cardiothoracic Surgery Research at the National Heart, Lung and Blood Institute and Chief of Cardiothoracic

Surgery at the National Institutes of Health Heart Centre) was a University Rounds lecturer (2009-10). Other distinguished visiting professors have included **Eugene Blackstone** (Director, Clinical Investigations Cleveland Clinic's Heart and Vascular Institute) in 2009-10, **John Ikonomidis** (Associate Professor, Medical University of South Carolina) in 2011-12, **Phillipe Menasche** (Professor, University of Paris Descartes) in 2011-12, **David Adams** (Mount Sinai Hospital, New York) and **Michael Borger** (University of Leipzig) in 2012-13.

Terrence Donnelly Day lecturers have included **Ivan Rebyka** (Professor, University of Alberta) and **Marc Ruel** (Professor, University of Ottawa Heart Institute) in 2010-11, and **Nimesh Desai** in 2011-12.

Heibecker Lecturers have included **James Cox** (Washington University School of Medicine) in 2011-12, and **Joseph Dearani** (Chief of Cardiovascular Surgery at the Mayo Clinic) in 2013-14.

### **Resident & Fellow Honours and Awards**

Over the course of the past five years, cardiac surgery residents received a total of 22 awards and honours for their achievements. Some notable awards include:

**Krishan Singh:** Vivien Thomas Young Investigators Award, American Heart Association (2009-10).

**Gilbert Tang:** Trainee Excellence in Education Award, Canadian Cardiovascular Society (2009-10).

**Bobby Yanagawa:** AATS Lillihei Research Award (2010-11), Heimbecker Award, University of Toronto (2010-11), Resident Research Award, Physician's Services Incorporated Foundation (2012-13)

**Mitesh Badiwala:** Inaugural Shafie S. Fazel Outstanding Resident Surgeon and Investigator Award, University of Toronto (2010-11); Second prize in the Gallie-Bateman Competition (2010-11), Royal College Detweiler Travelling Fellowship (2012-13)

**Mitesh Badiwala & Vivek Rao:** Vivien Thomas Young Investigator Award, American Heart Association (2010-11)

**Saswata Deb:** Sopman Humanitarian Award, University Health Network (2010-11), Vanier Canada Scholar (2011-12, 2012-13), Heimbecker Award for Surgical Research (2013-14)

**Edward Hickey:** Zane Cohen Clinical Fellowship Achievement Award, University of Toronto (2010-11); Postgraduate Medical Trainee Leadership Award, University of Toronto (2010-11)

**Daniel Lodge:** Harrison Award, Sunnybrook Health Sciences Centre (2010-11)

**Praphulla Shukla:** Vivian Thomas Young Investigator Finalist (2010-11, 2011-12)

**Rachel Vanderlaan:** Congenital Heart Surgery Resident Research Prize, American Association for Thoracic Surgery (2012-13), Banting Postdoctoral Fellowship, Canadian Institutes of Health Research (2013-14)

### **Faculty Honours and Awards**

Over the course of the past five years, staff surgeons received a total of 69 awards and honours for their achievements.

# DIVISION OF GENERAL SURGERY

*Department of Surgery, University of Toronto  
As Prepared by Dr Carol Swallow,  
Professor of Surgery  
July 1, 2009 – June 30, 2014*

## Divisional Activity

The Division of General Surgery continues to excel in its major contributions to the University of Toronto and citywide healthcare system. In addition to delivering excellent care to patients and their families, individuals and teams across the division are having a major system impact within the context of the rapidly changing healthcare system. In addition to standard metrics such as papers and grants, there is significant tangible evidence of the Division's positive impact.

## Education

**Darlene Fenech** assumed the role of Course Director for the new second-year medical school course 'Mechanisms, Manifestations, and Management of Disease' (2009-19).

**Jaime Escallon** was appointed citywide Divisional Director of the Surgical Clerkship (2011-12).

**Nancy Baxter** was appointed as Division Chief at St. Michael's Hospital (2012-13).

**Nancy Downs** became the Division Chief at North York General Hospital (2012-13).

General Surgery currently boasts eight formal fellowships. Under the leadership of Paul Greig, there has been an increase in coordination and integration of fellowship leaders and their programs across various sites. Najma Ahmed and her team have done an outstanding job of continually reviewing the structure of the residency and increasing the rigor of the component parts of the training program. Much of this has involved adding modules

that augment the educational experience of the various rotations in the hospitals.

The **One Day Master Program** was widely embraced by the Division faculty, as well as the 101 first-year students who had the opportunity to gain exposure to General Surgery by being positioned in the operating rooms with active faculty (2009-10).

The wide array of continuing education courses offered through the division is noteworthy. Courses, both large and small, increasingly reach across the entire city and beyond in their impact. For example, John Hagen and the MIS surgeons in Toronto have developed well attended recurring courses; monthly City-Wide MIS rounds and Bariatric rounds approximately six times per year. The Update Course in General Surgery celebrated its 50th anniversary in April 2010 with a record of 530 registrants.

Other academic highlights include the publication of the U of T Surgical Oncology Manual, led by France Wright and colleagues (2011-2012).

Finally, a highly notable change in the Department is the departure of Dr. Richard Reznick who proudly hailed from the Division of General Surgery. Dr. Reznick went on to become the Dean at Queen's University on July 1, 2010.

## Integration

The 2010-11 academic year saw the realization of the **Ontario Peritoneal-Based Malignancy Program (PBMP)**, a collaborative, inter-institutional, interdisciplinary program based at the Mt. Sinai Hospital.

A further example of the Division's integration efforts includes is the connection that continues to evolve between minimally invasive surgery (MIS) experts across the city. Dr. Allan Okrainec has energetically led the **MIS Fellowship** as this program continues to become increasingly competitive and attracts superb applicants from around the world. Most importantly, the training program was recently assessed and received full accreditation by the Fellowship Council. Other U of T leaders such as Dr. John Hagen have worked in a steadfast manner to increase the profile of minimally invasive surgery through the development of citywide MIS and obesity rounds and, by extension, knitted together a citywide community.

2011-12 was notable for the continued momentum of the **U of T Trauma Program**, a collaborative between St Michael's Hospital, Sick Kids and Sunnybrook Health Science Centre to integrate trauma related activities in the areas of education, quality, and research. The UofT Trauma Program features collaborative fellowship training; the newly designed Trauma & ACS fellowship will have fellows receive training from St. Michael's Hospital and Sunnybrook Health Sciences Centre. Additionally, UofT Trauma Guidelines seek to unify standards of care for trauma patients in Toronto and to have these readily available in an app.

Finally, **Trauma Triage Transfer Criteria** are improving the coordination efforts of EMS triage and the transfer criteria from community hospitals to a trauma centre.

The success of the Trauma Program is but one example in an increasing number of ways the individual hospitals' surgeons are linked in a systematic way.

## **BPIGS**

General Surgery continued to lead in the creation of evidence-based guidelines and the

implementation of the guidelines throughout the city through the BPIGS initiative. Led by **Robin McLeod**, an enlarging and increasingly varied inter-professional BPIGS team continues to bring focus to core areas of clinical importance including surgical site infection, mechanical bowel preparation, thrombo-prophylaxis, intra-abdominal infection, enhanced recovery after surgery (ERAS) and peri-operative pain management. Particularly noteworthy for 11-12 was the willingness of the University of Toronto hospitals to target money from their base budgets to support BPIGS evolution and thus sponsor the development of a single Toronto-wide approach to patient management. Additionally, BPIGS continued to catalyze awareness, agreement and adoption beyond Toronto as a result of outreach activities such as the BPIGS listserv and our U of T General Surgery Update Course.

## **Recruitment**

**Timothy Jackson** was recruited as staff surgeon at the Toronto General Hospital and bolstered the ranks of the minimally invasive surgery (MIS) program at UHN (2009-10).

**Jean Francois Boileau** joined the breast cancer team at Sunnybrook Health Sciences Center (2009-10).

**Shiva Jayaraman** joined Richard Hart at St. Joseph's Health Center to form the third unit of a Center for Excellence in hepatobiliary surgery in Toronto (2009-10).

**Peter Dauphinee** (Royal Victoria Hospital), Norm Hill, Don Munnings, Mark Pope, Joe Wen (Trillium Health Centre) and Mark Taylor (Lakeridge Health Centre) received adjunct faculty appointment (2009-10). Such community-hospital appointments are crucial for the Faculty of Medicine's development of integrated medical education.

**Mary Chen** was appointed as the University of Toronto Trauma Care Program Advisory Committee Research Manager (2010-11).

**Anand Govindarajan** was recruited as staff surgeon at Mount Sinai Hospital. He will contribute to ongoing PBMP and GI surgical oncology at MSH and the Princess Margaret Hospital (2010-11).

**Paul Karanicolas** was recruited as a hepatobiliary surgeon at Sunnybrook and the Odette Cancer Program (2010-11).

**Shady Ashamalla** was recruited as staff surgeon at Sunnybrook. He will contribute to MIS oncology and curriculum development in simulation (2011-12).

**Sandra de Montbrun** was recruited as staff surgeon at St. Michael's Hospital, specializing in colorectal surgery and surgical education research.

**Karen Devon** was recruited as staff surgeon at Women's College Hospital, specializing in endocrine surgery and surgical bioethics (2011-12).

**Fayez Quereshy** was recruited as staff surgeon at UHN. He will contribute to MIS oncology and healthcare economics (2011-12).

**Joseph Tan** was recruited as staff surgeon at Humber River Regional Hospital. He will contribute to MIS oncology and surgical education (2011-12).

**Agostino Pierro** was recruited as Division Chief at the Hospital for Sick Children (2012-13).

**Joao Rezende-Neto** was recruited as staff surgeon at St. Michael's (2012-13).

**Barto Nascimento** was recruited to the new role of academic hospitalist (2012-13).

**Nicole Look Hong** was recruited staff surgeon at Sunnybrook Hospital, joining the breast surgical oncology team (2013-14).

**Julie Hallet** was recruited as staff surgeon at Sunnybrook Hospital, joining the HPB surgical oncology team (2013-14).

**Jory Simpson** was recruited as staff surgeon at St. Michael's, joining the breast surgical oncology team (2013-14).

## Promotion

**Najma Ahmed**, SMH, was promoted to Associate Professor (2009-10).

**Andrea McCart**, Mount Sinai Hospital, was promoted to Associate Professor (2009-10).

**Ian McGilvray**, UHN-TGH, was promoted to Associate Professor (2009-10).

**John Hagen**, Humber River Regional Hospital, was promoted to the rank of Assistant Professor (2009-10).

**David Urbach**, UHN, was promoted to Full Professor (2010-11).

**Andy Smith**, Sunnybrook, was promoted to Full Professor (2010-11).

**Georges Azzie**, SickKids, was promoted to Associate Professor (2010-11).

**Anna Gagliardi**, UHN, was promoted to Associate Professor (2010-11).

**Teodor Grantcharov**, SMH, was promoted to Associate Professor (2010-11).

**Michael Reedijk**, UHN, was promoted to Associate Professor (2010-11).

**Todd Penner**, UHN-TWH, was promoted to Assistant Professor (2011-12).

**Carol Anne Moulton**, UHN, was promoted to Associate Professor (2011-12).

**Homer Tien**, Sunnybrook, was promoted to Associate Professor (2011-12).

**Natalie Coburn**, Sunnybrook, was promoted to Associate Professor (2011-12).

**Sandro Rizzoli**, SMH, was promoted to Full Professor (2011-12).

**Helen Macrae**, Mount Sinai, was promoted to Full Professor (2011-12).

**Allan Okrainec**, UHN-TWH, was promoted to Associate Professor (2012-13).

**Alice Wei**, UHN-TGH, was promoted to Associate Professor (2012-13).

**Sean Cleary**, UHN, was promoted to Associate Professor (2013-14)

**Tom Harmantas**, St. Joseph's Health Centre, was promoted to Associate Professor (2013-14).

**Erin Kennedy**, MSH, was promoted to Associate Professor (2013-14).

**Calvin Law**, Sunnybrook, was promoted to Full Professor (2013-14).

# DIVISION OF NEUROSURGERY

*Department of Surgery, University of Toronto  
As Prepared by Dr Andres Lozano,  
Dan Family Chair, Division of Neurosurgery  
July 1, 2009 – June 30, 2014*

## Overview

The Division of Neurosurgery continued in its tradition of strong performance in the academic, research, clinical and teaching domains as it underwent a change in leadership in 2010. Dr. James Rutka was succeeded as Chair by Dr. Andres Lozano, who after a competitive search, selected Dr. Abhaya Kulkarni as Residency Program Director. Approximately 6,000 cases were performed each year across our four main teaching hospitals. Over the five-year period, Neurosurgery faculty and residents published 1,392 papers in top-tier journals including *Nature*, *Nature Genetics*, *New England Journal of Medicine*, *Lancet*, *Lancet Neurology* and *Science Translational Medicine*. Our neurosurgeons and affiliated neuroscientists captured over \$116.3M in research grant funding, and 3 new endowed chairs were established for a total of 13 endowed chairs in the Division (as of June 30, 2014; now 15 chairs).

Neurosurgery Faculty members received some of the most prestigious distinctions and appointments in our discipline, with highlights including the Royal Society of Canada (Drs. Rutka and Lozano), Canadian Academy of Health Sciences (Dr. Michael Fehlings and Dr. Lozano), Order of Ontario (Dr. Rutka), CPSO Council Award (Drs. Fred Gentili and Charles Tator), SNS Winn Prize (Drs. Fehlings and Lozano), AANS Humanitarian Award (Dr. Mark Bernstein), ASIA Lifetime Achievement Award (Dr. Tator), PAIRO Resident Advocate Award (Dr. Gelareh Zadeh) and Editorship of the *Journal of Neurosurgery* (Dr. Rutka). Each year our residents were awarded McKenzie Prizes in Neuroscience Research, the most prestigious

neurosurgical resident awards in the country, in addition to garnering other highly competitive awards and fellowships. Our clinical fellows program was bolstered by the establishment in 2011 of the “Michael and Amira Dan Fellowships in Neurosurgery at the University of Toronto”. These ten new training positions over five years are an invaluable addition to our academic mission. In 2013 we launched a new city-wide Brain Tumor Bank at the University of Toronto, thanks to the generous support of the Dan Family. We remain extremely grateful for their strong ongoing commitment to neurosurgical education and excellence in Toronto.

Under the leadership of Dr. Kulkarni, our Neurosurgery Residency Program successfully completed its six-year review by the Royal College of Physicians and Surgeons of Canada in 2012, and although slightly out of the reporting period, our Division passed its external review held in early 2015. We continue to be regarded a premiere program with special stature globally, one that the world looks to for leadership on clinical, research, teaching and leadership fronts.

## Recruitment

### 2010

Sunit Das, St. Michael’s Hospital  
Nicholas Phan, Sunnybrook Health Sciences Centre

### 2012

Paul Kongkham, Mohammed Shamji, Ivan Radovanovic, Toronto Western Hospital  
Victor Yang, Sunnybrook Hospital  
Mark Erwin (Affiliate Neuroscientist), Toronto Western Hospital

## 2013

Suneil Kalia, Toronto Western Hospital

## Promotions

### 2009

Eric Massicotte, to Associate Professor  
Michael Taylor, to Associate Professor  
William Tucker, to Full Professor

### 2010

James Eubanks (Affiliate Neuroscientist),  
to Full Professor  
Mojgan Hodaie, to Associate Professor  
Gelareh Zadeh, to Assistant Professor

### 2012

Clement Hamani (Affiliate Neuroscientist),  
to Associate Professor  
Michael Taylor, to Full Professor

## New Endowed Chairs

**2011:** Greg-Wilkins Barrick Chair in  
International Surgery - Mark Bernstein

**2013:** The Garron Family Chair in Childhood  
Cancer Research - Michael Taylor

**2013:** The Garron Family Chair in Childhood  
Cancer Research – Peter Dirks

## Research Grants

Our neurosurgeons and affiliated neuroscientists captured over \$116.3M in research grant funding over this 5 year period, from agencies including the Canadian Institutes of Health Research (CIHR), Canada Foundation for Innovation (CFI), Natural Sciences and Engineering Research Council (NSERC) and National Institutes of Health (NIH), among many other granting agencies and philanthropic organizations.

These funds have been used to support research programs in the areas of advanced optic and imaging modalities, biomarkers, cerebrovascular disease, epilepsy, gene therapy,

head injury and prevention, movement disorders, neuromodulation, neurooncology, pain, regenerative medicine and spinal cord injury. Clinical trials funded in this period include those in the areas of Alzheimer's disease, depression, eating disorders, Parkinson's disease, spinal cord injury, stem cells and stroke.

## Residents and Fellows Honours/ Awards/Positions Held

In each year from 2009 to 2014, our residents were awarded McKenzie Prizes in Neuroscience Research, the most prestigious neurosurgical resident awards in the country. The prize winners are listed below. Toronto Neurosurgery continued its historically strong performance in this competition, having won 22 of the 37 McKenzie Prizes (59.5%) awarded since 2000 (as of June 20, 2014).

### 2009

Ratan Bhardwaj  
Clinical Neuroscience Research

### 2010

Scellig Stone  
Basic Neuroscience Research, 1st place

### 2011

Adrian Laxton Clinical  
Neuroscience Research, 1st place  
Douglas J. Cook  
Basic Neuroscience Research, 1st place  
Gregory Hawryluk  
Basic Neuroscience Research, 2nd place

### 2012

Jeff Wilson  
Clinical Neuroscience Research, 1st  
place

### 2013

David Cadotte  
Clinical Neuroscience Research  
Nir Lipsman  
Clinical Neuroscience Research



In addition, our residents have been successful in winning other highly competitive awards and fellowships, selected highlights of which include the prestigious Starr Medal, New York Academy of Medicine Lewis Rudin Glaucoma Award, Royal College Fellowship, American Academy of Neurosurgery Resident Award, New Investigator Award at the American Institute of Ultrasound, Synthes Award for Resident Research on Brain and Craniofacial Injury, CIHR Fellowship Grant, A.W. Harrison Resident Teaching Award, CIHR Bisby Prize, PSI Resident Research Award and NREF Research Fellowship.

### **Faculty Honours/Awards/Positions Held**

The remarkable talents and achievements of our faculty have been recognized by the receipt of numerous awards and honors from 2009 to 2014. Highlights include appointments to the Royal Society of Canada and Order of Ontario; induction to the Canadian Academy of Health Sciences; receipt of two prestigious Winn Prizes from the Society of Neurological Surgeons; and creation of an honorary named lecture by the American Association of Neurological Surgeons/Congress of Neurological Surgeons.

#### **2009**

Michael Fehlings received the Olivecrona Award and Medal from the Karolinska Institute.

Andres Lozano was elected to the Royal Society of Canada.

Michael Taylor received the Gold Medal Award in Surgery from the Royal College.

#### **2010**

James Rutka served as the President of the American Association of Neurological Surgeons (AANS).

Mojgan Hodaie was awarded the Wightman-

Berris Award for postgraduate education. Andres Lozano received the Winn Prize from the Society of Neurological Surgeons. Charles Tator was the recipient of the UHN 2011 Global Impact Award.

Michael Taylor received the George Armstrong-Peters Prize for outstanding achievements in research by a surgical faculty at the early stages of their career.

#### **2011**

James Drake was appointed as Director of the Centre for Image Guided Innovation and Therapeutic Intervention (CIGITI).

Fred Gentili and Charles Tator received the Council Awards for 2011 from the College of Physicians and Surgeons of Ontario.

Michael Fehlings was appointed as President of the Cervical Spine Research Society (CSRS).

Charles Tator and Michael Fehlings were co-recipients of the Reeve-Irvine Research Medal.

James Rutka was inducted as a Fellow of the Royal Society of Canada.

Andres Lozano was the recipient of a Pioneer in Medicine Award from the Society for Brain Mapping and Therapeutics.

Charles Tator was the recipient of the American Spinal Injury Association (ASIA) Lifetime Achievement Award, for his contributions to the world of spinal cord injury care.

James Rutka was elected to the Canadian Academy of Health Sciences.

Charles Tator had a lecture named in his honor by the American Association of Neurological Surgeons/Congress of

Neurological Surgeons (AANS/CNS) Section on Neurotrauma and Critical Care. Gelareh Zadeh on her receipt of the 2012 Lois H Ross Resident Advocate award from PAIRO.

## 2012

American Academy of Neurological Surgery (AAcNS) President James Rutka delivered the 2012 AAcNS Presidential Address.

Charles Tator was selected as the 2012 Gallie Surgical Lecturer by The Royal College of Physicians and Surgeons.

Michael Fehlings was awarded the Winn Prize from the Society of Neurological Surgeons.

Mark Bernstein received the 2013 Humanitarian Award from the American Association of Neurological Surgeons.

James Rutka received the inaugural 2012 Abhijit Guha Award from the Society for NeuroOncology and the Section on Tumors of the AANS/CNS.

Andres Lozano received the Olivecrona Award and Medal from the Karolinska Institute.

Todd Mainprize received the Peters-Boyd Academy Mentorship Award.

Michael Fehlings won the Queen Elizabeth II Diamond Jubilee Medal.

Andres Lozano was the inaugural recipient of the quadrennial Tasker Award from the World Society for Stereotactic and Functional Neurosurgery.

Michael Fehlings received the 2012 Jonas Salk Award.

James Rutka was appointed as the seventh Editor-in-Chief of the Journal of Neurosurgery.

## 2013

James Rutka was elected to the Order of Ontario, the Province's highest honour.

Michael Fehlings was appointed as Vice Chair Research in the Department of Surgery at the University of Toronto.

Andres Lozano received the 2013 Margolese National Prize in Brain Disorders, awarded to a Canadian who has transformed care in heart or brain diseases.

Gelareh Zadeh won 2014 Bernard Langer Surgeon-Scientist Award, presented annually to an outstanding graduate of the Surgeon-Scientist Training Program in the Department of Surgery who shows the greatest promise for a career in academic surgery.

Todd Mainprize received the Marvin Tile Distinguished Service Award at Sunnybrook Hospital.

Michael Fehlings was elected to the Canadian Academy of Health Sciences.

## Visiting Professors

### E. Harry Botterell Visiting Professorship in Neurosurgery

Daniel Barrow, Emory University, 2009

Matthew Howard III, University of Iowa College of Medicine, 2010

Jacques Morcos, University of Miami, 2011

Kim J. Burchiel, Oregon Health and Science University, 2012

Not held due to Celebration of 90 Years of Neurosurgery at the University of Toronto, 2013

**E. Bruce Hendrick Visiting Professorship in Pediatric Neurosurgery**

William Harkness, Great Ormond Street Hospital, 2009  
Richard Ellenbogen, University of Washington, 2011  
P. David Adelson, Barrow Neurological Institute, 2012  
John Kestle, University of British Columbia, 2013

**William S. Keith Visiting Professorship in Neurosurgery**

Anil Nanda, LSU Health Sciences Centre, 2009  
Nelson Oyesiku, Emory University, 2011  
Christopher Shaffrey, University of Virginia, 2012  
Duke Samson, University of Virginia, 2013

**Arthur and Sonia Labatt Brain Tumor Research Centre Annual Academic Lectureship**

Joe Costello, University of California at San Francisco, 2009  
Waldemar Debinski, Wake Forest University, 2010  
Kenneth Aldape, MD Anderson Cancer Centre, 2011  
Inder Verma, The Salk Institute, 2012  
Fred Lang MD Anderson Cancer Centre, 2013

**Brian Marshall Lectureship**

Michael Avidan, Washington University in St. Louis, 2009  
Andrew Maas, University Hospital Anwterp, 2011 (Host, Neurosurgery)  
Thomas Bleck, Rush Medical College, 2012 (Host, Anesthesiology)  
Not held due to Celebration of 90 Years of Neurosurgery at the University of Toronto, 2013

**Charles H. Tator-Barbara Turnbull**

**Lectureship Series in Spinal Cord Injury**  
James Fawcett, Cambridge University Centre for Brain Repair, 2009  
V. Reggie Edgerton, University of California

Los Angeles, 2010  
Armin Curt, University of Zurich, 2011  
Susan J. Harkema, University of Louisville, 2012  
Multiple guest speakers, 2013

**University of Toronto Spine Program Visiting Professorship**

Ed Benzel, Cleveland Clinic, 2009  
Charles Johnston, Texas Scottish Rite Hospital for Children, 2010  
Jens Chapman, University of Washington, 2011  
Jean F. Dubousset, St. Vincent de Paul Hospital, 2012  
Alexander Vaccaro, Thomas Jefferson University Hospital, 2013

**Division Firsts**

**2010**

In a new tradition for our Division, our annual William S. Keith Professorship dinner was combined with a graduation ceremony for our PGY6 residents, who were presented with mounted photographs taken with their mentors.

**2011**

1<sup>st</sup> Division of Neurosurgery Annual General Meeting  
Launch of a monthly “Faculty Focus” profile series on the Division website  
Establishment of the Michael and Amira Dan Fellowships in Neurosurgery

**2012**

Launch of a new PGY4-PGY1 mentorship program. We thank our PGY4 residents for their outstanding job in service to their junior colleagues.

**2013**

First Skype broadcast by the University of Toronto Brain School to the Neurosurgery Program in Kijabe, Kenya, as part of International Surgery Rounds.

Our Division's first Cerebrovascular Neurosurgery Soiree was held on Feb. 24, 2014 with Faculty presenting developments in clinical, research and teaching work at their sites, and discussing opportunities for new synergies across the University-wide program. The event was followed by Soirees for Neurooncology, Spine and Gamma Knife Surgery.

### **Leadership Changes/Progressions**

**Michael Tymianski**, Head, Division of Neurosurgery, Toronto Western Hospital, effective June 1, 2012

**Todd Mainprize**, Interim Head, Division of Neurosurgery at Sunnybrook Hospital, effective July 1, 2013

### **Royal College Fellowships**

**2009:** Hussein Al-Ahmadi, Merdas Al-Otaibi and Ratan Bhardwaj

**2010:** Ryan DeMarchi, Zul Kaderali, Paul Kongkham and Adrian Laxton

**2011:** Douglas Cook, Suneil Kalia, Demitre Serletis and Victor Yang

**2012:** Soha Al-Omar, Michael Ellis, Gregory Hawryluk, Scellig Stone and Adrienne Weeks

**2013:** Julius Ebinu, Aria Fallah, Carlo Santaguida, Mehdi Shahideh and Sunjay Sharma

# DIVISION OF ORTHOPAEDICS

*Department of Surgery, University of Toronto  
As Prepared by Peter Ferguson, MD, FRCSC,  
AR Latner Chair, Division of Orthopaedics  
July 1, 2009 – June 30, 2014*

The past 5 years have seen tremendous growth and accomplishment in the Division of Orthopaedic Surgery. Long considered a world leader in the pillars of orthopaedic clinical care, research and education, our division has continued to reinvent itself in these areas of academic practice. Dr. Benjamin Alman held the position of Albert and Temmy Latner Chair of Orthopaedic Surgery from 2009 to June 30 2013 before departing to become the Chair of the Department of Orthopaedic Surgery at Duke University. During his tenure the Division developed the world's first completely Competency-Based Surgical training curriculum, continued novel and innovative translational and clinical research and established various University-wide clinical programs to improve and streamline patient care. Judging from these achievements and the number of new faculty recruits, promotions and awards, Dr. Alman left the Division in fantastic shape. Dr. Peter Ferguson served as Interim Chair from 2013-2014 before being named the Albert and Temmy Latner Chair effective July 1 2014.

## **Education**

Our Division has developed the world's first completely Competency Based surgical training curriculum. This was done through the immense contributions of a number of committed and dedicated members of our faculty who served as educational leaders. Initially designed by Dr. Bill Kraemer Program Director and Dr. Peter Ferguson Associate Program Director, the first 3 residents in this pilot stream entered the program July 1 2009. This novel curriculum emphasizes (1) early technical skills training by institution of

an intensive skills course during the first month of training, (2) maximizing efficiency in training, (3) a rigorous and intensive assessment program and (4) progression through the program based on demonstration of competence rather than a fixed time. Educational leadership changed in January 2011 when Dr. Peter Ferguson took over as Program Director and Dr. Markku Nousiainen assumed the role of Associate Program Director with a focus on the Competency Based Curriculum. Initially 3 residents per year enrolled in the pilot for 4 years and then, based on its success, in July 2013 the entire class of 12 new residents entered this program which has now become the standard curriculum in our program. The metrics for success of this new curriculum include the fact that the initial intensive skills course is a part of curriculum for all surgical trainees at the University of Toronto and in fact is being mimicked by other orthopaedic training programs including Harvard University. The entire curriculum has generated significant interest at the level of the Royal College of Physicians and Surgeons of Canada with other orthopaedic programs across the country likely following suit. Furthermore other surgical programs around the world are looking to incorporate various components including our assessment tools into their programs. Thus far the new curriculum has been reviewed by the Royal College and has received full accreditation status without major weaknesses. The first 5 trainees have successfully passed their Royal College specialty exams on the first attempt, 4 of them after 4 years of training.

Dr. Jeremy Hall has held the position of undergraduate supervisor in the Division and has done a stellar job of incorporating orthopaedic

education into the undergraduate curriculum at the University. Our faculty regularly ranks highly in their undergraduate teaching evaluations and we have continued to recruit high quality residents into our program because of our undergraduate education endeavours.

Dr. Albert Yee has served as fellowship supervisor and has implemented a Division-wide fellowship committee to oversee fellowship education and research issues. Our Division has the largest fellowship program in the Department of Surgery and one of the largest in the world at over 60 fellows annually. Development of a Division-wide Fellowship Research Day has been met with much success, providing fellows a forum to present their research to their peers.

## **Research**

Our academic footprint is a measure of how we impact orthopaedics internationally. It is a measure of the impact of our publications, the number of our trainees who have develop successful academic careers outside of Toronto, and how our work improves the outcome for the patients we treat. We have one of the world's largest academic footprints, having ranked third in the world in peer reviewed publications several years consecutively, and this accomplishment is in no small part due to our strong focus of research.

Our Divisional research committee has been co-chaired by Drs. Cari Whyne and Sevan Hopyan. A key component of this essential job is overseeing and mentoring the residents who enter their integrated research and clinical year. Their participation in this novel combined clinical and research training program has facilitated the ability of our trainees to participate in high level research, resulting in an overall increase in our research productivity.

The Toronto Musculoskeletal Centre (a university wide extra-departmental unit) was initiated during Dr. Alman's tenure. While the center crosses all institutions and departments

across the broad University of Toronto and its affiliated hospitals community, it has two nodes at Sunnybrook Hospital and Mount Sinai Hospital. The centre focuses on developing initiatives to help translating research from the bench to the bedside to the backyard. Several trainees working with members of our division received salary support for their interdisciplinary translational research. The centre developed a new collaborative graduate education program, helping with the recruitment of new MSK researchers to Toronto. Its ultimate goal is to develop new and improved methods of treating patients with orthopaedic and other musculoskeletal conditions. Our division members will be able to use the centre infrastructure to develop multi centre research and to help develop new interdisciplinary work.

The past several years have seen the development of new technologies and research paradigms that have improved the quality and clinical applicability of our research work. These developments are associated with growth in the size of the biomedical research community and the expense of undertaking high quality research studies. Indeed there has been tremendous growth in the Toronto research community over the past decade. Unfortunately, national research funding has not kept pace with the increased costs associated with undertaking this high quality research. Despite these challenges, we continue to maintain research funding at a high level, with annual funding frequently totaling more than \$6 million dollars.

## **Clinical Care**

The six core academic teaching hospitals are quaternary referral centres for most subspecialties in orthopaedics. We also have 5 affiliated community hospitals within our division. Our clinical volumes and breadth of complex surgical cases far surpasses any centre in Canada and rivals most large centres in the US. As part of our initiative to develop a broader competency based program, we have organized some aspects of education, research, and clinical care along specialties rather than sites.

Dr. Albert Yee, along with Dr. Michael Fehlings (Neurosurgery) we appointed as co-directors of the U of T Spine Program, and have done a fabulous job working to integrate spine care, education and research across orthopaedics but also between orthopaedics, neurosurgery and other disciplines treating the spine. Dr. Tim Daniels, as the head of our foot and ankle program has developed a Toronto wide foot and ankle education program (including a city wide fellowship program), and is helping to coordinate care between foot and ankle specialists in the GTA, and to encourage new research in this field. Dr. Darrell Ogilvie Harris was appointed the inaugural interim head of our sports program. This program united clinicians from several of our hospitals and developed shared clinical resources for outpatient care at Women's College Hospital towards the development of an innovative comprehensive sports clinical, education, and research program. The program has developed a fully integrated education module for residents and fellows.

We continue to rejuvenate our faculty by recruiting outstanding young surgeons. These individuals are able to deliver the highest quality clinical care using modern technology and surgical techniques. In the past 5 years we have recruited 10 new faculty with a wide range of clinical and academic expertise. We have also had very few faculty depart our division. This group of young surgeons is poised to capitalize on the mentorship of our senior membership to lead us into the next era of academic orthopaedics.

## **Promotions, Awards**

The academic accomplishments of the members of our division are significant, as signified by the large number of awards and academic promotions that have been obtained. Ten members of our faculty have been successful in their promotion applications – 3 to Assistant Professor, 4 to Associate Professor and 3 to Full Professor. Our Divisional awards are always competitive and high quality individuals are rewarded for their achievements

in teaching and research. On a broader scale, members of our division have won numerous Departmental awards within Surgery including research achievements at Gallie Day, the D.R. Wilson Award for best resident teacher in the Department (twice), the Tovee Postgraduate Award for faculty (twice), the Charles Tator Surgeon-Scientist Mentor Award (twice) and the Surgical Skills Centre Distinguished Teacher Award. We have also won numerous awards across the entire Faculty of Medicine including the W.T. Aikins Award for best performance in small group undergraduate teaching, the Dean L. Chute Award for all-around contributions to undergraduate medicine, and the Excellence in Postgraduate Education Award (Development and Innovation) – an award open to all members of the Faculty of Medicine that has been won by members of the Division of Orthopaedics 5 years in a row. Finally, our members have won numerous national and international awards at the Canadian Orthopaedic Association, the American Academy of Orthopaedic Surgeons, the Orthopaedic Trauma Association and the American Orthopaedic Foot and Ankle Society, to name a few. Our faculty members have served in national and international leadership roles as we continue to demonstrate our outstanding reputation at the forefront of academic orthopaedics in the world.

# DIVISION OF PLASTIC AND RECONSTRUCTIVE SURGERY

*As Prepared for Christopher Forrest, MD, MSc, FRCSC*

*Division Chair, Plastic and Reconstructive Surgery*

*July 1, 2010 – June 30, 2015*

The Division of Plastic and Reconstructive Surgery at the University of Toronto is the largest group of academic surgeons in North America comprising a consolidated group of 49 surgeons, 3 senior scientists, 26 residents and 25 fellows working at 12 units in 10 teaching hospitals in the greater Toronto area all under the University of Toronto academic mission. Our division has expertise in the entire breadth and depth of Plastic and Reconstructive Surgery in the arenas of pediatric surgery, cleft, craniofacial, burns, microsurgery, facial reanimation, upper extremity, breast, aesthetic and oncologic surgery providing state of the art in patient care. Our program and its members are recognized across the globe and we attract a large number of medical observers who travel to visit and see firsthand the innovative techniques developed here. We train the largest number of residents and fellows in the country including tomorrow's generation of surgeon-scientists. The past 5 years have seen leadership change, divisional growth and enhanced profile in the arenas of education, research, clinical innovation and global outreach. [www.uoftplasticsurgery.ca](http://www.uoftplasticsurgery.ca)

## **Residency Training**

The vision of our training program is to produce outstanding plastic surgeons who will become leaders within our field and contribute to the ongoing development of our specialty in both an academic and a community setting. This occurs through a combination of excellence in education, world class research and committed mentorship. The training program is run by the residency program committee. This committee is chaired by the program director and includes

representation from all teaching faculty as well as from the residents. The committee is responsible for the effective delivery of the goals and objectives of plastic surgery residency training, as set out by the Royal College of Physicians and Surgeons of Canada. It is also responsible for the selection of new residents through the Canadian Resident Matching Service.

The University of Toronto training program is 5 years in duration. The first two years include training in Foundations of Surgery. Residents receive training in plastic surgery as well as in several complementary specialties. These two years provide the basic knowledge and foundation on which the resident will eventually become a specialist in plastic surgery. The three senior years occur entirely within the division. Residents typically rotate on 9 rotations of four month duration, covering all of the "subspecialties" in plastic surgery. Our academic program is diverse and includes an extremely detailed seminar series delivered through the weekly plastic surgery school curriculum. Other activities include: morbidity and mortality rounds, journal club, professor's rounds, multiple symposia, research day and the annual visiting professor. Research is a very important component of our program and residents have an opportunity to be involved in both clinical and basic science research throughout their training. Residents who desire a committed period of focus in research are encouraged to access the Surgeon Scientist Program within the Department of Surgery. The division trains approximately 4 new residents each year.



## Research

Research within the Division of Plastic and Reconstructive Surgery at the University of Toronto has always remained a cornerstone of our Division. Our humble start in the 1960's with former Chair, Dr. W. K. Lindsay's flexor tendon injury models in chickens has blossomed to include the full spectrum of laboratory-based research, epidemiology, surgical education and health care delivery. We have faculty that are "contributors" to our profession as we embrace research questions and the projects that follow. Many of our academic staff are graduates of the innovative Surgeon-Scientist program that was established at the University of Toronto well over 25 years ago and flourishes to this day. Each year, the division supports trainees with an interest in an academic surgery to enter this program to complete a MSc or PhD and help define the future of our specialty.

Plastic surgery does not own a major organ system but we face reconstruction in all anatomic arenas thereby allowing us the unique opportunity to collaborate with all medical and surgical subspecialties. As such, we are called on to help address problems in the broad areas of wound healing, tissue engineering, transplantation, limb replacement, breast reconstruction, peripheral nerve repair, skin replacement, surgical simulation and robotics to name but a few. The depth and breadth of our specialty is vast and this allows us to pursue an equally broad base of research interests and problems.

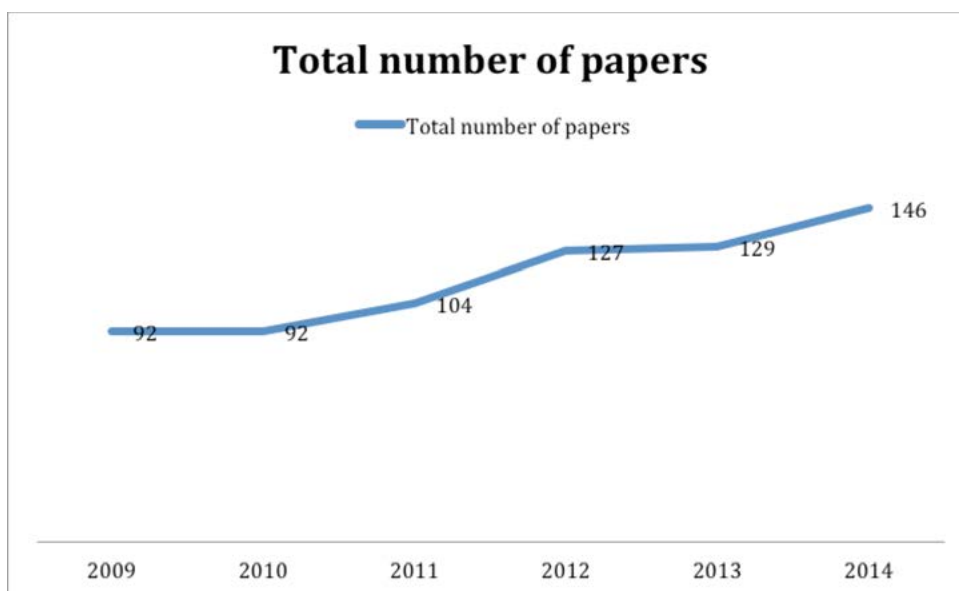
The Division of Plastic and Reconstructive Surgery at the University of Toronto has always had a tremendous interest in training tomorrow's leaders and surgeon scientists. Of the 49 surgeons on staff in our division, the vast majority of us hold higher degrees in research, either through the Surgeon-Scientist Program or other graduate programs.

Whilst many of our training program graduates become community Plastic and Reconstructive Surgeons, our philosophy to emphasize the importance of research methodology in all of our trainees is a necessary skill set regardless of the designation of your practice. Awareness of research methodology and the importance of recognizing good science is necessary when dealing with industry who are introducing new products or understanding the literature promoting an innovative surgical technique. All our trainees contribute to the body of scientific literature by completing a minimum of 2 research projects leading to peer-review publication during their residency. Our division is very supportive of the enhancing research profile of all trainees and the majority of staff will mentor summer students, medical students, residents and fellows to initiate and complete a research project.

The Division of Plastic and Reconstructive Surgery is fortunate in being surrounded by highly productive and collaborative surgical divisions at the University of Toronto. Our research trainees have worked with Divisions of Thoracic Surgery, Cardiac Surgery, Neurosurgery, Medical Bioengineering, Orthopedic Surgery and General Surgery.

Research is a necessary component of faculty development and all new staff recruits to the University of Toronto are encouraged to pursue a research focus as an important component of their academic career. Innovative opportunities have led to the development of internationally recognized leaders within the Division of Plastic and Reconstructive Surgery in the areas of outcomes research, epidemiology, surgical education and simulation, health care delivery and economics, basic science research, quality of life and patient reported outcomes.

Our division mission statement stresses the importance of research for our division and for the growth of Plastic and Reconstructive Surgery as a specialty.



## Recruitment

The Division has expanded over the past 5 years with new staff at 4 teaching hospitals and the inclusion of a new community partner at the Trillium Centre as part of the Mississauga Medical School Academy.

**Marc Jeschke:** Director, Ross Tilley Burn Centre, Sunnybrook Health Science Centre (2009)

**Greg Borschel:** Associate Professor, The Hospital for Sick Children (2009)

**Tessa Gordon:** Senior Scientist, The Hospital for Sick Children (2009)

**Michael Weinberg:** Lecturer, Trillium Health Science Centre (2009)

**Cory Goldberg:** Lecturer, Trillium Health Science Centre (2009)

**Zvi Margaliot:** Lecturer, Trillium Health Science Centre (2009)

**Morris Rebot:** Lecturer, Trillium Health Science Centre (2009)

**Frank Lista:** Lecturer, Trillium Health Science Centre (2009)

**Atul Kesarwani:** Lecturer, Toronto East General Hospital (2010)

**Laura Snell:** Assistant Professor, Sunnybrook Health Science Centre (2010)

**Jamil Ahmed:** Lecturer, Trillium Health Science Centre and TWH-UHN, (2010)

**Manuel Dibildox:** Lecturer, Ross Tilley Burn Centre, Sunnybrook Health Science Centre (2011)

**Joan Lipa:** Associate Professor, Sunnybrook Health Science Centre (2011)

**Christine Novak:** Associate Professor and Senior Scientist at the Toronto Rehabilitation Institute and Research Associate, The Hand Program - Toronto Western Hospital) (2011)

**Steven McCabe:** Associate Professor, Director of the Hand Program at the Toronto Western Hospital, University Health Network (2012)

**Anne O'Neill:** Assistant Professor at the Toronto General Hospital, University Health Network and Mt. Sinai Hospital (2013)

**Karen Wong:** Assistant Professor, The Hospital for Sick Children (2013)

**Karen Cross:** Clinical Associate, St. Michael's Hospital (2014)

**Bryan Cheung:** Clinical Associate, Hand Program at the Toronto Western Hospital, University Health Network (2014)

**Alan Rogers:** Lecturer, Ross Tilley Burn Centre, Sunnybrook Health Science Centre (2015)

**Kristen Davidge:** Locum, The Hospital for Sick Children (2015)

## Promotions

**David Fisher** (The Hospital for Sick Children) Associate Professor (2010)  
**Oleh Antonyshyn** (Sunnybrook Health Science Centre) Professor (2011)  
**Dimitri Anastakis** (TWH – UHN): Professor (2011)  
**Toni Zhong** (TGH – UHN) Assistant Professor (2011)  
**Jeff Fialkov** (Sunnybrook Health Science Centre): Associate Professor (2012)  
**Greg Borschel** (Hospital for Sick Children) Associate Professor (2013)  
**Stefan Hofer** (TGH - UHN) Professor (2013)  
**Marc Jeschke** (Ross Tilley Burn Centre, Sunnybrook Health Science Centre) Professor (2013)  
**Manuel Gomez** (Sunnybrook Health Sciences Centre) Associate Professor (2014)  
**Toni Zhong** (TGH - UHN) Associate Professor (2014)

## Departures and Transitions

In general, turnover of staff in the Division of Plastic and Reconstructive Surgery has been low indicating a high level of job satisfaction.

**Dimitri Anastakis** stepped down as the Chair of the Division of Plastic and Reconstructive Surgery to assume an appointment as Vice-Dean, Office of Continuing Education & Professional Development Faculty of Medicine, University of Toronto in September 2011,

**Christopher Forrest** was appointed the Interim Chair in October 2011 and commenced as Chair in July 2013.

**Linda Dvali** was appointed as the new Division Head to the Toronto East General Hospital as of April, 2011.

**Manuel Dibildox** (relocated to Mayo Clinic residency program in Plastic and Reconstructive Surgery) (June 2015)

**Ralph Manktelow** former Chair and Professor of the Division of Plastic and Reconstructive Surgery (TWH-UHN) and world expert in facial reanimation retired from the division in 2009.

**Manuel Gomez** (Sunnybrook Health Sciences Centre), Director of Research for St. John's Rehabilitation Unit retired in March 2015.

**Cho Y. Pang**, Senior Scientist at the Hospital for Sick Children and supervisor for many surgeon scientist trainees at the University of Toronto retired and transitioned into Professor Emeritus role in March 2015.

**Ronald M. Zuker**, former Chief of the Division of Plastic and Reconstructive Surgery at the Hospital for Sick Children retired from active clinical practice in June 2015.

## In Memorium

**Hugh G. Thomson**, MD, MSc, FRCS(C) (1930 – 2012) was Professor Emeritus in the Division of Plastic and Reconstructive Surgery, University of Toronto and staff surgeon at the Hospital for Sick Children for 43 years (1960 – 2003).

**WRN Lindsay**, MD, FRCS(C) (1926 – 2013) former Chief of the Division of Plastic and Reconstructive Surgery at the Wellesley Hospital, established the Burn Unit at the Wellesley Hospital (transitioning into the Ross Tilley Burn Unit at Sunnybrook Health Science Centre), actively participated in gender reassignment surgery and established the UoT Annual Aesthetic Plastic Surgery Symposium in 1970 which held its 45<sup>th</sup> annual meeting this year.

**Robert J. Knowlton MD, FRCS(C)** (1934 – 2014) former Chief of the Division of Plastic and Reconstructive Surgery, St. Joseph’s Health Sciences Centre.

**Peter MacDougall MD, FRCS(C)** (1932 – 2011) former Chief of Plastic Surgery, St. Michael’s Hospital and Past President, Canadian Society of Plastic Surgeons

## Engagement

	Engagement	Profile	Development
Staff	<ol style="list-style-type: none"> <li>1. Yearly interview and goals</li> <li>2. Recognition of achievements</li> <li>3. Communication</li> <li>4. Accountability and transparency</li> <li>5. Geographic accessibility: teleconferencing</li> <li>6. Snapshots: 33 questions</li> <li>7. Social program</li> </ol>	Clinical <ol style="list-style-type: none"> <li>1. City-wide special interest groups</li> <li>2. Clinical data-bases</li> <li>3. Web-site</li> <li>4. Public education</li> </ol> Research <ol style="list-style-type: none"> <li>1. Associate Research Director</li> <li>2. Divisional Research Coordinator</li> <li>3. Data warehouse: notification of grants</li> <li>4. Research dinner meetings q 6 months</li> <li>5. Collaboration</li> </ol>	<ol style="list-style-type: none"> <li>1. Early career mentoring</li> <li>2. Access to educational opportunities</li> <li>3. Encouragement to join important societies</li> <li>4. CME participation</li> <li>5. Nominations for awards and honors</li> </ol>
Residents	<ol style="list-style-type: none"> <li>1. Yearly interview and goals</li> <li>2. Recognition of achievements</li> <li>3. Communication</li> <li>4. Accountability and transparency</li> <li>5. Geographic accessibility: teleconferencing</li> <li>6. Snapshots: 33 questions</li> <li>7. Social program</li> </ol>	Clinical <ol style="list-style-type: none"> <li>1. Areas of clinical interest</li> <li>2. Academic vs community practice</li> </ol> Research <ol style="list-style-type: none"> <li>1. Connecting with supervisors</li> <li>2. Data warehouse: notification of grants</li> <li>3. Mentoring with grant application, presentation and publication</li> <li>4. Recognition</li> </ol>	<ol style="list-style-type: none"> <li>1. Early career mentoring</li> <li>2. Access to educational opportunities</li> <li>3. Encouragement to join important societies</li> <li>4. Jobs and fellowships</li> </ol>
Fellows	<ol style="list-style-type: none"> <li>1. Awareness of clinical and research opportunities</li> <li>2. City-wide opportunities</li> <li>3. Website information</li> </ol>	<ol style="list-style-type: none"> <li>1. Participation in Divisional research activities</li> <li>2. Meetings: local and national</li> </ol>	<ol style="list-style-type: none"> <li>1. Early career mentoring</li> <li>2. Access to educational opportunities</li> <li>3. Encouragement to join important societies</li> <li>4. Jobs</li> </ol>
Undergraduates	<ol style="list-style-type: none"> <li>1. Access to staff and residents</li> <li>2. Special interest groups</li> <li>3. Lectures</li> </ol>	<ol style="list-style-type: none"> <li>1. Awareness of clinical and research opportunities</li> <li>2. City-wide opportunities</li> <li>3. Website information</li> </ol>	<ol style="list-style-type: none"> <li>1. Mentoring</li> <li>2. Research</li> <li>3. Career choice</li> </ol>
Alumni	<ol style="list-style-type: none"> <li>1. Newsletter</li> <li>2. Email</li> <li>3. Participation in Divisional activities</li> </ol>	<ol style="list-style-type: none"> <li>1. Where are they now?</li> </ol>	<ol style="list-style-type: none"> <li>1. CME</li> <li>2. Philanthropy</li> </ol>

Under the supervision of Dr. Forrest, the division has been active in generating engagement at all levels using the schemata below. A major renovation of the divisional website was carried out in 2014 and was integral to success in this area.

Highlights of enhanced communication have included an active email-based system of regular announcements (WGO’s – What’s going on), Chair’s comments, “Snapshot: 33 questions”, “Where are they now?”, annual newsletter, division FaceBook and Twitter accounts.

An active social program has been established that focuses on staff-resident-fellow interaction in non-clinical settings such as Bowling Night, Cooking Class, Wine Appreciation Night, Career Night and the Gala Graduation event at the end of the academic year.

Engagement of alumni has become a priority and Dr. Ron Zuker was recently appointed as Director of Alumni Relations for the division. UoT Alumni and Friends receptions have been established at the annual Canadian Society of Plastic Surgeons, ASAPS and ASPS meetings.

Response has been very favourable in all these areas of development.

## Continuing Medical Education

The Division of Plastic and Reconstructive Surgery has an active program in CME. Yearly CME events consist of the following:

Tau Omicron Hoyle Campbell Visiting Professor- Resident Research Day  
Lindsay-Thomson Pediatric Plastic Surgery Symposium  
Vale Pediatric Craniofacial Lecture  
Upper Extremity Update  
UoT Aesthetic Plastic Surgery Symposium  
Toronto Breast Symposium  
Ralph Manktelow Upper Extremity Day  
Canadian Burn Symposium  
Biannual Pediatric Upper Extremity Symposium  
Pediatric Wound Care Symposium  
Dupuytren's Day

Other CME events include:

KLS Martin Craniofacial Lectureships  
Obstetrical Brachial Plexus Palsy Symposium  
Advanced Craniomaxillofacial Conference: Adult and Pediatric  
Wharton Lectureships  
GTA Lecture Series  
Professors Rounds  
M&M Rounds

## **Divisional Firsts**

The division is a large and biologically diverse organization, covering all aspects of the field of Plastic and Reconstructive Surgery – academic firsts and achievements in the areas of clinical work, research and education are briefly summarized below:

**George Armstrong Peters Prize:** This is awarded to a young investigator who has shown outstanding productivity during his/her initial period as an independent investigator as evidenced by research publications in peer reviewed journals, grants held, and students trained and represents the highest level of

recognition that can be bestowed by the Department of Surgery on a young surgeon. This prize was given to members of the Division of Plastic and Reconstructive Surgery two years in a row: Dr. Marc Jeschke (Ross Tilley Burn Centre, Sunnybrook Health Science Centre in 2013) and Dr. Greg Borschel (SickKids in 2014).

Plastic Surgery School was implemented in September 2010 as the Division's first Academic Half Day for the Senior Residents. Academic sessions are considered mandatory protected time for the residents. Most of these sessions are designed for senior residents, however some of the sessions are designed for both senior and junior residents. Plastic Surgery school takes place on Mondays from 8:00-11:00 a.m. and includes Resident Seminars, Ethic sessions, Surgical Skills sessions, and CanMEDS seminars/workshops. Each of these sessions, as well as all academic activities, have been formally evaluated, with feedback sent directly to the facilitators to use to create change where necessary as it relates to improved teaching methods.

Site Specific Goals and Objectives and Site Specific ITERS have been generated and instituted for all junior and senior resident rotations for off-service and on-service experiences.

## **CanMEDS Workshop**

Several faculty have assigned roles for implementing and incorporating the teaching of each of the seven CanMEDS roles. Seminars/lectures/assignments have been implemented into the training program for each of these roles.

Global Outreach is a major focus of many of the division members and activity has been focused through several NGO's (Operation Smile, Operation Rainbow, Transforming Faces Worldwide, African Medical Research and Foundation) in several low and middle income countries around the world including India,

Bangladesh, Uganda, Middle East, Ethiopia, Kenya to mention a few.

### **Clinical innovations:**

Dr. David M. Fisher (SickKids): Cleft lip repair and ear reconstruction  
Dr. Marc Jeschke (RTBC – Sunnybrook Health Science Centre):  
Skin bioengineering and 3D printing  
Dr. Greg Borschel and Dr. Ron Zuker (SickKids): Corneal re-innervation  
Dr. Ron Zuker (SickKids): Facial reanimation  
Dr. Craig Fielding (St. Joseph’s Health Science Centre): Gynecomastia repair  
Dr. Oleh Antonyshyn (Sunnybrook Health Science Centre): Craniofacial imaging  
Dr. Jim Mahoney (St. Michael’s Hospital): Wound Care Centre  
Dr. Steve McCabe (Toronto Western Hospital – UHN): Upper extremity surgery  
Dr. Joel Fish (SickKids): Pediatric Burn Care  
Drs. Christopher Forrest and John Phillips (SickKids): Use of CAD-CAM technology in pediatric craniomaxillofacial surgery

Composite Vascularized Transplantation Program: Drs. Ronald Zuker and Greg Borschel from the Hospital for Sick Children obtained approval for their protocol for the Pediatric Composite Vascularized Allotransplantation Protocol from the Ministry of Health and Long Term Care in 2013. This is the first approved protocol in the pediatric world and opens opportunities reconstructive world to include allotransplantation for limb loss and severe facial disfigurements.

Each year, the Annual Breast Reconstruction Awareness Day (BRA Day) is held for the purpose of educating women about breast reconstructive surgery post-mastectomy and was the brain-child of Dr. Mitch Brown (Women’s College Hospital). This was initiated in 2010 and is now internationally recognized in almost 30 countries and is open to the public each year.

The Pediatric Burn Care Program at the Hospital for Sick Children was the first program in Canada to receive approval from the American Burn Association in 2013 under the supervision of Dr. Joel Fish. The Ross Tilley Burn Program at Sunnybrook Health Science Centre also has ABA approval.

# DIVISION OF THORACIC SURGERY

*As Prepared by Thomas K. Waddell  
Pearson-Ginsberg Chair in Thoracic Surgery  
July 1, 2009 – June 30, 2014*

The academic years 2009-2014 have seen tremendous growth and successes in Division of Thoracic Surgery and cemented the position of the University of Toronto program as the pre-eminent Division in the world. It continues to have the largest clinical activity of any thoracic program in Canada. A fourth site has been added (2011) and an important collaborative effort established with McMaster University (2010). The Toronto sites now include Toronto General Hospital (TGH) and the community hospitals, St. Joseph's Healthcare Centre-Toronto (SJ-T), Toronto East General Hospital (TEGH) and the Mississauga hospitals (Trillium and Credit Valley). Residents have long enjoyed the community surgery experience at St. Joseph's Hospital but over the past 5 years both residents and fellows now rotate to both SJ-T and TEGH. The Mississauga program will be an increasingly important site for undergraduate education. The Toronto General site continues to serve as the primary tertiary referral centre for most of Ontario and a quaternary referral centre for Canada. The Toronto Lung Transplant Program, under the leadership of Dr. Shaf Keshavjee, has become the undisputed leader in lung transplantation, as the largest clinical program bolstered with a huge program of clinical and laboratory research.

## **Division Firsts**

2010 marked the opening of the Menkes Family Interventional Thoracic Surgery Suite at TGH for early diagnosis, staging and treatment of patients with lung and esophageal cancer. This includes modalities such as endobronchial ultrasound (EBUS), endoesophageal ultrasound (EUS), photodynamic therapy, autofluorescence

and narrow band imaging as well as endoscopic surgery. In 2011, the UHN site opened the LungMets Program to allow patients with malignancy metastatic to the lung to be evaluated by both Thoracic Surgeons and Radiation Oncologists. In October 2011, a program in Robotic Thoracic Surgery was initiated by Dr. Yasufuku and he performed the first robotic lobectomy in Canada shortly thereafter. The University of Toronto-McMaster Joint Program in Thoracic Surgery took another step forward with the first interchange of a clinical fellow, Dr. Nir Golan, who spent a portion of his training both in Toronto and Hamilton. In 2012-13, a new program initiated by the Division of Thoracic Surgery at TGH was the Joint Program in Benign Esophageal Disease, led by Dr. Gail Darling as a combined monthly clinic with GI Medicine and General Surgery. This program also features monthly rounds for interesting case discussion. Dr. Darling has also led the rejuvenation of the Esophageal Multidisciplinary Cancer Conference to focus more attention on this important area of Thoracic Surgery. In 2013, Dr. Marc de Perrot, along with radiation oncology colleague, Dr. John Cho, have reported on their pioneering use of neoadjuvant radiation in mesothelioma prior to extrapleural pneumonectomy.

## **Recruitment**

The University of Toronto Division of Thoracic Surgery successfully recruited several candidates over the last 5 years. Dr. Michael Ko was recruited to SJ-T (2010-graduate of the U of T residency), Dr. Najib Safieddine was recruited to TEGH (2010- graduate of the U of T residency, fellowship at Cedars-Sinai), Dr. Marcelo Cypel was recruited to TGH(2011- graduate of Porto

Alegre, Brazil and U of T fellowship) while Dr. Sameena Uddin was recruited to the Mississauga Hospital (2011- graduate of the U of T residency). All of them are now very successful and established in their respective centres.

Our partners at McMaster University recruited Dr. Yaron Shargal (2010-recruited from SJ-T), Dr. Christian Finley (2010-graduate of the U of T residency), Dr. Colin Schieman (2011-graduate of University of Calgary and fellowship at the Mayo Clinic), and Dr. Wael Hanna (2013-graduate of the U of T residency).

## Promotions

Dr. Waddell was promoted to Full Professor in 2010, on the basis of research activity. In 2011 Drs. Robert Zeldin and Andrew Pierre were promoted to Associate Professor, acknowledging their contributions to education. Dr. Yasufuku was promoted to Associate Professor at the University of Toronto in 2013. Dr. Carmine Simone was promoted to Assistant Professor in 2014.

## Leadership Changes

Dr. Keshavjee was appointed Surgeon-in-Chief at University Health Network in 2010. Dr. Carmine Simone was appointed Surgeon-in-Chief at TEGH in 2012. Dr. Compeau was appointed Surgeon-in-Chief at St. Joseph's Toronto in 2013.

In 2011, after more than 10 years of stewardship, Dr. Gail Darling passed the reins of the Thoracic Surgery Residency Program Directorship to Dr. Andrew Pierre while Dr. Maurice Blitz has assumed the important role of Associate Director, Undergraduate Education for Integrated Medical Education.

Dr. Abdollah Behzadi has assumed leadership of Undergraduate Education for the Division of Thoracic Surgery.

Dr. Najib Safieddine was appointed as Division Lead, Quality Improvement in 2014.

Dr. Maurice Blitz assumed Leadership of the Foundations Course for the Department of Surgery in 2014, after serving in support of the Integrated Medical Education portfolio.

## Royal College Fellowships

Over the last 5 years, our graduates have done well at the Royal College. Successful graduates included Drs. Finley, Smith, and Ko in 2010, Drs. Privitera and Uddin in 2011 Dr. Hanna in 2013.

Beginning in 2013, our training program has developed increasing recognition south of the border, beginning with the Massachusetts General Hospital, who sent two outstanding residents to us for 4-month rotations as part of their US residency training requirements. Additional residents have since joined us from the University of Colorado, and the University of Maryland, with two more scheduled for 2015 from MD Anderson and Memorial.

Fellows graduating from our program in 2010 included Dr. Masaki Anraku (Assistant Professor, Keio University, Japan), Dr. Masaaki Sato (Assistant Professor, University of Kyoto, Japan), and Dr. Eero Sihvo (Deputy-Chief, Thoracic Surgery, University of Helsinki, Finland). In 2011, Drs. Dr. Isabelle Schmitt-Opitz (Assistant Professor, University of Zurich, Switzerland), Dr. Gustavo Fortunato (Assistant Professor, University of , Brazil), Dr. Nona Zeitlin (Assistant Professor, University of Haifa, Israel) all completed their training in Toronto. Clinical Fellows completing additional training in the 2011-2012 academic year included Tetsuzo Tagawa (Kyushu Medical School), Drs. Henrique Nietmann (Serra dos Orgaos Foundation Medical School, Brazil), Tetsu Yamada (Kyoto University), and Bill Lynch (University of Iowa). Dr. Lianne Castle broke new ground as the first fellow to complete advanced training with Dr.



Yasufuku in Interventional Bronchology as a respirologist. In 2012-13, Dr. Golan (our first joint fellow with McMaster) returned to Israel as Assistant Professor and other fellows completing training included Drs. Donna Eaton (Assistant Professor, Dublin), Nicolo Daddi (Associate Professor, University of Perugia), and Andrea Mariscal (Assistant Professor, Barcelona). In 2013-14 we had an incredibly busy year for fellows, including several visiting faculty already well established as mid-career surgeons. These included Drs Amir Khan (ITSS fellow, pulmonologist, Baylor, Houston), Mauricio Pipkin (Assistant Professor, Porto Alegre, Brazil), Felipe Undurraga (Assistant Professor, Santiago, Chile) Olaf Mercier (Associate Professor, Marie Lannelongue, Paris), Stephane Collaud (Graham Fellow of the AATS, Zurich), Virginia Linacre (Assistant Professor, Santiago, Chile), Thorsten Krueger (associate Professor, Lausanne), Michele de Waele (Joint Fellow with McMaster, Assistant Professor, Antwerp), Edouard Sage (Associate Professor, Hopital Foch, Paris), and Tiago Machuca (Assistant Professor, Gainesville, Florida)

## **Faculty Honours and Awards**

Dr. Chris Compeau won the Outstanding Surgical Teacher at St. Joseph's Hospital in 2011.

The American Association for Thoracic Surgery awarded Dr. Cypel with the prestigious Michael DeBakey Research Scholarship as the most promising young faculty member in North America. In 2013, Dr. Cypel was awarded a Canada Research Chair in Lung Transplantation. In 2014, Dr. Marcelo Cypel was awarded a Premier's Early Research Award.

Dr. Gail Darling has accepted major roles in important Thoracic Surgery organizations. She is now Chair of the Thoracic Surgery Specialty Committee of the Royal College and Chair, Board of Regents for the International Association for the Study of Lung Cancer. She is a member of the Executive Committees of Lung Site Committee for National Cancer Institute of Canada Clinical Trials Group, and the General

Thoracic Surgery Club. She was appointed CCO Clinical Liaison for Lung Cancer in 2014, with responsibilities for all aspects of care including radiation and systemic therapy. She was elected to membership in the AATS in 2010 and to the American Surgical Association in 2013. She won the GE Darling Award for Excellence in Undergraduate Teaching in 2010, 2012, and 2013.

Dr. De Perrot was elected to membership in the AATS in 2010.

Dr. Keshavjee's leadership and contributions have received numerous recognitions over the past 5 years. For example, he was elected to the Council of the American Association for Thoracic Surgery in 2010. Several national and international special recognition awards were received by Dr. Keshavjee in recognition of the transformative impact that Ex Vivo Lung Perfusion (and organ repair in general) is having on the field of organ transplantation. These were the Zellers Senior Scientist Award (Cystic Fibrosis Canada), the Distinguished Lecturer in Respiratory Science Award (CIHR Institute of Circulatory & Respiratory Health & Canadian Thoracic Surgery) and the Roche Award for Excellence in Science (The Transplantation Society), all in 2011. In 2013, Dr. Shaf Keshavjee was awarded a Queen Elizabeth II Diamond Jubilee Award and was named to the Order of Ontario recognizing his many contributions in lung transplantation, thoracic surgery, and surgical leadership. In 2014, he was named a Companion of the Order of Canada, and received honorary degrees from Ryerson and Queen's Universities. He received the RJ Ginsberg Award for Best Postgraduate Teacher in 2010.

In 2011, Dr. Andrew Pierre received both the RJ Ginsberg Award for Best Postgraduate Teacher and the GE Darling Award for Excellence in Under-graduate Teaching.

In 2010, Dr. Waddell was renewed for a second term as R. Fraser Elliott Chair in

Transplantation Research and was awarded the newly created Heather and Richard Thomson Chair in Translational Research. He was admitted to the American Association for Thoracic Surgery that same year. In 2012, he was appointed Chair of the American Association for Thoracic Surgery Research Committee and was inducted into the American Surgical Association in 2013. In 2014, Dr. Waddell was appointed to the Council of the newly inaugurated Ontario Institute of Regenerative Medicine, the Chair of the Research Committee of the Thoracic Surgery Foundation for Research and Education. In recognition of contribution to teaching, Dr. Waddell won the RJ Ginsberg Award for Post-Graduate Teaching in 2012 and 2014, and the Ross Fleming Surgical Educator Award (UHN) in 2013.

Dr. Kazuhiro Yasufuku won the Best Referenced Paper Award (Japanese Association for Thoracic Surgery) in 2012. Dr. Yasufuku also was recognized at the American Association of Bronchology and Interventional Pulmonology, Fall Scientific Symposium, 2013 in Chicago where he received the Geoffrey McLennan Memorial Award, and had a paper receive the “Most Intriguing” Award. He was elected to membership in the American Association for Thoracic Surgery in 2013. That same year he won the Robert J. Ginsberg Award for Excellence in Postgraduate Teaching.

### **Resident/Fellows Honours and Awards**

The FG Pearson Award honours the Best Resident/Fellow Teacher of junior residents and medical students. Over the past 5 years it was awarded to: Drs. Michael Ko (2010), Sameena Uddin (2011), Yaqoob Al-Sawafi (2012), Wael Hanna (2013) and Pedro Reck dos Santos (2014).

Major highlights for 2010-2011 included the Young Investigator Award, from the American College of Chest Physicians going to Dr. Takahiro Nakajima for his work on molecular assessment of lung cancer (supervisor, Dr. K Yasufuku). In 2011-12, Dr. Wael Hanna, has

won a Astral Media Fellow Award from McGill University. Dr. Siba Haykal, a Plastic Surgery resident working in the laboratory of Dr. Waddell had an outstanding academic year in 2011-2012. She won the Best Basic Science Research Award at the Canadian Society of Plastic Surgeons, was a finalist in the Alan Wu Poster Competition at the Institute of Medical Science Research Day. She was the recipient of several Post-Graduate Medical Education Awards, such as the William S. Fenwick Research Fellowship, the Edward Christie Stevens Fellowship in Medicine and the Joseph M. West Family Memorial Fund Award. She also received the extremely competitive Vanier Canada Graduate Scholarship from CIHR. Dr. Jon Yeung won first place in the Gallie-Bateman competition for his research undertaken under Dr. Keshavjee’s supervision. Dr. Stephane Collaud, a clinical fellow from Zurich Switzerland was selected for the very prestigious Evarts A Graham Travelling Fellowship from the American Association for Thoracic Surgery. Dr. Kasia Czarnecka received the Cameron Gray Fellowship in 2012 to pursue her training with Dr. Yasufuku in interventional bronchology. In 2013, Dr. Wael Hanna won the Shafie Fazel Award, Dr. Siba Haykal (Supervisor T. Waddell) won the Gallie Bateman Prize for Resident Research.

### **Research Grants**

Over the last 5 years, several faculty have held major peer reviewed grants as PI and as Co-Investigators on several large team grants. For example, in 2009, Dr. Waddell held grants from CIHR, Cystic Fibrosis Canada and the Heart and Stroke Foundation totaling 300K per year as PI and was Co-Investigator on Team and other grants comprising a total of 5M/year. Dr. Keshavjee has maintained robust grant funding every year from 2009 to 2014 from both CIHR and Cystic Fibrosis Canada. In 2010, our Division entered a new phase of grant capture, with the first major Team grant awarded to Drs. Keshavjee and Liu from Genome Canada for 1.75M over 5 years. This same year was also notable for Dr. Yasufuku’s first success as a PI for an OICR research grant.

In 2011-12, several faculty were successful in grant capture: Dr. Keshavjee (Canadian Cystic Fibrosis Foundation. Tissue Remodelling and the Immune Response in Obliterative Bronchiolitis After Lung Transplantation. PI Dr. Shaf Keshavjee \$331,501), Dr. Yasufuku (CIHR. Porphysome nanoparticle-enabled minimally invasive transbronchial photothermal ablation of lung cancer, Co-investigator, Project Lead, Dr. Kazuhiro Yasufuku \$756,699 and NSERC-CIHR Collaborative Health Research Program. Non-linear multimodal microendoscopy for lung cancer pathology. Co-I Dr. Kazuhiro Yasufuku \$531,000). In 2012-13 Drs. Cypel, Liu, and Keshavjee received a 5 year CIHR grant entitled “Advanced therapeutic strategies for ex vivo repair of lungs for transplantation”. Dr. Cypel also received funding from the Canadian Cancer Society Research Institute for an Innovation Grant entitled “Development of isolated lung perfusion for the treatment of cancer metastases to the lungs”. Dr. Mingyao Liu received CIHR funding for his grant “Signal cross talk in lung injury and repair”. Dr. Waddell received funding from the Roche Organ Transplant Research Foundation for “Lung Progenitor Cell Profiling in the Development of Bronchiolitis Obliterans Syndrome”. He also received funding from the Centre for Commercialization of Regenerative Medicine (CCRM) for “Expansion of patient-specific Cystic Fibrosis epithelial cells for drug screening through transient partial reprogramming”. To help commercialize this technology, Dr. Waddell also received funding to support the patent application for “Methods and Compositions for Producing Induced Airway Tissue Progenitor Cells.” from the Stem Cell Network. Dr. Waddell also received funding for a Catalyst Grant from the Transplantation and Regenerative Medicine Centre, Hospital for Sick Children, entitled “Targeting Rejection: Reversal and Prevention of Allograft fibrosis by direct reprogramming of Activated Myofibroblasts.”. In total, just for laboratory research, only including grants where faculty surgeons were the Principal Investigators, funding for the Division exceeded 1.3 M annually in 2014.

## Visiting Professors

Over the last 5 years, we have maintained and indeed increased an active program of Visiting Professors. For 2009-10 Dr. Hiroshi Date (Kyoto University). For 2010-11, Drs Paul van Schil (Antwerp, Belgium) and Blair Marshall (Georgetown, Washington). For 2011-12, Drs. Sean Grondin (University of Calgary), Malcolm Brock, (Johns Hopkins), and David Sugarbaker, (Brigham and Women’s Hospital) who attended as the Kergin Lecturer for the Department of Surgery. Visiting Professors for 2012-13 academic year were: Drs. Alessandro Brunelli (University of Ancona, Italy), Brian Louie (Swedish Cancer Center, Seattle), and Dr. Ara Vaporciyan (MD Anderson Cancer Center, Houston). Visiting Professors for 2013-14 academic year were: Benjamin Kozower (University of Virginia, Charlottesville, Virginia) and Dr Gunda Leschber (Berlin Chest Hospital, Germany).

A highlight of the academic year is the highly successful Toronto Thoracic Surgery Refresher Course held each year in June. Over the past years some stellar faculty have visited Toronto including, 2010 – Drs. Doug Mathisen (MGH, Boston), David Jones (University of Virginia, Charlottesville) and Mark DeGroot (University of Capetown, South Africa), 2011 – Drs. Jean Deslauriers (Laval), Sudhir Sundaesan (Ottawa), Jim Luketich (Pittsburgh), and Walter Weder (Zurich), 2012 – Drs. Robert Cerfolio (Alabama), Drew Bethune (Halifax), Nasser Altorki (New York) and Eugenio Pompeo (Rome), 2013 – Drs. Phillippe Darteville (Marie-Lannelongue, Paris), Scott Swanson (Brigham, Boston), Wayne Hofstetter (MD Anderson, Houston) and Lorenzo Ferri (McGill, Montreal), 2014 – Drs. Paul De Leyn (University Hospital, Leuven, Belgium), Thierry Le Chevalier (Institute Gustav Roussy, Paris, France), Steve Cassivi (Mayo Clinic, Rochester, Minnesota), and Michael Humer (Kelowna General Hospital, Kelown, BC).

The academic year of the University of Toronto Division of Thoracic Surgery concludes with Pearson Day, an annual celebration of clinical and laboratory research by trainees in our Division. The Pearson Day Visiting Professors over the past 5 years have been Drs. Alec Patterson (Washington University, St. Louis), Valerie Rusch (Memorial, New York),

Eric Vallieres (Swedish Cancer Center, Seattle), Richard Finley (UBC, Vancouver) and Bryan Meyers (Washington University, St. Louis).

# DIVISION OF UROLOGY

*As Prepared by Neil Fleshner, MD, FRCSC,  
Martin Barkin Chair, Division of Urology  
July 1, 2009 – June 30, 2014*

The Division of Urology has continued to be productive over the past five years, to the point where we currently consist of 28 full time faculty as well as 3 full-time PhD scientists spanned over 6 fully affiliated University-based hospitals. During this time we have trained over 24 residents and 18 fellows. The following are some highlights of this period:

During the **2009-10** academic year, *Drs. John Honey, Darius Bagli and Magdy Hassouna* were promoted to Professor. *Dr. Kenneth Pace* was promoted to Associate Professor.

Some faculty awards and other appointments during this period were: *Dr. Ken Pace* was added to the Leadership Program of the American Urology Association; *Dr. Robert Stewart* was awarded the Bruce Tovee Award for excellence in undergraduate teaching; *Dr. Sender Herschorn* was given the Lifetime Achievement Award from the Society of Urodynamics and *Dr. Ron Kodama* won the Faculty of Medicine Aikin Award for excellence in undergraduate teaching.

Throughout the **2010-11** year the awards received by faculty included: *Dr. Sender Herschorn* was elected Secretary of the International Continence Society; *Dr. Ron Kodama & Dr. Rob Stewart* both won Faculty Postgraduate Teaching Awards; *Dr. Robert Nam* was awarded the Ajmera Chair in Urologic Oncology; *Dr. Vasu Venkateswaran* assumed the Graduate Coordinator role at the Institute of Medical Sciences; Queen's Diamond Jubilee Medals were received by *Drs. Trachtenberg, Jewett, Klotz, and Fleshner* and *Dr. Tony Finelli* won the Bernard Langer Surgeon Scientist Award.

The following promotions occurred this year: *Dr. Ron Kodama* was promoted to Professor. *Drs. Lesley Carr, Tony Finelli, Kirk Lo, Vasu Venkateswaran & Jack Barkin* were promoted to Associate Professor.

This year *Dr. Ron Kodama* was appointed site Chief at Sunnybrook Health Science Centre, taking over from *Dr. Laurence Klotz* and *Dr. Ken Pace* commenced as site Chief at St. Michael's Hospital, taking over from *Dr. John Honey*. In addition, *Dr. Jason Lee* commenced his first year in practice engaged in education-based research and minimally invasive surgery. He will also assume a major role in core curriculum development for undergraduate education.

**2011-12** was a steady but somewhat quiet year. This year *Dr. Alex Zlotta* was recognized by the European Association of Urology with two Best Poster awards and a Platinum Award for his presentation at their annual meeting that year. We note that *Dr. Tony Finelli* won the Best Poster distinction at the American Urology Association meeting and *Dr. Ken Pace* received the Best Reviewer Award from the Journal of Endourology. Finally *Dr. Laurence Klotz* was recognized by the Journal of Clinical Oncology for one of the 50 most cited publications in that journal.

*Dr. Darius Bagli* won 3<sup>rd</sup> Prize for his work from the European Society for Pediatric Urology and *Dr. Walid Farhat* organized and directed the 6th Annual North American Pediatric Fellows Laparoscopy Course. *Dr. Armando Lorenzo* was given an Award of Distinction from the European Association of Urology for his work with the International Exchange Program.

2012-13 was a banner year in terms of peer-reviewed grant capture. The following faculty served as PI's or Co-PI's on peer-reviewed grants totaling over 3 million dollars: Michael Jewett, Antonio Finelli, Magdy Hassouna, Neil Fleshner, Robert Hamilton, Girish Kulkarni, Andrew Matthew, Bharti Bapat, Darius Bagli, Keith Jarvi.

*Dr. Robert Nam* was promoted to Full Professor and *Dr. Rajiv Singal* was promoted to Assistant Professor.

This year saw *Dr. Neil Fleshner* being named to the GU Surgeons and elected as Chair of the Canadian Urological Oncology Group. *Dr. Sender Herschorn* was elected General Secretary of the International Continence Society. *Dr. Laurence Klotz* continued as Chair of the World Uro-Oncology Federation. Faculty teaching awards were received by *Drs. Robert Nam, Girish Kulkarni, Antonio Finelli and Kirk Lo, Rob Hamilton*.

Two outstanding awards were received by fellows this year. *Dr. David Margel* was granted 2 awards from the Health Policy Management and Evaluation (HPME) Department including the Claire Bombardier Award for the most promising researcher and *Dr. Li Ming Wong* won best poster award at the American Urological Association annual meeting.

Two Division "firsts" were, *Dr. Girish Kulkarni* performed the first robotic radical cystectomy and *Dr. Antonio Finelli* chaired and organized the first "Robotic Surgery in Ontario" symposium. This year saw *Dr. Neil Fleshner* assuming the Martin Barkin Chair as University Chair and *Dr. Martin Koyle* taking over as site for the Hospital for Sick Children following a strong term by *Dr. Joao Pippi-Salle*.

During the 2013-14 year, grant capture totaled over 4 million dollars in part due to the efforts of Michael Jewett, Neil Fleshner, Robert Hamilton, Girish Kulkarni, Andrew Matthew,

Bharti Bapat, Darius Bagli, Keith Jarvi, who served as PI's or CO-PI's on peer-reviewed grants.

*Drs. Dean Elterman & Michael Ordon* joined our faculty at the TWH and SMH sites respectively. *Dr. Walid Farhat* was promoted to Full Professor and *Drs. Robert Stewart & Armando Lorenzo* were promoted to Associate Professor

We are proud to report that *Dr. Bimal Bhindi* (PGY3) won an award from the Health Policy Management and Evaluation (HPME) Department as the most promising researcher & *Dr. Justin Lee* (PGY5) was voted Best Undergraduate Educator in the Department of Surgery.

This year, *Dr. Laurence Klotz* won the Lister Prize at Gallie Day. As well, *Dr. John Trachtenberg* was awarded an Honorary Doctorate from University of Guelph.

# DIVISION OF VASCULAR SURGERY

*As Prepared by Dr Tom Forbes  
Chair, Division of Vascular Surgery  
July 1, 2009 – June 30, 2014*

## **Division Executive Committee**

Dr. Thomas L. Forbes (Chair)  
Dr. Mohammed Al-Omran (Division Head, St. Michael's)  
Dr. Aaron Beder (Division Head, Humber River)  
Dr. Andrew Dueck (Division Head, Sunnybrook)  
Dr. Thomas Lindsay (Division Head, UHN)  
Dr. Marc Pope (Division Head, Trillium)  
Dr. George Oreopoulos (Director, Postgraduate Medical Education)  
Dr. Elisa Greco (Director, Undergraduate Medical Education)  
Dr. Giuseppe Papia (Quality & Best Practices)

## **Current Faculty (as of April 2015)**

### **St. Michael's Hospital**

Dr. M. Al-Omran  
(*Division Head*)  
Dr. E. Greco

Dr. T. Moloney  
Dr. M. Wheatcroft  
Dr. W. Tanner

### **Humber River**

Dr. A. Beder (*Division Head*)  
Dr. J. Cardella

### **Sunnybrook University Health Network**

Dr. A. Dueck  
(*Division Head*)  
Dr. G. Papia  
  
Dr. D. Kucey  
Dr. R. Maggisano\*  
  
Dr. T. Lindsay  
(*Division Head*)  
Dr. T. Forbes  
(*Division Chair*)  
Dr. B. Rubin  
Dr. G. Roche-Nagle  
Dr. G. Oreopoulos  
Dr. L. Tse  
Dr. J. Byrne  
Dr. K.W. Johnston\*  
Dr. D. Wooster\*

### **Trillium**

Dr. M. Pope (*Division Head*)  
Dr. C. Werneck  
Dr. I. Vucemilo  
Dr. W. Johnson

\*Senior, non-operating surgeons

## Introduction

The Division of Vascular Surgery was formed as a separate Division at the University of Toronto in 1982 with Dr. K. Wayne Johnston named the first Division Chair. Dr. Thomas Lindsay completed his term as University Division Chair in 2014 and the current Chair is Dr. Thomas Forbes (beginning in September 2014). Clinical activities are based at three main academic hospitals, St. Michael's, Sunnybrook and University Health Network and two affiliate sites, Humber River and Trillium.

The Division of Vascular Surgery at the University of Toronto has a long and established track record of clinical excellence, academic productivity, and excellence in education. The Division has received international acclaim with members having served as Presidents of major vascular surgery society's (CSVS: Drs Forbes, Lindsay, Johnston, Wooster, Kucey; PVSS: Dr Lindsay; SVS: Dr Johnston), Editor-in-Chief of the Journal of Vascular Surgery (Dr Johnston), Associate Editor of the Journal of Vascular Surgery (Dr Forbes) and Editor of the preeminent textbook in the field, Rutherfords Vascular Surgery (Dr Johnston), and current Chair (Dr Lindsay) of the Vascular Surgery Specialty Committee of the Royal College of Physicians & Surgeons of Canada (RCPSC). Division members also continue in health delivery leadership roles including Dr Rubin who continues to serve as Chairman and CEO of the MSH/UHN AMO and represents all AHSC AFP Governance Organizations in Ontario on the Academic Medicine Steering Committee. He is also Program Medical Director of the Peter Munk Cardiac Centre. Dr Forbes chair's the Vascular Care Working Group of the Cardiac Care Network which is charged with reorganizing vascular care for the province of Ontario. Other U of T vascular surgeons who sit on this committee are Drs Johnston, Lindsay, Dueck and Pope.

Our national specialty society, the Canadian Society for Vascular Surgery, currently has

a number of U of T vascular surgeons on its executive including Drs Forbes (President), Roche-Nagle (Research Committee Chair), Papia (Education Committee Chair) and Cardella (Member at Large – Central)

## Administration

The Division Chair has his clinical office at Toronto General Hospital and runs the Division's activities here. At some point an office in the Department of Surgery's offices and additional administrative support will be necessary. The Division's executive committee is chaired by the Division Chair and also consists of the Division Heads from the 5 hospitals, the Postgraduate Education Coordinator, the Undergraduate Education Coordinator and the Quality & Best Practices representative who also sits on the Department of Surgery's Quality & Best Practices Committee. The Division of Vascular Surgery is well represented at the Department level with the Division Chair sitting on the Senior Advisory Committee, the Quality & Best Practices Committee, the Research Committee and the Finance Committee.

The Division's finances are run through the Division Chair's office. There are 2 endowed chair positions within the University Division but these are both hospital based (Sunnybrook and UHN) and do not support University Wide Division related initiatives. The University Division's operating funds were previously obtained by tithing Division members. There was resistance to this and concerns regarding equality and transparency. There was not a tithe for the 2015/15 academic year. Operating funds were achieved from industry sponsors and some small alumni donations. Operating funds for the residency training program come from annual expansion funds from the Faculty of Medicine's Post Graduate Medical Education Office, which became available at the time Vascular Surgery became a direct entry program. The Department Chair has been very supportive of the Division's residency program in annual discussions with



the Division Chair regarding funding levels. Fellowship salaries come from a combination of individual hospital contributions and from individual hospital Division's practice plans.

## **Human Resources**

**Trillium** – 4 vascular surgeons work at Trillium, 3 of which were U of T graduates. Their HR needs are stable. They offer the full range of open and interventional vascular procedures, short of advanced aortic work, and offer residency and fellowship training opportunities.

**Humber River** - 2 vascular surgeons work at Humber River, but Dr Cardella has been recruited to Yale beginning this summer and a new surgeon from McMaster University will be replacing him. This group will be moving to a new hospital in the fall of 2015 and will likely be recruiting at least one more surgeon. They also provide residency and fellowship rotations.

**Sunnybrook** – 4 surgeons work at Sunnybrook, with one senior surgeon not operating. HR is stable at this site and recruitment in the near future is not likely.

**St. Michael's** – 6 surgeons currently work at St. Michael's. Over the last number of years this site has been a major challenge to stabilize human resources. However, with the recruitment of Dr. Al-Omran as Division Head and the Dr. Greco as a new surgeon, this has stabilized. However with the return to Ireland of Dr. Moloney and the impending retirement of Dr. Tanner there is the immediate need for one and eventually two new surgeons.

**University Health Network** – 9 surgeons currently work at Toronto General Hospital, 2 of which are senior non-operating surgeons. Of the remaining 7, 2 also have significant clinical responsibilities in interventional radiology, 1 is a newly recruited Surgeon-Scientist with only a 25% clinical responsibility and 1 has a major administrative role as Medical Director of the Peter Munk Cardiac Centre and less clinical

responsibilities. The University Division Chair has full clinical role including call responsibilities.

## **Clinical Services**

In 2005 and 2006 two Centres of Excellence were created at UHN and SMH as well as an alternative payment plan for surgeons at these hospitals. Currently, UHN and SMH remain the primary hospitals for senior resident and fellow training. CritiCall coverage for the GTA and surrounding areas are met through an alternating call arrangement between the two hospitals. Clinical volumes are significant with a large volume of endovascular aortic repairs including advanced aortic work performed in collaboration with interventional radiology colleagues. Peripheral interventions have been adopted by the vascular surgeons allowing sufficient exposure for trainees. Both UHN and SMH Divisions are supported by close collaborations with other colleagues in cardiac surgery and interventional radiology at the Peter Munk Cardiac Centre at UHN and the Heart & Vascular portfolio at SMH. Such collaboration provides many academic, educational and clinical opportunities.

Sunnybrook Health Sciences has a complement of 4 vascular surgeons who are a primary training site for vascular surgery residents and fellows as well. Previously this group had been disadvantaged by the failure to integrate, and to be integrated, into this city-wide system following the designation of the two Centres of Excellence at the downtown hospitals. As a consequence this group initially did not receive Ministry of Health funding for endovascular stent grafts, did not agree to adopt the Alternative Payment Plan, nor did it become involved in the provision of CritiCall coverage. A somewhat divisive relationship and a feeling of resentment persisted on both sides between Sunnybrook and the downtown hospitals (UHN and SMH) for some time. This has changed recently but still requires attention.

As with the SMH and UHN surgeons, Sunnybrook's vascular surgeons provide excellent care in all aspects of vascular surgery including extensive involvement in peripheral interventions by vascular surgeons. They also have a long history of open thoracoabdominal aortic work and more recently advanced aortic work as well as support of the busy trauma service at Sunnybrook.

Trillium Healthcare and Humber River Regional Hospital have been included in the Division's functions at the educational level. Both groups are populated by surgeons predominantly trained at University of Toronto. They are eager to be further involved in educational, academic and clinical initiatives. They are involved in administrative responsibilities within the educational program including Dr Wernick who organizes the residents' academic half days and Dr Cardella who successfully organized the first endovascular skills course last summer for all trainees across the country. Both groups have successfully incorporated peripheral interventions into their everyday vascular practice and certainly provide an attractive educational exposure for both junior and senior level vascular surgery residents.

Around the GTA more and more hospitals are performing vascular surgery, although not all are providing 24/7 coverage. There is some concern that that elective referrals are decreasing at the University affiliated hospitals but that after hours emergent work and complicated work are not. This is an area requiring attention going forward.

## **Quality & Best Practices**

UHN and St. Michael's are the only two Canadian sites participating in the Society for Vascular Surgery's Vascular Quality Initiative. Optimally all sites would enroll patients in the same CQI database, but some sites use the American College of Surgeons' NSQIP. Two members of our Division, including the Division

Chair, sit on the Department of Surgery's Quality & Best Practices Committee, chaired by Dr Robin McLeod, and are looking at such quality measures as readmission rates across the Division's hospitals. Dr. Roche Nagle is also enrolled in the IDEAS program. Alignment and coordination of our Division's CQI initiative is a priority.

## **Education**

Dr Oreopoulos was appointed Program Director in 2011 and is widely regarded as providing excellent leadership for the residency program. With vascular surgery now being a Royal College direct entry primary specialty, the Division now offers direct entry as well as the traditional 5+2 route to RCPSC certification in vascular surgery. A Fellowship program is also offered at the main academic teaching hospitals.

The residency program underwent a RCPSC mandated internal review earlier this year and although only a draft document has been reviewed by the Program Director and Division Chair, the review was favorable with no large concerns.

Several initiatives have been instituted by the Program Director and surgical faculty and are examples of innovative teaching initiatives aligning well with Departments educational program under Dr Levine. The vascular surgery academic half-day is organized by Dr Werneck and although still predominately sited at TGH does rotate around the city occasionally. The curriculum has been adjusted to meet the needs of the residents as reflected by the results of the recent VSITE examination, a US administered in-training examination. In addition a vascular surgery boot camp was added as an extension to the surgery boot camp that all PGY1 residents attend. This was very well received and should continue. Dr Cardella supervised the Canadian Endovascular Skills Summit at the Li Kai Shing Learning Centre at SMH and the hope is that this will continue to be a local and national resource.

This was originally funded partially by the Canadian Society for Vascular Surgery with one-time funding. Additionally, Dr Oreopoulos is planning on instituting several novel initiatives including in-training OSCE's and competency based evaluation and promotion tools and metrics for the residents.

Residents currently rotate through vascular surgery rotations at the 5 hospitals although senior level residents in both Royal College pathways are concentrated at TGH, SB and SMH with the other 2 hospitals receiving junior level vascular surgery residents predominately. There has been a general decline in the number of off service residents rotating through vascular surgery rotations which is causing some difficulty in coverage.

Excellent education for the residents is being offered at all 5 sites. Trillium Healthcare and Humber River Regional Hospital have recently begun to offer junior vascular surgery rotations. These have been very well received by the residents.

The Division as a whole provides an abundant opportunity for training in both open and endovascular vascular surgery. Endovascular aortic surgery is offered at all 5 sites with advanced work performed at TGH, SMH, and Sunnybrook. The endovascular aortic exposure is seen as sufficient by the residents. Peripheral interventions (PI) are offered at all 5 sites in a variety of clinical areas and by different providers. PI experience is obtained by the residents as either a separate rotation (TGH, SMH) or as part of their general vascular surgery rotation (SB, THC, HRRH).

The Surgeon Scientist Program (SSP) is well-established at the University of Toronto and trains surgeon researchers for an academic career. The Division of Vascular Surgery is well positioned to take advantage of this opportunity. As vascular surgery continues to be centralized in larger University affiliated hospitals, at least in

Canada, graduates of the SSP will be well-suited for the increasingly competitive job market in academic vascular surgery. The Division has two residents currently enrolled in this program and an additional one, at least, starting in the coming year. In addition Dr. Roche-Nagle serves as the residency director of research.

A well attended resident research day occurs yearly in June where resident research is highlighted and a visiting professor (K. Wayne Johnston Visiting Lecturer) is invited.

The Division continues to offer clinical fellowships for international surgeons at TGH, SB and SMH which are at least partially funded by the hospitals. Generally these surgeons are seen to augment the residency training program and to fill clinical needs when the residents are away at their academic half-day. However the potential does exist for conflict as the residents and fellows compete for adequate exposure with some procedures (advanced aortic cases are one example). Dr Mark Wheatcroft is transitioning into the role of Fellowship Director.

The residency training program currently has a half FTE administrator which will likely require augmentation once the recently completed internal review is considered.

## **Academic Productivity**

The Division is involved in a number of academic and research initiatives. Division members have been quite successful in obtaining awards from the Canadian Society for Vascular Surgery as well as small research grants. Dr. Roche-Nagle has been particularly productive at the CSVS annual meetings and has recently been appointed as Chair of the CSVS Research Committee.

With respect to academic productivity, in the past, the number of peer reviewed publications by the Division has been relatively modest for a Division of this size and capabilities. During 2011-2014, over the last 3 academic years the Division published 31 papers in peer reviewed

journals with Division members being primary or senior responsible author on 19 of these 26 papers. Increased academic productivity measured by grants, publications, citations and bibliometrics is a priority.

Grant funding has been modest outside of some CIHR and PSI research grants for the basic science research laboratories. Otherwise there are a fair number of small Society funded and internal research grants supporting the academic mission of the Division.

The University of Toronto Division of Vascular Surgery has long been envied as the only Canadian division with basic science expertise and productivity. This has been through Dr. Rubin's and Dr. Lindsay's laboratories which have received multiyear CIHR and PSI funding, until recently. This unique aspect of the Division is at risk with Dr Lindsay having to close his lab because of increasing administrative, clinical and academic responsibilities and with Dr Rubin having to spend less time in the lab because of increased responsibilities as Head of the Peter Munk Cardiac Centre. Dr. Byrne has been recruited to UHN as a Surgeon-Scientist and is pursuing a small animal research model in aneurysm pathogenesis in collaboration with Clint Robbins.

There are several areas of expertise in clinical research and applied research within the Division. These include Dr. Tse's biomedical engineering work, Dr Dueck's CIHR funded imaging research as well as education related research where there is some expertise and academic productivity with Dr Oreopoulos' and Dr Wooster's work. Clinical outcomes research is another opportunity for growth and is a priority of the Division. Several hospital-based research facilities such as the La Ki Shing Research Institute at St. Michael's Hospital provide an opportunity for this. In addition academic opportunities at some sites (namely UHN and SMH) are enabled by hospital administration and organizational structures, ie Heart and Vascular at SMH and Peter Munk

Cardiac Centre at UHN as well as the Surgical Scientist Program.

Clinical research productivity would be facilitated through a research database. The UHN and SMH group has adopted the Vascular Quality Initiatives (VQI) database from the Society for Vascular Surgery and this has major quality assurance capabilities with the ability to compare with other hospitals and jurisdictions. Division members are also involved in the creation of a provincial vascular surgery database being created with colleagues from other centres and the Cardiac Care Network. However, neither of these databases are true research databases. A hurdle to clinical research is the lack of a University Institutional Review Board (IRB). A centralized IRB would facilitate integrated Division wide research initiatives and make the Division an attractive site for industry and non-industry funded research and clinical trials.

## **External Review**

Nearing the conclusion of Dr. Lindsay's term as Division Chair, an external review of the Division was performed by Dr. Forbes (then Professor & Chair at the University of Western Ontario) on November 14<sup>th</sup>, 2013. The summary of that review follows:

### **I. Strengths & Weaknesses**

#### **a. Strengths**

- i. Strong leadership by Dr. Lindsay during a tumultuous period brought relative stability to the Division.
- ii. International profile through leadership positions in societies and editorial positions on journals and textbooks.
- iii. Cooperation between UHN and SMH to meet emergency clinical demands (via CritiCall).
- iv. Successful integration of Trillium and Humber River into the residency training program.

- v. Significant clinical exposure to all aspects of vascular surgery, including advanced aortic endovascular procedures.
- vi. Successful adoption of peripheral interventions by vascular surgeons at all 5 hospitals.
- vii. Successful adoption of direct entry residency program and continuation of 5 + 2 training program. Strong Program Director (Dr Oreopoulos) with successful formal teaching program (led by Dr Werneck).
- viii. Attractive fellowship positions for international surgeons at SMH and UHN, funded at least partially by the hospitals.
- ix. Surgeon Scientist Program at University of Toronto provides strong research training for residents.
- x. A history of continuously funded basic science research laboratories (Drs Lindsay and Rubin).
- xi. Several areas of clinical research potential including clinical trials, device development (Dr Tse), education, imaging.

#### **a. Weaknesses**

- i. Lack of clinical integration and coordination between SB and the downtown hospitals, UHN and SMH.
- ii. Inequality in the allocation of senior residents among the hospitals.
- iii. Some potential friction between residents and fellows as they compete for clinical exposure as well as with other health care providers (ie IR).
- iv. Declining basic science research footprint.
- v. Modest clinical research productivity (peer reviewed publications and grants).
- vi. Lack of a coordinated Division-wide research plan and priorities.

## **II. Recommendations**

### **1. A strategic planning exercise is required to:**

- a. Integrate SB with the downtown hospitals and develop a city wide clinical services delivery model for both emergent and elective care.
- b. Develop a model of residency training that ensures sufficient coverage of clinical teaching units at all hospitals and results in a more equitable allocation of junior and senior residents.
- c. Review opportunities to align and share financial resources to achieve shared academic goals.
- d. Develop and facilitate Division-wide research priorities which can have a unifying effect. Fully explore resident research opportunities in, and outside, the SSP to make trainees more competitive for academic positions and to augment the Division's academic productivity.
- e. Align the addition of new recruits with clinical needs and specific academic and research priorities.

### **2. In preparation for the next RCPSC review of the residency program:**

- a. Pay specific attention to service-education balance and ensure more equitable distribution of residents across the clinical teaching units. The SB site following the RCPSC review of the General Surgery program requires immediate attention.
- b. Consider appointing a separate Program Director for fellows so that the concerns of residents and fellows can be separately represented.
- c. Explore opportunities for developing (or sharing) a fellow position at Sunnybrook with hospital support (as at UHN and SMH).
- d. Ensure sufficient EVAR clinical case exposure at UHN for residents and minimize conflict with fellows and IR trainees.

### 3. In some areas Faculty and career development require attention:

- a. New recruits require expectations of academic deliverables and productivity and the resources, protected time, and support from Division members to ensure success.
- b. Because of extenuating clinical circumstances beyond their control the 3 year review period for Drs Wheatcroft and Moloney should be extended. These

are valuable clinicians with potential for academic productivity now that SMH is closer to a sufficient number of surgeons.

- c. Dr Tse's research program needs additional support in terms of protected time from the Division and in terms of recognition of its importance at both the Division and Department level.

## Strategic Planning (2015-2020) – DRAFT

The Division of Vascular Surgery recently (February 2015) underwent a strategic planning exercise and the following represents a DRAFT document.

### The Vision, Mission & Values of the Division of Vascular Surgery

**VISION**  
United in a Tradition of Leadership, Discovery & Excellence

**MISSION**  
To improve the human condition through clinical excellence, innovation, discovery and the training of tomorrow's leaders.

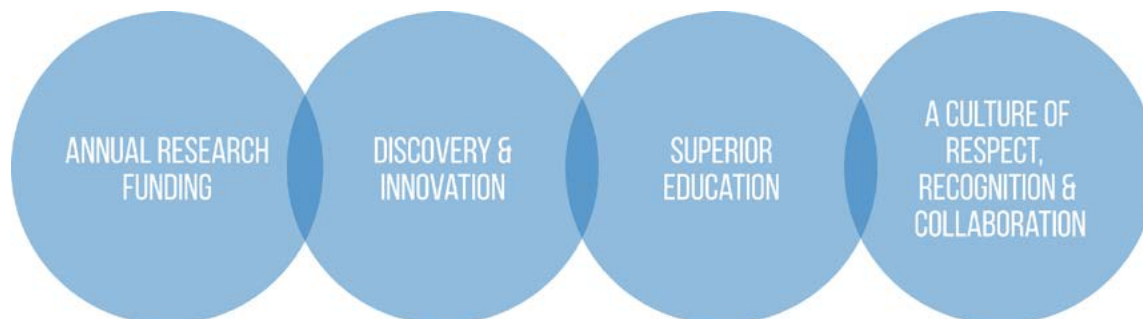
**SHARED VALUES**

**Excellence** - We strive to provide excellent care to every patient, in every situation.

**Quality** - As we strive for clinical excellence we work in an environment of continuing quality improvement where we track, improve and report our outcomes so they serve as benchmarks for others.

**Collaboration** - We encourage the principle of "virtual centres of excellence" through teamwork and collaboration with Division members throughout the city, other physicians, specialties and allied health personnel.

## Strategic Directions



### Strategic Directions 2015 – 2020

#### STRATEGIC DIRECTION 1 – CLINICAL EXCELLENCE

*We will ensure that our surgical practice results in the best outcomes for patients while facilitating world class research and teaching. This will be supported by the alignment of privileges, stronger partnerships and linkages, development of sub-specialties, consolidating best practices, coordinated outreach to university and community hospitals and coordination of urgent and non-urgent services.*

##### *Objective 1 – Privileges*

In order to promote collaborative clinical exercises within our hospitals and centres, surgeons at each academic hospital will have courtesy privileges at the other academic hospitals in the Division.

##### *Objective 2 – Partnerships in the Coordination of Clinical Activities*

Clinical excellence will be improved by developing strong partnerships, for example, with medical imaging, cardiac surgery and other groups of healthcare providers. In addition, we will strengthen external linkages with referring physicians to improve clinical coordination and collaboration. We will develop “virtual centres of excellence”

within our Division and with physicians from other specialties. These initiatives will align with those of the Cardiac Centres and Heart & Vascular Institutes at our individual hospitals.

##### *Objective 3 – Clinical Sub-specialties*

The Division will continue the process of developing Vascular Surgery sub-specialties, including complex aortic surgery, complex limb salvage, wound and diabetes management and hemodialysis, among others. These subspecialty interests and expertise will drive clinical coordination within the University Division and result in collaborative and multidisciplinary academic and educational initiatives.

##### *Objective 4 – Best Practices & Quality Improvement*

In order to lead in the development of vascular surgery best practices, we will carefully collect data on all surgical interventions. All vascular surgery procedures will eventually be included in CQI database (s) with appropriate risk adjustment, reporting and outcome measurement. This will assist in best practices and guideline development and provide benchmarks for performance improvement.

### *Objective 5 – Outreach*

We will coordinate outreach efforts with university affiliated and community hospitals. In addition, we will develop initiatives to optimize the delivery of urgent and elective vascular surgery provision through equitable and fair processes.

## **STRATEGIC DIRECTION 2 – INCREASE DISCOVERY & INNOVATION**

*To become a global leader in our field, we will expand discovery and innovation initiatives increasing Division wide resources and capabilities; appointing a Division of Vascular Surgery Vice-Chair Research; building a research database; increasing joint grant-writing and the output of peer reviewed publications; build capacity in clinical outcomes research; integrating pure scientists with clinical teams, and explore investments in basic science.*

### *Objective 1 – Fund Raising, Endowed Chair(s)*

Currently the University Division's ability to financially support protected time, centralized research resources and academic salary support is limited. Fundraising, philanthropy and endowed Chair(s) positions are vital instruments to promote Division wide academic productivity. Centralized research needs, such as grant writing and statistical support, as well as individual investigator support would be supported with these positions. An important objective for the Division will be finding sources of funding for these positions from foundations, corporations and grateful patients.

### *Objective 2 – Division Vice-Chair, Research*

In view of the importance the Division places on Discovery and Innovation,

steps will be taken to appoint a Vice-Chair, Research. Taking the lead for our overall research strategy, the Vice-Chair will engage members of the Division in developing a research agenda and needed resources to encourage research and innovation collaboration across the various hospitals.

### *Objective 3 – Research Database*

The Division will develop a Research Database. As a first step, we will amass an inventory of research, innovation activities and interests of Division members to develop a research agenda. Next, we will take steps to collect and assemble data in order to build a usable Divisional Research Database accessible to all members.

### *Objective 4 – Increase Academic Productivity*

Over the next five years, we will aim to increase the number of grants for research and double the output of peer reviewed publications. Objective bibliometrics, such as number of citations and h-factor, will be used as measurements of academic productivity at the Division and individual surgeon levels. In addition, we will encourage Division members to get involved in professional conferences and societies and make presentations on topical issues in vascular surgery. To achieve this, the Division will increase joint grant-writing, and develop statistical and research resources in support of members.

### *Objective 5 – Clinical Outcomes Research*

We are committed to pursuing a significant increase in clinical outcomes research. To the end, the Division will recruit a clinical trials specialist to champion this objective. Centralized research resources will also be developed so we take advantage of the breadth of clinical activity within our Division's individual hospital groups.



Also, the eventual coordination of hospital based Ethics Review Boards will allow more city wide clinical trials with our University Division being a prime site for industry and non-industry funded clinical trials.

#### *Objective 6 – Integrate Pure Scientists with Clinical Teams*

We will explore the opportunities of integrating pure scientists with clinical teams to enhance discovery and clinical outcomes. Recruitment of pure scientists will be an objective in 2016/17.

#### *Objective 7 – Investment in Basic Science*

To deepen our understanding of the mechanisms involved in vascular disease, the Division will seek funding for opportunities to support basic science research in areas of interest to members.

### **STRATEGIC DIRECTION 3 – DELIVER SUPERIOR EDUCATION & DEVELOPMENT**

*The Division will continue to provide excellent education of academic surgeons and the next generation of leaders in vascular surgery taking steps to improve innovative education initiatives and technology; faculty development including career planning for trainees; a mentoring program for new faculty while aligning and balancing clinical, research and academic priorities, respectful retirement planning, and a fair process for faculty review.*

#### *Objective 1 – Train Tomorrow’s Leaders in Academic Vascular Surgery*

Our Division will build on our tradition of leadership and academic excellence by selecting residents and fellows who are best suited for an academic career. Enrollment in the Surgeon Scientist

Training Program will be increased so as many trainees as possible receive the research training necessary for a successful academic career.

#### *Objective 2 – Innovative Education Initiatives*

We will take steps to continue and expand innovative education initiative such as the *Vascular Surgery Boot Camp*, *Vascular Surgery Half-Days* and the *Canadian Endovascular Skills Summit* with a view to making them available throughout the Division and beyond. We will seek to invest in simulation labs and other innovative technology that will keep us at the leading edge of vascular education. In addition, we will offer to pilot competency based, learner focused education and evaluation of trainees. Collaborative fellowship programs will be developed to align with clinical sub-specialties and “virtual centres of excellence” (see Objective 1.2)

#### *Objective 3 – Career Planning*

We will design and introduce a process to assist trainees in obtaining suitable employment upon graduation as well as longer range career planning. Milestones for knowledge, skills, attitudes and performance will be established with support systems to assist graduates with career development. Leadership training will begin at the resident level.

#### *Objective 4 – Faculty Development: Early, Mid and Later Career Stages*

We will provide support to faculty at the early, mid and later stages of career. For new faculty, we will establish a strong mentoring program for drawing on the expertise of older faculty members. Steps will be taken to align and balance clinical, research and academic priorities for all new faculty. The Division will create a Collaborative Leadership Development Program for mid-career faculty

including education skills workshops, advanced education programs and inter-professional education programs. Leadership will focus on “being” (who you are as a professional) and “doing” (what you do as an educator). To ensure respectful retirement for later career faculty, we will align with DOS policy on end of career surgeons which is being developed.

#### *Objective 5 – Faculty Review*

We will work to develop a “fair process” for faculty review that aligns the expectations of the Division, the Department and the hospital. Teaching, academic productivity and clinical service will be cornerstones of faculty review. However, we need a transparent process that takes into account many other important factors including innovation, community service, mentoring, collegiality and external recognition for example.

### **STRATEGIC DIRECTION 4 – EMBED A CULTURE OF RESPECT, RECOGNITION & COLLABORATION**

*We will strive to nurture and build a culture of respect, recognition and collaboration among members of the Division and the partners with whom we work. This will be supported through enhanced communications, meetings, surveys, recognition of contributions, and building the Division “brand”.*

#### *Objective 1 – Communications*

We will strive to enhance communication ensuring that all members, including administration and allied health are informed in a timely manner of Division developments and accomplishments. In addition to the Division Newsletter, we will explore communication initiatives using social media such as intranet, Facebook, LinkedIn and a phone app to connect all stakeholders.

#### *Objective 2 – Division Annual Meeting and Social Events*

The Division will hold an Annual Meeting to engage members in discussion about key issues and accomplishments. We will also plan social events at suitable times to bring members and their families together for celebration.

#### *Objective 3 – Conduct Annual Survey of Division members*

In order to assess the state of the Division, a survey of members will be conducted annually with the results shared in the Newsletter.

#### *Objective 4 – Build the “Brand”*

We will take steps to build the “brand” of the Division ensuring that it is seen as the best place to train and work. We will ask key stakeholders to assess our “brand” identity, achievements and reputation. Members of the Division have had many accomplishments over the years. We will celebrate our history of leadership by interviewing, video-recording and publishing the experiences of retired faculty. We will celebrate their teaching, research and clinical accomplishments in a variety of ways including publishing their stories in the Newsletter.

### **Supporting & Enabling Activities**

*The following activities have been identified as key activities to support the implementation of the Strategic Directions. The Vascular Surgery Division Executive Group will be tasked as the Core Group overseeing the implementation of the strategic plan. In addition, some individuals in the Division will be asked to participate in special groups or sub-committees to focus on these and other key aspects of plan implementation. To support and enable the Strategic Plan, we will*

*undertake fundraising activities to establish a Division Research Chair. We will establish a central resource centre to support the Division's research initiatives. We will develop a comprehensive communications plan and a human resources plan to serve the Division.*

#### I. Implementing the Strategic Plan

The Division Chairman will lead the implementation of the total Strategic Plan. He will appoint various members to lead specific initiatives as required. Each Strategic Direction will be headed by a Sub-Committee Lead for a 3 to 5 year period. Each hospital will be represented in special groups or sub-committees wherever feasible.

#### II. Fundraising Initiative (supporting Strategic Direction 2)

A Fund Raising Sub-Committee will be struck to create a strategy to solicit the contributions of grateful patients, government funders and foundations in order to fund endowed positions within the University Division.

#### III. Central Resource Centre to Support the Division (supporting Strategic Direction 2)

The Division will create a central resource centre to support all research initiatives. For example, we will collaborate to obtain the services of a grant-writer and a statistician. The Division's Vice-Chair for Research will be appointed and will also develop an inventory of current and ongoing research initiatives within the Division.

#### IV. Division of Vascular Surgery Communications Plan (supporting Strategic Direction 4)

We will undertake several new and several ongoing communication initiatives

to support and enhance the culture of respect, recognition & collaboration. A communications plan will be created. We will continue to publish the Newsletter as a means of updating all members about accomplishments, issues and events. We will continue City Rounds, Remote Rounds using IT and Chairman visits to engage all members in ongoing developments. We will begin to use Social Media such as Facebook, Twitter and Instagram as a means of connecting regularly on immediate topics of interest with members.

#### V. Division of Vascular Surgery Human Resources Plan (supporting Strategic Direction 1, 2 & 3)

We will design a Division Human Resources Plan aligned with other University of Toronto HR plans that will institute Division-wide mentoring of new faculty; a fair faculty review process; and a faculty leadership development process. In addition, we will institute a plan to equalize the distribution of senior residents among the hospitals in the Division. We will also develop a plan and process to assist graduates in obtaining suitable employment.

### **Implementation Framework**

STRATEGIC DIRECTION	ACTION & OUTCOME IN 5 YEARS	MECHANISM & START TIMELINE
<b>1 – CLINICAL EXCELLENCE</b>		
<b>1.1 Privileges</b>	Collaborative clinical exercises increase three-fold over 5 years.	Grant privileges to surgeons in academic hospitals by end of 2015.
<b>1.2 Partnerships in the Coordination of Clinical Activities</b>	Increase opportunities for greater collaboration intra and inter hospitals.	Negotiate agreements 2016.
<b>1.3 Clinical Sub-Specialities</b>	Increased the volume of complex aortic surgery and the development of multi-hospital, multi-divisional and multi-disciplinary training for surgeons.	Identify champions for sub-specialties 2016. Align with Division’s HR plan.
<b>1.4 Best Practices &amp; Quality Improvement</b>	Collection of data on surgery outcomes to identify promising and best practices, guideline development. Our Division to become the Canadian benchmark for vascular surgery outcomes	Continue with current CQI data collection and best practices criteria (VQI & NSQIP). All hospitals to input data to common CQI database by end of 2016.
<b>1.5 Outreach</b>	Coordinated outreach efforts with university affiliated and community hospitals and initiative to improve emergency coverage and increase referrals and elective surgery volumes.	Coordinated outreach plan by 2016.
<b>2 – DISCOVERY &amp; INNOVATION</b>		
<b>2.1 Fundraising, Endowed Chair(s)</b>	Endowed Chair(s) to enable long term commitments to academic mission.	Seek funding sources 2015 – 2020.
<b>2.2 Division Vice-Chair, Research</b>	Leadership for our overall research strategy in Vascular Surgery. Increase in grants and academic publications.	Identify and appoint a Vice Chair by end of 2015.
<b>2.3 Research Database</b>	A research database available to all members of the Division.	Inventory of research, innovation activities, and interests 2016.

<b>STRATEGIC DIRECTION</b>	<b>ACTION &amp; OUTCOME IN 5 YEARS</b>	<b>MECHANISM &amp; START TIMELINE</b>
<b>2.4 Academic Publications</b>	Double output of contributions to peer reviewed publications in 5 years.	Publications plan to be led by Vice-Chair 2016. Use bibliometrics to assess academic productivity by end of 2015.
<b>2.5 Clinical Outcomes Research</b>	Increased volume of clinical outcomes research & clinical trials across the Division.	Recruit a clinical trials specialist to lead this direction 2017.
<b>2.6 Integrate pure scientists</b>	Enhanced discovery and clinical outcomes.	Find opportunities to recruit and integrate 2016.
<b>2.7 Investment in Basic Science</b>	Greater understanding of the mechanisms involved in vascular disease.	Seek funding to support research in basic science 2018.
<b>3 – SUPERIOR EDUCATION</b>		
<b>3.1 Train Tomorrow's Leaders in Academic Vascular Surgery</b>	Graduates of our training programs will work at academic centers throughout the world.	Recruitment of trainees best suited for academic careers (immediate). Increase enrollment in SSTP (2016).
<b>3.2 Innovative Education Initiatives</b>	Innovative education initiatives applied throughout the Division (simulation, technology and competency based evaluation).	Comprehensive plan for educational innovation 2016/17.
<b>3.3 Career Planning</b>	All trainees have experienced the career planning process.	Design career plan process with milestones 2018.
<b>3.4 Faculty Development: Early, Mid and Later Career Stages</b>	All new faculty have a mentor and balanced priorities. Leadership program and retirement plans in place.	Initiate as part of HR plan 2019.
<b>3.5 Faculty Review</b>	Fair process in place for faculty review.	Design and implement in 2016.
<b>4 – CULTURE OF RESPECT, RECOGNITION &amp; COLLABORATION</b>		
<b>4.1 Communications</b>	All staff are informed in a timely manner of Division developments and accomplishments.	Institute existing and new communication mechanisms 2016.

<b>STRATEGIC DIRECTION</b>	<b>ACTION &amp; OUTCOME IN 5 YEARS</b>	<b>MECHANISM &amp; START TIMELINE</b>
<b>4.2 Annual Meeting &amp; Social Events</b>	Annual meetings are held in January/February each year with a State of the Union Address. Increased number of social events involving family.	Establish a master plan for meetings 2015.
<b>4.3 Annual Survey</b>	Survey is conducted in January each year.	Place in master plan for Division.
<b>4.5 Build the “Brand”</b>	The U of T Division of Vascular Surgery “brand” is known and admired in healthcare.	Initiate development of a “brand” strategy 2018 – 2019.
<b>5 – SUPPORTING &amp; ENABLING</b>		
<b>5.1 Core Group Oversight</b>	Strategic Priorities are implemented as appropriate on a timely basis by committed leads and Core Group members.	Leads and sub-committees for Strategic Directions 2015 – 2016.
<b>5.2 Fundraising</b>	Endowed Chair(s)	Fund Raising Sub-Committee 2015.
<b>5.3 Central Resource Centre</b>	Services of a grant-writer and a statistician; location of database.	Fundraise, recruit; plan for database 2016.
<b>5.4 Communications Plan</b>	Newsletter; City Rounds; Remote Rounds; Social Media	Comprehensive Plan 2016.
<b>5.5 Human Resources Plan</b>	Mentoring; Fair Review Process; Leadership Development Institute; Employment process for new graduates; plan for distribution of residents; retirement process; recruitment plan.	HR Plan 2016.

## Vascular Surgery Strategy Map

### VISION

*United in a Tradition of Leadership, Discovery & Excellence*

### MISSION

*To improve the human condition through clinical excellence, innovation, discovery and the training of tomorrow’s leaders*

VALUES

Excellence

Quality

Collaboration

Integrity & Responsibility

Recognition & Respect

Diversity & Inclusiveness

STRATEGIC DIRECTIONS

**1. Ensure clinical excellence**

*We will ensure that our surgical practice results in the best outcomes for patients while facilitating world class research and teaching. This will be supported by the alignment of privileges, stronger partnerships and linkages, development of sub-specialties, consolidating best practices, coordinated outreach to university hospitals and coordination of urgent and non-urgent services.*

**1. Expand discovery & innovation**

*To become a global leader in our field, we will expand discovery and innovation initiatives increasing Division wide resources and capabilities; appointing a Division of Vascular Surgery Vice-Chair Research; building a research database; increasing joint grant-writing and the output of peer reviewed publications; build capacity in clinical outcomes research; integrating pure scientists with clinical teams, and explore investments in basic science.*

**1. Deliver superior education & development**

*The Division will continue to provide excellent education of academic surgeons and the next generation of leaders in vascular surgery taking steps to improve innovative education initiatives and technology; faculty development including career planning for trainees; a mentoring program for new faculty while aligning and balancing clinical, research and academic priorities, respectful retirement planning, and a fair process for faculty review.*

**1. Embed a culture of respect, recognition & collaboration**

*We will nurture and build a culture of respect, recognition and collaboration among members of the Division and the partners with whom we work. This will be based on enhanced communications, meetings, surveys, recognition of contributions, and building the Division "brand".*

## SUPPORTING & ENABLING ACTIVITIES

I.	II.	III.	IV.	V.
Appointment of a Core Group to oversee implementation of the Strategic Plan	Fundraising Initiatives	Central Resource Centre to Support the Division	Division Communications Plan	Division Human Resources Plan

April-June 2015  
Volume 1, Issue 2

Toronto Pulse

Official Newsletter of the University of Toronto's Division of Vascular Surgery

**Special Interest Articles:**

- Synergy, SSTP
- Alumni Profile  
Dr. Ken Harris
- Faculty Profile  
Dr. Andrew Dueck

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### Chair's Column

According to Wikipedia: **Synergy (n): is the creation of a whole that is greater than the simple sum of its parts, from synergos, meaning "working together".**

In efforts to pursue collaboration and synergy 23 U of T vascular surgeons from 5 hospitals met on a beautiful Saturday in February.

Synergy is hardly a new concept in the business world and has been written about extensively including a 1998 *Harvard Business Review* article by Michael Goold and Andrew Campbell entitled "*Desperately Seeking Synergy*".

I encourage you to read this article in which Goold and Campbell list the advantages and disadvantages of synergy initiatives in business and the inherent struggle in balancing collaboration and autonomy.

They describe business synergy as the ability of two or more units or companies to generate greater value working together than they could working apart. They found that most business synergies take one of six forms: Shared Know-How, Shared Tangible Resources, Pooled Negotiating Power,

Coordinated Strategies, Vertical Integration and Combined Business Creation. It's not a far reach to see how these principles pertain to the practice of medicine in general, and our Division specifically.

Of course another way to look at it is through Benjamin Franklin's sage words, "We must all hang together, or assuredly we will all hang separately".

Dr. Thomas Forbes

### U of T Vascular Surgery SSTP Residents

Since 1983 the Surgeon Scientist Training Program in the Department of Surgery at the University of Toronto has provided excellent research training for surgical residents who are interested in an academic surgical career. Several of our faculty members have benefitted from this program and the tradition continues with several current residents.

Two of our U of T Vascular Surgery residents are currently enrolled in the SSTP and another is soon to follow.

Dr. Mohamad Hussain is investigating the "Utilization and Outcomes of Carotid Artery Revascularization in Ontario" with Drs. Mohammed Al-Omran and Muhammad Mamdami as supervisors. Dr. Trisha Roy is investigating "MR

guided revascularization of occlusive peripheral arterial disease" under the supervision of Drs. Graham Wright and Andrew Dueck. Dr. Sean Crawford will enter the SSTP this summer with Dr. Leonard Tse as supervisor.

These young Vascular Surgeon-Scientists are the future leaders of academic vascular surgery.



# HOSPITAL REPORTS

**Department of Surgery**  
*Mount Sinai Hospital*  
*University of Toronto*

FIVE YEAR REVIEW



**2009-2014**  
**Jay Wonder, M.D.**  
Surgeon-in-Chief, Mount Sinai Hospital  
University of Toronto

*Renew Sinai* is Mount Sinai Hospital's multi-year capital redevelopment project to create, expand and modernize its space. To date, six new floors have been added on top of the Murray Street wing to house the Women's and Infants' Health Program – the largest academic obstetrical, gynaecological, and neonatal program in Canada. Based on continued government support, plans are underway to completely rebuild and modernize several areas of patient care – featuring state-of-the-art operating rooms, emergency facilities, and critical care and inpatient units. Thanks to two generous donors, a Same Day Surgical Admission Unit adjacent to the Main Operating Rooms was built and has made a major positive impact for patients and their families on the day of surgery. 2015 developments will include a new neonatal intensive care unit, labour and delivery unit, and antenatal units. An emergency department, 19 new surgical suites, 8 modernized inpatient units, a 50% increase in ICU beds, and ambulatory clinic will follow.

Patient safety and access remain major focuses throughout the hospital, and particularly within the Department of Surgery. Dr. Jay Wunder led the implementation of the Mount Sinai Hospital Surgical Safety Checklist, which was facilitated by holding educational patient safety rounds for the entire surgical program. Compliance with the Checklist is now another of the publicly reported safety indicators by the Ministry of Health. Dr. Robin McLeod leads the Best Practices in General Surgery (BPIGS) program, which has brought together all the University of Toronto teaching hospitals to standardize practice guidelines across general surgery. Robin showed positive results of improvements in patient outcomes as a direct result of this initiative.

The surgical oncology program and arthroplasty groups once again provided leadership within the Toronto Central LHIN by successfully increasing surgical volumes beyond the hospital's target and improving patient wait times.

Many members from the hospital's Sarcoma Program were nominated to work on the Sarcoma Expert Panel, which developed a working document for Cancer Care Ontario (CCO) and the Ministry of Health on how to improve sarcoma patient care throughout the province, as well as rectify deficiencies in case funding, especially for limb salvage surgical procedures and sarcoma chemotherapy, both of which are expensive and poorly remunerated.

Finally, Mount Sinai Hospital was awarded Ontario's first Peritoneal Malignancy Program under the joint partnership of Mount Sinai Hospital, University Health Network, Sunnybrook Health Sciences Centre and Cancer Care Ontario. It has taken a lot of institutional cooperation and backroom political intervention leading to the creation of this program. This will allow patients to receive cytoreductive surgery with intraperitoneal hyperthermic chemotherapy locally, without having to be sent abroad to the USA for treatment. Research productivity in terms of publications, peer reviewed funding, and invited lectureships remained at an all time high for our department. Some highlights include:

## **Division of General Surgery**

**Andrea McCart** was promoted to Associate Professor in the Department of Surgery at the University of Toronto and appointed as head of the new Ontario Peritoneal Malignancy Program (2009-10).

**Carol Swallow** completed successful terms as President of the Canadian Society of Surgical Oncology, and Chair of the Royal College Specialty Committee for General Surgical Oncology (2009-10). She was appointed as the Chair of General Surgery in 2014.

**Helen MacRae** is Chair of the American College of Surgeons' Association of Program Directors Committee (2009-10). She was promoted to Professor in 2011.

**Robin McLeod** holds the Angelo and Alfredo De Gasperis Families Chair in Colorectal Cancer and IBD Research. Robin continues to do an outstanding job as Surgical Lead for Quality Improvement and Knowledge Transfer at Cancer Care Ontario. Robin was the Gallie Lecturer at the Annual Canadian Association of General Surgeons Meeting in 2010. In 2011, she became a life member of Colorectal Surgical Society of Australia and New Zealand in 2011 and also received the Best Paper Award from the Canadian Society of Colon and Rectal Surgeons. In 2013-14, Robin received the Award of Excellence from the College of Physicians and Surgeons of Ontario, and the Robert Mustard Mentor of the Year Award from the Division of General Surgery, University of Toronto. Although she closed her clinical practice and became a Vice President of Clinical Programs & Quality Initiatives at Cancer Care Ontario, she was awarded a CIHR grant aimed at developing a decision rule for discharge following colorectal surgery.

**Dr. Irving Rosen** helped facilitate a philanthropic donation by Mr. Mark Daniels and the Head and Neck Cancer Foundation of Canada to establish the Rosen-Daniels Visiting Professorship in Surgical Oncology Translational Research in 2009-10. The Rosen-Daniels professor was Dr. Hans de Wilt, a surgical oncologist from the Netherlands.

**Anand Govindarajan** and **Erin Kennedy** joined the Division of General Surgery in July 2011, both as Surgeons Investigators, at the rank of Assistant Professor. Erin Kennedy was promoted to Associate Professor at the University of Toronto, and was elected as the Cancer Care Ontario Gastrointestinal Lead with the Disease Pathway Management Program. Erin was also awarded a \$1 Million grant from the Canadian Partnership Against Cancer to improve care and outcomes for patients with rectal cancer across Canada (2013-2014).

In addition to numerous international talks, the Division has had high research productivity.

31 articles were published in 2010-2011, 52 published in 2011-2012, 38 published in 2012-2013, and 48 publications in 2013-2014.

## **Division of Orthopaedics**

**Peter Ferguson** helped launch the Competency-Based Curriculum (CBC) stream of the Orthopaedic Residency Program while serving as the Associate Program Director in 2010. He received the Ivan Silver Award from the University of Toronto Faculty of Medicine for Excellence in Creative Professional Development related to the new Competency Based Curriculum in the Division of Orthopaedic Surgery (2013-14).

**Oleg Safir** completed his Masters of Education and was promoted to Assistant Professor in 2009-2010. Oleg is also the co-Director of the new University of Toronto Young Adult Hip Clinic. He received the 2014 Award for Excellence in Postgraduate Medical Education at the University of Toronto in the category of Development and Innovation for development of the novel "Surgical Prep Camp" curriculum in the Surgical Skills Center.

**David Backstein** served as the Director of Undergraduate Education and Director of the Surgical Clerkship for the Department of Surgery, making significant improvements to the medical school's surgical curriculum (2009-10). He was selected as member of American Association of Hip and Knee Surgeons in July 2011.

**Jay Wunder** became the President of the Connective Tissue Oncology Society (2011-12).

**Paul Kuzyk** joined the Division as Surgeon-Investigator, at the rank of Assistant Professor in 2011.

The Division has been incredibly productive in terms of publications over the past five years. 44 articles were published in 2010-11, 78 in 2011-12, 39 in 2012-13, and 62 in 2013-14.

## Division of Urology

**Ethan Grober** received grants from the Medical Council of Canada, The Physicians' Services Incorporated Foundation (PSI), and The Association for Surgical Education (CESERT) to continue his investigations into the acquisition and evaluation of surgical skills, and particularly to determine the correlation between these findings and patient outcomes.

**Kirk Lo** was on the program committee for the Annual Meetings of the American Society of Reproductive Medicine and the American Society of Andrology (2010-2011). He won the A.W. Bruce Faculty Undergraduate Teaching Award from the Department of Surgery in 2013-14.

**Keith Jarvi** received a grant from the Canadian Cancer Society Research Institute, a patent for his findings, and a grant from the MaRS Innovation Proof of Principle Program to develop a test for commercialization. Keith is also on the editorial board of the Canadian Urological Association Journal (CUAJ) and is the secretary of the Society for the Studies in Male Reproduction. He completed his Presidency of the Society for Studies in Male Reproduction. Keith and colleagues published a landmark paper in Science Translational Medicine describing a non-invasive method for diagnosing the cause of male infertility (2013-14).

**Alexandre Zlotta** retains his high profile presence in urologic oncology. He remains an Associate Editor for European Urology and is on the faculty of the European School of Urology. He received the Basic Science Research Award from the University of Toronto at the 2011 Charles J. Robson Research Day; the EAU Platinum Award, and the Best Poster Award both from the European Association of Urology/European Urology in Paris, France (2011-2012). Alex was awarded the European Association of Urology's Platinum Award. Alex also received the Basic Science Research Award at the Charles J. Robson Division of Urology Research Day, and won three best poster awards at the European Association of Urology Meeting.

In addition to giving many international lectures, the Division has published many papers over the past five years. 18 papers were published in 2010-2011, 77 in 2011-2012, 25 in 2012-2013, and 45 in 2013-2014.

**Department of Surgery**  
*St. Joseph's Hospital*  
*University of Toronto*

FIVE YEAR REVIEW  
2009-2014



**Chris Compeau, M.D.**  
Surgeon-in-Chief, St. Joseph's Hospital  
University of Toronto

## 2009-2014

### Surgeon-in-Chief Report

Clinical excellence in surgery as well as an outstanding educational experience for undergraduate, graduate and post-graduate trainees has been the hallmark of the Department of Surgery at St. Joseph's Health Centre over the past five years. Annual surgical volumes have progressively increased in our priority programs (hepatobiliary, thoracic surgery, bariatrics, arthroplasties). Specifically we are a provincially recognized Level 1 centre for both thoracic surgery and hepatobiliary surgery and are a provincial centre of excellence for bariatric surgery. Our surgical manpower has grown with the hiring of five outstanding clinical surgeons (Dr. Maurice Blitz – thoracic surgery 2009, Dr. Shiva Jayaraman – general/HPB surgery 2010, Dr. Michael Ko – thoracic surgery 2010, Dr. Carlos Lopez – orthopedics/sports medicine 2013, Dr. Dustin Dalgorf – ENT/sinus surgery 2014).

### Division Heads

General Surgery	Paul Sullivan
Thoracic Surgery	Maurice Blitz
Orthopedic Surgery	Amr El Maraghy
Plastic Surgery	Craig Fielding
ENT	Rick Fox
Urology	Umesh Jain

## Education

Recognizing the historical importance of medical education at St. Joseph's Health Centre, the senior leadership and board of directors established the Department of Medical Education and Scholarship (DMES) in November 2012. Under the guidance of Dr. J. Maniate (Director of Medical Education) there has been an increase in the number of undergraduate, graduate and postgraduate medical trainees in our surgery program. In particular the Fitzgerald Academy in the University of Toronto, Department of Medicine has integrated St. Joe's into its core educational stream in Thoracic Surgery. We acknowledge and celebrate the outstanding contribution of educators within the department with annual divisional teaching awards which are voted on by surgical trainees. Many of our surgeons hold educational administrative leadership positions (Dr. Maurice Blitz – Director of Surgical Foundations, Department of Surgery, U of T; Dr. Ron Levine – Director of Postgraduate Education, Department of Surgery, U of T; Dr. Ian Witterick, Chair, Otolaryngology, University of Toronto; Dr. Chris Campeau – Chair, Examination Committee Thoracic Surgery, Royal College of Physicians and Surgeons

**Department of Surgery**  
*St. Michael's Hospital*  
*University of Toronto*

FIVE YEAR REVIEW  
2009-2014

**St. Michael's**  
Inspired Care. Inspiring Science.



**Ori D. Rotstein, M.D.**  
Surgeon-in-Chief, St. Michael's Hospital  
Professor and Associate Chair of Surgery, University of Toronto



## Preamble

St. Michael's Hospital (SMH) is a fully-affiliated hospital of the University of Toronto. It is a downtown hospital with 486 in-patient beds, 75,000 emergency room visits per year, in excess of 15,000 inpatient surgical procedures and an annual hospital budget of approximately \$500 million. The hospital is a Level 1 Trauma Centre. The Department has seven Surgical Divisions with thoracic surgery being represented within the Division of General Surgery. The Surgeon-in-Chief position and the Department were last

reviewed in 2009. The purpose of this document is to overview the activities in the Department of Surgery at St. Michael's Hospital from July 1, 2009 to June 30, 2014, a period which constitutes my past five-year term in the position of Surgeon-in-Chief.

With this context, I will try to overview the accomplishments of the Department over the past five years as well as articulate some of the ongoing challenges, both current and in the future.

### 1. Our Faculty

The Department of Surgery at SMH had 42 full-time active staff (including scientists) as of June 30, 2009. All full-time active staff at St. Michael's Hospital (SMH) have appointments at the University of Toronto. In addition to academic rank, The University of Toronto Department of Surgery has defined job descriptions for all faculty which articulate relative time dedicated to clinical work, research and teaching. These job descriptions include Surgeon-Teacher (20% research), Surgeon-Investigator (40%-60% research), and Surgeon-Scientist (70% research). The remaining percentage of activity beyond research consists of clinical care and educational activities. During the first 5 years of my term, recruitment significantly altered the academic flavour of our Department. On July 1, 2004 there were 28 active staff, all of whom had a job description as a surgeon-teachers except four faculty (14%) who had a job description of a surgeon-investigator. Not surprisingly, the Department was viewed as one which provided strong clinical care and teaching but was somewhat limited in its research capabilities, and hence its academic productivity. All recruitments require a formal search committee for selection, consisting of representatives from both the hospital and the University. The

percent of the Departmental members in each job descriptions has shifted considerably from 2004 and even from 2009(not shown). Among the 49 surgeons, there are 12 surgeon-scientists (24%), seventeen surgeon-investigators (35%) and 20 surgeon-teachers (41%). Several points are noteworthy in terms of elaborating on the recruitment process. All recruitments require a formal search committee for selection, consisting of representatives from both the hospital and the University. As a result, five of the recruits were from international sites, including the United States, Brazil, Saudi Arabia, Ireland and England. The Institution provided me with discretionary recruitment funds to support salary and research operating funds. The availability of these funds allowed me to leverage additional funding from the University, from the Research Institute, and from the Divisional Academic Funds. The financial support for new recruits has clearly been valuable in that it has allowed these individuals freedom from clinical duties thereby permitting protected time for research activities. During the past five years, seven surgeons have left the Department. Five surgeons retired (Drs. Tucker, Muller, Ameli, Koo and Mustard), and three pursued practice opportunities elsewhere (Dr. Nathens- Sunnybrook; Dr. Lossing-

Southlake; Dr. Cina-Italy). During the past five year period, we also recruited two full time scientists to bring the total number to six. In summary, the past five year period has been one characterized by considerable shift in the

makeup of the Department to one which has a better balance of clinical surgeons with a range of academic job descriptions.

## 2. Governance

### SMH Programmatic Structure

The hospital is divided into Programs for administrative oversight of clinical activities. Five of the major programs with their alignment with Department of Surgery divisions are:

*Mobility:* Orthopedic surgery

*Trauma/Neurosurgery:* Neurosurgery

*Specialized Complex Care:* General Surgery

*Diabetes Comprehensive care Program:*

Urology, Plastic Surgery

*Heart and Vascular:* Cardiac surgery and Vascular surgery

Otolaryngology, Ophthalmology and Obstetrics/Gynecology are separate Surgical Departments.

Each of the programs has a Medical Director (physician) and Program Director (administrative) to oversee activities and budget. The Medical Director of one of the Programs is a surgeon (Dr. Earl Bogoch- Mobility), while the remainder come from various other medical specialties. Input from the Surgical Services to the programs comes from surgical representation on each of the Program Councils. The Surgeon-in-Chief (SIC) does not sit in an official position on the Council of any of the five major programs, although Surgery is represented by Division Heads or their delegates. Issues arising in the programs are brought to my attention through interactions with Division Heads or the executive arm of Senior Management.

The operating rooms and Pre- and Post-operative care activities are managed as a separate Service Program called Perioperative Services (POS), which has its own budget and accountability to management. POS has a parallel governance with a Medical Director and Program Director. Obviously, interests of the major programs overlap considerably with those of POS. Over much of the past 5 years, the Medical Director of POS has been Dr. James Mahoney, Head of the Division of Plastic Surgery In the Operating room. As Surgeon-in-Chief, I sit on the Executive Council of POS and therefore am integrally involved in the decision making around OR activities. The Trauma Program has dual accountabilities- one to the hospital via the Trauma/Neurosurgery Program and the other to the Provincial government. While the Director need not necessarily be a Surgeon, a member of our Department has traditionally held this position and has continued to do so over the past 5 years (Dr. Najma Ahmed- 2004-6/ Dr. Avery Nathens 2006-2012, Dr. Sandro Rizoli 2013-present).

### Departmental Committees, Meetings and Leadership

Within the Department, we have monthly department-wide meetings, monthly meetings of the Division Heads and monthly meetings of the Education Council consisting of the Vice Chair of Surgery, Dr. David Latter (Cardiac), the Head of Undergraduate Education, Dr. Rob Stewart (Urology) and the Head of Postgraduate

Education, Dr. Timothy Daniels (orthopedics). The monthly Department meetings have precirculated agendas and are minuted in detail (available on request). The primary focus of these meetings is information dissemination. Each meeting includes an invited presentation on a topic of interest to Faculty (e.g. HBAM, clinical research infrastructure, Human Resources issues), an update regarding OR operations and a brief overview from the Divisions Heads of each of the Division's activities. The monthly Division Heads' meeting is intended to be higher level and feature more discussion of broader hospital and Departmental issues. These meetings have precirculated agendas and detailed minutes (available on request). The Education Council addresses primarily education issues within the hospital Department. Dr. Latter is the University Department of Surgery Vice-Chair of Education and his involvement in this group adds perspective to our discussions. This group has spearheaded a number of initiatives which we feel enhances the delivery of education in the Department,

particularly at the undergraduate (UG) level.

Our surgeons also have various positions at the hospital and at the University of Toronto. As noted, Dr. Bogoch is the Medical Director of the Mobility Program and Dr. Mahoney is the Director of Perioperative Services. Dr. Kenneth Pace is the President of the Medical Staff Association. Dr. Ralph George is the Director of the CIBC Breast centre and Dr. Rizoli is the Director of Trauma. Three of our surgeons are Program directors of their University Divisions (Dr. Latter- cardiac; Dr. Najma Ahmed- General Surgery; Dr. Robert Stewart-Urology; Dr. Julian Spears- Associate Program Director Neurosurgery). Dr. Latter is the Vice-Chair of Education in the University department, while I am the Associate Chair of Surgery in our University Department. Finally, Dr. Andras Kapus is the Associate Vice Chair of Research at the University Department. Dr. John Bohnen is Vice-Chair of Clinical Affairs at the University of Toronto Faculty of Medicine.

### 3. Departmental Clinical Activities

#### Overview

There are 15 Core OR's and 6 ambulatory ORs at the Institution. The Department of Surgery cases comprise approximately 70% of the total cases and hours in the operating room. Overall there has been a small rise in the total number of hours from 2009 to present (~2%) and a 5% increase in the total number of cases. This compares to 9% and 3% respectively for the period 2004 to 2009. General Surgery, Urologic Surgery, Orthopedic Surgery and Neurosurgery have risen over the past five years, while the reductions have occurred Cardiac Surgery, Vascular Surgery and Plastic Surgery. The increase in Orthopedic Surgery and Neurosurgery were predominantly related to the development of the "Wait Times strategy in Ontario" wherein institutions are given incremental funding

(above global hospital budget) to increase case activity in specific areas and hence reduce wait time. Similarly, General Surgery augmented its resource, through an increase in the oncology surgery and in bariatric surgery, both of which brought new resource through government funding. Vascular Surgery experienced an almost complete change in its faculty with the recruitment of new surgeons and the departure of one very busy surgeon, as an explanation for its reduction. Cardiac surgery experienced a modest reduction, although, in comparison to other hospitals in our University system, we have been able to sustain our numbers.

In the following sections, a short summary of the key activities of each of the Divisions/Programs will be provided.

### **Cardiac Surgery/Heart and Vascular Program**

During the past five years, the Division's numbers have been stable. However, this summer, we completed the search for a new cardiac who will join the Faculty next summer. As noted above, case number and hours have diminished. Concomitant with this reduction, there has been a shift in the case complexity, which now includes increased numbers in valvular heart disease. This has resulted in increased pressure on funding in the OR. There has also been shift in level of patient comorbidities over this period as well.

#### **Specific initiatives:**

1. The previous recruitment of Dr. Mark Peterson had profound influence on divisional clinical activities, and in particular augmented our activity in minimally invasive cardiac surgery. With Dr. David Latter and in collaboration with cardiologist Dr. Robert Chisholm, we have developed a percutaneous aortic valve program. In the past fiscal year (2013-2014), we performed 72 of these cases (71 in 12-13). We have also initiated a program in mitral valve clipping which is in its nascent stages. Funding for these two programs is partly through government sources (special application for support required) and partly through our Heart and vascular Program's existing resource. The recruitment of Dr. Bobby Yanagawa to our Division will bring further expertise in minimally invasive cardiac surgery to the Division.

Dr. Peterson has also worked closely with our Division of Vascular Surgery (see below) in promoting the Endovascular aneurysm repair (EVAR) program, particularly advanced activity such as thoracic EVARs including hybrid procedures.

### **Vascular Surgery/Heart and Vascular Program**

During the past five years, there has been significant evolution of the members of our Division of Vascular Surgery. Through international searches, we have recruited Dr. Tony Moloney (Ireland), Dr. Mark Wheatcroft (England) and our Division Head, Dr. Mohammad Al-Omran (Saudi Arabia). We have also recently recruited through a similar search process, Dr. Elisa Greco (Toronto) who will officially join our faculty in October 2014. The addition of these new surgeons balanced departures due to retirement or relocation (Retired- Dr Michael Ameli; Departed to Southlake Hospital- Dr. Alan Lossing). Obviously, these changes represent a considerable flux in the manpower of the division over the 5 year and not surprisingly, this has been stressful particularly for the junior surgeons who were starting their first faculty positions. With the addition of Dr. Greco, we feel that the Division is right-sized at present. To add to the mix, these manpower changes occurred in the setting of considerable transformation of delivery of Vascular Surgery services in the region. An agreement signed with the government in late 2005 established St. Michael's Hospital as a Centre of Excellence for delivery of vascular surgery care in collaboration with our partner hospital, University Health Network (UHN). This program began formally on February 1, 2006 when two surgeons from Toronto East General Hospital moved to St. Michael's Hospital to increase the faculty complement from 2 to 4. As part of this agreement, the four vascular surgeons entered into an alternative funding plan (AFP) with the government wherein base salary for each surgeon was guaranteed. The hospital was also provided with funding to increase vascular surgery volumes. The hospital agreed to provide alternate night coverage for vascular surgery emergencies in the Greater Toronto area, to provide additional resource in

the hospital to accommodate increase of volume by the new vascular surgeons, and finally to provide the government regular reporting of activity. University Health Network (UHN) and SMH instituted a shared on-call system in January 2006 wherein the surgeons at the two hospitals alternated 1<sup>st</sup> Call and if a 2<sup>nd</sup> Call was needed the other hospital would provide the backup. With this system, there were always two vascular surgeons on call for vascular emergencies referred through CritiCall Ontario everyday of the year. This call system led to a significant increase in the number of vascular surgery patients referred and accepted to the two hospitals through CritiCall each year (increase ~500%). The on call system also resulted in a 94.8% rate of acceptance of patients referred through this mechanism. The data further demonstrated that the Centres of Excellence at the two hospitals accommodated patients with a high frequency even when the patients originated from outside the local region.

### **Specific Initiatives:**

#### **Minimally invasive approaches to vascular surgery:**

**Endovascular aortic repair (EVAR):** In fiscal year 2004/2005, eight EVAR procedures were performed at the institution. This increased to a total of 123 by fiscal year 2008/2009 and from 2009 to 2014, our numbers have fluctuated between 81 and 117. We perform a mix of both “straight forward abdominal” EVAR but also in more complex thoracic EVAR, branched EVAR and fenestrated EVAR. The leveling off of these numbers is likely attributable to a number of factors including the change in our faculty (Dr. Lossing was a key provider) and also the fact that this technology is being increasingly adopted at other hospitals across the province. The development of this program prompted the

institution to make a major additional investment in capital by the construction of a dedicated angio-operating room. This was officially opened on October 20, 2009.

#### **Interventional and Diagnostic Radiology:**

As part of the development of this Division, our Division members now have the ability to perform peripheral arterial interventions in the Medical Imaging Department. The division members also have a regular slot in the vascular laboratory performing diagnostic Doppler procedures. The addition of these two activities in the past 5 years to the armamentarium of our vascular surgery division members has facilitated care delivery by our Division.

The advances in Vascular surgery program over the past five years was a result of multiple factors. Two aspects stand out. First, Institutional support for the development of the EVAR program was pivotal. In the early years, this new technology was funded through existing budget. As the technology evolved, the Heart and Vascular program leadership was spearheaded a successful proposal to the Ministry of Health and Long Term Care (MOHLTC) for new funding for this program. Further, the commitment to building a dedicated angio-suite in the operating room allowed our surgical teams to perform these procedures in an optimal setting. Second, the close collaborative interaction between medical imaging and vascular surgery, with particular support from the previous Head Dr. Andrew Common and the current Chief, Dr. Tim Dowdell, has enhanced the development of this program. While the evolution of aortic surgery toward endovascular approaches has caused a rift in the relations between medical imaging and vascular surgery in many institutions, it has served to strengthen the relationship at St. Michael’s Hospital and as we move forward, the

medical imaging physicians continue to work in close collaboration with the vascular surgeons in the angio-operating room. Included in this collaboration is an agreement between the Division of Vascular Surgery and Interventional Radiology for cross training of Vascular Surgery fellows.

### **General Surgery/ Specialized Complex Care**

The Division of General Surgery has evolved considerably over the past five years. Much of this change has occurred through targeted recruitment in a number of areas. The major strengths in the Division include: Trauma/ Critical Care/ Acute Care Surgery; Cancer care particularly in colorectal and breast surgery; Foregut and Minimally Invasive Surgery including Bariatric Surgery, and Breast. Dr. John Bohnen has an international reputation in the field of inguinal hernia repair. Four of the surgeons attend in the Intensive Care Unit (either the medical/surgical or trauma/neurosurgical ICU)

### **Specific Initiatives**

#### **1. Trauma and Acute Care Surgery Service (TACS)**

In 2008, the Division established an Acute Care Surgery Service designed to manage urgent/emergent referrals from both outside and inside the institution. Alignment of this program with the trauma team has helped to consolidate clinical care as well as academic foci. During the past 5 years, there has been some change in personnel due to departures, retirements and focused recruitment. Dr. Nathens departed to become the Chief of Surgery at the Sunnybrook Health Sciences Centre and Dr. Mustard retired. We were fortunate to recruit Dr. Sandro Rizoli to St. Michael's Hospital to be Chief of Trauma and the Head of the TACS service. Dr. Joao de Rezende-Neto was recruited from Brazil as a trauma/critical care surgeon. The Division now

has 4 individuals with acknowledged expertise and international profile in the Critical care Surgery field (Rizoli, Marshall, de Rezende-Neto, and Rotstein). The TACS surgeons receive referrals from across the province for the management of complex intraabdominal inflammatory/infectious problems as well as soft tissue infections. The number of patients referred to the ACS service through the Emergency Department and from inpatients services has progressively increased. This reflects the increasing numbers of patients evaluated in our emergency department and either admitted directly to the ACS service or to the General Medical Service.

St. Michael's Hospital is a level 1 Provincial Trauma Centre sharing trauma call with Sunnybrook Hospital. The Trauma Program is not formally under the auspices of General Surgery, but the new recruit to General Surgery, Dr. Sandro Rizoli, is also Trauma Director and as such, trauma surgery is very much integrated into the General Surgery activity including OR resource, recruitment, allocation of TACS rotations, sharing of faculty. In 04-05, we received 488 Level 1 trauma cases (ISS $\geq$ 16). This number was 566 in 08-09, and 541 in 13-14.

Over the past 5 years, we have strongly promoted harmonization of trauma-related issues with Sunnybrook Hospital. This includes: harmonization of clinical care protocols, sharing of quality assurance activities, maintenance of a joint fellowship program with a single intake process, rotation between sites and a common evaluation process, establishment of a joint University of Toronto visiting professorship program. The University of Toronto Trauma Committee (which includes leadership from both hospitals) meets quarterly and is committed to continued efforts to harmonize activity

## **2. Promotion of Surgical Oncology**

In the Strategic Plan of 2004, the hospital recognized Oncology as being a significant resource user in the Institution and introduced the concept of a “Cross Hospital theme” which would straddle the hospital programs to recognize the multidisciplinary of cancer care. Surgical Oncology has become one of the foci of this theme. This initiative dovetailed with the initiation of the Provincial Wait Times Strategy. In this strategy, the government contracted the hospital to increase its annual number of cancer cases performed in the area of breast cancer, colorectal cancer and gastric cancer. The Division has complied well with this initiative and in doing so has crystallized some areas of clinical expertise. In order to facilitate delivery of care, we have established a formal arrangement with our neighbouring cancer centre, Princess Margaret Hospital, to ensure expert and timely access to radiation oncology.

**Breast cancer surgery:** Over the past 5 years, under the leadership of Dr. Ralph George, the Director of the CIBC Breast Centre, multidisciplinary breast cancer care has evolved considerably. The Division recruited two fully trained surgical oncologists with expertise and interest in breast cancer. Dr. Jory Simpson joined the faculty in 2013 and Dr. Adena Scheer will begin officially as active staff on October 1, 2014. She is also trained in oncoplastic surgery. Breast Cancer cases increased from 263 in 04-05 to 336 in 08-09 (27% increase) to 402 cases in 2013-2014 (20% increase). We comply well with the Cancer Care Ontario quality guidelines in terms of wait times for surgery (Wait time 2), pathology turnaround time, and participation in multidisciplinary tumour boards.

**Colorectal Cancer Surgery:** With the

recruitment of Dr. Sandra deMontbrun in 2012, we now have three colorectal surgeons on our Faculty, providing both laparoscopic and open approaches to surgery. The focus of this care is on the treatment of rectal cancers. Our case numbers rose from 136 in 2004-2005 to 157 in 09-10 and then remained relatively stable (141 in 13-14). Like breast cancer care, the program has weekly multidisciplinary tumour boards (including radiation oncology by teleconference from Princess Margaret Hospital), has Wait times which adhere to the provincial standards, and has acceptable pathology turnaround times. Dr. Marcus Burnstein has recently inaugurated a program in Transanal Endoscopic Microsurgery (TEMS) using funds received from a donor. This should increase the scope of our practice in colorectal surgery.

## **3. Gastrointestinal Minimally Invasive surgery including bariatric surgery**

Over the past five years, the division has evolved its expertise in advanced. Dr. Grantcharov has established himself as a skilled foregut laparoscopic surgeon and spearhead with Dr. Rotstein the development of our bariatric surgery initiative in 2010. St. Michael's Hospital is part of the University of Toronto Collaborative which involves two intake Centres and 5 surgical sites. Our surgeons see patients through the Toronto Western Hospital intake site and operate on them here at St. Michael's. Patients return to the intake centre for subsequent care. Our site performs between 150-180 surgical cases per year and is fully active in the collaborative. The collaborative underwent a positive external review in 2012. In addition to providing high quality patient care, this program has provide an excellent educational opportunity especially with respect to developing advanced laparoscopic skills.

## **Urologic Service/ Diabetes Comprehensive Care Program**

The Division has expertise in endourology/ stone disease, renal transplantation as well as a lesser focus in genitourinary oncology. There have been two new recruits in the Division of Urology over the past 5 years. Dr. Jason Lee has specific expertise in laparoscopic and robotic surgery, while Dr. Ordon is a broadly trained general/laparoscopic urologist with a clinical interest in image-guided ablation of small renal tumours.

### **Specific Initiatives**

#### **1. Lithotripsy**

The hospital has one of the Provincial Lithotripsy machines. Surgeons from across the Greater Toronto Area have privileges in the Lithotripsy unit. The presence of the unit, however, has afforded our faculty an opportunity to gain clinical expertise as well as investigative renown in the area.

#### **2. Robotics**

St. Michael's Hospital was the first hospital at the University of Toronto to have a surgical robot. The Da Vinci Robot, purchased in 2007 is used by urology as well as the Department of Obstetrics and Gynecology. In addition to using this technology for prostatic cancer surgery, our urologists have utilized this technology to facilitate surgical care in stone disease, particularly ureteral and ureteropelvic strictures.

#### **3. Renal Transplantation**

The renal transplant program at St. Michael's Hospital is the second largest in Canada after our sister hospital in Toronto, the University Health Network. We perform both cadaveric donor transplantation as well living donor transplantation in a ratio of approximately 70:30. Our surgeons perform laparoscopic

organ retrieval in our living donor program. The diminution over the past 5 years has been primarily related to a reduction in the liver donor program. The Division collaborates fully with the multi-organ transplant group at the University Health Network and the University of Toronto.

### **Plastic Surgery/ Mobility**

This is our smallest Division with three full time faculty. Until this year, our third surgeon was an individual with courtesy privileges who worked here intermittently helping predominantly with call. With the recruitment of Dr. Karen Cross as the third fulltime surgeon, the part time surgeon will no longer work here. Manpower issues were among those raised at the last review and I feel that the addition of a third full-time member should address this issue for the present time. The clinical expertise in the Division is in the area of general plastic surgery, breast reconstruction, and wound care.

### **Specific Initiatives**

#### **1. Complex Wound care**

Under the direction of the Dr. James Mahoney, the Division heads a significant complex wound care management group which provides cross hospital care to patients with wound problems. Dr. Mahoney is recognized provincially for his work in this area and leads an interdisciplinary team of Advanced Practice nurses and research assistants. Dr. Cross has a translational research focus in wound healing which should augment the clinical care provided by the service.

#### **2. Breast reconstruction.**

The divisional work in this area focuses on the use of pedicled flaps, implants and oncoplasty. We do not offer reconstruction with free flaps.



## **Neurosurgery/Trauma-Neurosurgery Program**

Since 2009, there have been two retirements from the Division of Neurosurgery (Drs Muller and Tucker) and one recruitment (Dr. Sunit Das). Dr. Das is a surgeon-scientist with a clinical and research interest in neuro-oncology. The Division of Neurosurgery has three areas of clinical expertise. These are neuro-oncology, neurovascular disease and spine. The Division has selectively recruited in these areas to augment its capabilities.

### **Specific Initiatives:**

#### **1. Neuro-oncology**

Neuro-oncology is an active participant in the Wait Time initiative. As a major referral centre for brain tumours, the Division has progressively increased its annual surgical oncology numbers from 330 in 04-05 to 360 in 08-09 (9% increase) to 430 cases in 2013-2014 (~20%) increase. The vast majority of these are brain cancers, with a small number of spine tumours. This increase coincides with substantial upgrading in the neuro-imaging capabilities of the operating room. We also inaugurated an awake craniotomy program in collaboration with Anaesthesia commencing in 2012 and have performed 19 cases. During awake craniotomy, neuropsychological testing is performed to map the functional critical areas of the brain. Thereby helping to determine the safest corridor to pursue tumor resection.

#### **2. Neurovascular**

The Neurovascular program at St. Michael's Hospital was formally started in 2006. It is multidisciplinary involving neurosurgery, neuro-radiology and neurology. Its area of focus is on the management of hemorrhagic stroke. Since the program's inception, growth has been significant with the number of aneurysm management growing by 20% per annum. In real

terms, the number of aneurysms that underwent endovascular repair in 2006 was 60 compared to approximately 120 in 2008-2009 and 170 cases in the past fiscal year. The complexity of cases has also increased and novel approaches to dealing with larger and more complex aneurysms have been pioneered by our team. The multidisciplinary neurovascular clinic evaluates 1500 patients per year. This program has proven to be a model for collaborative interactions between surgery and medical imaging.

#### **3. Spine**

In July 2004, the hospital did not have a surgeon with expertise in spine. Subsequently, one neurosurgeon (Howard Ginsberg) and an orthopedic surgeon (Henry Ahn) have been recruited to spearhead the spine activities in the institution. We have recently completed a formal search process to identify our next spine surgery recruit. A significant contributor to the increase in volume relates to an increase in thoraco-lumbar spinal trauma. The group has integrated minimally invasive approaches and modern technology in the operating room. Thanks to these approaches, Lumbar disc surgery is now routinely done as an outpatient. With the successful implementation of 3-D spinal navigation, the group has become a national teaching centre for 3-D spinal navigation. Finally, we have pioneered the use of ultrasound in spinal surgery and incorporation of Japanese minimally invasive surgical techniques.

#### **4. Neurosurgery as a provincial resource**

With a finite number of neurosurgical centres in the province and a commitment by the Ministry of Health and Long Term Care (MOHLTC) to ensure that emergent neurosurgical cases are managed in a timely fashion and importantly, remain within the province of Ontario, there has been an increasing need to accommodate

neurosurgery transfers to our hospital. St. Michael's hospital is an active and willing participant in the MOHLTC "Life or Limb" policy for transfer of surgical emergencies and participates in the "Last Call" rotor for the Greater Toronto Area. The latter of these involved the allocation of new resource to help accommodate this increase in patient load.

### **Orthopedic Surgery**

The Division of Orthopedic Surgery has recruited one individual since 2009. Dr Aaron Nauth is a surgeon-scientist with clinical expertise in trauma surgery and a research interest in the use of stem cells in fracture healing. He has added to our capacity to provide high quality clinical care for our trauma patients.

### **Specific Initiatives;**

#### **1. Hip and Knee Arthroplasty**

The number of these cases has fluctuated considerably over the past decade. This is a result of the Provincial Wait Times initiative program cases were allocated to institutions . This program presently falls under the Quality based procedures (QBP) program and the numbers appear to have stabilized (11/12- 728; 12/13- 809; 13/14- 768). Three of our surgeons are actively involved in hip and knee arthroplasty. Of note, Dr. Emil Schemitsch has a robust program in metal-on-metal hip arthroplasty

(11/12- 59; 12/13- 33; 13/14- 47). The hip and knee arthroplasty program is extremely efficient in achieving their annual numbers- this is to a significant extent due to excellent collaboration between the Division members, the operating room administration and the Mobility program.

#### **2. Foot and Ankle Surgery**

Dr. Timothy Daniels is internationally known for his expertise in Foot & Ankle surgery. Over the past five years he has successfully integrated an ankle arthroplasty program into his service.

#### **3. Sports Medicine and Complex Upper Girdle surgery**

This program is headed by Dr. Michael McKee and Dr. Daniel Whelan. The Sports medicine component of this program is integrated with the broader University of Toronto effort centred at Women's College Hospital. Dr. Whelan now has regular operating room time there.

#### **4. Trauma**

All members of the Division are active participants in the Trauma program. With the recruitment of Dr. Jeremy Hall in July 2009, expertise in the area of pelvic and acetabular surgery has been added. Dr. Whelan has coordinated the development of a multidisciplinary team to deal with major knee disruptions.

### **4. department education activities**

St. Michael's Hospital is well regarded among university hospitals as a desirable location for undergraduate, postgraduate (PG), and fellow education. The best data are available for Undergraduate (UG) Education. The University sends its UG students to hospital based "Academies" for their clinical rotations. The FitzGerald Academy at St. Michael's Hospital is the home of our UG students. While Surgery-

specific data are not available, the popularity of the FitzGerald as a preferred site for training is overwhelming. The FitzGerald is currently the top choice for clerkship training at the University of Toronto. The UG students cite the quality of teaching and commitment by teachers, positive learning culture and the quality of the Academy staff as being significant themes underlying their positive experience.

## **1. Education Governance in the Department:**

Given the University of Toronto system, it is not surprising that the governance of education in the hospital department is a somewhat complex matrix. PG education is coordinated from the central University Department of Surgery office though each of the University Divisions. UG education is more distributed with the Fitzgerald Academy serving the UG students at St. Michael's. The hospital Department works in conjunction with these bodies to coordinate the delivery of teaching to the students.

As noted above, the members of this Council are Dr. David Latter, Vice Chair of Surgery at St. Michael's Hospital and Vice Chair of Education in the University Department; Dr. Timothy Daniels who is responsible for postgraduate education; and Dr. Rob Stewart, responsible for undergraduate education. Each month this group convenes to discuss education issues in the institution. We regularly evaluate Teaching Effective Scores (TES) scores of the faculty and clerkship debriefings. Most importantly, when problems are identified one of more of these individuals is tasked with addressing the problem. These may include private meetings with individual teachers with recommendations for improvement, including attendance at workshops to improve the skill set of individuals with consistently low TES. The data is also discussed with individual Division Heads particularly when a particular individual is problematic. The Division Heads have identified a point person responsible for UG and PG education in each of their Divisions.

Ms. Michelle Dominey is jointly employed by the Department and the Hospital to serve in the role of administrator of educational activities. In this role, she has coordinated UG and PG education in the institution. In the UG domain,

she organizes orientation each new rotation, coordinates the assignment of individual mentors and oversees Dr. Stewart's "Pizza with the Professor" rounds. She also debriefs the students regularly and has served as a sounding board for various other complaints and worries of students and residents. She has also been responsible for organizing assignment of faculty to student seminars, as well as monitoring attendance and collating data for feedback on a year to year basis. In the PG domain, Ms. Dominey plays a lesser organizational role as the majority of resident activities are coordinated centrally in the University Department. However, she organizes bi-yearly orientation sessions for the residents, coordinates year end social gatherings and is generally available for trouble shooting on resident issues. Ms. Dominey reports to me for her annual activity review. My participation on this Council ensures that I am intimately involved in the teaching mandate of the Department.

## **2. Teaching evaluation:**

The University Department of Surgery provides feedback regarding teaching through the calculation of the "Teaching Effectiveness Score (TES)". This score, used for both UG and Postgraduate (PG) trainees is based on student evaluation of multiple parameters including operating room teaching, ward teaching, formal teaching, challenging environment good rapport, provision of feedback. These scores are fed back to the individuals as well to the SIC on a yearly basis. Because of a need for confidentiality, there is generally a one-year lag in receiving this data. The scores are rated: Outstanding (18.5-20); Excellent (17.0- 18.49); Average (14.0-16.99); Below average (<14).

## **Teaching awards**

Teaching awards were established to recognize the important contributions of

the faculty and residents to our educational mandate. The Department now has six teaching awards to recognize excellence in undergraduate education, postgraduate education, continuing education, best resident teachers and an award for mentoring. Plaques recognizing excellence are clearly displayed in the operating room. The awards are also presented at the Hospital-wide Annual Physician Education Achievement Awards, hosted by the VP of Education and attended by the President/CEO, member of the hospital Board and the Dean of Medicine. This highlighting of education achievement has heightened the profile of education in surgery as well as across the hospital.

In addition to our “own” teaching award program, our surgical teachers have been recognized for their excellence in teaching beyond our own Department. Several are noteworthy in terms of the magnitude of recognition for individual teaching accomplishments. Dr. Ralph George was selected for the Fitzgerald Academy Master Teacher Award. Dr. Bob Mustard, now retired, was a perennial recipient of a Postgraduate Education Award. Dr. Marcus Burnstein received the prestigious Colin Woolf Award and the University of Toronto Surgical Skills Award in 2012/2013. Finally, Dr. Rob Stewart has been recognized with a number of awards for his prowess in UG education.

### **Other Departmental Initiatives:**

#### **1. Undergraduate Education:**

Under Dr. Rob Stewart’s leadership, our department augmented the regular University of Toronto UG curriculum with a number of other opportunities for students with the view that these might bring the surgical experience closer to the learner, hopefully make it less intimidating and more fun.

These include:

- **“Pizza with the Professors”** rounds, in which each student rotating through surgery is mandated to present a case to their colleagues, typically a rotation group of 10. These cases are ones that piqued their interest, but overwhelmingly are topics that demonstrate sound surgical principles. The students present a 10-minute case with relevant literature review, there is a period for questions, and then cases are uploaded to the U of T portal where all students will have access to these Powerpoint® presentations as part of an e-learning library that is rapidly growing. As students do not rotate through all subspecialty areas, access to these presentations by their peers offers an opportunity to review areas of surgery that they have not been exposed to. It has been very well received, and the best presentation by a student receives a prize from the U of T bookstore. The presentations are otherwise not graded and the atmosphere is relaxed and provides an opportunity to talk about principles of surgery in a very non-threatening and encouraging environment

- **“Lunch with the Chief”**: Each group of students rotating through surgery share a lunch hour with Dr. Rotstein. This is an opportunity to get to know the students at the Fitzgerald Academy and hears any concerns that they have about the curriculum or specific rotations. The message that the learners receive is one of support from the highest level of our Department, and a serious commitment to make their experience the best it can be. These discussions also focus on career planning and in particular, discussions about opportunities in both academic and non-academic medicine. Insights from these discussions with learners are brought to our Education Council in the Department of Surgery for discussion and action as appropriate

- **“Popular Science”** The Popular Science

lecture series is one which was inaugurated by Dr. Rotstein and has been a very successful endeavour aimed at bringing “bench to bedside” concepts to the undergraduate learners in surgery. It is hoped that these types of experiences of seeing real basic observations translate to clinical practice will stimulate some of the UG enthusiasts to pursue a career in academic medicine. Attendance at these by UG students has been somewhat variable, but it is hoped that more regular attendance by the students can be achieved.

**- Surgical Lead in Undergraduate Education (SLUE):** At the suggestion of the University Department, each of the hospitals has been encouraged to develop a SLUE program. The intent is to help UG students navigate their way through rotations on each of the services. Under Dr. Stewart’s leadership, our hospital department has embraced this initiative, appointing a SLUE director in each Division and having an evening event on July 2, 2013 where experiences were shared. Not all divisions have embraced this initiative with equal enthusiasm, with General Surgery and Vascular Surgery taking the lead. It is anticipated that there will be increasing enthusiasm and participation in this program

## **2. Faculty Development**

As Surgeon-in-Chief, I am personally committed to playing an important role in the development of our faculty members. During the first three years of faculty appointment, I meet with each of the new faculty on a one-two monthly basis to speak informally about a variety of issues, including practice problems, academic opportunities and personal issues. However, we have also promoted faculty development in other ways:

## **The initiation of Faculty Development**

### **Evenings**

Under the direction of Dr. Tim Daniels, we have had faculty development evenings with the stated purpose of enhancing physician skill set for the broad range of issues that might arise in practice. The format is unique in that it is an “all faculty-only faculty” event that combined a social evening with educational activities. Tim’s creativity in putting together these sessions is worthy of recognition.

### **Enrollment in Faculty development opportunities**

There have been a number of other activities in which surgeons have been supported with the goal of enhancing personal career development. These have included participation by our faculty in teaching programs, leadership development programs, Quality sessions, and courses on management.

- Unique Educational events sponsored by the Department

Landmark Lecture Series: The Division of Cardiac Surgery has sponsored a series of high profile lectures over the past five years. This series, conceived of by Dr. Subodh Verma, has attracted a series of internationally-renowned scientists with a general interest in cardiovascular disease to Toronto. The intended audience is broad, consisting of physicians and surgeons from both the University and the community as well as research scientists, students and fellows- Perioperative Services Rounds

The Department of Surgery has been the driving force behind the creation and presentation of monthly perioperative services rounds. By intention, these rounds which are attended by faculty, house staff and nursing from perioperative services have been broad based in their content. As one can appreciate, they range from discussion of the hospital’s strategic plan by the CEO through to more eclectic topics

such as the role of music in the development of technical skill. Ms. Michelle Dominey is the administrative assistant for these Rounds. Dr. Mark Peterson and more recently, Dr. Mark

Wheatcroft, have been responsible for the topic selection, speaker selection and overall coordination of these rounds.

## 5. Research and Innovation

The academic face of the Department has changed considerably over the past five years. Targeted recruitment of clinician-scientists and non-clinician scientists was the predominant contributor to this change. Since 2009, of the 15 new clinicians added to the department, 13 have advanced academic degrees (7/15 PhD; 6/15 MSc). The two without advanced degrees are in the process of completing their MSc degrees and one of the MSc recruits is in the midst of her PhD training. As shown, the new surgeon recruits were weighted towards job description of Surgeon scientist (6/15) and Surgeon investigators (7/15). With the addition of 2 full time scientists in the past year to our Department, we now have recruited a total of 6 non-clinician scientists to our Department to complement the research activities. The grant funding database of the University of Toronto Department of Surgery is attached for review. The total funding to the department in 2008/2009 was approximately \$4 million and in every year since then has exceeded \$6 million per year. It is noteworthy that this listing includes both peer review and non peer review sources of funding. Importantly, the number of members of our Department holding at least one Research Grants from the Canadian Institutes of Health Research, the major federal funding agency has increased from 6 in 2004 to 11 in 2014 (held during the period of 2009-2014). Peer reviewed funding is also derived from The Heart and Stroke Foundation, The Kidney Foundation of Canada, the Physicians' Services Incorporated Foundation, the Ontario Neurotrauma Foundation and the Canadian Cancer Society. We have also been the recipient

of infrastructure grants from the Canadian Foundation for Innovation.

The Li Ka Shing Knowledge Institute (LKSKI) opened in the fall of 2010. The two tower centre houses a basic research centre in the west tower (now called the Keenan Research Centre) and the east tower dedicated to education and Knowledge Translation. The Waters Simulation Centre is located in the east tower. St. Michael's Hospital has also fostered the development of the Applied Health Research Centre (AHRC). This unit focuses on various aspects of clinical trials and health services research and represents a resource for our Department. The general buzz around research at the Institution has definitely aided in my recruitment of excellent clinician-scientists to our Department.

Research reports have the potential to be exhaustively long. To economize on space and time of the reviewer, I will focus on highlights of research activity and refer the reader to the University of Toronto Surgery web site which provides the Annual Report of all hospitals in the system over the past 5 years. The University of Toronto surgery website link is: <http://www.surg.med.utoronto.ca>

The Grant Funding database is available on request.

### 1. Research chairs:

It would be an understatement to suggest that Chairs are an essential element of recruitment and retention of outstanding faculty and in our case, this is clearly true as all Chair holders are

international leaders in their fields. We have held 8 Chairs in the Department over the past 5 years

- a. Dr. Avery Nathens: Tier 2 Canada Research Chair in Trauma Systems (now relocated to Sunybrook Hospital)
- b. Dr. Subodh Verma: Tier 2 Canada Research Chair in Vascular biology
- c. Dr. Nancy Baxter: Tier 1 Chair in Health Services research from Cancer Care Ontario
- d. Dr. Loch Macdonald: Endowed Keenan Chair in Surgery
- e. Dr. Sandro Rizoli: Endowed Chair in Trauma Surgery
- f. Dr. Emil Schemitsch: Term Chair in Fracture Care
- g. Dr. Tim Daniels: Term Chair in Foot and Ankle Research
- h. Dr. Julian Spears: Term Chair in Cerebrovascular and Brain Surgery (mixed clinical and research Chair

Dr. Teodor Grantcharov has been nominated for a Tier 2 Canada Research Chair. This is currently under consideration at the CIHR.

### 1. Research foci

Our major areas of research and innovation are:

**1. Trauma/critical care.** Trauma/critical care research is performed across multiple divisions with a concentration in General Surgery and Orthopedic Surgery. In trauma/critical care, methodologies include a. fundamental research in the areas of infection, inflammation and bone regrowth, b. clinical trials in both surgical infection and fracture management, c. Health Services Research in trauma care, and spine surgery and d. Knowledge Translation including trauma systems, fracture management, injury prevention and complex wound care. Our new surgeons- Dr. Karen Cross (innovative approaches to wound imaging) and Dr. Joao

Rezende (resuscitation) are just setting up their research groups.

**2. Vascular disease.** In this area research activity spans fundamental research, clinical trials and health services research. The fundamental science is focused in the areas of endothelial cell biology as well as vasospasm. On the clinical research side, activities focus on innovation (neurovascular/endovascular) and on development and use of large multicentre registries. This activity spans several divisions including neurosurgery, cardiac surgery and vascular surgery.

**3. Oncology:** The Institution has traditionally been involved in medical oncology clinical trials especially in the area of breast cancer. With the arrival of Dr. Nancy Baxter, institutional profile in health services research in the area of colorectal oncology and screening has expanded considerably, a conclusion supported by Dr. Baxter's publication record and grant capture. To support our effort in neuro-oncology, Dr. Sunit Das was recruited as a clinical surgeon and has a robust basic research group in the biology of glioblastoma. To facilitate his research, his research group has been intentionally located with like-minded researchers at the Labatt Brain Tumour Research Centre at the Hospital for Sick Children.

**4. Simulation/Education:** Prior to 2007, the use of the Simulation Centre by the Department of Surgery was very limited. With the recruitment of Dr. Teodor Grantcharov, there has been increasing surgical input into the Centre. In particular, a comprehensive training and assessment curriculum for skills in basic and advanced laparoscopic surgery has been designed and implemented and several randomized trials assessing the impact of these curricula on

performance in the operating room have been performed. Dr. Grantcharov is considered an international leader in the use of simulation as an adjunct to technical training in the operating room. He has now initiated his studies adapting the use of “black box technology” to the operating room where his group will study the genesis of errors during surgical care. Our new recruit, Dr. Sandra de Montbrun is completing her PhD under Dr. Grantcharov’s supervision. She has already established herself as a leader in the use of technical testing of surgical graduates as part of the certification of colorectal trainees under the auspices of the American Board of Colorectal Surgery. As noted above, a listing is available via the web on the University of Toronto Site.

**5. Non-clinician scientists:** A number of individuals are appointed in the Department of Surgery as full time scientists without clinical activities. Since 2004, the Department has recruited 6 full time scientists to work within various research groups. In General Surgery, four scientists, Dr. Andras Kapus, Dr. Katalin Szaszi, Dr. Gregory Fairn and Dr. Wolfgang Kuebler have joined the Department. In broad terms, the research interests of these four fundamental

scientists relate to infection/inflammation and wound healing. Their expertise in Bioimaging brings important methodological skills to the Department and in the institution. All four hold funding from the Canadian Institutes of Health Research as well as at least one other major granting agency. Dr. Tom Schweizer is a cognitive neuroscientist who is part of the Division of Neurosurgery. His expertise meshes well with other Departmental members in the study of brain tumours, head injury, and effects of alcohol on the cerebellum. Finally, Dr. Krishna Singh is a recently appointed scientist at the Institution. He has a longstanding collaborative interactions with the Divisions of Cardiovascular and Vascular Surgery. His appointment as a scientist will consolidate his work with this group over the long term. Publications: The annual publication record of the department is included in the University report. As a summary of activity, in the most recent Annual Report of the University Department, in 2013, **310** publications were attributed to our St. Michael’s Hospital Department of Surgery, compared to **173** publications in 2009.

## 6. Knowledge Translation

Quality patient care is one of the guiding principles in healthcare and is a major focus at St. Michael’s Hospital. One of the barriers to providing best care is the gap in knowledge between what is known in the scientific literature and actual practice, the so-called “ Knowledge Translation gap” In 2011, our Department initiated a “KT-Quality Program” to help our Divisions catalyze projects which would serve to improve patient care. There were several components of this program. First, we discussed this program with each of the Divisions to gain their support of this initiative. This involved financial support from each of the divisions to

help to hire a KT practitioner. Second, the KT practitioner worked with each of the Divisions to identify a feasible KT project for that group. Third, the KT practitioner developed the components of individual projects and worked with identified members of the Divisions and also other health care personnel to initiate the necessary intervention. Finally the KT practitioner reported back to the Divisions and also to an oversight committee established by me to ensure the projects were on track. The program is now in its third year and has, in many ways, been successful. Projects have been initiated in 5 of the seven divisions; a number of



projects have been completed and have had clear impact on patient care (or in the process of doing so); some of the projects have received external funding and finally, we have had some scholarly

publications emanate from the work.

## 7. Fundraising

In our healthcare system, fundraising has become an important aspect of hospital operations allowing us to support clinical care, research and education beyond that provided by the government. Surgical care is a high profile activity in our institution and without naming individuals, I think that all have been supportive of the Foundation's effort by supporting specific projects and also by participating in the larger campaigns over the past decade. I have personally been a strong supporter of the philanthropic efforts of our Institution through personal donation and also through a commitment to aiding the fundraising effort. I do so both through personal belief but also because I feel that it is one of the components of Physician leadership in academic medicine. To this end, I have taken on the role of Head of the Physician Engagement Committee, a group convened to help physicians understand more

about the importance of fundraising and the ways to help the Foundation's efforts in doing so. As part of this activity, we undertook a qualitative research project to gain a more in depth understanding of grateful patient donation in our health care environment. Specifically, we hoped to gain insight into the perspectives of physicians regarding the approaches they believe lead to successful or unsuccessful patient philanthropy to SMH, to better understand the barriers and enablers associated with fostering grateful patient philanthropy and to learn about physicians' relationship with the SMH foundation and the role the foundation played in their philanthropic efforts. The learnings from this work (presently under review) have helped to guide both the physicians and the Foundation in their fundraising efforts.

## 8. Challenges and Opportunities

The Department of Surgery has grown considerably over the past five years and in my view, the clinical and academic activities have flourished.

### 1. Clinical Domain:

A number of significant issues face the Department in the clinical arena.

a. Over the past decade, we have recruited with great success and have integrated new surgeons, to a significant extent into the existing resource. While we do not anticipate an urgent need to continue the same pace of recruitment, there is continuing pressure on the OR and ward resource. This may be further

exacerbated having to deal with hospital wide budgetary issues. While we have been able to generally preserve the OR budget over the past 5 years, future pressures may look to the operating room as a potential source for savings. Several other factors may impact on the OR budget: 1. The inauguration of the quality based procedures (QBP) program may impact on the cost per case remuneration received. To this point, we have not been impacted by QBP in Hip and Knee arthroplasty and in fact, have benefitted from our efficiency. 2. The per cost case of advanced interventions (heart valves, joint prostheses, novel approaches to care e.g. TAVR) is steadily increasing. This

will require budgetary diligence to manage. The Institution has a strong track record of going to government for separate funding for many of these areas. 3. Pressure of urgent/emergent cases due to our role as a provincial centre for care in a number of surgical areas. Several strategies are being considered to address the current and future perceived pressures. We are currently beginning an operational review of the operating room to ensure that we are right sized and operating at optimal efficiency. We have also considered in the past the possibility of decanting cases outside of the institution. We already perform much of our arthroscopic surgery at Women's College Hospital. The potential role of "surgicentres" to deal with high volume, low intensity cases should be considered. The development of the Kensington Centre for cataract surgery is an example of a successful government initiative. We should explore these as well as other opportunities outside of the main hospital.

b. The operating room is increasingly burdened with urgent/emergent cases. This competes with and disrupts a busy elective operating room schedule. The tension is further exacerbated by Provincial Wait time imperatives for elective cases. While our hospital is generally a strong performer, we have areas where we have problems including hip arthroplasty, anorectal disease, foot and ankle surgery. We have had reasonable success at balancing urgent and elective cases, but as the burden of urgent cases increases, it will be essential to resolve this conflict, as it is not sustainable from a patient care standpoint or from a staff satisfaction point of view. Potential solutions include reconsideration of nursing shifts to accommodate different and perhaps more flexible scheduling and consideration

by each of the services to proactively shift elective time to urgent blocks. Clearly, we will have to work with nursing and anaesthesia to address this issue.

c. Quality is one of the Corporate Principles of our current strategic plan (2011-2014) and will undoubtedly remain a primary focus of the Institution going forward. Obviously, each surgeon is focused on delivering the highest quality of care for his/her patients. However, it will be critical to systematize this focus and, in so doing, align it with the hospital activities. Some divisions have done this well. Involvement in the KT program in the department (see Section 6) has augmented care in several of the divisions and hopefully sustaining this program will be a priority of this activity. Data acquisition and feedback to stakeholders is a key aspect of monitoring quality of care, devising interventions to improve care, following up on the success of the intervention and ensuring it is sustained over time. In the Department, we have had some success in the use of registries to help with this process. The most notable is the Trauma Registry, which ensures accountability of the quality of care of our unit. We are now in the early stages of implementing registries in both cardiac and vascular surgery, and have also made progress in the initiation of the NSQIP program for other services. The successful implementation and appropriate use of these databases will help ensure the delivery of quality care in our department. Clearly, it will require leadership, focus and commitment from our Department to take advantage of these opportunities. Obviously, this is just one aspect of the multiple facets of Quality, but, in my view, should be a priority of the Department over the next five years.

- d. Wherever we have initiated partnerships with other institutions/facilities over the past decade, there has been an overall benefit to the provision of care for our patients. We should continue to seek these out and advocate for them when appropriate.

## 2. Education

- a. The UG and PG educational experience will remain a priority of our Department. While our evaluations are in the very good to excellent range, we should aspire to continuous improvement in this area. This is clearly a challenge as TES scores are a somewhat subjective measure of quality of the teaching experience for our students. Several approaches will be used. First, within the next six-12 months, the Education Council members will meet with the VP of Education of the hospital to get an accounting of the strengths and weaknesses of the Education program in our Department. We will then convene a retreat attended by SMH surgical faculty, selected UG and PG students and educators to discuss the existing circumstances and propose innovative approaches to improving education in the Department. Other initiatives: (i) The SLUE program has had some success at our hospital, but its profile as a mechanism for improving the UG experience could be improved. (ii) Our Department is committed to supporting the University Longitudinal Integrated Curriculum as a pilot this coming year and as it expands in the future. We will look for opportunities for our faculty to improve individual teaching skills (e. though the Centre for faculty Development), with a view to further enhancing this experience for the students. (iii) We will explore the feasibility of a more longitudinal experience for our PG trainees who are rotating here for > 3 months. This program has been very successful in

the General Internal Medicine Division at St. Michael's Hospital. (iv) Finally, I see as a mandate of our University to develop the medical leaders of the future. We current have a regular faculty event focused on leadership and I will propose to extend this to Senior resident and fellows.

- b. Faculty Development: In my view, this remains a relative weakness of our University. In my role as Associate Chair of Surgery in the University, I have been given the responsibility to oversee the Faculty Development portfolio. The mentoring program in place at present within our Department is currently undergoing revision and by the end of next year, we anticipate that we will have a robust program, with trained Faculty mentors and accountability to the Department for this program. Within the hospital, we will continue our faculty development evenings as a means of augmenting the skill sets of our Surgeons. In addition, as a Department, we need to take advantage of various programs available to our faculty including the Education Scholar programs through the Centre for Faculty Development as well as various leadership programs available for both junior and senior faculty.

Addressing the late career needs of our senior surgeons is one of the foci of our University Faculty Development initiative. At the University level, the Chair, Dr. James Rutka is gathering ideas from various hospitals with a view to hosting a mini-retreat to share thoughts around retirement. At a local level, we have had some success in transitioning senior surgeons to retirement. It is a given that this discussion should start early, but the involvement of Division Heads in the planning process has been and will continue to be important.

c. Use of the Simulation Centre: The Waters Simulation Centre offers the opportunity for trainees to augment skills in a simulation setting. In our University Department, we have expertise and interest in using simulation to enhance clinical training. A recent summit at the University has concluded that a coordinated approach to accessing simulation facilities across the University would optimize its use in clinical training. Obviously, the Department is very supportive of participating in this initiative and will work with the Director of the Simulation, Dr. Doug Campbell to ensure that our hospital is involved.

### **3. Research:**

a. Financial issues. In my view, salary support for faculty to protect time for research is the single most important challenge for Departmental leadership. Granting agencies are increasingly cutting back their awards programs as a means of protecting their funding for operating grants. This directly affects junior and mid level investigators, who are most dependent on these funds for time protection. Similarly, hospital and University sources are challenged in the current economic environment. While practice plans

and Academic Financial Plans compensate to some extent for this shortfall, these sources are stretched and generally insufficient. We have had some success in increasing the number of Chairs in the Department over the past 5 years and as Chief, I will continue to strongly advocate for bringing these Chairs to our Department In my role as Head of the Physician Engagement Committee,

b. Alignment of Research in Surgery with the directions of the LKSKI. As for clinical programs, alignment of research activities in the Department with that of the Research Institute is key to ensuring that we have the financial and physical resource to expand our academic activities. The Research Institute has established two themes for translational research: neuroscience and Critical Care trauma, with a plan for a third theme in cardiovascular disease. It is vital that our Department takes advantage of the unique opportunities for patient-oriented research provided by clinician-scientists.

## **9. Closing remarks and Personal perspectives:**

This is an exciting time at St. Michael's Hospital. Our unique roles as care providers for our local community and as a Provincial resource for the delivery of Critical Care services demand that we provide the highest quality care in a timely and efficient way. We are engaging in a new Strategic Planning process which will undoubtedly reiterate the importance of this objective. The new patient tower and the expansion of the Emergency Department will be

key enablers of our goals. Both the research and education mandates of the hospital have been strongly enhanced by the building of the LKSKI and through its integration with the hospital. Upon reflection of the specific goals I set for the Department at the beginning of my term, I am greatly pleased with how the Department has evolved and what the Department and its members have accomplished since then. We have built a vigorous Department with strengths

in clinical care, education and research. Our external profile has increased considerably over this period. The opportunity to interact with all levels of management has been extremely educational and profoundly satisfying. My surgical colleagues have been both collegial and supportive and have made my job a pleasure. Budgetary issues will undoubtedly exert continued pressure on the way we do business. However, even in constrained environments,

I believe that excellence will be the driver for gaining support for our initiatives. Finally, I am very thankful to the leadership at the Hospital for sharing and being supportive of my vision for the development of our Department over the past five years and I look forward to helping our Department participate in the shaping of the future of St. Michael's Hospital.

**Department of Surgery**  
*Sunnybrook Health Sciences Centre*  
*University of Toronto*

FIVE YEAR REVIEW  
2009-2014



Sunnybrook Health Sciences Centre

**Avery Nathens, MD, PhD, FRCSC**  
Surgeon-in-Chief, Sunnybrook Health Sciences Centre  
Professor of Surgery, University of Toronto

# SUNNYBROOK HEALTH SCIENCES CENTRE

## DEPARTMENT OF SURGERY 2009-14

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### Overview

The Department of Surgery at Sunnybrook is comprised of 7 Divisions: General Surgery, Orthopaedic Surgery, Urology, Plastic and Reconstructive Surgery, and Neurosurgery. In 2012, the Division of Cardiovascular Surgery divided into two separate divisions: Cardiac Surgery and Vascular Surgery. The Surgeon-in-Chief transitioned from Dr. Robin Richards, who held the position since 2001 to Dr. Avery Nathens in Sept 2012.

Sunnybrook is home to the Ross Tilley Burn Centre and the Tory Trauma Centre, the largest burn and trauma centres, respectively in Canada. It is also home to the Odette Cancer Centre, the 6<sup>th</sup> largest cancer centre in North America. There are approximately 15,000 surgical cases per annum and this volume of surgical activity, coupled with an extraordinarily busy emergency department has resulted in tremendous bed pressures. In 2009, the hospital initiated the “Drive to 95% occupancy”, with a push toward more outpatient activity. To date, occupancy remains a major challenge and a distraction from more strategic activity.

Over 2009-2014, significant investments were made in expanding the M-Wing, with a fully integrated breast centre finally coming to fruition in 2012. The Louise Temerty Breast Cancer Centre provides patients with expanded facilities for breast care and fosters greater collaboration in the areas of imaging, clinical care, research and trials.

The Department of Surgery initiated participation in ACS-NSQIP in 2013, and now

has a significant focus on quality improvement with the hiring of a surgical PI coordinator, 30-d mortality reviews, and number of initiatives borne through data from ACS NSQIP. It is recognized for these activities and was one of the few institutions rolled into the provincial NSQIP collaborative in early 2015, while others were required to compete for funding.

The Department has hosted several faculty development opportunities, including Crucial Conversations (2012/13) and leadership day focusing on the Art of Conflict Resolution with expert mediator Gary Furlong in 2013/14. These events were very well received and served as an excellent model for improving communication and teamwork within the Department.

Divisional activities are outlined below:

### Cardiac Surgery

**Division Head: Dr. Gideon Cohen**

#### *Overview*

The Division is comprised of four cardiac surgeons and has a focus on minimally invasive cardiac surgery, with the largest programs in Transcatheter Aortic valve Implantation and Mitral Clip in the greater Toronto area. **Dr. Bernard Goldman** (earlier Division Head and Surgeon-in-Chief) received the Order of Canada for his contributions to cardiac surgery in 2010. **Dr. Gideon Cohen** took over as Division Head from **Dr. Stephen Fremes** in 2013. Within the Division, **Dr. Gideon Cohen** was appointed Program Director in the University Division of Cardiac Surgery (2011), **Dr. George Christakis** was appointed Departmental Director of

Undergraduate Education (2012) and **Dr. Stephen Froles** was appointed as the inaugural Dr. Bernard S. Goldman Chair in Cardiovascular Surgery (2012). **Dr. Fuad Moussa** was appointed as the Undergraduate Lead in the Department of Surgery at Sunnybrook (2013) and was the recipient of the Peters-Boyd Academy Clerkship Teaching Award in 2014.

#### *New appointments/departures*

**Dr. Fuad Moussa** was hired in 2010 at the rank of lecturer and job description of surgeon teacher with a focus on surgical simulation. He has since been promoted to Assistant Professor (2013).

#### *Major University-related initiatives*

The Division was one of the first groups participating in the University of Toronto Cardiac Surgery Databases as early as 2013/14, an opportunity for risk adjusted benchmarking with other Toronto cardiac centres. The Division also participates in the new Toronto Aortic Collaborative, designed to distribute referred cases across the city, review outcomes and provide opportunities for research.

## **Vascular Surgery**

**Division Head: Dr. Andrew Dueck**

#### *Overview*

The Division is comprised of 4 surgeons and has a major focus on endovascular procedures, particularly limb salvage using peripheral angioplasty. The Division also shares in the care of a large volume of patients with the most complex aortic disease with the Division of Cardiac Surgery. This relationship was formalized in 2014, with multidisciplinary pre-review of cases, an established management plan and collaborative procedures in the

operating room. The Division became a separate academic and financial unit from the Division of Cardiac Surgery in 2012, at which time **Dr. Dueck** assumed the role of Division Head after a national search.

In 2013, the Division developed formal relationships with two community hospitals through a Memorandum of Understanding: North York General Hospital and Mackenzie Health. This MOU assures cross coverage and credentialing across the three sites and assures ongoing referrals for the most complex cases to Sunnybrook. **Dr. Dueck** is the Division Head for all three sites in what is a single vascular division.

#### *New appointments/departures*

**Dr. Giuseppe Papia** (2010) joined the Division of Vascular Surgery and the Department of Critical Care Medicine at the rank of Assistant Professor as a Surgeon-Teacher with special interest in minimally invasive vascular reconstruction, patient safety and quality assurance. He has since left the Department of Critical Care Medicine to focus on his vascular practice.

#### *Major awards/recognition*

**Dr. Robert Maggisano** was named the Maggisano Chair in Vascular Surgery to enhance the development and evaluation of less invasive image-guided interventions in 2011.

**Dr. Dueck** received the Peters Boyd Award for Clerkship teaching (2010/11) and the Undergraduate Teaching Award within the Department of Surgery at Sunnybrook over 13/14.

#### *Major University-related initiatives*

Up until 2014, the Division of Vascular



Surgery was not well integrated into University activities. In 2014, the Division began participation in the shared fellowship program. Member of the Sunnybrook division also work closely with Division members at St. Michael's Hospital for the most complex aortic cases.

## **Division of Urology**

### **Division Head: Dr. Ron Kodama**

The Division of Urology is comprised of 5 surgeons and one scientist with two areas of focus: prostate cancer and reconstructive urology. **Dr. Ron Kodama** was appointed head of the Division of Urology, taking over the position from **Dr. Laurence Klotz**. **Dr. Kodama's** expertise in post-trauma urethral reconstruction draws referrals from across the province; **Dr. Klotz** has received international acclaim for demonstrating that watchful waiting for prostate cancer is safe, while **Dr. Sender Herschorn** has accumulated remarkable surgical expertise in reconstructive urology, resulting in referrals from across Canada. **Dr. Robert Nam's** clinical focus is prostate cancer and has an active research laboratory. He was appointed leader of the GU site group in 2009. The Division also has within it a scientist (**Dr. Vasu Venkateswaran**) with a focus on prostate cancer research.

#### *Major awards/recognition*

Dr. Kodama won the WT Aikins Award for teaching performance in 2009/10. **Dr. Kodama** was appointed pre-clerkship coordinator for the University Department in 2011/12. In 2013/14, he received the University Award for Excellence in Postgraduate Medical Education and a Peters-Boyd Academy Clerkship Teaching Award.

**Dr. Nam** received the Postgraduate Urology Teaching Award for Surgical Training (2009/10) and was appointed the Ajmera Family Chair in Urologic Oncology to pursue his research focus on the molecular genetics of prostate cancer in 2011/12.

**Dr. Sender Herschorn** was awarded the 2010 Life Time Achievement Award in recognition of "significant contributions and leadership in the field of voiding dysfunction" by the Society of Urodynamics and Female Urology. He was also appointed Chair of the Departmental Appointments Committee in 2010/11 and continued in his final year as the Chair of the University Division over that same year. **Dr. Sender Herschorn** received the F. Brantley Scott Award from the AUA in 2013/14 for his contributions to reconstructive urology.

**Dr. Laurie Klotz** was elected as an Honorary Member of the American Urological Association in 2009/10 and was chair of the Chair of the World Uro Oncology Federation and Editor-in-Chief of the Canadian Urological Association Journal in 2010/11. He won the Lister Prize at Gallie Day in 2013/14, recognizing his outstanding and continuing research productivity of international stature. He also received the Society of Urologic Oncology Medal from the American Urological Association (AUA) for significant achievements in the field.

#### *New appointments/departures*

None

#### *Major University-related initiatives*

The Division participates in a city-wide fellowship program in the area of uro-

oncology. The Division at Sunnybrook is the sole division among the major academic centres in the city without a robot. However, the Division initiated a cooperative robotic surgical program located at the Toronto East General Hospital in 2011/12, which appears to be highly functional. The lack of an on-site robot potentially is a threat to further recruitment of uro-oncologists.

## Neurosurgery

**Division Head:** Dr. Todd Mainprize (interim)

The Division includes 7 neurosurgeons, with area of foci including traumatic brain injury, neurovascular (endovascular in particular), and skull base tumours. The two neurovascular neurosurgeons work in collaboration with interventional radiology to support an interventional stroke program at Sunnybrook. Urgent spine activity is coordinated between the three orthopaedic spine surgeons and the Division of Neurosurgery who all participate in spine call. **Dr. Michael Schwartz** transitioned from his role as Division Head in 2013 to fulfilling a role primarily in the research domain. **Dr. Mainprize** has been interim Division Head since that time. The Division has a research focus that aligns closely with the work of imaging scientists at Sunnybrook Research Institute and includes MRIgFUS in essential tremor and Parkinson's disease, white matter tractography in tumors, MRIgFUS for tumor ablation and blood brain barrier disruption, and blood oxygen level-dependent (BOLD) cerebrovascular reserve in trauma and subarachnoid hemorrhage.

Since 2013, the hospital has invested heavily in resources to better support emergency neurosurgical care. This investment has resulted in Sunnybrook's Division of Neurosurgery to participate fully in a shared call rota across the

Toronto neurosurgical centres and increased emergency surgical volumes by approximately 30%.

### *Major awards/recognition*

**Dr. Leo Da Costa** and his team were the only Canadian research group to be awarded a grant from a partnership between the National Football League and General Electric to support research in mild TBI.

### *New appointments/departures*

**Dr. Nick Phan** was appointed as a Surgeon-Investigator in 2009/10 at the rank of Assistant Professor with a focus in traumatic brain injury.

**Dr. Victor Yang** was appointed to the Division of Neurosurgery in 2013 as a surgeon scientist at the rank of Associate Professor with a clinical focus in endovascular neurosurgery. As an engineer, he also holds a position as a scientist at Sunnybrook Research Institute (Physical Sciences platform) where he focuses on applying biophotonics to improve surgical navigation in spine procedures.

### *Major University-related initiatives*

The Division participates in the University of Toronto Spine program, a collaborative between the University Divisions of Orthopaedic Surgery and Neurosurgery to integrate spine care, education and research across the city.

## General Surgery

**Division Head:** Dr. Natalie Coburn

The Division of General Surgery is comprised of 16 members and one scientist with several areas of focus including trauma, breast and melanoma, colorectal cancer, and

hepatobiliary surgery. The Division is very well aligned with the institutional priorities (trauma, colorectal cancer, breast cancer), which has enabled significant recruitment. Leadership transitions over this time interval included Dr. Andy Smith who handed the baton on to Dr. Natalie Coburn in 2011. Dr. Smith was appointed Chief of the Odette Cancer Centre and Regional Vice President of Cancer Care Ontario at that time and then moved on to an Executive Vice President Position at Sunnybrook in 2013. Dr. Calvin Law was identified as the inaugural chairholder of the Hanna Family Chair in Surgical Oncology Research at the Odette Cancer Centre in 2010 and was appointed leader of the GI Site Group at the Cancer Centre. He went on to head the Division of Surgical Oncology in 2011 from Dr. Sherif Hanna and then took over the position as Chief of the Odette Cancer Centre from Dr. Smith in 2013. **Dr. Frances Wright** was appointed the Head, Breast Cancer & Melanoma Surgery, Temerty Breast Cancer Centre in 2013.

**Dr. Fred Brenneman** completed a ten-year term as Trauma Program Chief in 2009 and was recognized for his successful leadership of the Program. Dr (and Colonel) **Homer Tien** succeeded him as Medical Director of the Tory Regional Trauma Centre.

#### *New appointments/departures*

**Jean François Boileau** joined the staff of the Division of General Surgery with a special interest in the treatment of breast cancer in 2009 and returned to his home in Quebec in 2012.

**Dr. Paul Karanicolas** in 2010/11 was appointed as a Surgeon-Scientist in the Division of General Surgery with special interest in hepatobiliary cancer management and health services research and clinical trials in surgical and hepatobiliary oncology.

**Dr. Avery Nathens**, a surgeon scientist and Director of Trauma from St. Michael's Hospital was recruited in 2012 as the new Surgeon-in-Chief with a clinical focus on trauma surgery and quality and has a strong health services research background.

**Dr. Shady Ashamalla** was recruited to the Division at Sunnybrook in 2012 as a clinician teacher with a focus on colorectal cancer and simulation.

Dr. **Sandro Rizoli** left the Division to take on the role as Trauma Medical Director, St. Michael's Hospital.

**Dr. Nicole Look Hong** was recruited to the Division of General Surgery in 2013/14 as a surgeon investigator with a clinical focus on surgical oncology, breast cancer and melanoma. Dr. Look Hong holds a position as an Associate Scientist at Sunnybrook Research Institute (Evaluative Clinical Sciences platform), where she focuses her work on improving cancer care efficiency through economic analyses and systematic evaluation of new technologies.

**Dr. Junaid Bhatti** was recruited as a scientist at Sunnybrook Research Institute (Evaluative Clinical Sciences platform) in 2014 with a focus on injury epidemiology, particularly the relationship between obesity, motor vehicle crashes and injury.

#### *Major awards/ Recognition*

**Dr. Calvin Law** received a Peters-Boyd Academy Teaching Award (2009)

**Dr. Homer Tien** was promoted to the rank of Colonel in the Canadian Armed Forces (2010) and received the Order of

Military Merit by the Governor-General at Rideau Hall in 2011. In 2012, he became the inaugural chairholder of the Canadian Forces Major Sir Frederick Banting Term Chair in Military Trauma Research.

**Dr. Frances Wright** received the Bruce Tovee Award for excellence in undergraduate education for 2010/11.

**Dr. Darlene Fenech** receiving the Bruce Tovee Award for excellence in undergraduate education for 2013/2014

**Dr. Sherif Hanna** embarked on a sabbatical in Egypt to develop a surgical residency program and received a special award at the Harrison Dinner for his longstanding service to the Department of Surgery. He was also the recipient of the Leo Stevens Excellence in Leadership award for his contributions as head of surgical oncology and Division Head, General Surgery.

In 2013, **Dr. Claire Holloway** was recognized for her system-level contributions to Cancer Care and has joined CCO as the inaugural Provincial Clinical Lead, Disease Pathway Management, where she has been charged with developing and supporting the evolution and execution of the Disease Pathway Management (DPM) approach and the Diagnostic Assessment Program.

**Dr. Avery Nathens** received the Lister Award for research productivity in 2013 and the Charles Tator Surgeon Scientist Mentoring Award in 2014 and was the recipient of the Peters-Boyd Academy Clerkship Teaching Award. Dr. Nathens leadership in policy development led to him being awarded the University of Toronto's

Carolyn Tuohy Impact on Public Policy Award (2014). Dr. Nathens was also named the de Souza Chair for Clinical Trauma Research (2014).

#### *Major University-related interactions and initiatives*

**Dr. Darlene Fenech** co-directs the MMMD second year course for undergraduate medical students.

The Division supports the University of Toronto Surgical Oncology Fellowship and is a major training centre for these fellows.

**Dr. Frances Wright** was appointed Program Director for this University-wide fellowship in 2009.

In 2013/14 **Dr. Shady Ashamalla** hosted TORSO-tech, a one day teaching and simulation-based course featuring live surgery and simulation in order to transfer knowledge to practicing surgeons. This educational endeavour was sufficiently novel that CTV News featured this event as a model for knowledge transfer to practicing surgeons.

The Division supports the University of Toronto Trauma Program led by **Dr. Nathens**, which was conceived in 2011 to coordinate trauma-related activities across the University. This includes a shared fellowship program, QI and education activities, and annual trauma conference. The Program received support for a named lectureship (the "Tile Lecture") in 2014, which supports a visiting professor for the last University Grand Rounds of the academic year. Dr. Marvin Tile is credited in creating the first trauma centre in Canada at Sunnybrook and is a former Chief of Surgery at Sunnybrook.

## **Plastic and Reconstructive Surgery**

**Division Head: Dr. Paul Binhammer**

The Division of Plastic and Reconstructive Surgery focuses their activity on craniofacial reconstruction, hand trauma and burn care. The Division is comprised of 5 plastic surgeons and 4 burn surgeons. The burn surgeons provide care to patients in the Ross Tilley Burn Centre (RTBC). **Dr. Marc Jeschke** was recruited from Galveston, TX as Medical Director of RTBC in 2009/10, who shepherded the unit through a successful site visit by the American Burn Association, which led to verification (the first in Canada) in 2011 and then reverification in June 2014.

### *New appointments/departures*

**Dr. March Jeschke** was recruited as a surgeon scientist and Medical Director of the Burn Unit in 2010.

**Dr. Laura Snell** was appointed in 2010 at the rank of Assistant Professor as a surgeon-investigator having received a Master's degree in Clinical Research Methods from Columbia University. Her clinical focus is breast reconstruction.

**Dr. Joan Lipa** was recruited from UCLA as a surgeon investigator in the 2011 at the rank of Associate Professor. Her focus is breast reconstruction and together her and Dr. Snell work closely with the breast surgical oncologists to deliver comprehensive care to this population.

**Dr. Manuel Dibildox** was recruited as a burn surgeon at the rank of Assistant Professor with a job description of surgeon investigator in 2011. He was to complete his MSc through the Institute for Health Policy,

Management, and Evaluation focusing on outcomes after burn injury.

### *Major awards/recognition*

**Dr. Oleh Antonyshyn** received the William K. Lindsay Faculty Research Mentor Award in 2010 and in 2012. This award is presented to the faculty member in the Division of Plastic and Reconstructive Surgery in recognition of their significant contributions to the nurturing of plastic surgery residents' research.

**Dr. Marc Jeschke** was awarded the George Armstrong Peters Prize in 2013. This award is to a young investigator who has shown outstanding productivity during his/her initial period as an independent investigator as evidenced by research publications in peer reviewed journals, grants held, and students trained.

**Dr. Oleh Antonyshyn** led a medical mission to the Ukraine in 2014 to address the injuries and necessary education to support medical care subsequent to the Euromaidan demonstration.

## **Orthopaedic Surgery**

**Division Head: Dr. Hans Kreder**

This Division of 17 surgeons and one scientist has activity spanning both the Bayview site and the Holland Centre. The Division has three areas of focus: the management of orthopaedic trauma, the provision of spine care, and arthroplasty. Virtually all arthroplasty activity occurs at the Holland Centre. In 2010/11, a surgical program funded by the Workmen's Safety and Insurance Board (WSIB) was initiated at the Holland Centre for patients with shoulder, elbow, hip and knee problems. While staffed primarily by Sunnybrook surgeons, several staff from other academic health science

centres help support the program. Dr. Jeffrey Gollish oversees activity within the arthroplasty program, recognized for its efficiency and throughput across Canada. Internationally, the orthopaedic surgeons are very well recognized and active in the AO Foundation. Further, they are involved in a large number of randomized controlled trials to identify best practices in orthopaedic trauma care.

#### *New Appointments/departures*

**Dr. Richard Jenkinson** was appointed as a Surgeon-Teacher in the Division of Orthopaedic Surgery at the rank of Lecturer in 2010. His clinical focus is orthopaedic trauma. He subsequently was promoted to Assistant Professor and changed his job description to a surgeon investigator in 2014.

#### *Awards/Special Recognition*

**Dr. Richard Holtby** received the Surgical Skills' Centre Distinguished Educator Award for 2009/10.

**Dr. Albert Yee** received a Faculty Award for Excellence in Postgraduate Medical Education for Development and Innovation (10/11). Albert Yee was selected as one of two 2013 ABC Travelling Fellows by the Canadian Orthopaedic Association. This travelling fellowship allows for the educational exchange of young orthopaedic surgeons selected by the American, British, Canadian, New Zealand, Australian and South African Orthopaedic Associations. Dr. Yee along with **Dr. Cari Whyne** received the Charles Tator Mentorship Award for 2011/12. That same year, Dr. Yee also received the prestigious Eduard Samson award from the Canadian Orthopaedic Foundation for his work on the treatment of

spinal metastasis.

**Dr. John Murnaghan** received the Donald Richard Wilson award for excellence integrating CanMEDS roles into a Royal College Training Program in 2011/12.

**Dr. Markku Nousiainen** was the recipient of the 2013 PGME Award for Excellence in Development/Innovation for his work in the implementation of the competency-based curriculum in orthopaedic surgery.

**Dr. Hans Kreder, Dr. David Stephen, and Dr. Richard Jenkinson** were awarded the Orthopaedic Trauma Association Bovill Award for best paper in 2013/14.

#### *Major University-related interactions and initiatives*

**Dr. Robin Richards** completed a ten-year term as Chair of the Departmental Promotions Committee in 2011.

**Dr. Terry Axelrod** was appointed Director of Continuing Education for the Department of Surgery in 2009/10

**Dr. Albert Yee** is co-director of the University of Toronto integrated spine program since its inception in 2008/9. This program integrates clinical care, research, teaching and educational activities with respect to spine across the academic health science centres in Toronto.

**Dr. Markku Nousiainen** was appointed Associate Program Director for the University Division of Orthopaedic Surgery in 2011 with responsibility for the Division's competency-based curriculum.

**Department of Surgery**  
*The Hospital for Sick Children*  
*University of Toronto*

FIVE YEAR REVIEW  
2009-2014

**SickKids<sup>®</sup>**



**Christopher Caldarone, M.D., FRCSC**  
Surgeon-in-Chief, The Hospital for Sick Children  
University of Toronto

## Current Division Heads:

<b>Glen Van Arsdell</b>	Cardiovascular Surgery
<b>Agostino Pierro</b>	General and Thoracic Surgery
<b>James Drake</b>	Neurosurgery
<b>Martin Gargan</b>	Orthopaedic Surgery
<b>Christopher Forrest</b>	Plastic and Reconstructive Surgery
<b>Martin Koyle</b>	Urology

## 1. OVERVIEW OF DEPARTMENTAL ACTIVITIES

The Hospital for Sick Children (SickKids) is Canada's largest and premiere Paediatric Academic Health Science Centre. SickKids is often compared with London's Great Ormond Street Hospital, Boston Children's Hospital, and Children's Hospital of Philadelphia. SickKids treats the sickest and most complex children in Canada. Comparators, where available, place the quality of care among the best in the world. SickKids has a world-renowned Research Institute (RI) with more than 480 faculty engaged in all types of basic, clinical, and educational research. SickKids is consistently more successful at the Canadian Institute for Health Research (CIHR) (the Canadian "National Institutes of Health or NIH equivalent") than the national funding rate and receives more funding than the University of Western Ontario and Queen's University combined. Many of the clinical faculty are world-renowned scientists in their own right. The hospital educates medical students, residents, fellows, graduate students and performs Continuing Medical Education (CME). Many of the Fellowship Programs are the largest in North America and attract fellows from around the world. The faculty at SickKids are leaders in their respective disciplines.

To further define direction, the focus for 2009-2014 was driven by two retreats. The 2009 retreat centred on communication and patient flow and 2013 retreat on Innovation. We have made substantial progress in these areas, some of which are described below.

We have worked hard to reduce administrative cancellations of elective surgery. With the expansion of the Critical Care Unit from 27 to 33 beds and the creation of separate Pediatric and Cardiac Units, the cancellation rate for "administrative reasons", which peaked at 6% per month in 2007 is now down to approximately 1% per month.

A three-phase Surgical Safety Check List (SSCL) was implemented in 2012. Individual patients are discussed briefly when they enter the room, specific details confirmed during the time-out and post-operative plans confirmed during the debriefing. We have exceeded our 2013-14 target of 97% complete for all three phases. This effort, led by Dr. Darius Bagli as Associate Surgeon-in-Chief, received enormous and vital support from the nursing staff.

A "Commitment to Safety" by the surgeons had also been developed. This commitment to safety has become part of the reappointment process and signed by each surgeon on an



annual basis. Many important safety initiatives including POCU Quality/Safety Rounds have also been developed. Dr. Darius Bagli, using POS Innovation Fund, developed a smartphone Safety and Near-Miss POCU reporting web application.

Quality is of prime concern at SickKids. However, the dilemma is to define quality and then measure it. In the area of quality, our primary focus has been on reduction of surgical site infections (SSI) including the appropriate use of perioperative antibiotics, reduction of pain, and improvement in access.

Although described in more detail in draft manuscripts, in the area of reducing SSI the first step was to revise our guidelines for antibiotics. Guidelines available in 2005 were incomplete for all specialties and did not consider patients with specific allergies to preferred antibiotics. Revised and expanded evidence-based guidelines were developed, reviewed, and endorsed by all specialties. The next step was for a task force, led by Drs. Annie Fecteau and Igor Luginbuehl, to develop a series of processes to improve the use of perioperative antibiotics. The expanded guidelines were posted on the E-formulary, in each OR, and on every anesthetic cart. In addition, KidCare computerized order entry that came online in November 2008 was modified to indicate the appropriate use of antibiotics. The use of antibiotics was also included in the surgical pause. A specific compulsory Rounds was created for residents and fellows to orient them to the use of guidelines. Beginning in 2009, surgeons have been receiving “real-time” automated email informing them of patients who did or did not appropriately receive antibiotics. These efforts are ongoing and we repeated an audit in the spring of 2009 and 2013 demonstrating substantially enhanced appropriate antibiotic

use. Other aspects of reducing SSI, including appropriate methods of hair removal and patient warning, have been completely addressed. While compliance with antibiotics remains below ideal, improved antibiotic use has resulted in a contemporaneous drop in surgical site infection rates. The use of the antibiotic prophylaxis guideline is associated with a 30% drop in the SSI.

Concurrent with this effort to improve the use of antibiotics, a strategy was developed to expand the determination of surgical site infections through the use of health records. Monitoring of SSI currently relies on Infections Control Practitioners (ICP), which due to limited resources, monitor infections only in orthopaedic spine surgery, neurosurgery and cardiac surgery. A preliminary comparison has shown neither ICP nor health records are completely accurate methods for identification of infection. The revisions to coding practice in health records are ongoing leading hopefully to a comprehensive and accurate assessment of SSI for all disciplines.

Pain management is another major quality initiative which has been addressed in several ways. First, an institution-wide approach modeled after the “Blue print for Patient Safety” has led to an institutional commitment to improved pain management. Second, the creation and approval of the Pain Management Centre has further integrated clinical care, teaching and research in the area of pain medicine. Third, the creation and expansion of the Acute Pain Service, Chronic Pain Service, and Palliative Care have enhanced our ability to address access to care. Fourth, the Department of Anesthesia has been renamed the Department of Anesthesia and Pain Medicine in recognition of the key role of the Department and the importance of reduction in pain for children, increasing pain education throughout

the hospital. Fifth, specific initiatives, including the creation of practice guidelines for patients receiving foot surgery and shifts in practice to using blocks, enhanced post-operative pain management. At an institutional level, the percent of patients with moderate or severe pain in the previous 24 hours has decreased from 46 to 25%.

We participate in provincial benchmarking through the Provincial Wait Time Initiative and the Surgical Efficiency Target Program. SickKids was certified in 2011 as the second most efficient teaching hospital in Canada. While efficiency can always be improved (particularly turnover), cost per worked hour (labour and equipment costs/worked hours) has increased since 2006 from \$73 to \$93. Over the same period the cost of an OR hour (labour and equipment costs/number of OR hours) has decreased from \$420 to \$410. Thus, the fixed costs of running the operating rooms has increased by 26% but due to the efficiency efforts, the cost of conducting the average operation has dropped by 4%.

SickKids out-of-window rates, Wait 2 defined as time waited between decision to treat date to surgery date, peaked at 46% but has steadily dropped and is now 13.7% as of April 2015. When we began our efforts to reduce our wait list we had approximately 3,000 children waiting for surgery at SickKids -- this list is now at 2,170 as of April 2015.

Dr. Walid Farhat developed a clinical mentorship policy whereby new surgeons for the first six months are required to discuss all elective surgical cases with a senior staff member. In addition, new surgeons are encouraged to have a senior colleague scrub on difficult cases. While Cardiac Surgery has an explicit model

of graduated complexity for new surgeons, we are in the process of developing a peer-to-peer support policy including an expanded clinical mentoring program that will be implemented in 2014.

### **Academic Leave**

Perioperative Services did not have a specific academic leave policy. After some deliberation, an academic leave policy was developed which has been implemented with success in several Divisions. In 2013, we expanded and harmonized across all Divisions and Departments our Away Time Policies including an accountability process that was implemented early in 2014.

### **Leadership Development**

Leadership development is a key investment in staff. We finished our second of five, two-day module leadership development course for Division Heads/Department Chiefs and future leaders in partnership with the hospital and Rotman School of Business. This course had multidisciplinary participation and was linked to a specific SickKids project. The evaluations have been phenomenal and we are in early stages of planning for a third course.

To develop further enhanced innovation, the fourth Perioperative Services (POS) Retreat facilitated by David Weiss focused on innovative thinking. To support innovation we developed the POS Innovation Fund. We choose to fund many projects of low-cost with a maximal funding amount of \$10,000. The fund has received 114 applications (including summer studentship applications) and funded 61 projects for virtually all disciplines and Division/Departments in a wide array of innovative topics as of April 30, 2015.

## 2. RECRUITMENT

**Greg Borschel** was recruited from Washington University, St. Louis to the Division of Plastic and Reconstructive Surgery. His clinical field of expertise is peripheral nerve, upper extremity and microsurgery. He is cross-appointed as surgeon-scientist with a research focus devoted to improved understanding and outcomes in peripheral nerve injury using growth factor delivery systems for motor nerve injury and the use of type I collagen conduits for the repair of peripheral nerve gaps.

**Joel Fish** joined the Division of Plastic and Reconstructive Surgery as the Medical Director of the Burn Program. He is a graduate of the University of Toronto surgeon-scientist program in Plastic Surgery and was on staff at the Ross Tilley Burn Unit for many years. He has a strong research interest in the application of infra-red spectroscopy in determination of burn wound depth.

**Tessa Gordon** who has an international reputation as a basic scientist in the field of peripheral nerve injury and repair, joined Division of Plastic and Reconstructive Surgery. Tessa's work has attracted international attention for her studies of neurophysiology, nerve regeneration, electrical stimulation and novel surgical paradigms.

**Lucas Murnaghan** joined the Division of Orthopaedic Surgery in August 2009 to develop the sports medicine program in children and young adolescent in Toronto. He was a joint recruit between The Hospital for Sick Children, Women's College Hospital and Mount Sinai Hospital.

**Kellie Leitch** joined the Division of Orthopaedic Surgery in July 2009 on an interim locum assignment.

**Simon Kelley** joined the Division of Orthopaedic Surgery in July 2010. His medical training was in the United Kingdom. He was the inaugural Trans Canada Pediatric Orthopaedic Fellow, pending six months in Montreal, Toronto and Vancouver. His area of expertise is in limb deformity.

**Osami Honjo** was recruited as a staff cardiovascular surgeon in July 2010. His clinical practice focuses on open heart surgery in neonates and infants, surgical palliation for single ventricle patients, mechanical cardiopulmonary support in pediatric population, and surgery for patients with adult congenital heart diseases. Dr. Honjo's research focuses on seeking clinical predictors/factors that influences outcome, which improve the quality of surgeons' decision making.

**Martin Koyle**, Division of Urology was recruited in 2010-11. He was the former Division of Urology Head at Seattle Children's.

**Ed Hickey** joined the Division of Cardiovascular Surgery starting in July 2012. He served as the Kirklin/Ashburn Fellow in the Congenital Heart Surgeons Society Data Center during his residency and completed a clinical fellowship at The Hospital for Sick Children.

**Agostino Pierro** was recruited as Division Head of General and Thoracic Surgery, Senior Associate Scientist at the Research Institute and Program Director for Pediatric Surgery in April 2013. He also holds the Robert M. Filler Chair in Paediatric Surgery and Professor of Surgery, University of Toronto. His expertise and

interests are related to necrotizing enterocolitis, regenerative medicine, and minimally invasive surgery.

**Karen Wong**, Division of Plastic and Reconstructive Surgery, was recruited in 2013-14. She is completing her PhD through McMaster University focusing on the development of a patient-reported outcome measure to assess the impact of cleft surgery on children, teens and young adults.

### 3. DEPARTURES

**Peter Kim** of the Division of General and Thoracic Surgery departed in 2010-11 to become Vice-President of the Sheikh Zayed Institute for Pediatric Surgical Innovation at the Children's National Medical Center in Washington.

**Osman Al-Radi**, Division of Cardiovascular Surgery, returned to his home country Saudi Arabia in 2010-11.

**Benjamin Alman** stepped down as Head, Division of Orthopaedics effective June 1, 2013 to begin his position as Chairman of the Department of Orthopaedic Surgery at Duke University School of Medicine, North Carolina.

**Pippi Salle's** departed in April 2014 to pioneer a formal paediatric urology clinical and training program at Sidra Hospital in Qatar.

### 4. APPOINTMENTS AND PROMOTIONS

There are multiple Appointments and Promotions, some of which are summarized below.

#### 2009-10

1. David Fisher, of the Division of Plastic and Reconstructive Surgery was promoted to Associate Professor

2. Michael D. Taylor, Division of Neurosurgery, was promoted to Associate Professor.
3. Reinhard Zeller, Division of Orthopaedic Surgery, was appointed as a member of the American Orthopaedic Association.

#### 2010-11

1. Abhaya Kulkarni, Division of Neurosurgery, was selected as the new Residency Program Director.
2. Georges Azzie, Division of General and Thoracic Surgery, was promoted to Associate Professor.
3. James Drake, Head of Neurosurgery and Senior Associate Scientist, Neurosciences & Mental Health, has been appointed as interim lead of the Centre for Image-Guided Innovation and Therapeutic Intervention (CIGITI).
4. James Rutka, Division of Neurosurgery, was appointed Chair of the Department of Surgery for a five-year term commencing April 1, 2011.
5. Joao L. Pippi Salle was appointed Herbie Doctor of the Year.
6. Kellie Leitch, Division of Orthopaedic Surgery, was elected MP for Simcoe-Grey and appointed as the Parliamentary Secretary to the Minister of Human Resources and Skills Development and to the Minister of Labour.
7. Osami Honjo, Division of Cardiovascular Surgery, was appointed Associate Scientist in the Physiology and Experimental Medicine Program by the SickKids' Research Institute.
8. Unni Narayanan, of the Division of Orthopaedic Surgery, was promoted to Associate Professor. Christopher Caldarone, Division of Cardiovascular Surgery, was promoted to Senior

Associate Scientist by The SickKids' Research Institute.

#### **2011-12**

1. Annie Fecteau was appointed Interim Head of the Division of General and Thoracic Surgery.
2. Christopher Forrest was appointed Interim Chair of the Division of Plastic Surgery at the University of Toronto.
3. Christopher Forrest, Division of Plastic Surgery, was appointed Interim Chair of the Division of Plastic Surgery, University of Toronto.
4. Greg Borschel was promoted to Associate Professor in the Department of Surgery, University of Toronto.
5. Michael Taylor was appointed to Senior Scientist, The Hospital for Sick Children Research Institute.
6. Michael Taylor, Division of Neurosurgery, was appointed to Senior Scientist at The Hospital for Sick Children's Research Institute.
7. Ted Gerstle was named Chair of the Canadian Association of Pediatric Surgery Program Training Directors.

#### **2012-13**

1. Abhaya Kulkarni was also appointed to the Editorial Board of Journal of Neurosurgery: Pediatrics.
2. Agostino Pierro was re-appointed as Chairman of the European Pediatric Surgery Association (EUPSA) Network dedicated to the establishment and co-ordination of multicentre research in 2012-13.
3. Andrew Howard was appointed interim Division Head of Orthopaedic Surgery at the Hospital for Sick Children.
4. Georges Azzie was appointed an honorary Professor in the Department of

Surgery at the University of Cape Town, South Africa.

5. James Rutka was appointed Fellow of the American Surgical Association.
6. James Wright was appointed the Vice President, Medical, at the Hospital for Sick Children.
7. Michael Taylor was promoted to Professor, Department of Surgery, University of Toronto.

#### **2013-14**

1. Armando Lorenzo was promoted as Associate Professor at the University of Toronto and as Director of Nephrourology at SickKids in 2013-14
2. Peter Dirks was appointed as Chair Holder, The Hospital for Sick Children, the Garron Family Chair in Childhood Cancer Research
3. Walid Farhat, Division of Urology, was promoted as Director of the Fellowship Training Program at SickKids, and Professor of Surgery, University of Toronto

## **5. Honours and Awards**

There are too many honours and awards to mention, some of which are summarized below. Benjamin Alman and James Wright won the highest research awards of the American Academy of Orthopaedic Surgery, Canadian Orthopaedic Association and Pediatric Orthopaedic Society of North America (Unni Narayanan also recently won this last award). Christopher Caldarone, James Drake, James Rutka and James Wright (recently stepped aside) are editors or editorial Board members of their respective leading specialty journals. James Rutka was President of the American

Association of Neurologic Surgery. James Rutka is Chair of the University of Toronto Department of Surgery, Benjamin Alman (until recently), Christopher Caldarone, and Christopher Forrest are Chairs of their respective University Divisions. Benjamin Alman and James Wright have served on the Board and as Chairs of the Research Council of the Pediatric Orthopaedic Society of North America. James Rutka was the honored guest of the Congress of Neurosurgery and Peter Dirks won the Terry Fox Award and the Farber Award of the American Association of Neurosurgery. Darius Bagli has won both the American Urological Association Foundation's Distinguished Mentor Award and its Pediatric and Basic Science Research Prizes. Armando Lorenzo won the SickKids Humanitarian Award. Jacob Langer won the James IV Traveling Fellowship (and was the first pediatric surgeon to ever win the award). Christopher Caldarone leads the Congenital Heart Surgeons database, a prospective cohort collecting data from approximately 30 hospitals.

#### **2009-10**

1. Armando Lorenzo won the Michael A.S. Jewett Award for Excellence in Postgraduate Teaching in the Division of Urology. He received an Award as the best reviewer for the paediatric section of the Journal of Urology.
2. Michael D. Taylor won The Royal College of Physicians and Surgeons of Canada Gold Medal Award in Surgery, 2010 and The Canadian Cancer Society Award for Excellence in Cancer Research-Young Investigator Award in Biomedical Science, June 2009.

#### **2010-11**

1. Armando Lorenzo was awarded a European Association of Urology Travel Scholarship.

2. Armando Lorenzo was granted outstanding reviewer for the Journal of Urology.
3. James Rutka was inducted as a Fellow of the Royal Society of Canada.
4. James Wright was awarded the inaugural Sickkids' President's Award "for his outstanding leadership, commitment to high quality and performance, and dedication to improving access to surgical services for children across the country."
5. James Wright was awarded the John Sharrard Memorial Medal, from the British Society Children's Orthopaedic Surgery, to recognize academic contributions to children's orthopaedics.
6. Kellie Leitch was awarded the Order of Ontario for providing a national voice on Children's Health.
7. Michael Taylor ranked #2 on the *Toronto Star's* list of the biggest scientific discoveries of 2010.
8. Walid Farhat was awarded third prize for a clinical poster at the European Society for Pediatric Urology on Impact of Biofeedback on Self-Esteem in Children with Voiding Dysfunction: A randomized controlled trial for which he was PI.

#### **2011-12**

1. Armando Lorenzo was awarded the A.W. Bruce Faculty Undergraduate Teaching Award, Division of Urology, University of Toronto.
2. Darius Bägli was named the Distinguished Mentor for 2012 by the American Urological Association Foundation. This was the first time the award was made to a urologist in Canada, and the first ever for a pediatric urologist.

3. Georges Azzie was the recipient of the Herbie Fund Doctor of the Year Award for his work in developing countries and the Bruce Tovee Award as the best teacher in surgical undergraduate education.
4. Greg Borschel was awarded the Early Researcher Award (ERA) by the Ontario Ministry of Economic Development and Innovation.
5. Pippi Salle was awarded the Chair in Urology by the Women's Auxillary at SickKids.
6. Unni Narayanan received the Dr. John Whittaker Memorial Cerebral Palsy Award.
7. Walid Farhat received the Award for Teaching Excellence for the Paediatric Resident Lecture Series, University of Toronto.
5. Martin Koyle was awarded the Women's Auxiliary Chair of Urology and Regenerative Medicine.
6. Michael Taylor was the selected recipient of a Garron Family Cancer Centre Chair.
7. Paul Wales won five awards this past year with the latest being the Best Published Clinical Research Article in May 2013.
8. Simon Kelley was awarded the Orthopaedic Chair's Teaching Award from Division of Orthopaedic Surgery, Department of Surgery, University of Toronto.
9. Walid Farhat, with Dr. M. Koyle, received the Award for Teaching Excellence for the Paediatric Resident Lecture Series, University of Toronto.

#### 2012-13

1. Benjamin Alman was awarded the Award for Excellence in Innovation by the Association for Surgical Education in Los Angeles, CA.
2. Darius Bägli was recognized for outstanding contributions to innovation, and cross-team leadership as the Associate Surgeon-In-Chief by being named to the 'President's Circle' of The Hospital for Sick Children.
3. James Rutka was the recipient of numerous awards including the 2012 Abhijit Guha Award, The Society of Neuro-Oncology.
4. James Wright received the Peter Armstrong, MD Shriner's Hospital for Children Award for his manuscript "*Antimicrobial Prophylaxis and Rates of Surgical Site Infection in Children*".

#### 2013-14

1. Greg Borschel was awarded the George Armstrong Peters Prize for 2014.
2. Jack Langer was named one of the top 30 doctors in Toronto by Toronto Life magazine.
3. James Rutka was elected to the Order of Ontario in June, 2014.
4. John Wedge was awarded the Doctor of Laws (LLD)(Hon.), University of Saskatchewan.
5. Paul Wales won five awards this past year with the latest being the Best Published Clinical Research Article in May 2013.
6. Ronald Zuker received an Honorary Fellowship of the College of Plastic Surgeons of South Africa, an Honorary Membership in the Association of Plastic Surgeons of South Africa, the Humanitarian Award from The Smile Foundation of South Africa, and the 2014 Canadian Society of Plastic Surgeons Lifetime Achievement award.

7. Unni Narayanan was awarded the 2013 Arthur Huene Memorial Award of POSNA.

## 6. DIVISIONAL SUMMARIES

### Cardiovascular Surgery

Over the past five years the division has had the second highest level of publication impact points, with respect to congenital heart surgeons' publications, in the world. The Heart Centre (in which the division is a key participant) held symposiums in 2009-10 and 2010-11, attended by over 150 and over 200 individuals from around the world respectively. The division co-hosted, with Division of Cardiology, the International Symposium which focused on the treatment of Hypoplastic Left Heart Syndrome.

The Division of Cardiovascular Surgery has focused on team clinical performance, for the past several years, in a forum labeled Performance Rounds. The concept was driven by the idea that best patient outcomes are achieved by making optimal decisions and interventions at each point along the care pathway. Performance Rounds is a management system that entails reviewing each patients' clinical course, from diagnosis through hospital discharge, using a proprietary individualized patient graphic. The weekly review is performed with team members from cardiology, intensive care, anaesthesia, and allied health professionals. Through this system we are able to identify specific patient issues as well as structural areas for improvement even in the face of good patient outcome. The long term goal is to gradually enhance team learning and team performance. The concept is also a strong academic platform.

The division holds one US patent **US923218B2** for: Modulation of the integrin-

linked kinase pathway to promote cardiac stem cell proliferation and self-renewal.

### General and Thoracic Surgery

The Centre for Image-Guided Innovation and Therapeutic Intervention (CIGITI) ([www.cigiti.com](http://www.cigiti.com)), developed by a team headed by **Peter Kim**, was officially opened in 2009-10. Peter Kim's team developed new innovative technologies focused on paediatric and fetal applications in three areas: image-guided surgical intervention, simulation for educational applications and miniaturized robotic surgery. The CIGITI is funded by approximately \$20 million in grants, from a variety of governmental and industrial sources.

**Annie Fecteau** served as Chair of the American Pediatric Surgical Association Ethics committee and was a senior author an article in CMAJ on the health risk of rare earth magnets in toys which was instrumental in getting them banned in Canada. She served as Interim Head of the division while the search for a new Division Head was being conducted

**Georges Azzie** and **Ted Gerstle** are involved in a number of important initiatives measuring the burden of surgical disease on population health and developing training programs and surgical expertise world-wide including the Schools of Medicine of the Universities of Botswana and Namibia. They, including Dr. Doruk Ozgediz (paediatric general surgery fellow) and Engineer Brian Carrillo, developed the only validated Pediatric Laparoscopic Surgery simulator.

**Georges Azzie** continues to develop an innovative tele-mentoring program teaching minimal access surgical skills to surgeons in Botswana. He continues to be an Adjunct



Associate Professor in the Department of Surgery at the University of Pennsylvania and supervises their senior residents on surgical electives in Botswana for two months a year.

**Jack Langer** was part of the team that established the SickKids Obesity Management Program (STOMP), which ultimately anticipates performing 10-15 bariatric surgical procedures per year. He is also Chair of the Research Committee of the newly formed University of Toronto Collaborative Bariatric Surgery Program, and sits on the provincial Bariatric Surgery Steering Committee. He was the Director and then nominated President-elect of the Canadian Association of Paediatric Surgeons (CAPS) for a two-year term beginning 2011-12. He hosted the biennial Winter CAPS meeting in Toronto in February 2013. After 12 years, Jack stepped down as Division Head. He took a sabbatical at the University of California, San Francisco, and studied new techniques in fetal surgery and worked with the Pediatric Device Consortium based at UCSF.

**Paul Wales** continues to advance the treatment of intestinal failure, in his role as Director, through the Group for Improvement of Intestinal Failure and Treatment (GIFT). He is involved in translational studies using a porcine model of short bowel syndrome in order to develop novel medical and surgical approaches to this problem. The program treated its 200<sup>th</sup> patient in 2011-12 and continues Annual Fundraising. This is the only formalized program for intestinal failure in Canada

**Priscilla Chiu** is part of the Steering Committee for the Garron Family Cancer Centre and the Leukemia Research Group - a city-wide effort to bring local leukemia researchers together for collaborations and idea exchange. She was part of an effort to establish the first city-wide

multi-disciplinary clinic for esophageal atresia patients that will formally evaluate and treat patients from birth to adulthood. She also led the effort to establish the first international registry to track the long-term outcomes for congenital diaphragmatic hernia patients with the registry starting in 2013. She will take over as the CAPS Program Committee Chair in 2014. Dr. Chiu continues as a member of the CAPSNet Steering Committee and a member of the EPIQ review on CDH Care.

**Sharifa Himidan** was interim Medical Director of CIGITI, with Peter Kim's departure in 2010. Work has focused on establishing programs that bridge relationships between academic and community centres affiliated with the University of Toronto. She is actively involved in Surgical Innovation and collaborating with many national and international centres in the field of Surgical Robotics, Smart tools and simulation

**Ted Gerstle** is co-principal investigator on a grant from the Canadian International Development Agency (CIDA) which provides \$420,000 over three years for healthcare leadership development in Tanzania and Ethiopia. He has taken on the role of Surgical Director at the new Children's Hospital in Qatar as part of the partnership with SickKids' International. He was named the Director of the Surgical Oncology Program at Sickkids in June 2013 and is the co-lead for the Department of Surgery in the Toronto Addis Ababa Academic Collaboration.

SickKids 'Liver Transplant Program had a record year in 2011-12, with 30 pediatric liver transplants. The program was highlighted as having the lowest hepatic artery thrombosis rate of all the 27 centres participating in the Study in Pediatric Liver Transplant (SPLIT).

## Neurosurgery

In 2011-12, James Drake was appointed Director, Image Guided Innovation and Therapeutic Intervention (CIGITI) and is a mentor to members of The Canadian Pediatric Neurosurgery Study Group. He was re-appointed as Division Head for a third five-year term in 2012-13 after a review. He continues to supervise a large cadre of undergraduate engineers from the University of Waterloo, and Toronto, and graduate students in the IBBME and Mechanical Engineering Department

**James Drake** and **Abhaya Kulkarni** continue their involvement with research and quality improvement initiatives lead by the Hydrocephalus Clinical Research Network and continuously review the care and treatment of hundreds of children affected by hydrocephalus.

**Abhaya Kulkarni** was selected as the Residency Program Director after a rigorous search in 2010-11 and continues to attract the top pool of candidates to the University of Toronto program. He was elected to membership in the Society for Neurological Surgeons in 2011-12 and was invited to be a Steering Committee member for the United Kingdom Medical Research Council in 2012-13,

**James Rutka** became President of the American Association of Neurological Surgeons (AANS) and Honoured Guest at the Congress of Neurosurgery in 2009-10. One of the highlights in 2010-11 was the AANS meeting in Denver where Toronto shone under his presidency. He became Past President of the AANS; Member of the Finance Committee; Strategic Planning Committee; the Van Wagenen Fellowship Committee and Neurosurgery PAC; Chair of the Nominating Committee in 2013-14. Dr. Rutka was elected to Fellowship in the

Canadian Academy of Health Sciences (CAHS) and continues to take on new responsibilities including Scientific Program Chair - Pediatric Neuro-Oncology Basic and Transitional Research Conference, President of the World Academy of Neurological Surgery, and Editor-in-Chief, Journal of Neurosurgery.

**Michael Taylor** was the selected recipient of a Garron Family Cancer Centre Chair and is on the Executive Council, Garron Family Cancer Centre. He is an Associate Section Editor (Pediatrics) for Brain Tumor Pathology. Michael supervised Steve Mack, winner of the prestigious Governor General's Gold Medal Award, created in 1873 by Lord Dufferin to encourage academic excellence across the nation. Steve Mack completed his doctoral dissertation entitled "*The Genetic and Epigenetic Basis of Posterior Fossa Ependymoma*" in April 2014.

### Bruce Hendrick Visiting Professor in Pediatric Neurosurgery

2011-12: Dr. Richard Ellenbogen, Professor and Theodore S. Roberts, Endowed Chair of Pediatric Neurological Surgery at the University of Washington, delivered two excellent talks, "*Neurosurgery in Difficult Locations: The Case for Pineal Region*" and "*Concussion: Education & Advocacy*".

2012-13: Dr. P. David Adelson, Director, Barrow Neurological Institute, delivered a highly engaging lecture entitled "*Adding insult to injury: Improving Outcomes through Aggressive Management*", followed by a presentation on "*Epilepsy surgery in children*" for residents. He also served as an evaluator for resident case presentations given later that morning.

2013-14: Dr. John Kestle, University of British Columbia, was the Guest Lecturer.

In December 2013, Dr. Drake, with co-chairs Drs. Rutka and Kulkarni hosted the American Association of Neurological Surgeons – Pediatric Section which in addition to the main scientific program (Drake), included a pediatric epilepsy course (Rutka and Drake), an Advanced Practitioners course (Kulkarni), breakfast seminars (Kulkarni and Mazzola), a social program (Drake), followed by a fellowship reunion celebrating 80 years of pediatric neurosurgery at Sickkids (Drake). Meeting evaluations were extremely high and broke previous attendance records.

## **Orthopaedic Surgery**

**Benjamin Alman** was named the Interim Director of the Toronto Musculoskeletal Centre of the University of Toronto in 2010-11. This is an extra departmental unit focusing on interdisciplinary translation research. The centre will be developing a collaborative graduate program, a new mechanism for research funding and will help recruit new MSK researchers to Toronto. He was elected to a Fellowship in the Canadian Academy of Health Sciences in 2011-12.

**Andrew Howard** successfully ran the 12<sup>th</sup> Bethune Round Table Conference in Toronto in 2011-12. He became a member of the Institute of Medical Science in 2013-14 and was appointed Interim Head of the Division of Orthopaedics at the Hospital for Sick Children from June 2013 to September 2014.

**Lucas Murnaghan** took part in the POSNA/BIOMET Travelling Fellowship in 2013-14.

**Reinhard Zeller** sits as an Associate Editor on the Editorial Board of the Spine

Deformity Journal, Scoliosis Research Society.

The Division of Orthopaedic Surgery continues to build the Bone Health Centre. This centre focuses on the care of children with musculoskeletal conditions requiring multidisciplinary care, and in the development of collaborative research. The centre is on the verge of beginning its first clinical trial, using a cell therapy approach to disorders.

### Robert B. Salter Visiting Professor

Peter Newton, Orthopaedic Surgeon, Rady Children's Specialists of San Diego and President of POSNA

*2012-13:* Daniel Sucato, Orthopaedic Surgeon, Chief of Staff, Texas Scottish Rite Hospital for Children.

*2013-14:* The division hosted a father and son duo. Dr. Perry Schoenecker, orthopaedic surgeon, Chief of Staff at Shriners Hospital, St. Louis and Acting Chairman of the Department of Orthopaedics at the St. Louis Children's Hospital and Dr. Jonathan Schoenecker, orthopaedic surgeon, Monroe Carell Jr. Children's Hospital at Vanderbilt and Assistant Professor, Department of Orthopaedics, Pathology, Pediatrics and Pharmacology, Vanderbilt University, Nashville, TN.

### Mercer Rang Visiting Professor

*2011-12:* Michael Sussman, staff orthopaedic physician, Shriners Hospital for Children Research, Portland, OR.

*2012-13:* Martin Gargan, Orthopaedic Surgeon, University Hospitals, Bristol, UK

*2013-14:* Professor Christopher Lavy, orthopaedic surgeon, Oxford, UK.

The division boasts four faculty members who hold CIHR-funding as primary investigators, making them the highest proportion of CIHR-funded orthopaedic surgeons in any one division in the country.

## **Plastic and Reconstructive Surgery**

**Greg Borschel** was chosen as the new Deputy Editor for the Journal of Plastic Reconstructive and Aesthetic Surgery in 2011-12.

**Howard Clarke**, with the help from Emily Ho, hosted the Toronto Obstetrical Brachial Plexus Palsy Workshop on May 10, 2014 with neurosurgery, orthopedic surgery, plastic surgery, OT and PT participation.

**Joel Fish** and the entire Pediatric Burn Program team at SickKids were the first pediatric burn program in Canada to receive full accreditation by the American Burn Association in 2013-14.

**Christopher Forrest** underwent a 10-year review of his leadership of the division in November 2012 and was successfully re-appointed for a third five-year term.

**John Phillips** embarked on a unique sabbatical opportunity that he entitled "Teach the teacher". His goal was to visit as many former fellows as possible and charge them with the mission to teach him something that they have subsequently modified or learned after completing their fellowship in pediatric craniofacial surgery. John travelled to California, Texas, Colorado, Taiwan, Singapore and made multiple stops in Australia in 2013-14.

**Ron Zuker** was the Chair of the Organizing Committee for the 16th Congress

of the International Confederation of Plastic, Reconstructive and Aesthetic Surgery that was held in Vancouver May 2011. This was a highly successful meeting with over 1700 registrants from all around the world with significant participation from all division members.

### Annual Lindsay Thomson Symposium in Pediatric Plastic Surgery

*2011-12:* Professor Yu-Ray Chen visiting from Taipei, Taiwan was the Vale Visiting Lecturer.

*2012-13:* Dr. John B. Mulliken, Professor of Surgery, Harvard Medical School was the Vale Lecturer.

*2013-14:* Mr. Jonathan Britto, Consultant and Pediatric Craniofacial Surgeon at Great Ormond Street Hospital in London, UK was the Vale Lecturer.

Post-graduate fellowship education in pediatric plastic surgery continues to be a high point in the division profile with 99 applicants for the five-fellow positions in 2010-11.

The division organized two educational exchanges via the Sickkids-Operation Smile program and had visits from two trainees from West Bengal and three trainees from Assam in India via SickKids-India Educational Exchange Program in 2010-11. In a continuing relationship with Operation Smile and the facility in Guwahati, Assam, India, Ron Zuker, Greg Borschel and two clinical fellows travelled in January 2014 for another site visit. Surgeons, anaesthetists, speech and language pathologists and dieticians from the Guwaharti Comprehensive Care Centre have visited SickKids to see first-hand how cleft care is delivered here. This model of an ongoing collaboration is working exceptionally well, many thanks to the personnel involved on both sides.

The division hosted four **CME events** in 2010 including the Advanced Craniomaxillofacial Surgery Symposium, Pediatric Upper Extremity Symposium, the Lindsay-Thomson Pediatric Plastic Surgery Symposium and the Composite Tissue Allotransplantation Symposium in 2010-11.

The **Annual University of Toronto Transplant Day** was held on December 17, 2012 with division members Ron Zuker and Greg Borschel organizing a half-day symposium on Composite Vascularized Allotransplantation (CVA), the highlight being a lecture by Visiting Guest Speaker, Dr. Bohdan Pomahac, from Boston. This day coincided with the Ministry of Health's successful approval of a Pediatric Vascularized Composite Allotransplantation Program that has been generated through the huge efforts of Ron Zuker and Greg Borschel.

The first **Hugh G. Thomson Award** was received by **Dr. Karen Cross** at the 2013 Gala Graduation dinner. This award was established and funded by the SickKids' division members and acknowledges Dr. Thomson's values of collegiality, collaboration and simply being a good human being.

The first **Pediatric Wound Care Symposium** was held on November 1, 2013 with course directors Joel Fish and Irene Lara-Corrales (Pediatrics). Over 130 health care providers from surgery, pediatrics, dermatology, nursing and wound care specialists attended this event. Over half of the attendees were community based with representation from London, Hamilton, Ottawa, Montreal and the GTA hospitals.

## **Urology**

**Darius Bagli** continues as Associate Chief of Surgery at Sick Kids and staff coordinator of Urology Resident Research within the University of Toronto Urology residency program. In 2012-

13, he spearheaded a successful initiative using iPads for wireless point-of-care billing, to achieve record billing compliance of over 99%. Following his introduction of the Surgical Safety Checklist to SickKids Hospital, Dr. Bagli continues major efforts in health technology development to reengineer the surgical pathway for patients and families at SickKids. Along with Drs. Lorenzo, Salle and Koyle, he was significantly involved in the First International Consensus Symposium in Hypospadias held in Las Vegas in September, 2013. He was appointed for a three-year term to the American Urological Association's Research Council and represented SickKids at the First Innovation Leadership Forum held in La Jolla.

**Walid Farhat** became the associate editor of the paediatric section of the Journal of Urology in 2009-10. He continues to organize and direct the Annual North American Pediatric Urology Fellows Laparoscopy Course. He co-chaired the Canadian Urology Association Laparoscopy course for the 4<sup>th</sup> year in 2011-12 and was instrumental in developing a multidisciplinary clinic with the Nephrology Division for children with stone disease. He and Dr. Koyle were extensively involved in the 2014 Annual Paediatrics Update discussing "Nuts & Bolts of paediatric urology: a rational primary care approach to common problems".

**Martin Koyle** succeeded Pippe Salle as Division Head on April 1, 2013. He led a volunteer educational and surgical mission to Kampala, Uganda in cooperation with International Volunteers in Urology and members of the Pediatric Surgery and Anesthesia Divisions at Vancouver Children's Hospital. Along with Dr. Salle, he was co-organizer of the meeting on transitional care entitled "Moving Beyond Pediatric Incontinence" in June 2013.

**Armando Lorenzo** organized and chaired the Society for Fetal Urology meeting in Atlanta, GA in 2011-12. He has been extremely active internationally in the Children's Oncology Group and Society for Fetal Urology. He also acts as the division representative in the selection of residents for the University of Toronto, Division of Urology and leads the medical student Urology elective program at SickKids. Dr. Lorenzo continues to develop collegial relationships with colleagues at Mt. Sinai in the field of andrology. In 2013-14, he completed a handbook for medical students rotating at SickKids

**Joao Pippi-Salle** successfully chaired the 3<sup>rd</sup> World Congress of the Society of Hypospadias and Disorders of Sex Development in 2009-10 when he was elected President of this Medical Association. In addition, he finalized the video component of the Reconstructive Pediatric Urological Video-Atlas. He was instrumental in organizing a major world-wide congress on exstrophy that was held in Morocco in May 2013. Both he and Warren Snodgrass were involved in a live surgery webinar on hypospadias in February 2013 and were both invited to direct a postgraduate course on that subject at the Annual American Urological Association meeting in May 2013.

**Dr. Michael Mitchell** was the inaugural Robert Jeffs Visiting Professor in Paediatric Urology at SickKids and the University of Toronto in 2013-14.

The division attracted its top fellowship choices for both the American Board of Urology accredited and the international 2-year spots, hosted numerous observers and represented SickKids in multiple venues from around the world.

## **Divisions of Surgery Reviews**

Without exception, each division has been favorably reviewed in the past five years and in many cases ranked among the best in the world. I quote below from written comments by the external reviewers.

**Cardiovascular:** The cardiothoracic surgeon Dr. William Gaynor from the Children's Hospital of Philadelphia (CHOP) was one of the three reviewers for the Cardiology/Cardiac Surgery review. Cardiologist, Dr. Robert Shaddy from CHOP and Dr. Jane Newburger from Boston Children's Hospital, cardiologist stated, "We must state at the onset that the Heart Centre at the Hospital for Sick Children is one of the premier programs, not only in North America but in the world, and that the current leadership has brought this program to ever-greater heights".

**The Labatt Family Heart Centre** (of which the division is a key participant) underwent a 10 year external review led by three well known individuals from Children's Hospital Philadelphia and The Children's Hospital, Boston. The following is a quote that opens their summary: "The reviewers unanimously found the Heart Centre at the Hospital for Sick Children to be a premier pediatric cardiovascular centre, with superb performance in domains of clinical care, clinical research, academic scholarship extramural funding, and education."

**General and Thoracic Surgery:** Dr. Keith E. Georgeson from the University of Alabama School of Medicine stated, "the clinical activities of the Division of General and Thoracic Surgery at the Hospital for Sick Children in Toronto seem strong".

**Neurosurgery:** Dr. John Kestle from University of Utah stated, "the HSC pediatric

Neurosurgery Division is outstanding. In the neurosurgical community it is universally recognized as one of the best in the world”.

**Orthopaedics:** Dr. Matthew Dobbs from St. Louis Missouri stated, “the Department is extremely well accomplished and viewed in the highest regards around the world. The history of the Department speaks for itself as many of the great leaders in pediatric orthopaedics were here, are here, or have been trained here.”

**Plastic Surgery:** Dr. Richard Hopper from Seattle Children’s Hospital, University of Washington stated, “the Hospital for Sick Children’s Division of Plastic Surgery has an unparalleled international reputation”.

**Urology:** Dr. Andrew MacNeily from Vancouver, British Columbia described the Division of Pediatric Urology as “internationally renowned, and deservedly so. It ranks alongside other famous Divisions such as those at Boston Children’s Hospital, Children’s Hospital of Philadelphia and Great Osmond Street Hospital for Sick Children”.

## 7. SUMMARY OF EDUCATIONAL ACTIVITY

We completed our Royal College Review in 2013. All programs were approved and while receiving many compliments, not a single concern specific to SickKids was identified. The development of the Learning Institute (LI) and a Simulation Centre at SickKids, due to efforts of Walid Farhat (Division of Urology), Associate Chief of Education, has substantially improved the effectiveness and efficiency of teaching.

Several of the staff have received teaching awards including Drs. Unni Narayanan and James Wright from the Division of Orthopaedic

Surgery, Armando Lorenzo and Walid Farhat from the Division of Urology and Georges Azzie from the Division of General and Thoracic Surgery who won the Bruce Tovee Award for Undergraduate Teaching.

Continuing Medical Education has been an area of innovation in the Centre for Image-Guided Innovation and Therapeutic Intervention (CIGITI) and the Divisions of Urology and Plastic and Reconstructive Surgery. These divisions have been using real-time surgical education through web-technology whereby live surgery is either linked to our auditorium or webcast. Dr. Walid Farhat developed a Paediatric Urology Laparoscopy course. Dr. Darius Bagli developed a Microsurgical Skill course now in its 5<sup>th</sup> year. The Department of Surgery is involved in education on an international level with several outreach activities. Drs. Georges Azzie (Division of General and Thoracic Surgery) developed a low fidelity tele-simulation approach to developing laparoscopic skills in Africa. The No Boundaries Group, an annual medical mission, has an educational component intended to build local capacity and has recently developed a specific partnership with a medical school in Ethiopia. Drs. Christopher Caldarone and Glen Van Arsdell developed partnerships in China to teach and improve local capacity in cardiac surgery.

Other examples of exemplary education initiatives include Dr. Annie Fecteau (Division of General and Thoracic Surgery) developed a curriculum for teaching of ethics to pediatric surgical trainees that has been adopted by the North American Association of Pediatric Surgical Program Directors. Dr. Benjamin Alman, previously the University Division Chair of Orthopaedics, began in July 2009 the first competency-based surgical training program in the world.

SickKids has always had global outreach as mentioned above. Other examples are the partnership with Qatar has provided international experience for many of our faculty, including Dr. Ted Gerstle named Surgical Director at the new Children’s Hospital in Qatar. The Operation Smile Program and the India Educational Exchange Program organized by Dr. Ron Zuker. The creation of the Centre of Global Health under the leadership of Dr. Stan Zlotkin will further enhance our international activities.

## 8. SUMMARY OF RESEARCH ACTIVITY

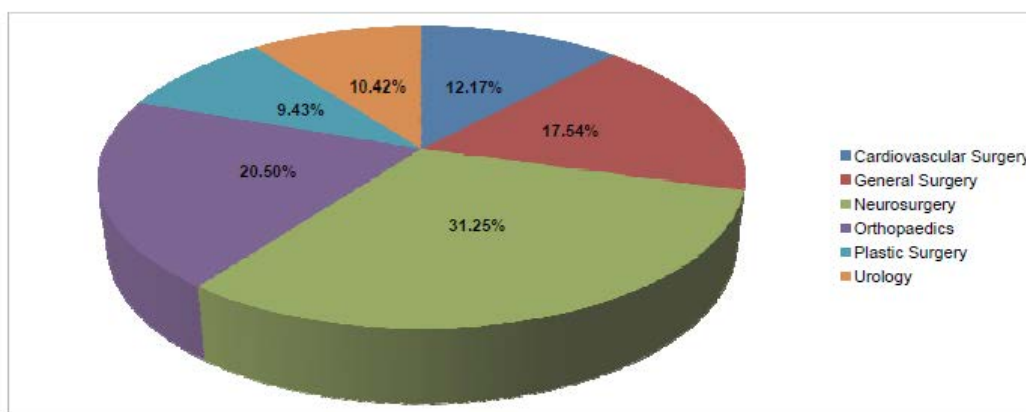
The research accomplishments, involved programs, area of collaborations, and type of research programs are too innumerable to mention. Briefly, Benjamin Alman was a Canadian Research Chair (the only Orthopaedic Surgeon in Canada). James Drake, Martin Koyle, Agostino Pierro, James Rutka, Michael Taylor, Glen Van Arsdell, Agnes Wong and James Wright all have endowed Chairs. James Rutka was appointed to the Order of Ontario and John Wedge to the Order of Canada.

Of 41 surgeons in Department of Surgery, 30 have research grants, and 18 have CIHR grants. The total *annual* grant funding for Perioperative Services is approximately \$17.2 million in 2012-13. The funding rate at CIHR in 2012-13 for members of the Department of Surgery was 23% (with CIHR national Funding rate of 17%) with five new CIHR grants.

Members of the Department published 924 papers in the past five years. Many of the publications are in high impact journals. For example, Drs. Benjamin Alman, Peter Dirks, Sevan Hopyan and Michael Taylor have published in *Nature*, *Genetics*, Dr. Agostino Pierro in the *Lancet*, Dr. Jacob Langer in the *New England Journal of Medicine* and *Lancet*, Dr. Andrew Howard in the *Lancet* and Dr. James Wright in the *New England Journal of Medicine*, *British Medical Journal* and the *Lancet*.

Of the 924 articles published from 2009-14, Plastic Surgery published 9.43%, Urology published 10.42%, Cardiovascular Surgery published 12.17%, General Surgery published 17.54%, Orthopaedics published 20.5%, and Neurosurgery published 31.25% as indicated below.

Percentage of Articles Published January 1, 2010 to December 31, 2014 by Division



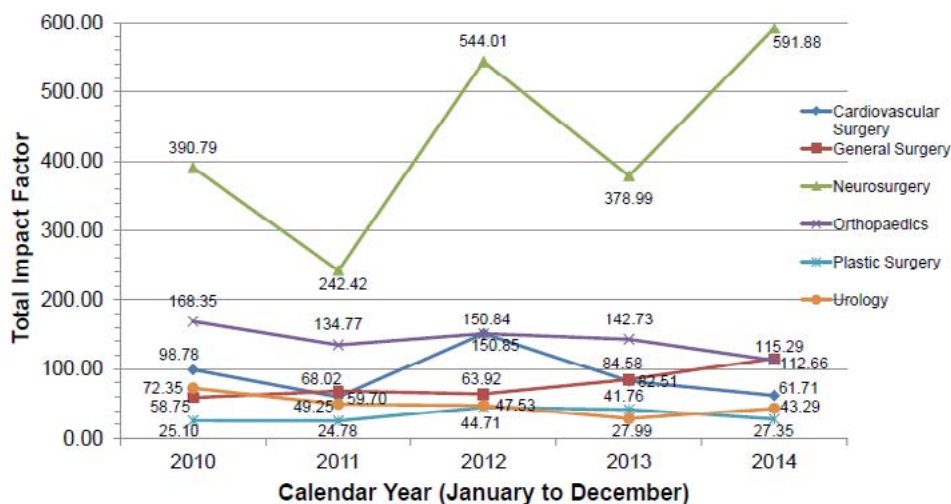
Notes:  
 Data retrieved from WebCV and PubMed.  
 Total number of publications: Cardiovascular=111; General=160; Neuro=285; Ortho=187; Plastics=86; Urology=95  
 Percentages do not add up to 100% because some articles with authors from multiple divisions



The total journal impact factor attained between July 1, 2009 to June 30, 2014 is, 163.70 in Plastic Surgery, 240.41 in Urology, 390.56 in General Surgery, 453.58 in Cardiovascular Surgery, 709.35 in Orthopaedics and 2148.09 in Neurosurgery. The journal impact factor per

year peaked at 44.71 in Plastic Surgery, 72.35 in Urology, 115.29 in General Surgery, 150.85 in Cardiovascular Surgery, 168.35 in Orthopaedics and 591.88 in Neurosurgery as demonstrated below.

**Total Impact Factor for Surgical Divisions by Calendar Year**



Notes:  
Data retrieved from WebCV, PubMed, and Web of Science.  
Some articles do not have an impact factor.

The current activities and expertise with stem cells research within Developmental Biology of the RI has been enhanced by the recruitment of Drs. Gregory Borschel and Agostino Pierro. The Department of Surgery also has tremendous strength in tumor biology particularly in the Division of Neurosurgery and Orthopaedics.

The Centre of Image Guided Innovation and Therapeutic Intervention (CIGITI) is an amazing accomplishment having raised more than \$20 million due to the efforts of Dr. Peter Kim and the Division of General and Thoracic Surgery. CIGITI brings together surgeons and bioengineers to develop innovative treatments including imaging, particularly the integration with real-time imaging, and surgical robotics, an MR compatible pediatric surgical robot. The group is the “research and development” base for

the CIGITI and has many successes including Otosim (a computer-based simulation model to teach otoscopy skills) and craniofacial skull templates. Robotics, led by Dr. James Drake with support from the Ontario Research Fund and the Canadian Foundation for Innovation, has been a major focus. Dr. Drake, who took over for Dr. Peter Kim, has assembled a multidisciplinary group of industry and researchers who in addition to many other areas of innovation has focused on robotics designed for children while integrating image guidance incorporating newer “disruptive” technologies.

We are changing education through simulation and competency-based curriculum, surgery through robotics with image guidance, and research with regenerative medicine and stem cells medicine.

**Department of Surgery**  
*Toronto East General Hospital*  
*University of Toronto*

FIVE YEAR REVIEW  
2009-2014



**TORONTO EAST**  
**GENERAL HOSPITAL**



**Carmine Simone, MD**  
Surgeon-in-Chief  
Toronto East General Hospital  
University of Toronto

## Divisional Activity

Our vision is simple: We want the Toronto East General Hospital (TEGH) to be the best place for our patients, friends, and family members to receive high-quality surgical care. If we cannot provide the best care, we will seek out partnerships that will ensure our patients get the care they need and deserve. We want TEGH to be the best place for a community surgeon to work in Toronto.

The TEGH Department of Surgery is a very popular destination for learners of all levels. The Department accepts medical students, surgical residents, family medicine residents, internal medicine residents, and surgical fellows from within Canada and internationally. The Department teaching effectiveness score (TES) for clinical fellows for 2012 was 19.24, the 2nd highest in all teaching hospitals in Toronto. A total of 21 of the 24 active staff in our department have university appointments and 20 of the 24 active staff include teaching residents as part of their daily routine.

Patient safety stands at the forefront TEGH's focus. In 2009-10, the **Surgical Safety Checklist**, in collaboration with Anesthesia and Nursing, was fully implemented. Antibiotic Stewardship has also proved to be a very useful strategy in our Critical Care and Surgical Inpatient Care, combining best practice and cost savings. Provincial funding of emergency department wait-times has affected in-patient bed management strategies (2010-11). The theme of "**TEGH – Your Choice for Safe Surgery**" shaped the 2012-13 agenda and led to the development of a comprehensive website with individual surgeons' interests, contact information, links of for post-operative care, and a virtual journey for patients to better understand the quality initiatives they will encounter from initial referral to recovery.

Cross-site partnerships are also vital to the delivery of high-quality community care. After 11 years of serving as Head of the Division of

Urology, **Rajiv Singal** implemented his vision of a robotic surgical program with shared capital and operative funding by establishing a partnership between TEGH and Sunnybrook's **Odette Cancer Centre**. The **Da Vinci Robot** was installed, and training is now underway for the urologists and allied professionals in laparoscopic surgeries (2012-13). Under the leadership of **Paul Bernick** as Chair of all TEGH Multidisciplinary Cancer Conferences, the partnership continues to provide treatment of various surgical conditions with low wait times, as well as the development of a regular tumor board (2012-13). Robert Zeldin continues to oversee the thoracic surgery program's service at multiple sites: the Odette Cancer Center, North York General Hospital, and the Royal Victoria Hospital in Barrie (2013-14).

In 2011, Laura Tate organized the second annual **Rotman Advanced Health Leadership program**. She has also launched a **University of Toronto Book Club** with Karen Devon at Women's College Hospital.

## General Surgery

The **Fractured Hip Initiative** and **Bariatric Initiative** were fully integrated into the Hospital in 2009-10, thanks to the leadership and implementation from **Mary-Anne Aarts** and **Jamie Cyriac**.

**Hany Sawires** leads the Time to Treat Initiative for Breast and continues to strengthen ties with the University's model of breast cancer diagnostics (2010-11).

**Robert Zeldin** has developed a core PGY3 general surgery rotation for University of Toronto learners as a pilot project in 2012-2013. It has been extremely popular and has now been extended to the core thoracic anesthesia rotation for PGY5 anesthesia residents.

TEGH's relationship with the **Royal**

**Victoria Hospital** respirologists and oncologists in Barrie continues to be effective. A partnership between TEGH's Thoracic group and the RVH to deliver thoracic surgery services in North Simcoe Muskoka LHIN and establish a Diagnostic Assessment Unit at RVH led to the achievement of the **2010 Cancer Care Ontario Quality Award**.

### **Orthopedic Surgery**

**Bill Kraemer** successfully developed and implemented a Competency-Based Curriculum in the Division of Orthopedics (2009-10). His landmark work led to his 2010 Award for Excellence in Postgraduate Medical Education in the Design & Innovation category.

### **Plastic and Reconstructive Surgery**

For the first time since 1984, TEGH has had regular rotation of PGY3 residents in Plastics & Reconstructive Surgery. This marks a significant investment in the teaching efforts of the Hospital (2010-11).

**Linda Dvali** has developed a hand surgery and peripheral nerve program within the Division of Plastic and Reconstructive Surgery, a unique feature to a community hospital (2013-14).

### **Urology**

With Rajiv Singal serving as the Clinical Lead for the **Robotic Surgery Program**, the hospital continues to serve as a template for inter-hospital collaboration for robotic prostate surgery. **Sender Herschorn** and **Laurence Klotz**, both senior staff urologists from Sunnybrook, are now cross-appointed at TEGH in order to perform robotic prostatectomies using the new Da Vinci robot.

### **Recruitment**

**Linda Dvali** joined the Division of Plastic and Reconstructive Surgery as Division Head (2009-10).

**Ryan Groll** was recruited as staff surgeon

in the Division of Urology (2009-10).

**Najib Safieddine** was recruited as staff thoracic surgeon in the Division of General Surgery (2009-10).

### **Appointments**

**Rob Zeldin** was promoted to Assistant Professor in the Division of General Surgery (2009-10).

**Atul Kesarwani, Ryan Groll, and Hany Sawires** were promoted to the rank of Lecturer (2009-10).

**John Kell** was appointed as Head of the Division of Urology (2012-13).

**Carmine Simone** assumed the role of Surgeon-in-Chief after **Laura Tate** successfully completed her mandate (2012-13).

**Rajiv Singal** was promoted to Assistant Professor in the Department of Surgery (2013-14).

**Department of Surgery**  
*University Health Networks*  
*University of Toronto*

FIVE YEAR REVIEW  
2009-2014



**Shaf Keshavjee, MD**  
Surgeon-in-Chief  
University Health Networks  
University of Toronto  
James Wallace McCutcheon Chair in Surgery  
Director, Toronto Lung Transplant Lung Program  
Director, Latner Thoracic Research Laboratories  
Vice Chair, Innovation, Department of Surgery  
Professor, Division of Thoracic Surgery & Institute of Biomaterials  
and Biomedical Engineering, University of Toronto

## A. Introduction

The Surgery and Critical Care Program at University Health Network encompasses 127 surgeons and 8 surgical specialties (including divisions of Cardiac Surgery, General Surgery, Neurosurgery, Orthopedic Surgery, Plastic Surgery, Thoracic Surgery, Urology and Vascular Surgery) as well as the other surgical related departments of Otolaryngology/Head & Neck Surgery, Ophthalmology Gynecologic Oncology, Anesthesia and Critical Care and the sections of Surgical Oncology and Transplant Surgery.

The programs are committed to the UHN vision statement (achieving global impact), the mission statement (exemplary patient centered care, education and research), and to the purpose statement “we are a caring, creative and accountable academic hospital transforming healthcare for our patients, our community and the world”.

The Surgical Programs continue to make significant progress in innovation and in achieving clinical excellence and academic productivity. Surgery at University Health Network holds a national and international profile of clinical and academic excellence in the fields of transplantation, surgical oncology, neurosurgery, cardiovascular surgery, musculoskeletal health and arthritis, and minimally invasive surgery to name a few,— many of the surgeons, divisions and programs are leaders in Canada and in North America.

## B. Education and Research

*Education:* Surgeons at UHN have been accomplished educators at the undergraduate, postgraduate and fellowship levels. In both quality and quantity of education they have provided excellent experiences for local, national and international students.

*Research Activities:* Surgeons at UHN have been accomplished researchers (Please see attached Department of Surgery 5 year Trend Publication Report)

## C. Achievements

a. *Endowed Chairs* – there are currently 36 endowed chairs held by surgeons at UHN. This philanthropic support is an important enabler for the department driving innovation, recruitment and retention of talented surgeons.

b. *Development of new operating room suites* – the Multi-Purpose continues to be a very successful leading edge endeavor. The Da Vinci Robotic OR is also or fully utilized now (by Urology and Gyne-Oncology and more recently by Thoracic Surgery and General Surgery). Canada’s first robotic lung lobectomy was performed at TGH last year. The first-in-the-world Organ Repair Laboratory was built and it is operational in the TGH OR. The Guided Therapeutics Image Guided OR is now operational. It is evident that going forward, all OR’s will be built to this level of sophistication, with advanced imaging capability built in, and with minimally and maximally invasive surgical capability. A second Da Vinci robot is now needed. Staffing models which include engineers as part of the OR team need to be developed and appropriately funded to properly take maximal advantage of the new technologies. A simulation center for education of surgeons (and the surgical team) will be built to train our surgeons and to create a world class teaching center for students of surgery at all levels.

c. *Information Systems*-Information management is recognized as a critical element for SPCC. While there have been some innovative explorations in surgery and anaesthesia, this clearly must be integrated into the UHN wide

EPR, which in turn, needs to be integrated with our research databases. Our IT support at UHN (Advanced Clinical Documentation and mobility solutions) needs significant investment and development to bring us to a level where we can truly call ourselves a leading research and clinical hospital.

d. *The Surgical Scorecard* – the UHN surgical scorecard is a useful tool for measurement of surgical activity and outcomes, and for quality improvement in every division. The electronic e-booking form aids surgeons, secretaries and assistants in booking elective cases, and subsequently contributes to further data collection. This has allowed us to lead the province in the wait times data collection process. The scorecard has been revised to include the SET (Surgical Efficiency Targets) data and wait time data, as well as a number of quality indicators.

e. *Patient Safety* – patient safety is a major focus of surgical practice at University Health Network. There is a well-developed system of quality committee review in that each division/department and program participates in quality improvement rounds(QCC – Quality of Care Committees), which are overseen by our Surgical Programs Quality of Care Committee (SPQCC). This committee in turn reports to the UHN Quality of Care Committee chaired by the CEO. Deliberations by the Surgical Programs Quality of Care Committee are used to implement changes in practice and developments of new policies and guidelines.

The World Health Organization Surgical Safety Checklist which was co-developed by UHN (Dr Bryce Taylor) has become a standard operating procedure in our operating rooms and now also in our endoscopy units

and ICU's. This is being disseminated in hospitals across the country and is now a recognized safety indicator in the province of Ontario.

f. *Technology and Surgery* – To continue to lead and innovate in surgery, we must maintain and enhance our focus on technology in surgery. Major strides have been made with: i) the establishment of a robotic surgery program which has expanded from urology and gynecological oncology, to thoracic surgery, general surgery and Head and Neck Surgery; ii) the opening of the MPOR with image guided advances in vascular and cardiac procedures, iii) the opening of the Organ Repair Laboratory in the TGH OR for organ repair and stem cell treatment and iv) with the construction of the GTxOR (Guided Therapeutics OR). We are well into an era of advanced surgical technology. We will need to plan to add an additional robot and a second GTx OR in the near future. Furthermore, we will need to improve in training and education with the establishment of a Surgical Simulation Centre. We have finalized a process for review of proposed innovations by the Surgical Innovation Committee. We have also developed a streamlined stratified application program for Innovations that are: i) new to the hospital, but already Health Canada and FDA approved, ii) new technology that is not yet FDA approved and iii) first in man novel technologies with appropriate overview for the level of innovation and appropriate feedback and follow-up as well as Research Ethics Board consultation and review.

g. *International Patient Program* –The IPP program continues to focus on humanitarian cases and operations that cannot be provided in the patients home country. We have

established one IPP room per week at the TGH site. This will help with planning and ability to deliver service in a timely manner. It also clearly separates this activity from service to Ontario patients. Furthermore, if the room is not filled, then the staff will be used to treat Ontario patients so actually a net benefit to Ontario patients will be realized.

- h. *Fundraising* – We are working on a number of fundraising initiatives with our foundations. These include: i) Re-development of TWH operating rooms – in progress ii) Further investment in the Sprott Department of Surgery, iii) Major Naming opportunity for UHN Lung Center – in progress, iv) ongoing activities in thoracic surgery, lung transplant fundraising, MOT Program fundraising and v) support of fundraising activities in other divisions and UHN at large.
- i. *Centre of Excellence for Simulation Education & Surgical Innovation* - Simulation is an area where we have not invested sufficient resources and it is a threat to the future of

surgical education and education as a whole at UHN. I am actively leading a fundraising initiative for this and am coordinating with the VP Education towards an institution wide strategy.

- j. *UHN Biobank*- We have been working for some time with the various stakeholders in the biobank project to move us forward in the development of a state of the art biobank with appropriate governance that all will be comfortable with. While we have hit some bumps in the road, I think we are moving in the right direction. The recruitment of a new biobank director and investment of money from all of the major UHN programs hopefully should facilitate this. The Sprott Surgery Innovation Fund will be outfitting our operating rooms with liquid nitrogen tanks in each OR – to collect the highest quality samples 24/7 right as they are removed from the patient. This requires coordination with the biobank staff, pathology and IT.

## **D. Department of Surgery Divisional 5 Year Summary Report:**

### **a. Cardiac Surgery**

Vivek Rao MD (**Division Head**)

Stephanie Brister MD

Mitesh Badiwala MD

Robert J. Cusimano MD

Tirone David MD

Chris Feindel MD

Maral Ouzounian MD

Anthony Ralph-Edwards MD

William Stansfield MD

Terrence Yau MD

Richard Weisel MD

### **Recruitments/Promotions/Retirements:**

Drs. Vivek Rao & Terry Yau were promoted to Full Professors

Dr. Maral Ouzounian was recruited for her expertise in the area of thoracic aortic disease.

In 2014, two new surgical recruits joined the Division. Dr. William Stansfield is

a graduate of the University of North Carolina surgical training program and will augment our advanced heart

failure team and participate in our minimally invasive surgery program. He is appointed as a Surgical-Scientist



and his research interests focus on the molecular changes that occur in cardiac tissue during ventricular remodeling. Dr. Mitesh Badiwala is a graduate of our

training program and recently completed an advanced fellowship in valvular repair at Northwestern University in Chicago.

### **Major Accomplishments/Appointments/Awards:**

Dr. Richard Weisel received the Scientific Achievement Award of the American Association of Thoracic Surgery. Dr. Hugh Scully received the Canadian Medical Association's 2010 Medal of Service Award.

Dr. Vivek Rao was appointed as Division Head.

Drs. Terrence Yau, and Richard Weisel, successfully launched the province's first stem cell program for cardiac disease in addition to maintaining extramural support from the Heart and Stroke Foundation.

Dr. R.J. Cusimano was awarded the Wightman-Berris award for Undergraduate Teaching.

Dr Richard Weisel has been appointed

Editor in Chief of the premier journal in cardiothoracic surgery - *Journal of Thoracic and Cardiovascular Surgery*. Several members of the Division serve in key administrative roles including the Provincial Chair of Cardiac Surgery for the Cardiovascular Care Network (Dr. Chris Feindel), Chair of the Physician Payment Review Board (Dr. Vivek Rao) and a director of the Trillium Gift of Life Network (Dr. Vivek Rao). Dr. Hugh Scully serves as a Canadian representative on the Board of Governors for the American College of Surgeons.

### **b. General Surgery**

Allan Okrainec MD (**Division Head**)  
Mark Cattral MD  
Tulin Cil MD  
Sean Cleary MD  
Karen Devon MD  
Jaime Escallon MD  
Steven Gallinger MD  
Anand Ghanekar MD  
David Grant MD  
Paul Greig MD  
Timothy Jackson MD  
Wey Leong MD  
David McCready MD

Ian McGilvray MD  
Carol Anne Moulton MD  
Catherine O'Brien MD  
Todd Penner MD  
Fayez Quereshy MD  
Michael Reedijk MD  
Lorne Rotstein MD  
Markus Selzner MD  
Eran Shlomovitz MD  
Bryce Taylor MD  
David Urbach MD  
Alice Wei MD

### **Recruitments/Promotions/Retirements:**

Dr. Markus Selzner was recruited as a surgeon-scientist, adding significantly

to the strong research foundation in transplantation.

Dr. Ian McGilvray was promoted to Associate Professor.

Dr. Timothy Jackson was recruited to the program. Tim's academic area of interest is quality assessment of quality control. This has led to the implementation of NSQIP at UHN and provincially.

Dr. Richard Reznick left the Division to take on the position of Dean of the Faculty of Health Sciences at Queen's University Medical School, Kingston ON.

Dr. David Urbach was promoted to Professor of Surgery.

Dr. Anna Gagliardi was promoted to Associate Professor.

Todd Penner was promoted to Assistant

Professor & Carol-Anne Moulton who was promoted to Associate Professor.

Dr. Fayez Queresby was recruited with research interests in colorectal surgery and in the area of Operations Management and Process-level Evaluation and Optimization.

Dr. Karen Devon was recruited with a research interest in medical ethics.

Dr. Anand Ghanekar was promoted to Assistant Professor and Dr. Alice Wei was promoted to Associate Professor.

Dr. Karen Devon was recruited, a Toronto trained Endocrine surgeon.

Sean Cleary was promoted to Associate Professor.

### **Major Accomplishments/Appointments/Awards:**

Drs. Allan Okrainec, David Urbach and Todd Penner help to develop the new University of Toronto Bariatric Surgery Program.

Division enrolled in the General Surgical Module of NSQIP (National Surgical Quality Improvement Program) which allow for improvements in assessment of process and outcomes in General Surgery at our centre and across the breadth of General Surgery. Dr. Timothy Jackson spearheaded this initiative.

The Division initiated a Robotic Colorectal Surgery Program.

The UHN Multidisciplinary Bariatric Program at the Toronto Western site continues to grow, the program was designated a Level 1A Facility by the American College of Surgeons Bariatric Surgery Center Network (ACS BSCN) Accreditation Program, the highest level of accreditation for Bariatric Centers of Excellence.

General Surgery hold current grants totalling

more than \$5,000,000 from National granting agencies; the Canadian Institute of Health Research (CIHR), Ontario Institute for Cancer Research, Canadian Liver Foundation, the Ministry of Research and Innovation, the Royal College of Physicians and Surgeons of Canada, the Medical Council of Canada, Physicians Services Incorporated (PSI), the Ontario Research Fund, The Canadian Cancer Society Research Institute, National Cancer Institute of Canada and International Grants; National Institutes of Health (NIH).

Dr. Paul Greig was honoured with the University of Toronto Award for Excellence in Medical Education for Teaching Performance Mentorship and Advocacy; Dr. Carol-Anne Moulton was honoured with the 2013 PAIRO Excellence in Clinical Teaching Award.

Dr. David Urbach was awarded a James IV Travelling Fellowship in Surgery.

A number of Faculty members were

recipients of prestigious awards; Paul Greig received the Francis Moore Excellence in Mentorship in the Field of Transplantation Surgery Award by the American Society of Transplant Surgeons. Fayez Quereshy and Michael Reedijk were both recipients of a Wightman-Berris Academy Individual Teaching Excellence Award. Timothy Jackson received the Frank Mills Award for Excellence in Teaching by a General Surgery Faculty Member. Catherine O'Brien received the Associated Medical Services Recognition Award for Exemplary End of Life Care.

Catherine O'Brien's publication in *Nature Medicine* titled "Self-renewal as a therapeutic target in human colorectal cancer", David Urbach's publication in the *New England Journal of Medicine* titled "Introduction of surgical safety checklists in Ontario, Canada", and Carol-Anne Moulton and Steve Gallinger's publication in *JAMA* titled "Effect of PET before liver resection on surgical management".

Dr. Carol-Anne Moulton was appointed as Medical Director, TGH Operating Rooms

Allan Okrainec was appointed as the new Head of the Division of General Surgery and University of Toronto Peter Crossgrove Chair.

#### Visiting Professors:

- **2011-12** The John Palmer Lecturer was Dr. Michael Choti from Johns Hopkins School of Medicine; The Peter Crossgrove Lecturer was Dr. Louis Hugh Francescutti from the University of Alberta and the Langer Lecturer was Professor Malcolm Dunlop from the University of Edinburgh.
- **2012-2013** Dr. Richard Reznick, a former member of the Division of General Surgery and present Dean of the Faculty of Health Science at Queen's University, delivered the Division of General Surgery and Canadian Association of General Surgeons Langer Lecturer. Dr. Quan-Yang Duh, from the University of California San Francisco was the John Palmer Lecturer. The Peter Crossgrove Lecture was presented by Dr. Jeffrey Matthews, Chair, Department of Surgery at the University of Chicago.
- **2013-14** Dr. Scot Helton from Virginia Mason Medical Center in Seattle delivered the Division of General Surgery and Canadian Association of General Surgeons Langer Lecturer in September, 2013. The Peter Crossgrove Lecture was presented by Dr. Charles Balch from the University of Texas Southwestern Medical Center in June 2014.

#### c. Neurosurgery

Michael Tymianski MD ( <b>Division Head</b> )	Andres Lozano MD
Mark Bernstein MD	Eric Massicotte MD
Michael Fehlings MD	Ivan Radovanovic MD
Fred Gentili MD	Mohammed Shamji MD
Mojgan Hodaie MD	Charles Tator MD
Suneil Kalia MD	Taufik Valiante MD
Paul Kongham MD	Gelareh Zadeh MD

### **Recruitments/Promotions/Retirements:**

Drs. Eric Massicotte, Taufik Valiante and Gelareh Zadeh and were promoted to Associate Professors, UofT.

Dr. Mojgan Hodaie was promoted to Assistant Professor.

New faculty recruits include; Dr. Ivan Radovanovic (Cerebrovascular), Neuro-Oncology (Dr. Paul Kongkham), Spine (Dr. Mohammed Shamji) and Dr. Suneil Kalia (Functional Neurosurgery).

Dr. Andres Lozano was appointed to the rank of University Professor, the most prestigious and distinguished rank at the University of Toronto.

Dr. Mohammed Shamji received the

Canadian Pain Society Early Career Investigator Research Grant.

Dr. Gelareh Zadeh was appointed to the new role of Director of Academic Affairs for the University of Toronto Division of Neurosurgery effective March 1, 2014, and the new Chair of the Neuro-oncology Committee for World Federation of Neurological Surgeons. She was the recipient of the 2014 Bernard Langer Surgeon-Scientist Award, the Wightman-Berris Academy Postgraduate Education Teaching Excellence Award and The Ross Fleming Surgical Teaching Award.

### **Major Accomplishments/Appointments/Awards:**

Dr. Michael Fehlings received the prestigious Olivecrona Award from the Karolinska Institute in Stockholm for excellence and impact in the field of neurosurgery, related to his work in spinal cord injury. He also received the Leon Wiltse Award from the North American Spine Society for excellence in spine clinical research.

Dr. Andres Lozano won the Winn Prize and the Donald Calne Award for Parkinson's disease Research.

Dr. Michael Tymianski was named the Canada Research Chair (Tier 1) in Translational Stroke Research.

Dr. Michael Fehlings was awarded the Hansjörg Wyss Foundation Award from AOSpine International.

Dr. Mark Bernstein was appointed as the inaugural Greg Wilkins-Barrick Chair in International Surgery.

Dr. Gelareh Zadeh received the Annual Clinician Scientist Award and the Best Abstract Award at the American Society for Therapeutic Radiation and Oncology (ASTRO).

Dr. Mojgan Hodaie was awarded the Wightman-Berris Award for postgraduate education.

Dr. Charles Tator was the recipient of the UHN 2011 Global Impact Award, given to a UHN staff member have been leaders in medicine and science, and whose past work has led to improvements in health care well beyond our borders.

Dr. Michael Tymianski was appointed as Head of the Division of Neurosurgery at UHN

Michael Fehlings was appointed as President of the Cervical Spine Research Society (CSRS).

Taufik Valiante is Co-Director of the Krembil Neuroscience Center's Epilepsy Program

Dr. Michael Fehlings received a Golden Axon Award from the Brain Mapping Foundation, given in recognition of individuals who have demonstrated world-class leadership in neuroscience and have reached out to their local communities.

Drs. Fred Gentili & Dr. Charles Tator received a Council Award from the College of Physicians and Surgeons of Ontario in recognition of outstanding Ontario physicians who have demonstrated excellence and come closest to meeting society's vision of an "ideal physician".

Dr. Andres Lozano was also selected as the recipient of the 2012 Herbert Olivecrona Medal from the Karolinska Institute.

Dr. Charles Tator was presented with the Outstanding Achievement Award by the Medico-Legal Society of Toronto in recognition of significant contributions to the society, the professions and the community at large.

Dr. Andres Lozano was awarded a renewal of his Tier 1 Canada Research Chair in Neuroscience.

The Division collectively, brought in \$4,395,788.31 in peer-review research grants.

Dr. Mark Bernstein was appointed as the inaugural Barrick-Wilkins Chair in International Surgery.

In 2013 Several members of the Division have received international awards: the 2013 Humanitarian Award of the AANS (Dr. Mark Bernstein); the Margolese National Brain Disorders prize from the University of British Columbia (Dr. Andres Lozano); the Jonas Salk Award and the Richard Winn award for excellence in translational neuroscience research and the Queen Elizabeth Diamond Jubilee Award for significant contributions to Canadian society in science and medicine (Dr. Michael Fehlings); the Society of Neuro-oncology Excellence in Translational Research award (Dr. Gelareh Zadeh); Lumbar Spine Research Society basic science award (Dr. Mohammad Shamji).

Division members also published groundbreaking research, including the world's first positive randomized controlled trial of a stroke neuroprotectant (Tymianski; *Lancet Neurology* 2012); the world's first report of treatment of Anorexia Nervosa with Deep Brain Stimulation (Lozano; *Lancet* 2013) and the world's first report of transcranial magnetic resonance guided focused ultrasound to treat tremor (Lozano; *Lancet Neurology* 2013).

Dr. Mark Bernstein was honoured in the Senate of Canada on March 26, 2014 in recognition of his humanitarian work helping those less fortunate in developing countries.

Dr. Michael Fehlings was appointed as Vice Chair Research in the Department of Surgery at the University of Toronto. He was also elected as a Fellow of the Royal Society of Canada and to the Canadian Academy of Health Sciences (CAHS) due to his exceptional academic achievements.

Dr. Fred Gentili was appointed as the Alan and Susan Hudson Chair in Neuro-Oncology at the University Health Network.

#### **Visiting Professors:**

**2011-12** Dr. Jacques Morcos, Professor of Clinical Neurosurgery, University of Miami, 29th Annual E. Harry Botterell Visiting Lectureship in Neurosurgery  
Christopher Ogilvy, Director, Endovascular and Operative Neurovascular Surgery, Harvard Medical School and Massachusetts General Hospital, City-Wide Rounds at Toronto Western Hospital  
Christopher Shaffrey, Harrison Distinguished Teaching Professor of Neurological Surgery, University of

Virginia, 37th William S. Keith Visiting Professorship

2013-14 Drs. Juan C. Fernandez-Miranda, University of Pittsburgh; Sebastien Froelich, Hôpital Lariboisière, Paris; Franco De Monte, MD Anderson Cancer

Center.

#### **University Division Chairs at UHN:**

Dr. Andres Lozano Professor and Chair, Neurosurgery, Department of Surgery, University of Toronto.

#### **d. Orthopedic Surgery**

Nizar Mahomed MD (**Division Head**)

Jaskarndip Chahal MD

Rod Davey MD

Rajiv Gandhi MD

Johnny Lau MD

Stephen Lewis MD

Wayne Marshall MD

Darrell Ogilvie- Harris MD

Raj Rampersaud MD

Khalid Syed MD

Christian Veillette MD

Andrea Veljkovic MD

#### **Recruitments/Promotions/Retirements:**

Dr. Nizar Mahomed was promoted to Full Professor.

Dr. Stephen Lewis was promoted to Associate Professor.

Dr. Jas Chalal was recruited as the new orthopaedic sports surgeon for UHN &

WCH.

Dr. Andrea Veljkovic was recruited as the new foot and ankle surgeon who will focus on complex MIS surgery.

#### **Major Accomplishments/Appointments/Awards:**

Dr. Rod Davey was appointed Co-Chair of the Joint Health & Disease Management Steering Committee for the Toronto Central LHIN. Dr. Darryl Ogilvie-Harris was appointed Director of the University of Toronto Sports Medicine Program.

Dr. Christian Veillette has developed an integrated clinical outcomes measurements database called UHN DADOS. This is a web based health information platform that provides the core data management and outcomes research infrastructure for prospective data collection in clinical and translational research.

Dr. Raj Rampersaud implemented an integrated adverse events tracking program called ORTHOSAVES. The goal of this project is to capture adverse

events in the intraoperative and in the perioperative period to provide an infrastructure for quality improvement and patient safety strategies. This is modelled after the program that Raj has developed in spine surgery called Spine Adverse Events Severity system (SAVES).

Dr. Christian Veillette was awarded with the Canadian Orthopaedic Association Award of Merit in recognition of leadership and innovation in orthopaedic informatics, technology and communication.

Dr. Raj Rampersaud received a \$2.8 million grant from the Ministry of Health and Long Term Care to establish and evaluate to benefit of a new spine model of care across the province.

Division successfully reached the target of raising \$35 million in the Campaign to Cure Arthritis.

#### **e. Plastic Surgery**

Stefan Hofer MD (**Division Head**)

Jamil Ahmad MD

Dimitri Anastakis MD

Peter Bray MD

Brent Graham MD

Steven McCabe MD

Anne O'Neill MD

Herb Von Schroeder MD

Toni Zhong MD

#### **Recruitments/Promotions/Retirements:**

- Dr. Toni Zhong was promoted to Assistant Professor in the Department of Surgery.
- Dr. Christine Novak was recruited appointed as Associate Professor as a Scientist at the UofT.
- Dr. Stefan Hofer was promoted to Full Professor.
- Dr. Steven J. McCabe was recruited and appointed to the position of Director of

the UHN Hand Program at the Toronto Western Hospital. His goals are to transform the Hand Program into a University wide collaborative group, to develop a program in hand transplantation, and to invigorate the academic activities of the Hand Program. Dr. Anne O'Neill was also recruited the Division.

#### **Major Accomplishments/Appointments/Awards:**

Dr. Stefan Hofer was appointed as Editor of the *Journal of Plastic, Reconstructive and Aesthetic Surgery* (JPRAS). He is the first non-British plastic surgeon to hold this position.

The UHN Breast Restoration website was launched in December 2009 as an information resource for patients and referring clinicians. At the same time, the division published the first edition of the UHN Breast Reconstruction Patient Education booklet, with an electronic version available for downloading on the program's website.

Dr. Toni Zhong was appointed as the Breast Cancer Reconstruction Fellowship Coordinator as well as the Clinical Fellowship Coordinator for the Division at the University of Toronto.

Dr. Toni Zhong received a 3-year Career

Development Award from the American Society of Clinical Oncology (ASCO) – Conquer Cancer Foundation.

Dr. Hofer has been appointed to serve as the Editor-in-Chief for the *Journal of Plastic, Reconstructive and Aesthetic Surgery* for a second term.

Dr. Toni Zhong was appointed by Cancer Care Ontario as the Provincial Clinical Lead to establish Standardized Provincial Post mastectomy Breast Reconstruction (PMBR) Clinical Guidelines. Dr. Zhong was nominated for the Gerald Kirsh Humanitarian Award, Princess Margaret Cancer Centre.

#### **Visiting Professors:**

**2012-13** Dr. Gregory Evans, MD, FACS, Professor of Surgery and Biomedical Engineering, The University of California

and President of the American Society of Plastic Surgeons was the Guest Speaker at Professors Rounds.

### ***f. Thoracic Surgery***

Tom Waddell MD (**Division Head**)

Gail Darling MD

Marcelo Cypel MD

Marc de Perrot MD

Shaf Keshavjee MD

Andrew Pierre MD

Kazuhiro Yasufuku MD

### **Recruitments/Promotions/Retirements:**

Dr. Tom Waddell was promoted to Full Professor in the Department of Surgery, UofT.

Dr. Marcelo Cypel was recruited for his clinical and research work in lung

transplantation and extra-corporeal life support.

Drs. Andrew Pierre and Kazuhiro Yasufuku were promoted to Associate Professors.

### **Major Accomplishments/Appointments/Awards:**

Dr. Gail Darling was named Kress Family Chair in Esophageal Cancer.

A new Interventional Thoracic Surgery Program was established under the direction Dr. Kazu Yasufuku; a state-of-the-art interventional thoracic surgery suite at the Toronto General site for early diagnostic and therapeutic management of lung and esophageal cancer.

The Division of Thoracic Surgery formed a unique partnership with McMaster University as a joint academic and clinical program in thoracic surgery.

Dr. Shaf Keshavjee was appointed to Surgeon-in-Chief, UHN.

Dr. Cypel won the prestigious Michael DeBakey Research Scholarship as the most promising young faculty member in North America from the American Association for Thoracic Surgery.

Dr. Darling was appointed as the surgical lead for the thoracic site in the leading radiation oncology trials group, RTOG. Dr. Yasufuku was appointed to the lung site group for the CCO Program in

Evidence-Based Care. Dr. Keshavjee was appointed to the Council of the AATS. Dr. Waddell was appointed Chair of the AATS Research Committee and continued to serve on the Research Committee of the TSFRE and the Program Planning Committee for the Annual Meeting of the STS.

The publication of our clinical trial of “Normothermic Ex vivo lung Perfusion in Clinical Lung Transplantation” in the *New England Journal of Medicine* (Cypel et al, NEJM, 364(15):1431-1440).

Dr. Tom Waddell was appointed as Division Head

New programs that have been initiated by the Division of Thoracic Surgery are the LungMets Program (Drs. Waddell and Cypel) and the Program in Robotic Thoracic Surgery (Drs. Yasufuku and Waddell).

Dr. Tom Waddell was appointed as the Thomson Family Chair in Translational Research.

Dr. Shaf Keshavjee in recognition of the



transformative impact that Ex Vivo Lung Perfusion (and organ repair in general) is having on the field of organ transplantation. These were the Zellers Senior Scientist Award (Cystic Fibrosis Canada), the Distinguished Lecturer in Respiratory Science Award (CIHR Institute of Circulatory & Respiratory Health & Canadian Thoracic Society) and the Roche Award for Excellence in Science (The Transplantation Society).

Dr. Gail Darling received the Gail E. Darling Award for Excellence in Undergraduate Teaching and Dr. Tom Waddell received the Robert J. Ginsberg Award for Excellence in Postgraduate Teaching.

Dr. Marcelo Cypel was awarded a Canada Research Chair in Lung Transplantation.

Dr. Shaf Keshavjee was awarded two Queen Elizabeth II Diamond Jubilee Medals and was named to the Order of Ontario recognizing his many contributions in lung transplantation, thoracic surgery, and surgical leadership.

Dr. Gail Darling was inducted into the American Surgical Association. Dr. Tom Waddell was appointed Chair of the American Association for Thoracic Surgery Research Committee and was inducted into the American Surgical Association.

### **Visiting Professors:**

**2011-12** Dr. Sean Grondin (University of Calgary), Dr. Malcolm Brock (Johns Hopkins), and Dr. David Sugarbaker (Harvard). Refresher Course Visiting Professor included Dr. Robert Cerfolio (Alabama), Dr. Drew Bethune (Halifax), Dr. Nasser Altorki (New York) and Dr. Eugenio Pompeo (Rome). Pearson Day Visiting Professor was Dr. Eric Vallieres from Seattle.

Drs. Cypel and Keshavjee have achieved stable Ministry of Health funding for the Extra-Corporeal Life Support (ECLS) program.

In 2014, Dr. Shaf Keshavjee was awarded an Honorary Doctor of Science Degree from Ryerson University, as well as an Honorary Doctorate of Science from Queen's University. He has also received the country's highest civilian honour with an appointment as an Officer of the Order of Canada. He is also a Fellow of the Canadian Academy of Health Sciences.

Dr. Tom Waddell was appointed to the Council of the newly inaugurated Ontario Institute of Regenerative Medicine.

Dr. Marcelo Cypel was awarded a Premier's Early Research Award. Notably, Dr. Cypel led the development of a hands-on course in ECLS technology at the Annual Meeting of the American Association for Thoracic Surgery.

Dr. Marc de Perrot, along with radiation oncology colleague, Dr. John Cho, have pioneered the use of neoadjuvant radiation in mesothelioma prior to extrapleural pneumonectomy.

**2012-13** Dr. Alessandro Brunelli (University of Ancona, Italy), Dr. Brian Louie (Swedish Cancer Center, Seattle), and Dr. Ara Vaporciyan (MD Anderson Cancer Center, Houston). Another highly successful Toronto Thoracic Surgery Refresher Course was held in June 2012 and included the following Visiting Faculty: Phillippe Dartevele (Marie-Lannelongue, Paris), Scott Swanson

(Brigham, Boston), Wayne Hofstetter (MD Anderson, Houston) and Lorenzo Ferri (McGill, Montreal). The Pearson Day Visiting Professor was Dr. Richard Finley from Vancouver.

**2013-14** Benjamin Kozower (University of Virginia, Charlottesville, Virginia) and Dr Gunda Leschber (Berlin Chest Hospital, Berlin, Germany). Another highly successful Toronto Thoracic Surgery Refresher Course was held in June 2014 and included the following Visiting Faculty: Paul De Leyn (University Hospital, Leuven, Belgium),

Thierry Le Chevalier (Institute Gustav Roussy, Paris, France), Steve Cassivi (Mayo Clinic, Rochester, Minnesota), and Michael Humer (Kelowna General Hospital, Kelowna, BC).

The Pearson Day Visiting Professor was Dr. Bryan Meyers from Washington University in St. Louis.

#### **University Division Chairs at UHN:**

- **2011-12** Dr. Tom Waddell Professor and Chair, Division of Thoracic Surgery, Department of Surgery, University of Toronto

#### **g. Urology**

Neil Fleshner MD (**Division Head**)  
Dean Elterman MD  
Antonio Finelli MD  
Rob Hamilton MD  
Magdy Hassouna MD

Michael Jewett MD  
Girish Kulkarni MD  
Sidney Radomski MD  
Michael Robinette MD  
John Trachtenberg MD

#### **Recruitments/Promotions/Retirements:**

Dr. Magdy Hassouna was promoted to Full Professor

Dr. Girish Kulkarni was recruited and his focus will be on health services research in urological oncology.

Dr. Robert Hamilton was recruited as a new

uro-oncologic surgeon.

Dr. Dean Elterman joined the faculty and will lead the divisions Men's Health program based at TWH site.

#### **Major Accomplishments/Appointments/Awards:**

Dr. Neil Fleshner presented on the results of the REDEEM study which was a featured paper at GU ASCO, AUA and EAU meetings.

The Division collectively brought in over 3 million dollars in peer reviewed grant capture largely in the area of urologic oncology.

The group published over 60 publications including such prestigious journals as

*Journal of Clinical Oncology* and *Lancet*.

Dr. Michael Jewett received the prestigious

career recognition awards from the American and Canadian Urological Associations and the Society of Urologic Oncology. Dr Neil Fleshner was awarded a Queen's jubilee medal.

Collectively grant funding was over 3 million.

### **Visiting Professors:**

**2012-13** Visiting professors included Dr Marsden Linehan (NIH) and Dr Joel Nelson (University of Pittsburgh).

**2013-14** Drs Dean Assimos, John Denstedt, Jack Baniel and Joel Nelson .

### **University Division Chairs at UHN:**

Dr. Neil Fleshner Professor & Chair, Division of Urology, Department of Surgery, University of Toronto

### ***h. Vascular Surgery***

Tom Lindsay MD (**Division Head**)

Thomas Forbes MD

Wayne Johnston MD

George Oreopoulos MD

Graham Roche-Nagle MD

Barry Rubin MD

Leonard Tse MD

### **Recruitments/Promotions/Retirements:**

Dr. Leonard Tse was recruited to the Division of Vascular Surgery as a surgeon-scientist.

Dr. Thomas Forbes was recruited as the University Division Chair

### **Major Accomplishments/Appointments/Awards:**

Dr. Wayne Johnston received the Lifetime Achievement Award from the Society for Vascular Surgery. At the same time he became Editor-in-Chief of the Rutherford Vascular Surgery textbook.

Dr. Tom Lindsay was awarded the Ross Fleming Surgical Educator award at UHN.

Several clinical firsts for this division included; the first initial renal artery denervation procedure, and the first Anaconda fenestrated EVAR graft implantation in Canada.

Dr. George Oreopoulos was appointed to the position of University of Toronto, Division of Vascular Surgery Program Director.

Currently, UHN is the only Canadian site and the only site outside of the USA to be participating in the Society for Vascular Surgery's Vascular Quality Initiative (VQI). The prospective data collection has demonstrated that Vascular surgery

outcomes, in terms of mortality and morbidity are equal or exceed those of the VQI group. The Division has used the data to identify areas for improvement such as routine EVAR length of stay.

Dr Leonard Tse was the first to use the Anaconda fenestrated cuff and is the North American proctor for this new EVAR device.

Dr. Wayne Johnston developed the new content of the premier vascular surgery text book (Rutherford's Vascular Surgery), co-editing the chapters, and organized the electronic output for computers and e-books. In addition, he received the Pioneers in Gore Performance Award for commitment to ongoing learning.

Dr. George Oreopoulos won the Surgical Skills Centre Distinguished Educator Award at Gallie Day 2014.

Dr. Roche-Nagle won The CSVS Gore Research Award for his project titled "The therapeutic and prognostic value of

perfusion angiography with indocyanine green fluorescence in patients with critical ischemia.”

**University Division Chairs at UHN:**

Dr. Thomas Forbes Professor & Chair,  
Vascular Surgery, Department of Surgery,  
University of Toronto

## **Summary**

In summary, we have the largest and most productive department of surgery in the country. Our department is academically productive and the dedication to patient care, teaching and research is exemplary. The members of the department are focused on academic productivity and also in clinical excellence with an understanding of the business aspects of delivery of surgical services – timely delivery of care and volume targets with performance measures in place. We will continue to work to develop and maintain the appropriate environment to enable leadership in academic productivity and surgical innovation.

**Department of Surgery**  
*Women's College Hospital*  
*University of Toronto*

FIVE YEAR REVIEW  
2009-2014



**John Semple, MD**  
Surgeon-in-Chief  
Women's College Hospital  
University of Toronto

# WOMEN'S COLLEGE HOSPITAL

## AT A GLANCE

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### **Surgeon-in-Chief:**

Dr. John L. Semple

### **Division Heads:**

Orthopedic Surgery: Dr. John Theodoropoulos

Plastic Surgery: Dr. John Semple

### **Staff Surgeons:**

#### **Division of Plastic Surgery**

Dr. John Semple

Dr. Mitchell Brown

#### **Division of Orthopedics**

Dr. John Theodoropoulos

Dr. Ogilvie-Harris

Dr. Jaskarndip Chahal

Dr. Lucas Murnaghan

Dr. Tim Dwyer

#### **Division of General Surgery**

Dr. Tulin Cil

Dr. Karen Devon

#### **Division of Urology**

Dr. Ethan Grober

Surgical programs with a focus in Ambulatory Care continue to be a dominant theme in the evolving structure of Women's College Hospital as this institution continues to progress as an Academic Ambulatory Surgical Centre that is fully integrated with the hospital's primary ambulatory strategic plan and current services. Women's College Hospital is a designated facility for academic ambulatory surgery at the University of Toronto and the Toronto Central LHIN. Our Surgical Programs are dynamic and innovative and our mandate is to be a leader in academic ambulatory surgery.

These innovations include the expedited discharge in postoperative patients and remote monitoring of patients at home using smart phone technology. These innovations include the X OR-WCH to be the incubator for developing processes that move in-patient surgeries to an Ambulatory setting. Women's College Hospital continues to develop a fully academic affiliated site for inter-professional research and education in ambulatory surgery focused on minimally invasive and specialized ambulatory procedures and innovative models of systems solutions.

Women's College Hospital continues to develop as a hub of a citywide focus in Orthopedic Sports Medicine and building surgical strength in our core programs of Urology, Orthopedic Surgery, Plastic Surgery and General Surgery. Our goal is to become a leader in ambulatory surgery as we continue to work on our strengths: innovation and collaboration.

## **Activities**

Women's College Hospital in 2010 embarked on the development of a new way of viewing healthcare with a mandate to keep people out of hospital with the plans to design a new hospital. In the summer of 2010 the construction of the new Women's College Hospital commenced with the demolition of a parking garage to make way for the first Phase of the new 10 storey tower which would be home to 8 operating rooms, clinical and administrative space. In May of 2013 we moved into Phase 1 and within several weeks the old building was demolished. It was celebrated with various events including "Paint the Halls" where 75 artists were selected to feature their works of art on the walls of WCH.

Phase II which is set to be completed in the summer of 2015 will be comprised of a 9 storey building that will be joined to comprise the new L-shape building. This new 400,000 square foot facility will have the capacity to accommodate 340,000 patients a year. It will also be the home to education, research, clinical centers and inter professional teams of various sorts all under one roof. This new space will accommodate the core surgical activities and programs of the Department of Ambulatory Surgery.

## **Appointments**

Since 2009 The Department of Surgery at Women's College Hospital continues to expand and thrive. Twenty eight surgeons from eight

different hospitals now work at Women's College Hospital in our key areas. Over the past 5 years we have actively recruited in Orthopedics and General Surgery, both were co-recruitments with the University Health Network and The Hospital for Sick Children. In addition, several staff have been appointed, successfully passed their three year reviews and continue to enhance divisional involvement.

Dr. Lucas Murnaghan joined the Orthopedic Division in August of 2009 with a focus in orthopaedic care of athletic injuries in the paediatric, adolescent and collegiate athlete. His clinical practice includes general pediatric orthopaedics with a sub-specialty interest in paediatric athletic injuries and the use of arthroscopy in the management of a wide spectrum of pathologies. His practice extends to the adolescent and collegiate athlete with close association with the MacIntosh Clinic at The University of Toronto and his young adult practice at Women's College Hospital. In that same year Dr. John Semple was awarded the Chair in Surgical Breast Cancer Research by the Canadian Breast Cancer Foundation, Ontario Region. The Chair is not only the first surgical research Chair awarded by the Canadian Breast Cancer Society but also the first endowed Chair based in the Department of Surgery at Women's College Hospital. Dr. Semple still holds this chair appointment to date.

2010, Dr. Darrell Ogilvie-Harris was appointed Director of the University of Toronto, Department of Surgery Orthopaedic Sports Medicine Program. WCH has become one of the primary hubs for orthopaedic sports medicine within this city-wide network and a primary training site for orthopaedic residents in this subspecialty.

In 2011 Dr. John Theodoropoulos not only successfully defended his MSc thesis in the Institute of Medical Science in Cartilage Regeneration and successfully transitioned his three year CARS process, during the past year he was appointed Head of the Division of Orthopedics at Women's College Hospital.

In 2012-2013 we welcomed three new recruits Dr. Jaskarndip Chahal, Dr. Karen Devon and Dr. Tim Dwyer.

**Dr. Jaskarndip Chahal** is an Assistant Professor in the Department of Surgery at the University of Toronto with his primary appointment as an Orthopaedic Surgeon at Women's College Hospital. Dr. Chahal attended medical school at the University of Manitoba and completed his orthopaedic residency training here at U of T where he enrolled in the Surgeon-Scientist Program in Clinical Epidemiology. His practice is focused on treating patients with orthopaedic sports medicine disorders. His research will focus on cartilage regeneration, clinical measurement and conducting translation outcomes research of novel cartilage repair techniques. Dr. Chahal is currently enrolled in a joint international Master's of Business Administration (MBA) program at the University of Toronto and the University of St. Gallen (Switzerland). This MBA program provides strong exposure to leadership and strategy as well as innovation and entrepreneurship.

**Dr. Karen Devon** is an Endocrine and Thyroid Surgeon with an interest in Medical Ethics and Education. After receiving her MDCM at McGill University Dr. Devon entered the General Surgery Training Programme and the Surgeon Scientist Programme here at the University of Toronto. She was awarded her MSc in Clinical Epidemiology in 2008 and her

FRCS(C) in General Surgery in 2010. Karen then completed 6 months of postgraduate training in Breast Surgical Oncology at UHN, followed by a Clinical Fellowship in Endocrine Surgery at the University of Chicago. This Fellowship included one month in the Philippines studying the surgical treatment of goitre. Additionally, Karen completed a Surgical Ethics Fellowship at the MacLean Center for Clinical Ethics at the University of Chicago.

**Dr. Tim Dwyer** has recently joined Women's College Hospital in the division of orthopedics with a cross appointment at Mount Sinai Hospital., Assistant Professor at the University of Toronto, Dr. Dwyer's surgical practice encompasses open and arthroscopic surgery of the knee and shoulder, as well as the management of sports injuries. Dr. Dwyer's primary research focus is on the assessment of surgical competence in Competency Based Medical Education, which is the basis of his PhD thesis at the Institute of Medical Science. He designs and validates assessment methods for Medical Expert and Intrinsic CanMEDS Roles, as well as methods used to assess acquisition of competence in surgical skill - research funded by grants from the American Orthopedic Association.

## Departures

The Department of Surgery at Women's College Hospital has had the privilege of working with both Dr. George Hiraki and Lavina Lickley, both serving 4 decades of service to the Department of Surgery.

In 2010, Dr. George Hiraki retired from the Department of Surgery at Women's College Hospital after he had been a major figure in our Department of Surgery and was well recognized



for his wide scope of practice and his passion for teaching. In November 2014, Dr. Lavina Lickley, surgeon, researcher and co-founder of the Henrietta Banting Breast Centre and former Surgeon in Chief (1989-1999) also retired. Both still remain Honorary Staff within the Department of Surgery at Women's College Hospital.

## **Divisional Activities**

Since 2009 Dr. Mitchell Brown continues to host the Annual Toronto Breast Symposium, welcoming local, national and international professors who are leaders in the field of Aesthetic and Reconstructive Breast Surgery. Women's College Hospital continues to host international candidates under the University of Toronto Breast Reconstruction Clinical Fellowship Program. Since 2009 Women's College Hospital has supervised 14 fellows from around the world. Dr. Ethan Grober in 2010 successfully passed his three year review while holding 6 research grants. Dr. Tulin Cil was awarded the Wightman-Berris Academy Individual Teaching Performance Award and was appointed the Director of Undergraduate Education for the Department of Ambulatory Surgery at Women's College Hospital. The Department of Surgery continues its expansion on key programs. In 2012, Dr. Jamil Ahmad was appointed the Director of the University of Toronto – Women's College Hospital Education Program in Aesthetic Plastic Surgery. This Aesthetic Clinic is a key ambulatory program that offers patients economically priced cosmetic procedures that are performed by the plastic surgery senior resident under the supervision of faculty plastic surgeons certified as specialists by the Royal College of Physicians and Surgeons of Canada.

## **Education**

Women's College provides a unique surgical education setting because of its ambulatory mandate. Over the past 5 years The Department of Surgery has worked in partnership with its various disciplines to develop an ambulatory curriculum with learning objectives specific to ambulatory surgery. We have designated resident rotations in Plastic Surgery and Orthopedics. In 2014 Dr. Karen Devon and Dr. Tulin Cil developed a new Ambulatory General Surgery Rotation with introduction of weekly guided reflective practice. Women's College Hospital is now the primary rotation for Orthopedic Sports Medicine residents at the University of Toronto Orthopedic Sports Medicine that includes a Simulation Education Centre in a multidisciplinary content, with a primary contribution by Orthopedic Surgery

Dr. Karen Devon has developed multiple educational activities including the Endocrine Surgery Journal Club, Department of Surgery Book Club, Ethics Quality of Care Rounds Karen has also been invited to lecture extensively on the ethics of social media in health care and is conducting research in this area. Dr. Devon has been recognized for her scholarly work in Ethics and Education and received an Associated Medical Services (AMS) Phoenix Fellowship Award. Her most recent publications include "Ethics and Genomic Medicine, How to Navigate Decisions in Surgical Oncology" and "Tragic Knowledge: Truth telling and the maintenance of hope in surgery".

The experience rated by undergraduate, residents, fellows and the Continuing Medical Education (CME) continues to rate as excellent with our teaching volumes steadily increasing. They continue to make their surgical mark in the Department of Surgery as our residents

and fellows have been honored with numerous awards in recognition of their research and education in patient care and development

## Research

Over the last five years the ten core surgeons at Women's College Hospital have held over 60 active research grants (including CIHR). We also have over 250 peer reviewed publications from July 1, 2009 to June 30, 2014. As in previous years they are engaged in a variety of clinical, educational and basic research activities. Several of them supervise residents and fellows in projects and graduate degree programs.

## Awards

We continue to attract outstanding graduate and post graduate trainees who have been presented with a number of awards and prizes for their achievements. Our surgical staff has also been very active in all levels of education and has been recognized for their achievements with 22 awards as listed below:

### ***Dr. John Semple***

Dr. John Semple was awarded the Chair in Surgical Breast Cancer Research by the Canadian Breast Cancer Foundation, Ontario Region. The Chair is not only the first surgical research Chair awarded by the Canadian Breast Cancer Society but also the first endowed Chair based in the Department of Surgery at Women's College Hospital. Dr. Semple still holds this chair appointment.

Leading Practice Award: Ambulatory Model of Care for Breast Reconstruction by Accreditation Canada 2010. 2011. Along with the Women's

College Hospital Team.

Joan Lesmond Quality Award for TRAM Working Group "An Innovative Ambulatory Model of Care for Women Undergoing Breast Cancer Reconstruction". 2011. Along with the Women's College Hospital Team.

Dr. Semple was recognized in the 2011-12 Dean's Report by The Faculty of Medicine, University of Toronto for his 30 day post op monitoring APP. 2012.

Mentor Canada Prize Best Clinical Paper (Resident Award- Dr. Heather Baltzer) at the Division of Plastic Surgery, University of Toronto Residents Research Day. *MRI Volumetric Analysis of Breast Fibroglandular Tissue to Assess Risk of the Spared Nipple in BRCA1 and BRCA2 Mutation Carriers*. 2013. Dr. John Semple, Supervisor

American Society of Clinical Oncology, (Resident-Heather Baltzer) awarded 1 of 10 Novartis Oncology Young Canadian Investigator Awards (NOYCIA) by the Program Committee. *MRI Volumetric Analysis of Breast Fibroglandular Tissue to Assess Risk of the Spared Nipple in BRCA1 and BRCA2 Mutation Carriers*. 2013. Dr. John Semple, Supervisor

FM Woolhouse Award (Resident Award - Dr. Heather Baltzer) for the best presentation of a clinical study at the Canadian Society of Plastic Surgeons, Calgary Alberta. *MRI Volumetric Analysis of Breast Fibroglandular Tissue to Assess Risk of the Spared Nipple in BRCA1 and BRCA2 Mutation Carriers*. 2013. Dr. John Semple, Supervisor.

Mentor Canada Prize Best Clinical Paper (Resident Award - Dr. Katie Armstrong), in the Division of Plastic Surgery, University of Toronto

Residents Research Day. “Breast Reconstruction Follow-Up Using QoC Mobile App: A Societal Economic Evaluation”. 2014. Dr. John Semple, Supervisor.

The Cause Leadership Award from the Canadian Breast Cancer Foundation (Ontario Chapter) in recognition for his Leadership in Breast Reconstruction in Breast Cancer patients and for his outstanding clinical accomplishments and research in this area. 2014.

Best Paper - Breast Section, American Society of Plastic Surgeons, Annual Meeting - Chicago, ILL -- Quality of recovery in women undergoing autogenous breast reconstruction in an ambulatory setting. Armstrong K, Davidge D, Brown M, Morgan P, Semple J. 2014.

The American Telemedicine Association - Best Student Paper (Dr. Katie Armstrong) “ Breast Reconstruction Follow-up using QoC Mobile App: A Societal Economic Evaluation. 2014. Dr. John Semple, Supervisor

68th Annual Meeting of The Canadian Society of Plastic Surgeons - Outstanding Paper Presentation. “Quality of recovery in women undergoing autogenous breast reconstruction in an ambulatory setting”. Davidge K, Armstrong K, Brown M, Semple J. 2014.

**Presenter, “Quality of Recovery in Women Undergoing Autogenous Breast Reconstruction in an Ambulatory Setting”. SGS Conference Grant. \$800: 2014.** Dr. John Semple, Supervisor.

**2014 Mentor Medical Systems Canada Graduate Scholarship, the Division of Plastic & Reconstructive Surgery, University of Toronto, Toronto, Ontario for the research protocol “Replacing ambulatory clinic follow-up with remote home monitoring using smartphone in breast reconstruction**

**patients: Is it cost effective?”** Dr. John Semple, Supervisor

### ***Dr. Mitchell Brown***

The Chair’s Award for “Going Above and Beyond”, Division of Plastic and Reconstructive Surgery, University of Toronto. 2013.

Best Paper - Breast Section, American Society of Plastic Surgeons, Annual Meeting - Chicago, ILL -- Quality of recovery in women undergoing autogenous breast reconstruction in an ambulatory setting. Armstrong K, Davidge D, Brown M, Morgan P, Semple J. 2014.

### ***Dr. Jaskarndip Chahal***

Arthroscopy Association of North America Research Grant (\$12, 250) – The Minimal Clinically Important Difference (MCID) and Patient Acceptable Symptomatic State (PASS) for the KOOS and IKDC in patients undergoing surgery for articular cartilage defects of the knee.

Principal Investigator: Brian J. Cole MD MBA

**Co-Investigator:** Jaskarndip Chahal MD MSc FRCSC, Aileen Davis

Date Awarded: May 2012.

Arthroscopy Association of North America Research Grant (\$20,500). The Effect of Knee Flexion Angle for Graft Fixation During Single-Bundle Anterior Cruciate Ligament Reconstruction – A Multicentre, Patient and Assessor Blinded, Stratified, Two-arm Parallel Group Superiority Trial

**Principal Investigator:** Jaskarndip Chahal  
MD MSc FRCSC  
Co-investigators: Daniel Whelan, Tim  
Dwyer, Darrell Ogilvie-Harris, Paul Marks,  
John Theodoropoulos  
Date Awarded: March 2014

***Dr. Tulin Cil:***

Education Research Award, September 2013  
Canadian Association of General Surgeons,  
Ottawa, Ontario Canada. Women's College  
Hospital Education Innovation Award-,  
November 2013

***Dr. Ethan Grober***

2014 Jun ***Dr. Michael Jewett Post-Graduate  
Teaching Award***, Urology, Dept of Surgery,  
Faculty of Medicine, Division of Urology,  
University of Toronto. Best Post Graduate  
Lecturer.

***Dr. Lucas Murnaghan***

2014 Mar - 2014 Apr **POSNA/BIOMET  
Traveling Fellowship**, POSNA/BIOMET

# 18. CONCLUSIONS

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The compilation of materials for this five year review was instructional and beneficial in many ways. As opposed to the conventional Annual Report which has been prepared for the Department over the past 5 years, this present document amasses an extraordinary amount of information which demonstrates the required interplay in the Department between the Faculty of Medicine, the Hospitals, and the Research Institutes. While structure and governance are key features of any successful organization, I should like to stress once again the importance of the contributions of the faculty members (full-time, part-time, and adjunct), the scientists, the residents, fellows, and medical students to the mission and goals of the Department. The talent within the Department as a whole is both astounding and awe-inspiring. And finally, I would be remiss if I did not mention the superior support that the Department receives from its full-time staff who work tirelessly on all functions and programs to ensure that smooth operations of the Department.

**James T Rutka, MD, PhD, FRCSC, FACS**  
RS McLaughlin Professor and Chair  
Toronto, September 10<sup>th</sup>, 2015



It has been my great pleasure and privilege to be the RS McLaughlin Professor and Chair of Surgery at the University of Toronto these past 5 years. Our future has never looked as bright and promising as it does at this time.  
Respectfully Submitted