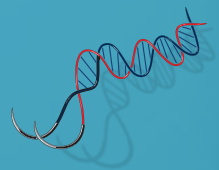




Surgery
UNIVERSITY OF TORONTO

SELF-STUDY REPORT

Department of Surgery
External Review 2020





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Department of Surgery
External Review 2020

Submitted by **Dr. James T. Rutka**
RS McLaughlin Professor and Chair of Surgery

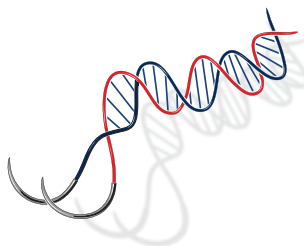


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ABBREVIATIONS

AAP: Annual assessment of productivity
AEF: Academic enrichment fund
AFP: Alternate Funding Plan
BPIGS: Best Practice in General Surgery
CACMS: Committee for Accreditation of Canadian Medical Schools
CAR: Continuing appointment review
CaRMS: Canadian resident matching service
CBC: Competency Based Curriculum
CPD: Continuing Professional Development
CRC: Canada Research Chair
FEAC: Fellowship Education Advisory Committee
IDEAS: Improving & Driving Excellence Across Sectors
LCME: Liaison Committee on Medical Education
LHIN: Local Health Integration Network
MAM: Medical Academy of Mississauga
MOHLTC: Ministry of Health and Long-term 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 practice
RCPSC: Royal College of Physicians and Surgeons of Canada
SEAD: Surgery Exploration and Discovery
SIC: Surgeon-in-Chief
SLUE: Surgical Leaders of Undergraduate Education
SSTP: Surgeon Scientist Training Program
TES: Teaching Effectiveness Score
UME: Undergraduate Medical Education

SURGERY BY THE NUMBERS

2014-2019



545

FACULTY

- 296 FULL-TIME
49 NEW HIRES
- 079 PART-TIME
25 NEW HIRES
- 170 ADJUNCT
31 NEW HIRES



225 ○ MEDICAL STUDENTS
4-YEAR UNDERGRADUATE CURRICULUM

277 ○ RESIDENT
TRAINEES

249 ○ CLINICAL FELLOWS from 40 countries
The largest clinical fellowship program in the country



11
RESIDENCY
PROGRAMS



73 FACULTY MEMBERS PROMOTED
TO HIGHER ACADEMIC RANKS

1 CITY-WIDE
BRAIN TUMOUR
BANKING INITIATIVE

2 NEW UNIVERSITY
DIVISION CHAIRS

3 NEW SURGEON-IN-CHIEFS
NEW PROGRAM DIRECTORS

4 SUB-SPECIALTY
PROGRAMS

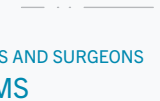
- Pediatric general surgery
- Colorectal surgery
- Surgical oncology
- Thoracic surgery

5 CANADA RESEARCH
CHAIR HOLDERS

6 FULLY-AFFILIATED
TEACHING
HOSPITALS

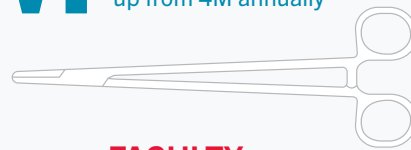


7 DIRECT ENTRY
ROYAL COLLEGE OF PHYSICIANS AND SURGEONS
TRAINING PROGRAMS



8M in annual
ADVANCEMENT
FUNDING
up from 4M annually

Grant capture:
404M



64
FACULTY
SUCCESSFULLY COMPLETED
Continuing Appointment Reviews (CARs)

- Sunnybrook Health Sciences Centre
- St. Michael's Hospital, Unity Health
- Mount Sinai Hospital
- University Health Network
- Women's College Hospital
- The Hospital for Sick Children



76M in annual
RESEARCH
FUNDING
up from 40M annually



40

RESEARCH
SCIENTISTS

Faculty have
published more than

8,500
peer-reviewed
publications



BEST GLOBAL UNIVERSITIES IN SURGERY



Founded in 1933, the US News and World Report has published rankings of top institutions throughout the world in education, health, and technology. It is the oldest and best-known ranker of academic institutions.

In addition to rankings of the world's top 1,500 universities overall and by region and country, the sixth annual U.S. News Best Global Universities rankings include an examination of the leaders in key academic subject areas. U.S. News used a separate methodology to publish the top global universities in 28 subject areas.

These subject-specific rankings, powered by Clarivate

Analytics InCites, are based on academic research performance, as well as indicators for global and regional reputation in each specific subject. The rankings in surgery were based on excellence in such areas as organ transplantation, trauma surgery, minimally invasive surgery, surgical technology and academic research performance. The bibliometric indicators are based on data from the Web of Science for the five-year period from 2013-2017.

For 2020, the US News and World Report identified the Department of Surgery at the University of Toronto as the fourth best academic institution throughout the world for surgery.

The Top 5 Best Global Universities in Surgery



#1 Harvard University
 United States Cambridge, MA
 #1 – Best Global Universities

100
Subject Score



#2 Johns Hopkins University
 United States Baltimore, MD
 #11 – Best Global Universities

90.1
Subject Score



#3 University of Pittsburgh
 United States Pittsburgh, PA
 #47 (tied) – Best Global Universities

88.7
Subject Score



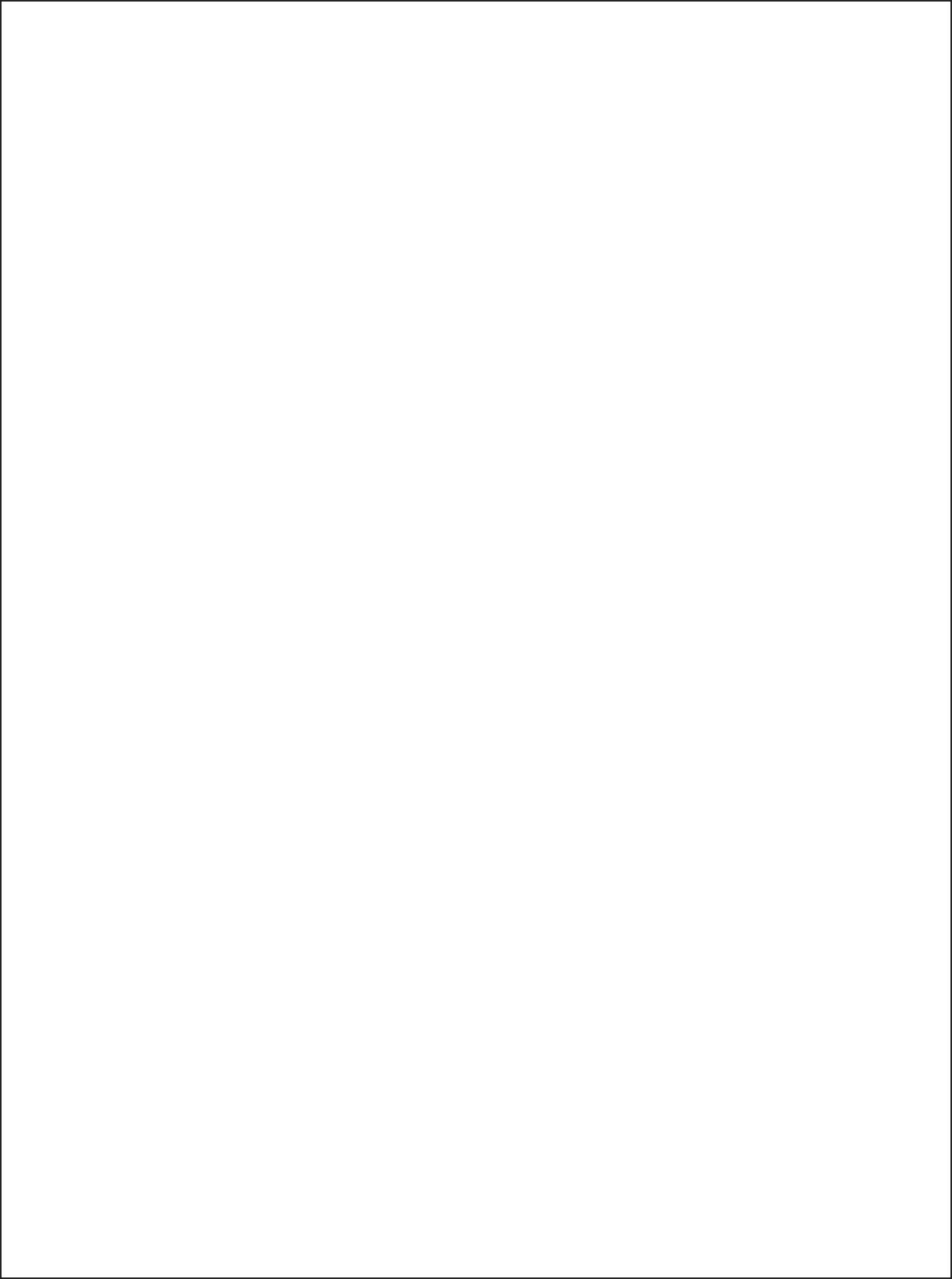
#4 University of Toronto
 Canada Toronto, Ontario
 #18 – Best Global Universities

83.4
Subject Score



#5 University of Michigan--Ann Arbor
 United States Ann Arbor, MI
 #17 – Best Global Universities

82
Subject Score





EXECUTIVE SUMMARY

1

EXECUTIVE SUMMARY



Executive Committee of the Department of Surgery: Back row – M. Fehlings, O. Rotstein, A. Nathens, S. Keshavjee, R. Richards; Front row – N. Ahmed, J. Rutka, R. McLeod

The Department of Surgery at the University of Toronto has been ranked fourth in the world for global universities in the recent 2020 US News and World Report. Its global reputation is based on a highly talented faculty who demonstrate exemplary patient care, excellence in teaching and training the next generation of surgeons, state-of-the-art research across the continuum of investigative ideology, and devotion to surgical innovation, entrepreneurship, and commercialization.

The Department is the largest across Canada with 296 full-time faculty members, 277 residents,

249 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). 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.

Members of the faculty are distributed at 6 major teaching hospitals: St Michael's Hospital, Unity Health, 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, Michael Garron Hospital, Unity Health Toronto (St. Joseph's Hospital), and Trillium Health Partners.

The Department is a research-intensive, and academically productive unit in which the faculty have generated on average over \$75 Million per annum in research funding over the past 5 years. The amount of funding has nearly doubled when compared to the previous 5 years, 2009 – 2014, when it was on average \$40 Million per annum. Credit for this incredible accomplishment goes to all surgeons engaged in research who have maximized opportunities for receiving operating grants from the Tri-Council agencies (CIHR, SSHRC, and NSERC), in addition to large career awards such as the CIHR Foundations grants, and Program Project awards. The Department of Surgery faculty publish more than 1,000 peer-reviewed publications per year including in high-impact journals such as *New England Journal of Medicine*, *Nature*, *Science*, and *The Lancet* to name a few. Each year, the faculty also distinguish themselves by earning and receiving numerous prestigious national and international awards. The Department also lays claim to 5 Canada Research Chair holders.

Funding for the Department is derived from multiple sources including: Base funds are received annually from the University and the Ministry of Health and Long-term 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. On an annual

basis, the Department of Surgery receives \$5 – 10M in Advancement funds to support Chairs, research investigators, clinical fellows, and the advancement infrastructure. This past year was a banner year for the Department of Surgery in which \$11.8M in Advancement funds were received.

The Department has developed an ambitious Strategic Plan for 2018 – 2023 entitled: “Aspire – Advance – Achieve”. Within this plan, there are 6 well-defined areas of surgical activity including: 1) Education; 2) Research; 3) Best practices; 4) Faculty Development; 5) Global Outreach; and 6) Innovation. Progress that has been made along each of these areas 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 2018 – 2023 Strategic Plan – Leadership in Advancing New Knowledge, Better Health and Equity.

From 2015 - 2020, the Department has recruited 109 new faculty members (29 clinical adjunct, 2 adjunct, 49 full time, 25 clinical part-time, and 4 status-only), appointed 2 new University Division Chairs, and supported the appointments of 3 new program directors, and 3 new Surgeons-in-Chief at the various hospitals. There were 64 faculty who successfully completed their Continuing Appointment Reviews (CARs). And finally, the Department celebrated in the promotion of 73 faculty members to higher academic ranks.

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.



INTRODUCTION

2 INTRODUCTION



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 296 full-time faculty, 79 part-time faculty, 170 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 \$75–80 M 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, 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.

This Self-Study Report and External Review bridges two effective Strategic Planning Processes and Plans that have served the Department well. The first was the Strategic Plan for 2012-17 – Transforming Surgery: Beyond the Cutting Edge – which was a bold blueprint for taking the Department to a higher station. The current Strategic Plan for 2018-23 – Aspire – Advance – Achieve – builds on progress made during the first plan, and has the following Strategic Directions which have taken the Department into wholly new areas previously unexplored. These directions are identified as follows:

STRATEGIC DIRECTIONS



1. Educational excellence through novel approaches to teaching and learner engagements



2. Integrated research for clinical and academic excellence



3. Optimize patient and clinical outcomes through the provision of **high-quality, person-centred care**



4. Faculty members achieving their maximum potentials in both professional and personal domains



5. Consolidate partnerships and expertise for local, national and international impact



6. Translation of novel discoveries into surgical practice

Enabling and supporting strategies for the plan include communication and knowledge sharing through the use of Department-specific materials; pursuing alternative sources of sustainable funding through Advancement; and promoting faculty members to higher academic standings for regional, national and international awards.

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 Long-term 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 will clearly illustrate.

A close-up photograph of a person's hand holding a black pen, writing on a document. The document features a blue bar chart. In the background, another hand is visible, possibly holding a spiral notebook. A large, semi-transparent white number '3' is overlaid on the right side of the image. The bottom right corner has a blue diagonal overlay containing white text.

3

**KEY FINDINGS
FROM THE 2015
EXTERNAL REVIEW**

3 KEY FINDINGS FROM THE 2015 EXTERNAL REVIEW



There is no question that the Department of Surgery at the University of Toronto is the top Department of its kind in Canada and one of the top 10 in the world. Its educational programs are world famous and its clinical programs are cutting edge, state-of-the-art that compare favourably with any such program in the world.”

Department of Surgery, External Review 2015-2016

Dr. Carlos Pellegrini | Professor & Chair, Department of Surgery at the University of Washington

Dr. John Kortbeek | Professor & Chair, Department of Surgery at the University of Calgary

The previous review of the Department of Surgery was undertaken in 2015 close to the end of my first term as Chair of the Department of Surgery. The Review was commissioned by the Dean of the Faculty of Medicine, Dean Trevor Young. The two External Reviewers were Professor John Kortbeek, Professor and Head, Department of Surgery, University of Calgary; and Professor Carlos Pellegrini, the Henry N. Harkins Professor and Chair, Department of Surgery, University of Washington. On balance, the review by Professors Kortbeek and Pellegrini was highly laudatory of the leadership of the Department of Surgery, and the quality of its Divisions and many programs. 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 (UME)

Whereas there was some concern regarding undergraduate medical education (UME) in the previous external review, the 2015 External Reviewers stated that systems were put into place to mitigate against the less than optimal prior experience faced by medical students on surgical rotations. Some of these systemic changes included the introduction of “Surgical Leaders of Undergraduate Education” (SLUEs) at each Hospital, the establishment of strong student surgical interest groups across numerous Divisions, the development

of the Surgery Exploration and Discovery (SEAD) course (J Surg Res 2019 235: 315-321), and surgical rotation debriefing of all medical students by the Director of UME. Although improved over the prior epoch, scores by medical students for their surgical rotations are somewhat lower than for their other rotations in different disciplines. The External Reviewers recommended expanding the SEAD course to a larger number of students, placement of more medical students at community hospitals, less emphasis for medical students on heavily specialized tertiary or quaternary surgery services and taking greater advantage of surgical residents as teachers of medical students in the Department of Surgery.

Response

The SEAD course has been expanded to accommodate more medical students completing their first year. The Department continues to financially support the SEAD course with all of its component parts at the Surgical Skills Centre, and within the various hospitals. Community surgical rotations are now more frequently utilized since the establishment of the Mississauga Academy of Medicine (MAM) and with the desire of the Surgeons-in-Chief at community-affiliated hospitals to accept additional medical students. At main core hospitals, emphasis is now placed on a core acute care surgical curriculum, and less in the way of tertiary or quaternary rotations. This approach has been widely adopted by the Leads of Surgical UME at each core hospital. Finally, the Department is now recognizing and awarding surgical residents who distinguish themselves by excellence in teaching at the medical student level.

Postgraduate Medical Education (PGME)

The External Reviewers noted that two residency programs had received mandatory external review status by the Royal College of Physicians and Surgeons of Canada (RCPS), but that these two programs are now fully accredited, joining all remaining fully accredited programs. Failure to achieve full accreditation related to issues with service/education balance in these two programs.

Another challenge noted included the identification of appropriate alternate service providers to offset the high service load that typifies most resident surgical rotations. The large complement of Fellows in the Department of Surgery was commented upon as a strength overall, but interactions between Residents and Fellows needs continuous monitoring. On the whole, the External Reviewers noted that all Resident and Fellowship programs are robust and well organized. They commented on the challenges facing all graduating residents regarding future employment, a universal Canadian issue; and they underscored the need to preserve and maintain the current physician extender policies to ensure that the resident service/education ratio stays balanced.

Response

In all Divisions, the interactions between Residents and Fellows are being continuously monitored through the Residency Program Committees (RPCs), and the Fellowship Program Directors. The issue of employment for graduating residents is real and important. The RCPS has tackled this directly by analyzing and writing a “white paper” on this topic: royalcollege.ca/rcsite/documents/health-policy/employment-report-2013-e.pdf



While this is a universal issue across Canada, the Department of Surgery at the University of Toronto, is uniquely positioned to train its Residents and Fellows towards academic positions, making them highly competitive for any jobs that are posted across the country.

The Department of Surgery has been extremely fortunate to advocate for and to receive numerous physician extenders across all hospitals to assist with reducing the resident service load while maximizing their educational opportunities. By and large, these physician extenders have been hired and paid for by the respective hospitals through their global budgets.

Continuing Education and Quality Improvement

The External Reviewers commented on the need to espouse ethical issues and principles in surgery to a higher level. They noted that for some of the smaller Divisions, there are some barriers to establishing Continuing Professional Development (CPD) Programs. The potential for revenue generation through CPD offerings was noted. In addition, the External Reviewers suggested that champions of CPD be identified in each of the Divisions. Finally, it was recommended that the Department of Surgery would benefit from an active CPD/CME committee, with the suggestion that a CPD retreat be held to address such issues as Conflict of Interest (COI), and best practices in CPD.

Response

The number of CPD offerings in the Department has increased substantially since the last External Review. 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. A new Director of CPD, Dr Ralph George, has been appointed in the Department of Surgery. A CPD Retreat, and Evening Event of Best Practices in CPD was held. Dr George now sits on the Senior Advisory Committee of the Department of Surgery

and offers periodic updates on progress in CPD offerings across all Divisions. When compared to many other Departments in the Faculty of Medicine at UofT, the Department of Surgery now hosts among the greatest number of CPD offerings to its community of surgeons and trainees.

Research

The External 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. The amount of funding attained per annum (\$40M), the devotion of the Chair to the research mission, the number of peer-reviewed publications and grants attained within the Department of Surgery would place its ranking in the top 10 in the world.

The External Reviewers recommended that recruitment processes for new faculty be organized through a collaborative approach between Research Institutes and the Department; that collaborative research programs/projects occur more frequently across hospitals; that research mentoring be provided to surgeons engaged in investigative inquiry; that further philanthropic funds be created to support the academic mission in the Department of Surgery; and that entry criteria and support for residents entering the SSTP be re-evaluated.

Response

The issue of coordinating recruitment packages especially for research support with the Hospital-based Research Institutes is a difficult one that the Department is continuing to improve upon. The Department Chair has been meeting with the hospital CEO's and the Research Institute Directors on a routine basis to accomplish this. For all new recruits requiring research support, members of the various Research Institutes sit on the search committees for these recruits. To enhance collaborative research efforts across the UofT fully affiliated Hospitals, a Translational Research Committee has been formed in the Department of Surgery, with Dr Marc Jeschke



as the Director. The purpose of this Committee is to bring surgeons together across the UofT campus to spawn new collaborative efforts.

All new surgical recruits and junior faculty members have the benefit of being assigned a research mentor through the mentorship program in the Department of Surgery. Dr Ori Rotstein, Vice-Chair, Faculty Development in the Department, ensures that the research mentor's name is included in the Memorandum of Agreement (MOA) of all new recruits.

The Department has enhanced its support of the SSTP trainees on an annual basis through the establishment of newly endowed funds. That said, this is a costly undertaking for the Department at a time when resident external research fellowship applications are not reaching funding level status. In fact, a crisis point was reached in 2018 when the Department of Surgery was in a deficit position of \$500K given the number of SSTP trainees and shortfall of funding. Thankfully, the University Division Chairs provided one-time only funding to overcome this shortfall. This led to a “white paper” on SSTP training and funding as written by Dr James Wright, former Orthopedic Surgeon in the Department of Surgery. This document has been approved by the Executive and Senior Advisory Committees of the Department of Surgery leading to a more consistent and sustainable approach to SSTP applications and funding (see **Appendix A -Wright Report**).

Relationships

Overall, there was support for the current Chair's leadership style and response to issues that arise. The overall morale of the Faculty in the Department of Surgery was considered high. Where there were issues, these related to the job market for graduating residents/fellows which was considered a challenge. In addition, the Faculty were genuinely concerned by the shrinkage in the budget available to the Chair to promote the academic mission. Recommendations included a meeting with key stakeholders regarding the job market in Canada; considerations to reappportion the Departmental academic funds to the Department to successfully implement its Strategic Plan; and continued branding of the Department of Surgery at the University of Toronto so that all appointments meet the criteria required to enhance the brand.

Response

The difficulties obtaining positions after graduation from the residency training programs at the University of Toronto are not unique to this program. That said, Department of Surgery graduates are often the most sought-after recruits across the country. Still, the Department is keen to work with its respective Divisions to determine how best to position itself regarding opportunities for residents/fellows to obtain positions immediately after completion of training.

Because of the shrinkage in funds available to the Department of Surgery, annual stipends based on Annual Assessment of Productivity (AAP) scores have now ceased. This now enables the Department of Surgery to use funds for support of early surgeon investigators for the research projects, to fund the SSTP to a much higher level than previously possible, and to consider holding “merit awards” for surgeon-scientists or investigators doing research on a competitive basis each year.

Finally, the Chair reviews all requests for Annual appointment or reappointment to the Department of Surgery. Prospective adjunct or part-time faculty members need to demonstrate an ability to teach surgical trainees, or conduct academic work in order to be granted a position in the Department of Surgery, thus enhancing its brand.

Organizational and Financial Structure

The External Reviewers noted the diminishing budget available to the Chair to run the operational activities, and strategic priorities of the Department. In addition, the barriers to promoting multi site programs were identified. The External Reviewers recommended that the Department of Surgery obtain a sustainable budget. Revision of the allocation of stipendiary support to all faculty was suggested. In addition, the redistribution of funds for training IMG/VISA trainees was mentioned. Finally, it was recommended that a need for multisite programs in breast surgery, and vascular surgery be realized.

Response

A sustainable budget has now been achieved. At first, allocation of stipendiary funds was based on annual Assessment of Productivity (AAP) scores. However, when this became untenable, the Department of Surgery has stopped this practice in favor of having the practice plans across all Divisions provide remuneration for surgeons based on the AAP scores.

There have been many discussions at the Clinical Chairs meetings regarding the training of IMG/VISA trainees and increased returns to the Departments. At this time, this does not appear to be a realistic goal, as the main source of VISA training funding (i.e. Saudi Arabia) has largely disappeared.

Efforts are in place to develop specific programs for breast surgery and vascular surgery that incorporate the relevant hospital partners in the fully affiliated teaching hospitals.

Long Range Planning Challenges

The External Reviewers noted the challenges in maintaining and growing the SSTP in the Department of Surgery. With shrinking Departmental Budget reserves, convincing

academic faculty to remain competitive at grants panels, and with peer-reviewed publications may become difficult. Maintaining Faculty morale may similarly become problematic.

Response

The continued support of the SSTP remains a major concern in the Department of Surgery. Thankfully, the reappropriation of Faculty stipendiary support back to the Department of Surgery will help in this regard. The Chair remains committed to supporting all Faculty Members engaged in research to be successful in their academic programs. There is the real possibility of holding “merit-based awards” in the Department of Surgery to support the early research work and careers of junior faculty.

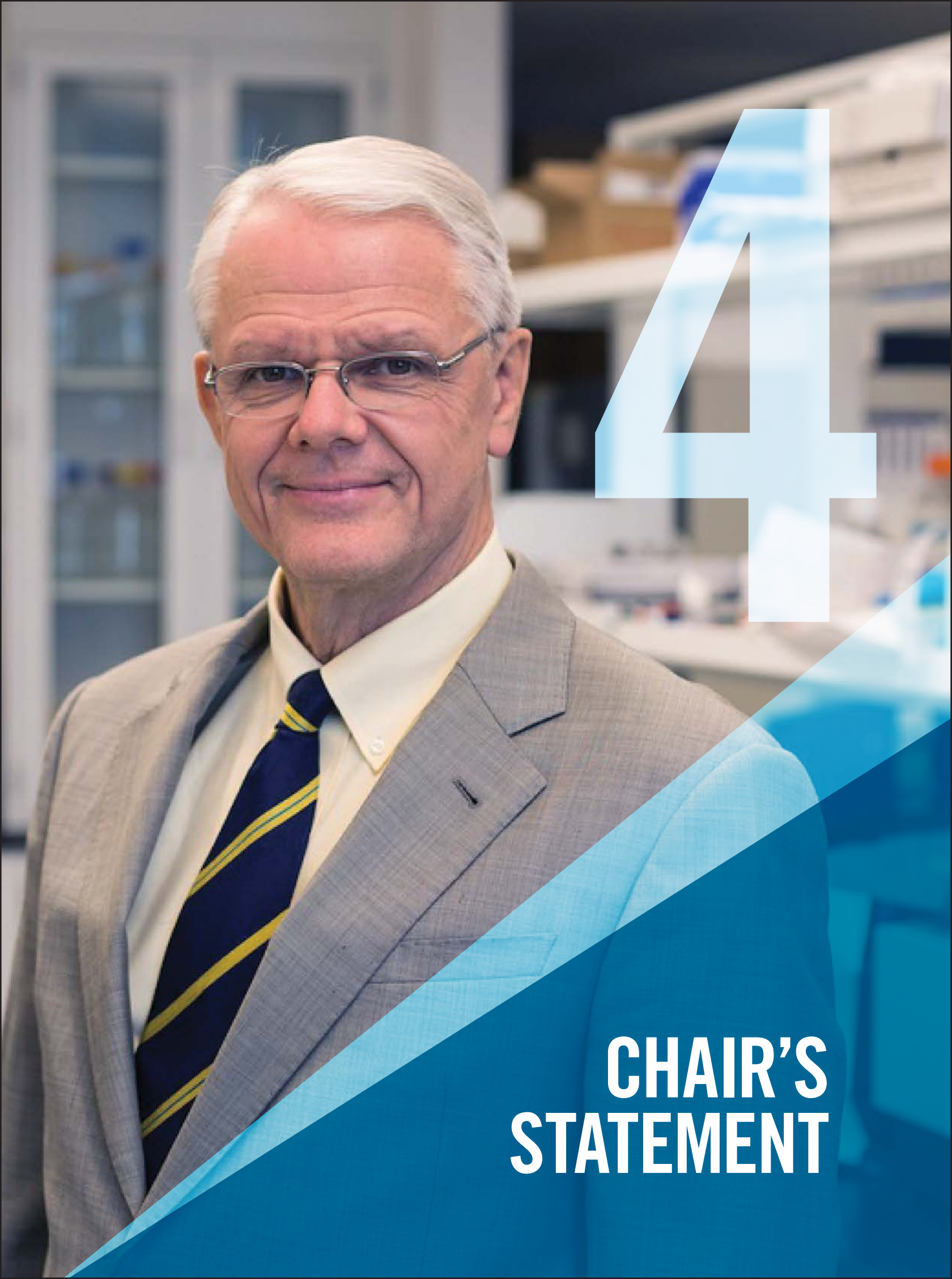
Regarding faculty morale, the Chair is committed to work with all faculty members to ensure that their academic goals are being realized and met. Each year, the Chair meets with more than half of the entire faculty to discuss opportunities for improvement, and how best to advance in their related areas of investigation.

National and International Comparators

The External Reviewers have stated that there is no question that the Department of Surgery at the University of Toronto is the top Department of its kind in Canada and probably one of the top 10 in the world. Its educational programs, in particular residency and fellowship are world-famous and its clinical programs are cutting edge, state of the art that compare favorably with any such program in the world.

Response

We thank the External Reviewers for this high praise. Improving upon the expressed current ranking of the Department of Surgery will be challenging, but is something the current Chair is very interested in doing.



4

**CHAIR'S
STATEMENT**

4 CHAIR'S STATEMENT



Present and Past Chairs of the Department of Surgery (left to right): J. Rutka, R. Reznick, D. Wilson, J. Wedge, B. Langer, D. Latter

4.1 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 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 I was announced as the RS McLaughlin Chair of Surgery in April 2011, and the tenth Chair of Surgery in its history.

The Departmental Office had been located in the offices of the Banting Institute at 100 College Street for 80 years before a move was undertaken for the offices to be installed in the Stewart Building on 149 College Street, 5th floor, on March 21st, 2013. The new office space was refurbished by the Faculty of Medicine to enable the Department of Surgery to run its core business and programs from within. The transition to the new space has been seamless.

Notable firsts in the Department of Surgery throughout its illustrious history include: The discovery of insulin by Sir Frederic Banting in 1921; the introduction of heparin for treatment of vascular thrombosis by Dr Gordon Murray in 1935; the first mobile blood transfusion unit by Dr Norman Bethune (1936); the world's first electronic pacemaker, by Dr Wilfred Bigelow (1951); the first complete heart valve transplant, by Dr Raymond Heimbecker (1962); the first procedure to repair transposition of the great arteries, by Dr William Mustard (1962); the world's first single-lung transplant, by Dr Joel Cooper (1983); the world's first heterologous human peripheral nerve transplant, by Dr Alan Hudson and Dr Susan MacKinnon in 1988; the first study of the use of deep brain stimulation for depression, by Dr. Andres Lozano in 2007; and the creation of the Ex-Vivo lung perfusion method to improve lung transplantation donor rates, by Dr Shaf Keshavjee in 2008. These milestone events, among others, signal the rich history of surgical pioneering and innovation in the Department of Surgery that have carried it through to present time.

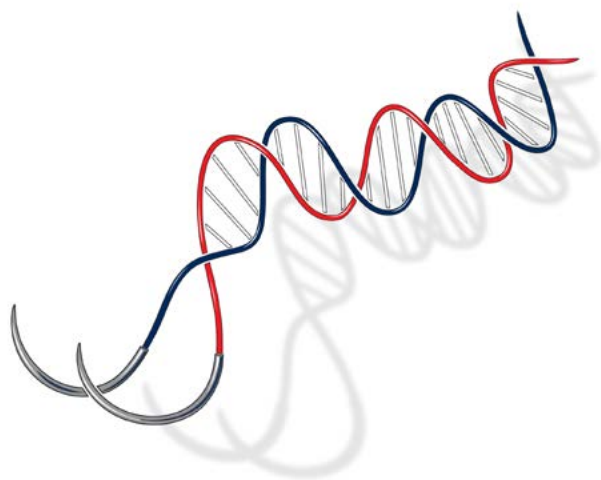


Figure 4.2 Department of Surgery Logo

4.2 Developing the Brand

As part of my recruitment to the Department of Surgery as Chair, 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.

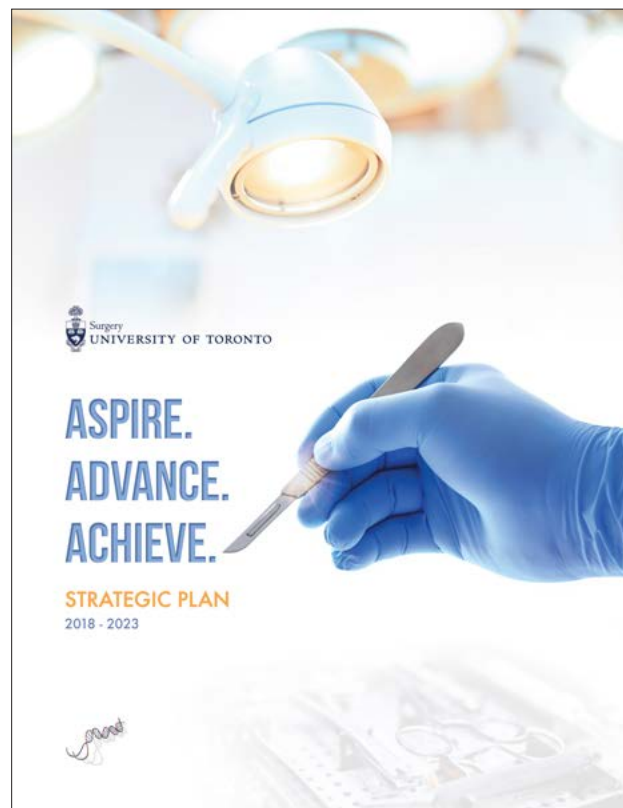
In this image (Figure 4.2), you will see two suture needles that are slightly offset, one to the other, in space. The suture needles represent our emphasis and focus on the art and practice of surgery. The suture threads are actually depicted by a double helix of double-stranded deoxyribonucleic acid (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.

The logo now adorns a variety of merchandise in the Department (e.g. coffee mugs, ties, scarves, necklaces, vests, pens, and lanyards), as well as exists on letterhead, e-communications, and PowerPoint presentations in stylish ways.

4.3 Strategic Plan

The Department of Surgery held a Strategic Planning Retreat on March 7th, 2017, with the aim of developing a robust roadmap and well-defined priorities to guide the Department's efforts over the next five years. Our new Strategic Plan for 2018 – 2023 – **Aspire – Advance – Achieve** – acknowledges the Department's position as one of Canada's leading Departments of Surgery and one of the top tier Departments in the world (surgery.utoronto.ca/strategic-plan-2018-2023-aspire-advance-achieve). 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 six major goals of the Department's Strategic Plan as follows:



Education

Education excellence through novel approaches to teaching and learner engagement. The Department of Surgery is heavily invested in its focus on education with advanced programs in undergraduate, postgraduate, fellowship and graduate education.



**Faculty Lead,
Dr. Najma Ahmed**

**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 all levels.

For Undergraduate Medical Education (UME), we have refined the core undergraduate surgery curriculum to outline the essential learning elements

for surgery clerkship and expanded the range of learning sites. We are moving towards a more uniform clerkship experience. UME leads in Surgery have been appointed at each site. Focus has been placed on the 8 week 3rd year clerkship. We continue to work towards improving our scores and standing for UME in Surgery at UofT and in the country.

In Postgraduate Medical Education (PGME), all 11 residency programs are fully accredited. This is a tribute to all current Residency Program Directors and highly functional and effective Residency Program Committees (RPCs). 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 established a new Education Scholars Symposium in which surgeons, residents and fellows, whose primary academic focus is in teaching, curriculum development, or surgical simulation, present their findings to their peers. The Education Scholars Symposium 2019 poster is shown (right).

All surgical programs are already in or heading towards the RCPSCs "Competency by Design" (CBD) training curriculum. Here, achieving competency amongst surgical trainees is the goal. Program Directors from the Department of Surgery have played significant roles in designing CBD for each surgical specialty. In particular, our faculty have helped to codify the "Entrustable Professional Activities (EPAs) that serve as milestones for surgical residents to reach their competencies. Mastering EPAs and providing regular feedback to residents are now logged successfully into UofT's specialized

"Entrada" smartphone App and housed on a secure server for use by the RPCs. One of the goals of CBD is to allow for earlier detection of surgical residents facing challenges in their training.

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 Dr. Ralph George, Professor, Division of General Surgery, who has helped to make these offerings as informative and as profitable as possible. The full report on CPD can be found in Section 11, Continuing Professional Development.

FRIDAY 8 FEBRUARY 2019
08:45 - 13:20
PGCIL, 686 Bay Street, Room 2B

THE 3RD ANNUAL EDUCATION SCHOLARS SYMPOSIUM

08:45 - 09:15 BREAKFAST

09:15 - 09:20 OPENING REMARKS
Dr. James Baker | Visiting Chair of Surgery, Department of Surgery

09:20 - 09:25 INTRODUCTION OF KEYNOTE SPEAKER
Dr. Nayna Ahmed | Vice Chair of Education, Acute Care and Trauma, St. Michael's Hospital

09:25 - 10:05 KEYNOTE ADDRESS
"Make no small changes, they do little to stir men's and women's blood"
Dr. Richard Reznick | Dean, Faculty of Health Sciences, Queen's University

10:05 - 10:20 DISCUSSION

10:20 - 11:20 FACULTY PRESENTATIONS

"Humanistic Education in Surgery: Developing a patient as teacher initiative in surgery for clerkship students"
Dr. Jary Simpson | General Surgery, St. Michael's Hospital

"Creating a template for introducing surgical innovation: Lessons learned from a S/TNE postgraduate network"
Dr. Shady Khamis | Head, General Surgery, Sunnybrook Hospital

"The impact of D-5 residency on vascular fellowships"
Dr. Mark Wheaton | Vascular Surgery, St. Michael's Hospital

11:20 - 11:35 COFFEE BREAK

11:35 - 13:10 RESIDENT & FELLOW PRESENTATIONS

"The teaching of ethics: A novel framework for surgical education"
Dr. Kasper Guldberg | PGY-2, General Surgery

"The development and evaluation of a tool to assess competence in wound management"
Dr. Omar Selim | PGY-4, Vascular Surgery

"Objective assessment and standard setting for basic flexible endoscopy skills among surgery trainees"
"Validation of a real-time, intra-operative surgical competence (OSCE) assessments linked to clinically relevant patient outcomes: A model of competency assessment in endoscopy"
Dr. Mitchell Guldberg | PGY Candidate, Division of Urology

"The impact of research training on performance in general surgery residency"
Dr. Alexandre Mahal & Dr. John Connor | PGY-2 & 3, General Surgery

13:10 - 13:20 CONCLUDING REMARKS & PRESENTATION AWARDS
Dr. Markha Nevejan | Orthopaedic Surgery, Sunnybrook Hospital

Education Scholar's Retreat 2019 Poster



Research

Integrated research for clinical and academic excellence.



**Faculty Lead,
Dr. Michael Fehlings**

**Significant Developmental
Milestones:**

In the past 5 years, research funding in the Department of Surgery has nearly doubled from approximately \$40M/year (2009 – 2014) to \$76M/year. In collaboration with the Office of Advancement at the University of Toronto, donations to the Department of Surgery have averaged close to \$8 Million/year to support the academic mission these past 5 years which is double the average amount/year (\$4M/year) from the prior 5 years.

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. The number of new Chairs established in the Department of Surgery over the past 5 years is shown.

NEW CHAIRS IN THE DEPARTMENT OF SURGERY

HOSPITAL – UNIVERSITY

- **William Coco Chair**
in Surgical Innovation for Lung Cancer
- **Harold & Esther Halpern Chair**
in Neurosurgical Stroke Research
- **Labatt Chair**
in International Neurosurgical Education at St. Michael's Hospital
- **Chair in Neurosurgical Innovation**
at University Health Network
- **Wilkins Family Chair**
in Neurosurgical Brain Tumour Research
- **Gluskin Granovsky Chair**
for the Division Head of Orthopaedics,
Mount Sinai Hospital

UNIVERSITY

- **John Ross and Patricia Quigley Chair**
in Limb Preservation
- **George Robert Swan Chair**
in Global 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 biobank in which all hospitals add patient data and specimens (tumour, blood, DNA, RNA, protein, stem cells) to a centralized database (braintumourbanknetwork.ca).

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 continuation of the Roscoe Graham Reid Scholarship as salary support for scientists within their first 5 years of practice, an internal review of grants program, and a mentorship program.

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 – 2.0 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 \$8,000/year).

We have increased the number of SSTP trainees from approximately 30 trainees per year (2009 – 2014) to 46 trainees per year (2015 – 2019). While this is evidence of an increased and expanded research program, the success of the increased enrollment in the SSTP comes at a distinct cost to the Department of Surgery (see Wright report, Appendix A).

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, the Vascular Surgery Co-operative, and the developing Collaborative Breast Surgery program across several hospital sites.

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. A new Translational Research Committee has been formed with Dr Marc Jeschke as lead.

Each year, a Translational Research Symposia is now held which brings together surgeons and collaborators across the UofT campus and identifies fruitful fields of interdisciplinary study towards advancing patient care.



Best Practices

Optimize patient and clinical outcomes through the provision of high-quality, person-centred care.



**Faculty Lead,
Robin McLeod**

We have instituted a robust Best Practices program across all Divisions of the Department of Surgery. A Departmental BP Committee has formed with representation from all Divisions, and Chaired by Robin McLeod.

Guidelines have been established for important surgical topics such as Enhanced Recovery after Surgery (ERAS), Pre-operative Fasting Recommendations, Surgical Site Infection Prevention, Management of Acute Pancreatitis, Mechanical Bowel Preparation, Surgical Wound Care, Opioid Usage, and Pain Management.

A Best Practices website has been created in the Department of Surgery (bestpracticeinsurgery.ca). A mobile App is also available for download and implementation tools can be used to manage surgical wounds, and surgical site infections.

Best Practices Newsletters have been developed, and are sent around electronically to all Department of Surgery Faculty each month featuring a special guest writer.



A unique Person (Patient) Centered Care (PCC) initiative has been developed to increase patient experience and satisfaction, as well as reduce health care costs.

Funding for the Best Practices initiatives and infrastructure has been received from the various Hospitals. Dr's Rutka and McLeod meet annually with all Hospital CEO's and VP Medical Affairs to provide updates on the Best Practices Program, and to request yearly funding.

The Best Practices Program is now integrated 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 Best Practices 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, Best Practices lectures and seminars are provided to faculty throughout the one-day course.

The Best Practices Program has worked collaboratively with the Hospitals to synergistically manage data collected through the National Surgical Quality Improvement Program (NSQIP) of the American College of Surgeons (ACS), and through the Society of Vascular Surgeons and the Society of Thoracic Surgeons databases.

The Best Practices program continues to work collaboratively with the Ministry of Health and Long-term Care (MOHLTC) towards the adoption of pragmatic trials for various surgical procedures.



Faculty Development and Mentoring

Faculty members achieving their maximum potentials in both professional and personal domains.



**Faculty Lead,
Ori Rotstein**

The Department of Surgery has an active Faculty Development and Mentoring program that has strengthened and extended faculty support, developed a rigorous mentoring program, fostered the development and succession of surgeon leaders, and has strengthened the academic process. 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.

Mentoring Awards, such as the Charles Tator Surgeon Scientist Trainee Mentoring Award, and the Bryce Taylor Mentoring Award, have been established in the Department of Surgery to recognize outstanding mentors. Mentors and mentees are highlighted during the Chair's Annual Address to the Department of Surgery.

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 (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.

Recently, emphasis has been placed on expanding diversity in the Department of Surgery. The first townhall on "Academic Advancement: Focus on Gender Issues" was held in 2018 which led to a heightened awareness of the myriad of challenges facing female surgeons in the Department of Surgery. The Chair has written on this topic as it pertains to neurosurgeon faculty members (*J Neurosurg* 2018 129: 277). All appointments in the Department of Surgery are now the product of a formalized search process which seeks to identify a diverse array of applicants. Search Committees are comprised of balanced and diverse members. All Search Committee members take unconscious bias testing before serving. Finally, a Director of Diversity, Equity and Inclusion is being appointed in the Department of Surgery.

In the absence of a defined retirement age, the Department of Surgery has developed Guidelines for Late Career Transition (*Can J Surg* 2017 60: 355-358). 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.

Recently, the Department of Surgery has appointed a Lead for Faculty Wellness, Dr Giuseppe Papia. A Faculty-wide survey was administered showing that UofT Surgeons genuinely like their positions and have a high degree of job satisfaction. That said, the survey identified a number of external pressures (e.g. adding surgical cases, grant and publication deadlines, and administrative burdens such as the electronic medical record) which are affecting wellness. The Faculty Development program in the Department of Surgery will identify and leverage the resources needed for promotion of a healthy lifestyle.

Book Club

The Department of Surgery Book Club was established by Karen Devon, Division of General Surgery, following the success of and interest in the 2013 Kergin lecture by Dr. Gerald Imber, author of the book, *Genius of the Edge*, about William Stewart Halsted. The purpose of this book club is for faculty, residents and fellows to come together to discuss books on a wide variety of topics, many of which are non-medical books.



Faculty and residents at the home of James Rutka during a discussion about the book entitled *The Year of Magical Thinking*, by Joan Didion

Some examples of previous books read by the book club include: *Wit*, by Margaret Edson, *The Tennis Player*, by Abraham Verghese, *Frankenstein*, by Mary Shelley, and *Catch 22* by Joseph Heller. The book club takes place bi-annually at the home of a resident or faculty member. The inaugural meeting was held on June 24, 2013 at the home of Mari and Jim Rutka and chaired by Karen Devon.



Global Outreach

Consolidated partnerships and expertise for local, national and international impact.



**Faculty Lead,
Avery Nathens**

The Department of Surgery has developed the Global Surgeon job description by which Faculty members can be promoted. A Global Surgery website has been developed as has a Global Surgery newsletter (surgery.utoronto.ca/global-surgery).

The Inaugural Chair in Global Surgery, The George Robert Swan Chair, has been created and fully endowed in the Department of Surgery, with Dr Lee Errett as the inaugural Chairholder.



Allan Okrainec, Terry Irwin, and James Rutka at the presentations of the UK Traveling Surgical Society meeting

More than 40 UofT Surgeons are actively engaged in global surgery in such countries as China, Ukraine, Botswana, Ethiopia, Jamaica, and Niger.

A global surgical scholar program for surgical residents is now available through the PGME Global Health Education Initiative.

The Department of Surgery has established an annual Ash 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.

Travelling Surgical Society of Great Britain and Ireland

The Traveling Surgical Society (TSS) and the Department of Surgery UofT held a Joint Academic Meeting in Toronto June 6-8, 2016. The scientific sessions were held at Mount Sinai, St. Michael's, and Princess Margaret Hospitals. All faculty, residents and fellows were invited to attend. The TSS of Great Britain and Ireland is a group of surgeons from around the United Kingdom that travels to various hospitals and surgical departments around the world and in the UK. Academic and clinical meetings encourage educational and surgical exchanges.

The organization was founded in 1924 by a group of British surgeons who had worked in France during the First World War in the Casualty Clearing Stations of the Royal Army Medical Corps. Meeting surgeons from elsewhere they realized that British surgery was somewhat isolated from that of other countries. To remedy this, they formed the Travelling Surgical Club, the object of which was to travel every year to a foreign country and meet colleagues with whom they could share knowledge and exchange opinions.



Innovation

Translation of novel discoveries into surgical practice.



**Faculty Lead,
Shaf Keshavjee**

Guidelines for the introduction of innovative practices have been created; and a prospectus of commercialized efforts has been produced highlighting numerous faculty members' achievements.

The Innovation Committee is promoting capacity-building in knowledge translation with linkages to the newly established Translational Research Committee in the Department of Surgery (surgery.utoronto.ca/translational-research-program).

Efforts are being directed towards the development of a Surgeon Entrepreneurship job description as a valid academic pathway to promotion.

As mentioned, we are well along the way with our goals in the Department of Surgery Strategic Plan. Enabling and supporting strategies include advanced and enhanced communications; fundraising; and promoting faculty to receive honours and awards for which they are eligible. 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, Joanna Giddens, who has helped us stay on course with the plan.

4.4 Communications

A monthly e-newsletter of communications, known as **Excelsior**, was established when I became Chair of Surgery. We also have the capability for rapid e-news communications through the distribution of **e-clips** to our entire faculty, residents and fellows. The Department is now quite active on social media including Facebook pages and a Twitter feed (@UofTGlobalSurg) which the Chair helps to manage. A full-time assistant in the Department of Surgery office, Stephanie Neilson, is assigned the task of distributing all communications, and to ensuring that the Department of Surgery website remains up-to-date (surgery.utoronto.ca).

4.5 Academic Performance

The Department of Surgery lays claim to approximately 1,000 peer-reviewed publications each year, and to dozens of competitive grant awards – too numerous to mention here – these can be found in the Supplementary Materials of this 5-year review. 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, Cancer Cell, and JAMA.

Grant capture in the Department of Surgery has averaged \$80 Million/year with a total of \$404 Million from 2014 - 2019. 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, among several others.

4.6 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 5 endowed University Chairs (Langer Chair, General Surgery; Dan Family Chair, Neurosurgery; and Barkin Chair, Urology; John Ross and Patricia Quigley Chair, Vascular Surgery; George Robert Swan Chair, Global Surgery). There are 9 Joint University – Hospital Chairs; 36 Hospital – University Affiliated Chairs; and 21 Hospital Chairs, making a total of 71 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 Figure 4.6A. 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 5 Canada Research Chairholders (CRC's, Figure 4.6B). CRCs are highly competitive research support mechanisms to ensure that faculty surgeons can have sufficient protected time for their research.

Figure 4.6A Endowed Chairs by Division

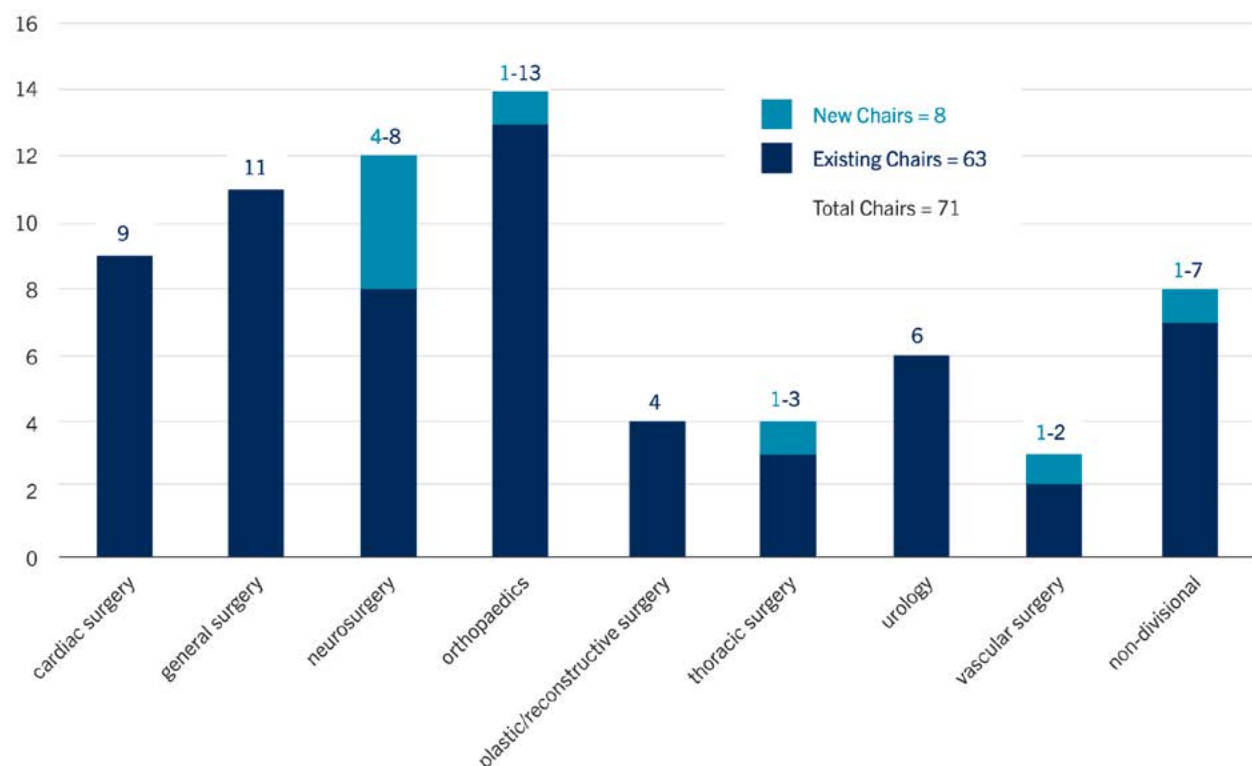


Figure 4.6B Canada Research Chairs

NAME	RESEARCH	START-END DATE	TIER
Lozano, Andres M	Canada Research Chair in Neuroscience	2012-03-01 to 2019-02-28	1
Li, Ren-Ke	Canada Research Chair in Cardiac Regeneration	2013-07-01 to 2020-06-30	1
Cypel, Marcelo	Canada Research Chair in Lung Transplantation	2017-10-01 to 2022-09-30	2
Tymanski, Michael	Canada Research Chair in Translational Stroke Research	2017-10-01 to 2024-09-30	1
Verma, Subodh	Canada Research Chair in Cardiovascular Surgery	2018-01-01 to 2024-12-31	1

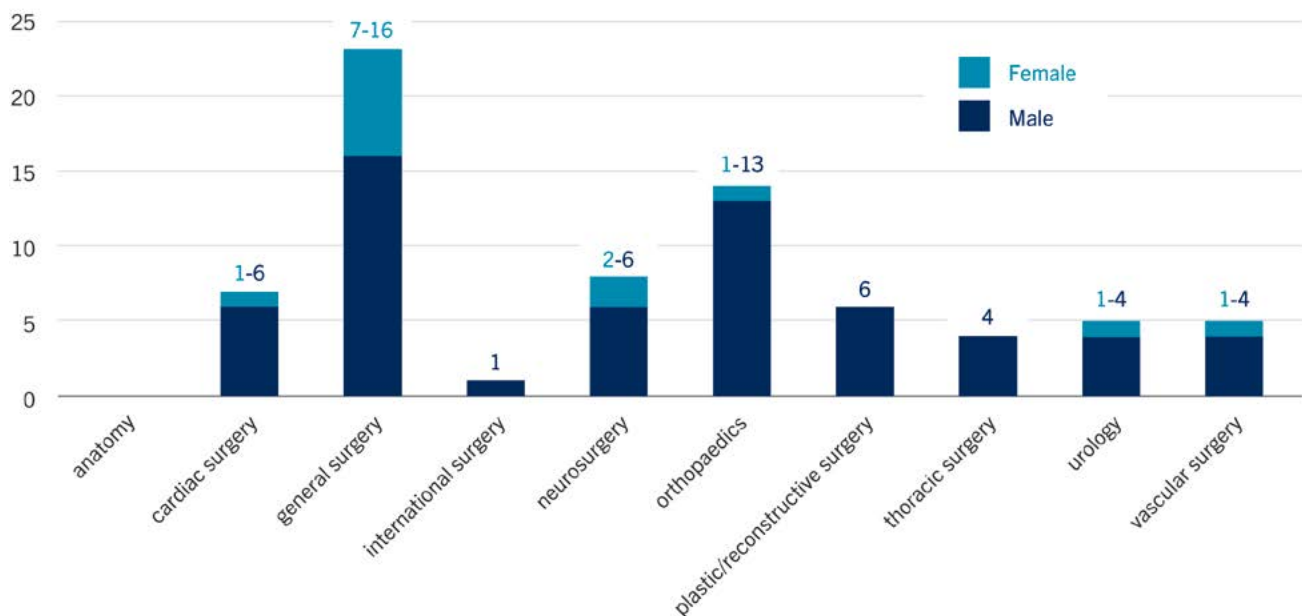
4.7 Promotions

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 2015 – 2020, we have had 73 successful applications, and 2 unsuccessful applications. The distribution of faculty members who were promoted in the Department across the Divisions over all years can be found in Figure 4.7.

Figure 4.7 Promotions by Division 2015–2019



4.8 Appointments

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.

From 2015 – 2020, there were 120 new recruits to the Department of Surgery. Of these, 112 (+ 1 Adjunct Lecturer) were first time faculty appointments in the different University Divisions. 4 (+ 3 Adjunct Professors) were appointees at mid- to senior levels. The number of new recruits as a function of year is shown in Figure 4.8A; the distribution of new recruits over time across the different Divisions is shown in Figure 4.8B.

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 Liaison Committee on Medical Education (LCME) in the US) (cacms-cafmc.ca/about-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 have developed 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 (**Appendix B**).

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.

Figure 4.8A New Full-time Recruits by Year 2015-2019

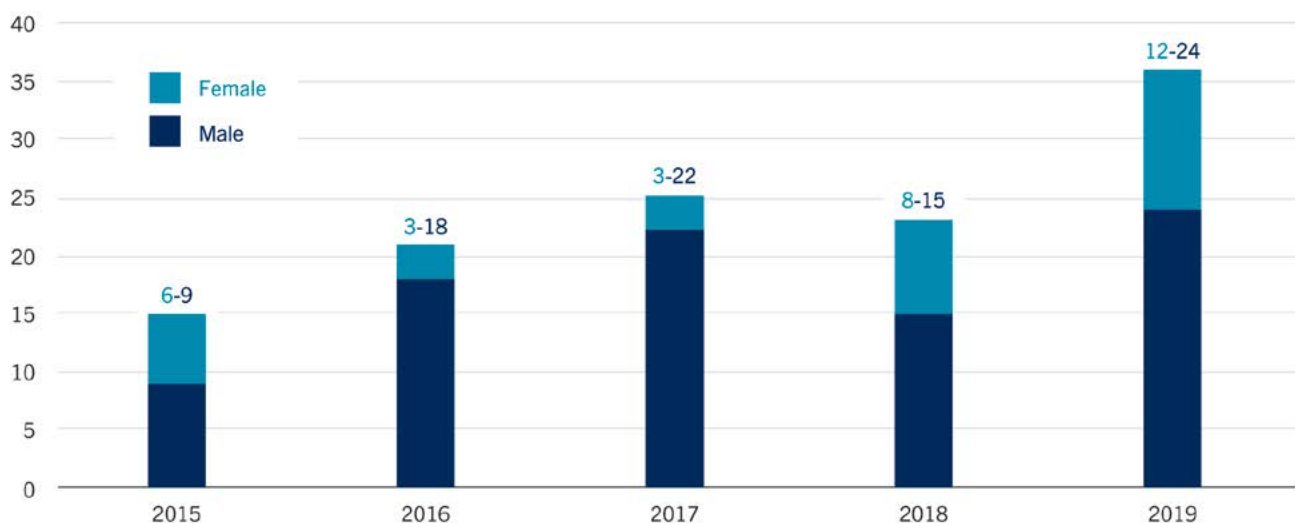
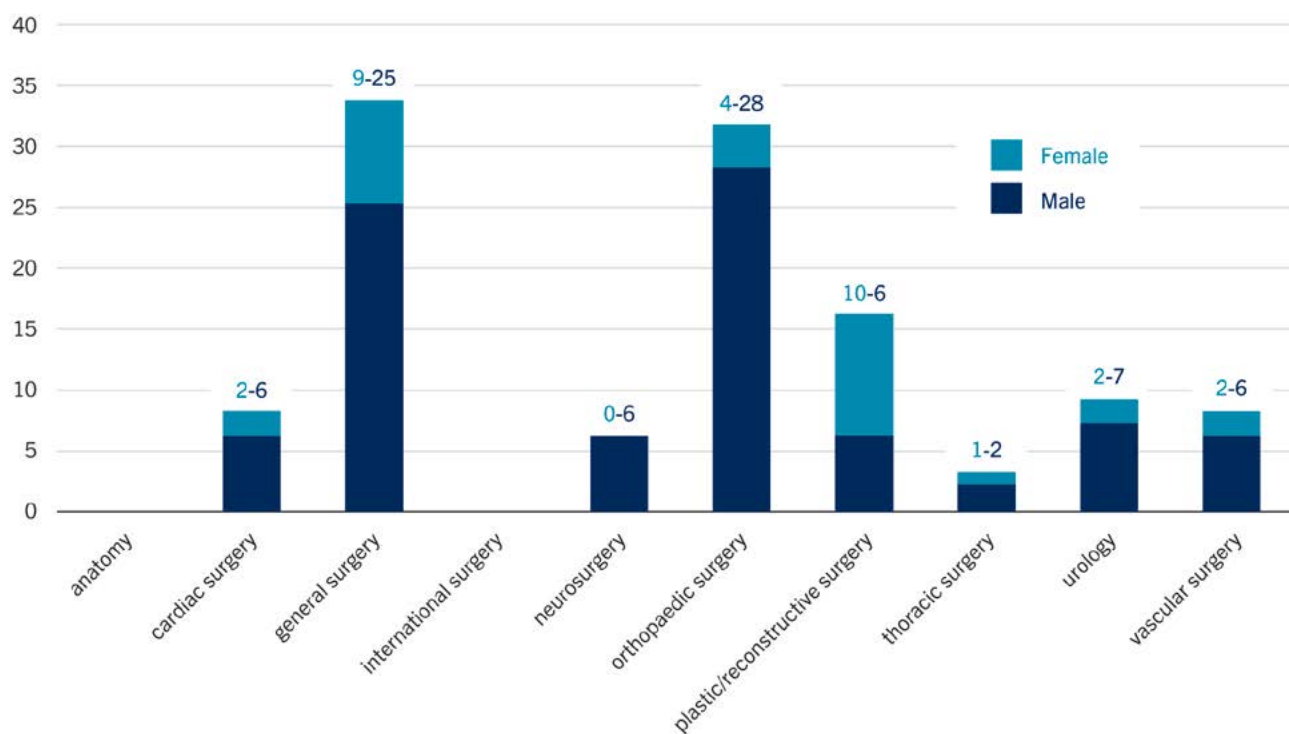


Figure 4.8B New Full-time Recruits by Division 2015-2019



From 2015 – 2020, external searches were held for 8 University Chair positions.

DIVISION	COMPLETED REVIEW	YEAR	UPCOMING REVIEW	YEAR
Anatomy	5-year	2015	10-year	2020
Cardiac Surgery	—	—	—	—
General Surgery	5-year	2019	—	—
Neurosurgery	5-year	2015	10-year	2020
Orthopaedics	5-year	2019	—	—
Plastics	5-year	2018	—	—
Thoracic	5-year	2015	10-year	2020
Urology	5-year	2017	—	—
Vascular	5-year	2019	—	—

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 2015 – 2020, the following SIC appointments occurred:

- Dr. David Urbach, WCH – September 2016
- Dr. James Drake, HSC – June 2018
- Dr. Najma Ahmed, SMH – 2019 (Interim)

Other Leadership Appointments

YEAR	NAME	POSITION
2014	Andy Smith	CEO Sunnybrook Health Sciences Centre
2014	Carol Swallow	Chair, Division of General Surgery
2015	Howard Clarke	Director of the Department Promotions Committee
2016	Melinda Musgrave	Director of Undergraduate Education
2017	Jeremy Hall	Director of Undergraduate Education
2017	Najma Ahmed	Vice Chair Education
2018	Bobby Yanagawa	Program Director of Cardiac Surgery
2018	Mark Wheatcroft	Director of the Surgical Foundations Course
2018	Terry Yau	Chair, Division of Cardiac Surgery
2019	Savtaj Brar	Program Director of General Surgery

American Surgical Association and the University of Toronto

The American Surgical Association (ASA) is the oldest and one of the most prestigious organizations for surgery in the world. Founded in 1880, the ASA lays claim to the publishing of the foremost authority in surgical publications, the *Annals of Surgery*, since 1885. The Department of Surgery at the University of Toronto is fortunate to have numerous faculty members who are active, senior and retired members of the ASA.



In 2019, Dr Robin McLeod, Division of General Surgery, became the President of the ASA. Her Annual meeting takes place April 16 – 18, 2020, during the 140th Annual meeting of the ASA in Washington, D.C.. Dr McLeod is only the second female surgeon, and the 5th Canadian in history to hold the office of President of the ASA. Congratulations Robin!

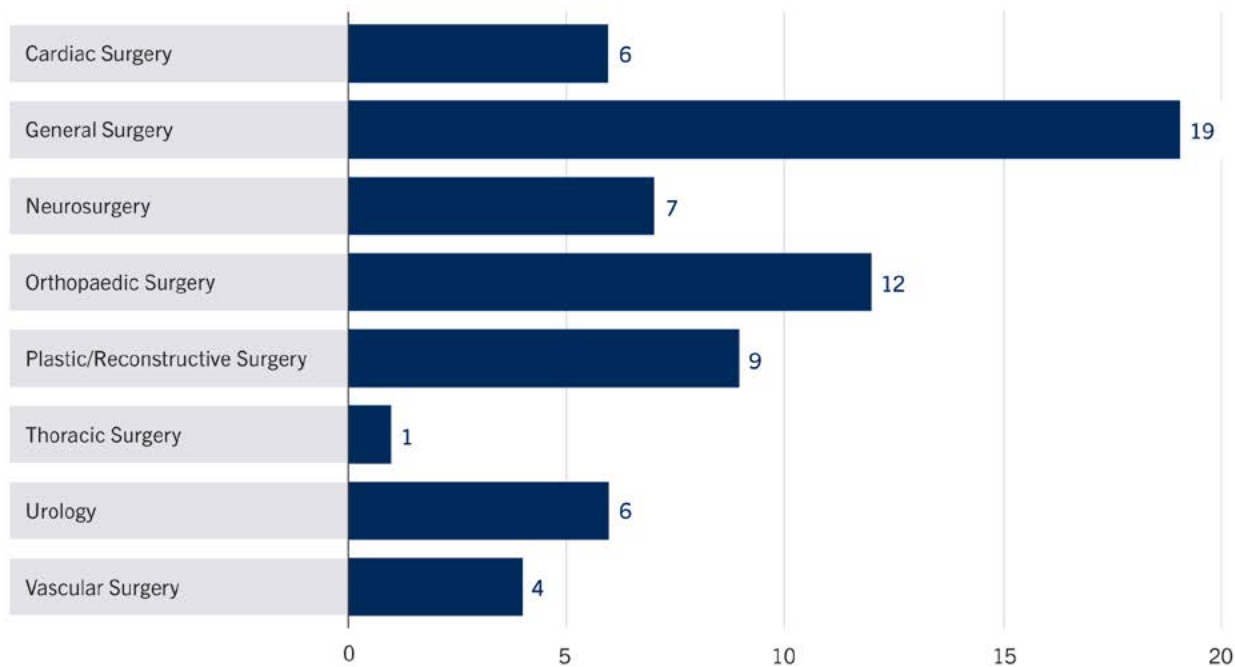
4.9 Continuing Appointment Reviews

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 2015 – 2020, there were 64 faculty who successfully underwent their CARs. The distribution across the various specialty sections of Surgery is found in Figure 4.9.

Special thanks are given to Ori Rotstein, Associate Chair Surgery, who adjudicated over all CARs in the Department of Surgery.

Figure 4.9 CARs Passed by Surgical Specialty



4.10 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.

4.11 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. A Department of Surgery policy has been created. Please see surgery.utoronto.ca.

4.12 Education

In the past 5 years, there have been no accreditation reviews of either the Medical School by the Committee for Accreditation of Canadian Medical Schools (CACMS), or the Residency Training Programs in the Department of Surgery by the RPCSC. That said, both the Medical Schools and the Surgical Residency Training Programs will be undergoing formal accreditation cycles in 2020, at a timepoint where the information will not be available for the External Reviewers of this report. For the accreditation of the Medical School, the Department will be working diligently with the Faculty of Medicine to ensure that the core curriculum in surgery, and student evaluations are at the highest level possible. For the RCPSC Review, all programs will work closely with PGME office to ensure that elements such as Competency by Design (CBD), and service:education ratios are in balanced states.

The Department is grateful to the time, energy and effort expended by Najma Ahmed, Departmental Vice-Chair of Education, Ronald Levine, Director of PGME, and Jeremy Hall, Director of UME. Their detailed reports are found on the Education Section (pages 58–64) of this 5-year review.

4.13 Research

One of the main goals of the Department since 2015 has been 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 are given to Michael Fehlings, current Vice Chair of Research, for all that he has 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 2014 – 2019 revealed a total number of publications of 8,817. The number of publications per year are shown in Figure 4.13A.

Of the top 50 most prolific authors/investigators in the Faculty of Medicine at the University of Toronto, several are appointed to 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, UCLA, UCSF, and University of Pittsburgh (Figure 4.13B).

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 333 residents of whom almost 118 have enrolled in doctoral programs. The SSTP requires almost \$2.0 Million annually of support to run effectively. Sources of support are being actively sought each year.

Figure 4.13A Number of Publications by Year (2014-2019)

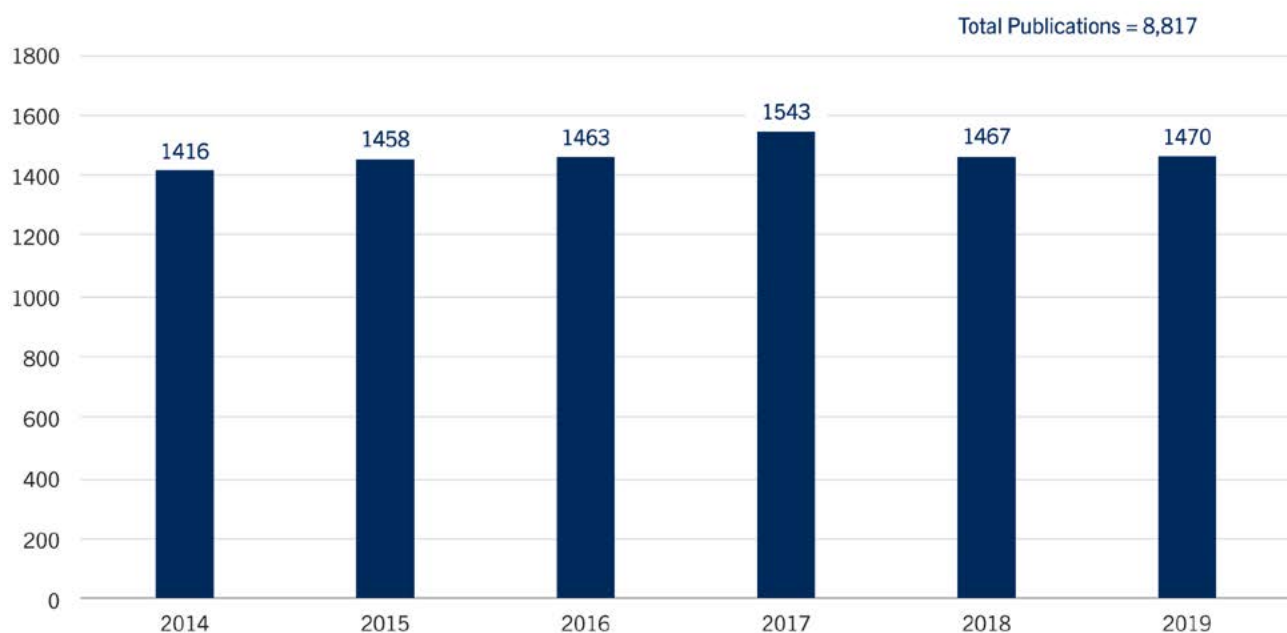
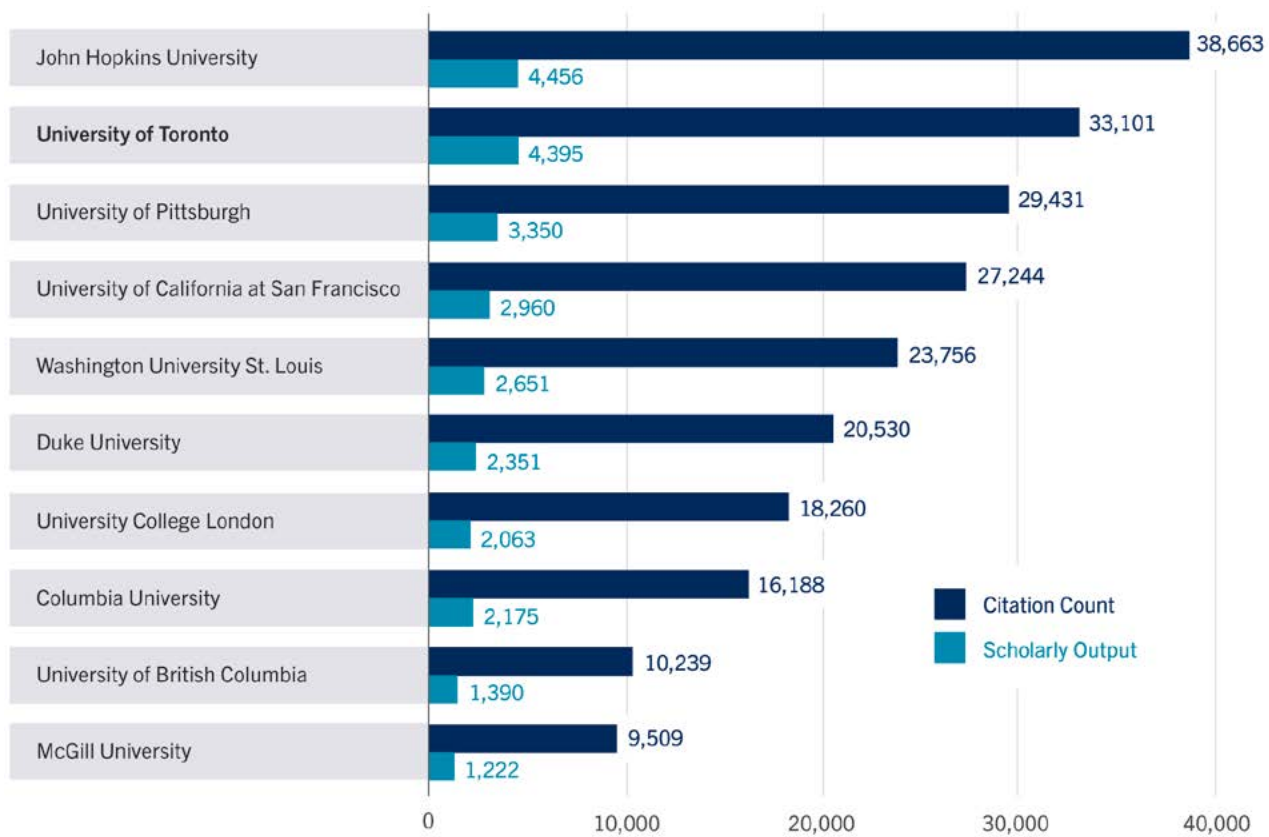


Figure 4.13B Scholarly Output and Citation Count by University 2014-2019*



*Generated by the Faculty of Medicine, data filtered to subject area "Surgery" in Scopus/Sci Val for 2014-2019, allowing for standardized comparison across institutions. Data does not reflect total academic productivity for the University of Toronto Department of Surgery.

More than 200 faculty are engaged in research at some level in the Department. Since 2015, more than 8,500 publications have emanated from the hands and hard work of Departmental members engaged in research (Figure 4.13A). In the past 5 years, research funding has grown from \$38.7 Million (2009 – 2014), to \$80.4 Million (2015 – 2020).

The 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 pages 65–69.

4.14 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 2015 - 2020 can be found in the supplementary information at: surgery.utoronto.ca/gallie-day-award-recipients

4.15 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. Mr. David Grieco was the appointed SDO in 2015, and with his help, and assistance from the University Division Chairs, a total of \$36.12 Million was raised in the Department of Surgery.

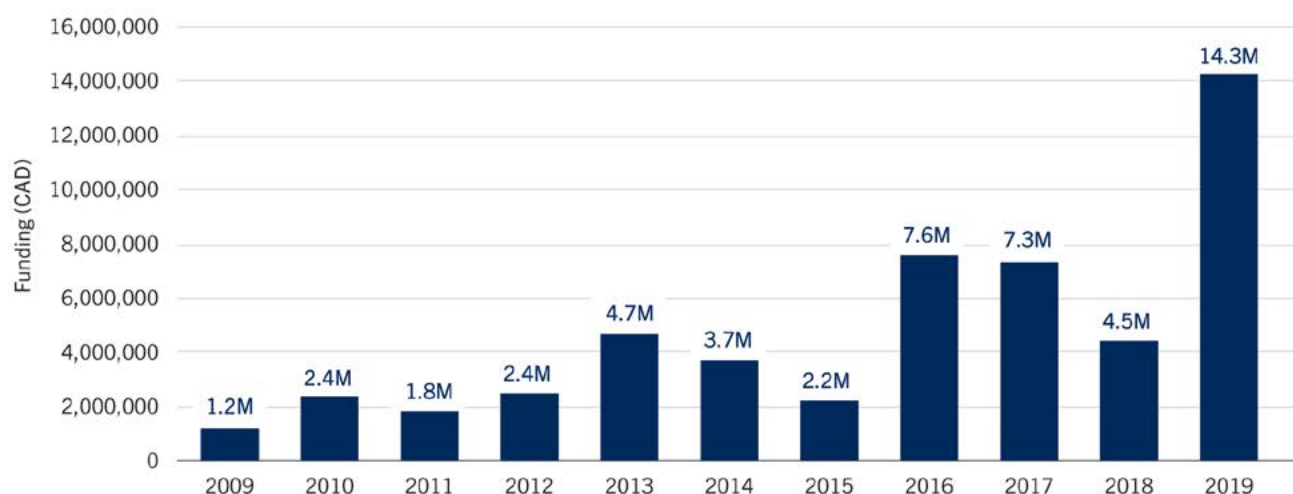
Advancement funds take the form of direct donations, alumni appeals, support from Industry, fellowship funds, support of endowed Chairs,

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

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 (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.

Figure 4.15 Advancement by the Numbers (2014-2019)



4.16 Departmental Firsts

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 outlined below:

EDUCATION

- Establishment of a **Joint Department of Medicine – Department of Surgery Lectureship**
- Inauguration of 3 new named **Annual Lectureships: Balfour Lectureship in Surgical Ethics; Robin McLeod Lectureship in Clinical Epidemiology; and Ben Alman Lectureship in Surgical Research**
- Establishment of the annual **Education Scholar's Symposium**
- Development of the **Annual Surgical Ethics Course**

RESEARCH

- Establishment of the **Translational Research Committee and Annual Translational Research Symposia**
- Establishment of **14 new Chairs in Surgery** at the Hospitals and University
- Establishment of the **University of Toronto City-Wide Brain Tumour Banking Initiative**
- Establishment of a new **\$3M Endowment Fund to support the Surgeon Scientists Training Program**

GLOBAL SURGERY

- Hosting the **2018 Bethune Roundtable at Women's College Hospital**
- Hosting of the **UK Traveling Surgical Society June 2016**
- Establishment of the **Ash Prakash Fellowships in Global Surgery**

FACULTY DEVELOPMENT

- Establishment of conjoint **Annual Faculty Development Day with Anesthesiology**
- Establishment of the **Lavina Lickley Annual Lifetime Achievement Award**
- Publication of "**Late Career Transition Guidelines**", Canadian Journal of Surgery 2017 60(5):355-358

WELLNESS

- **Harmonization of Departmental Academic Salaries** according to Academic Role and Job Description
- Establishment of a **Directorship in Diversity, Equity and Inclusion**
- Development of **Departmental Guidelines for Parental Leave**
- Creation of a **Surgical Wellness Program, and appointment of Departmental Leads in Surgical Wellness**
- Approval of the **Respectful Relationships Guidelines Growth**

4.17 Strengths and Challenges

Strengths

The Department of Surgery is the largest of its kind across Canada when one considers the number 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. 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. The Royal College of Physicians and Surgeons produced a report which has examined employment issues in specialties across Canada.

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 the support they need to be successful has been a core mission of the Department. Accordingly, an annual Education Scholars Symposium has been created to bolster the support for Surgeon teachers in 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 at 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. Thankfully, we did a deep dive into the issues with SSTP funding through the production of the “Wright Report” which enabled us to devise new ways to consider successfully and sustainably funding the SSTP long into the future.

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 has contrived an alternate means of business modeling to stay financially solvent over the next 5 years.

4.18 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, 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 Best Practice 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. We have just terminated the practice of providing historic hard dollars to all faculty members irrespective of their contributions to Departmental activities. Funds that are recovered through this strategy will be used to support the SSTP on an ongoing basis, in addition to strategic “Merit Awards” for deserving faculty members upon application.

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, SickKids, 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



J Bohnen, Dean T Young and J Rutka at Faculty Development Day 2015

in Surgery and other Departments in achieving a competency-based assessment curriculum.

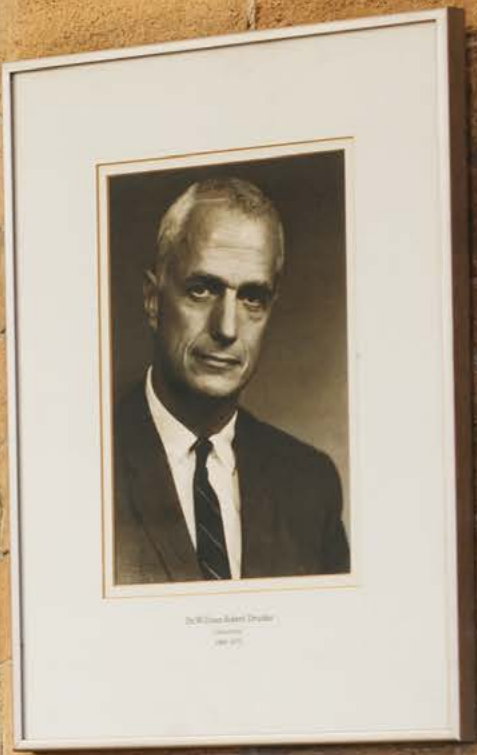
The Department is eager to implement its “Late Career Transition” Guidelines as part of its efforts in Faculty Development. There have already been some good examples of “graceful” transitions to retirement in several Divisions. To accomplish such successful transitions will require an early dialogue 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 assisted significantly 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 Long-term 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.



UK Traveling Surgical Society and members of the Department of Surgery at the Annual Banquet, Vaughan Estates, Friday, June 10, 2016



5

ORGANIZATION AND FINANCIAL STRUCTURE

5 ORGANIZATION AND FINANCIAL STRUCTURE



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 295 full-time clinical faculty, 80 part-time clinical faculty, 160 adjunct clinical faculty, 8 anatomists and 26 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 277 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. 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.

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 five academic roles from which faculty members can choose. They include: Surgeon-Scientist (76 faculty); Surgeon-Investigator (127 faculty); Surgeon-Teacher (90 faculty); Surgeon-Global Surgery (2 faculty); and Surgeon-Ethicist (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 attendance at university/divisional rounds. Each category is assessed on a point scale of 0-3, as per Figure 5.1 below, with the exception of the attendance at university/divisional rounds 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.

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.

Figure 5.1 Academic Point System

ACADEMIC ROLE	RESEARCH	TEACHING	CREATIVE PROFESSIONAL ACTIVITY	ADMIN	RANK	ATTENDANCE AT ROUNDS	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
Surgeon-Global Health	0-3 x 1	0-3 x 2	0-3 x 3	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



J. T. Rutka
R. S. McLaughlin Professor and Chair

EXECUTIVE COMMITTEE



O. Rotstein
Associate Chair



R. McLeod
Vice-Chair, Quality



N. Ahmed
Vice-Chair, Education



H. Clarke
Chair, Promotions
Committee



R. R. Richards
Vice-Chair, Clinical



S. Keshavjee
Vice-Chair, Surgical
Innovation

DIRECTORS



R. George
Director,
Continuing Education



R. Levine
Director,
Postgraduate
Education



J. Hall
Director,
Undergraduate
Education



M. Musgrave
Director,
Evaluations and
Teaching Innovation

UNIVERSITY DIVISIONS CHAIRS



C. Morshead
Anatomy



T. Yau
Cardiac Surgery



C. Swallow
General Surgery



A. Lozano
Neurosurgery



P. Ferguson
Orthopaedic Surgery



C. Forrest
Plastic Surgery



T. Waddell
Thoracic Surgery



N. Fleshner
Urology



B. Yanagawa
Program Director,
Cardiac Surgery



A. Kulkarni
Program Director,
Neurosurgery



M. Nousiainen
Program Director,
Orthopaedic Surgery



K. Wanzel
Program Director,
Plastic Surgery



A. Pierre
Program Director,
Thoracic Surgery



J. Lee
Program Director,
Urology



S. Brar
Program Director,
General Surgery



H. MacRae
Program Director,
Colorectal Surgery



F. Wright
Program Director,
Surgical Oncology



G. Azzie
Program Director,
Pediatric General
Surgery

PROGRAM DIRECTORS



● SURGEONS-IN-CHIEF (BY HOSPITAL LOCATION)



M. Fehlings
Vice-Chair, Research



A. Nathens
Chair, Departmental
Appointments
Committee



A. Kapus
Associate Vice-Chair,
Research



L. Smith
North York General Hospital



A. Nathens
Sunnybrook Health Sciences Centre



C. Simone
Michael Garron Hospital



D. Urbach
Women's College Hospital



S. Keshavjee
University Health Network



J. Drake
The Hospital for Sick Children



J. T. Rutka
Department of Surgery
Offices



T. Forbes
Vascular Surgery



G. Oreopoulos
Program Director,
Vascular Surgery



J. Wunder
Mount Sinai Hospital



N. Ahmed (Interim)
St. Michael's, Unity Health Toronto



C. Campeau
St. Joseph's, Unity Health Toronto

Figure 5.2 Department of Surgery Organizational Chart

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 (Figure 5.2 on the previous pages). These include a number of main committees: An **Executive Committee** consisting of the Chair, Associate Chair and Vice-Chairs; a **Senior Advisory Committee** (Figure 5.3) consisting of approximately 25 individuals in key leadership positions in the Department of Surgery; a **Finance Committee** and a **Departmental Appointments Committee**.

Figure 5.3 Senior Advisory Committee

Dr. James Rutka (Chair)	Dr. Andres Lozano
Dr. Najma Ahmed	Dr. Robin McLeod
Dr. Christopher Compeau	Dr. Cindi Morshead
Dr. James Drake	Dr. Melinda Musgrave
Dr. Michael Fehlings	Dr. Avery Nathens
Dr. Peter Ferguson	Dr. Robin Richards
Dr. Neil Fleshner	Dr. Ori Rotstein
Dr. Thomas Forbes	Dr. Carmine Simone
Dr. Christopher Forrest	Dr. Lloyd Smith
Dr. Ralph George	Dr. Carol Swallow
Dr. Jeremy Hall	Dr. David Urbach
Dr. Marc Jeschke	Dr. Thomas Waddell
Dr. Andras Kapus	Dr. Jay Wunder
Dr. Shaf Keshavjee	Dr. Terry Yau
Dr. Ronald Levine	

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, 5th floor, along with the senior academic administrative leaders.

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), residency education support funds (formerly Pool B IMG funding), and funds received for Visa-sponsored trainees (Pool C). These funds are used to administer the operational expenses and for academic stipends provided to all new faculty members within their first five years of clinical practice and to those serving in leadership positions.

In 2018-19, the budget for the Department of Surgery, considering all sources of revenue, was \$5.6 million.

Unlike other Departments of Surgery in other jurisdictions, the Department does not tax practice plan/clinical earnings in any of its Divisions.

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. 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

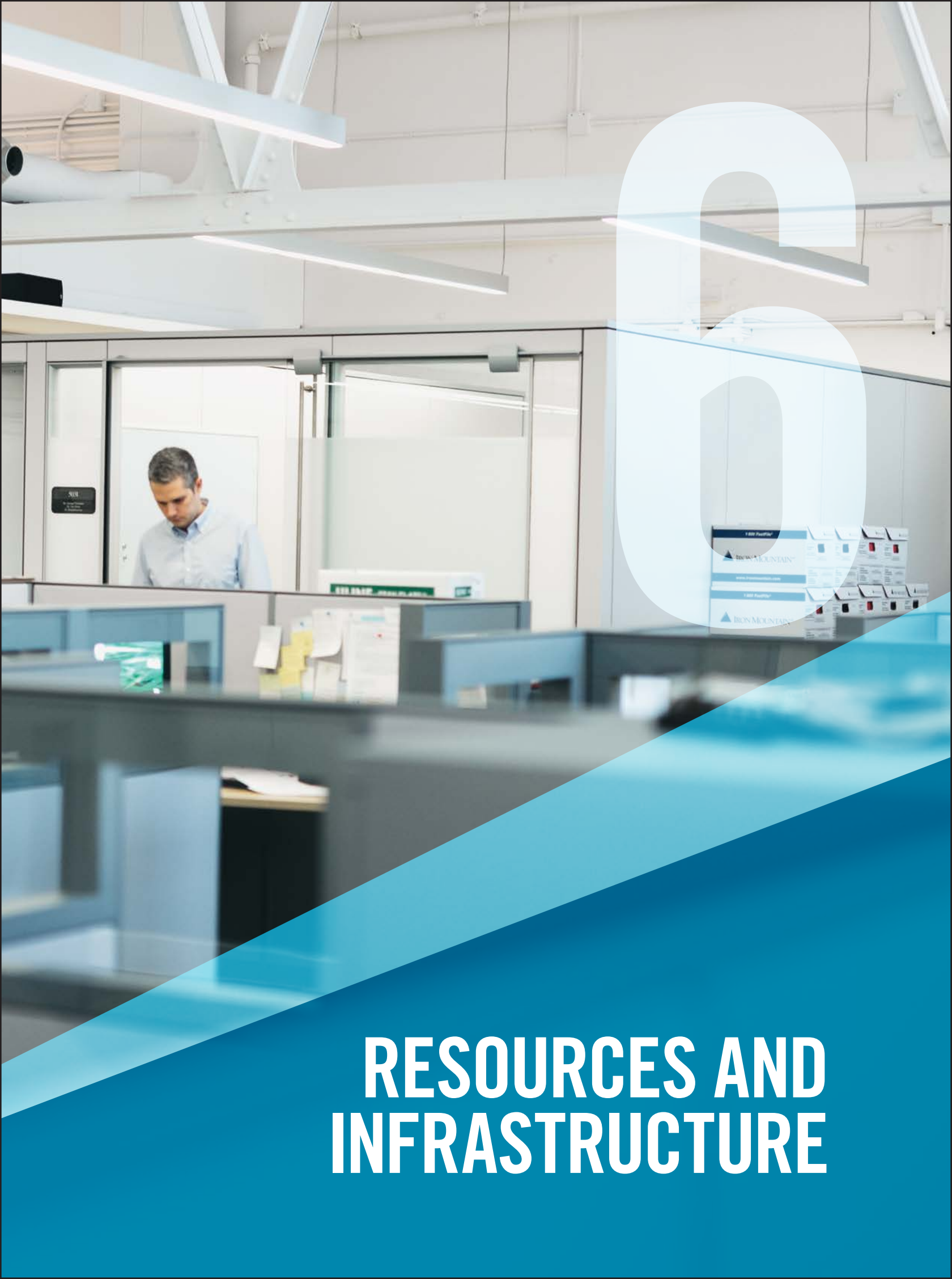


endowment funding, working collaboratively and appropriately with industry, and identifying new philanthropic donor pools of funding.

While the Department of Surgery has had, and continues to have a carry forward amount at the end of each fiscal year, this amount is being reduced annually. The reasons for the reduction in annual carry forward is multifactorial, but include the following:

1. 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; and
6. 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. 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.



RESOURCES AND INFRASTRUCTURE

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 5th 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 videoconferencing, 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.



7

EDUCATION

7 EDUCATION



Report Provided by Najma Ahmed Vice-Chair Education

With input from Jeremy Hall, Undergraduate Education; Mark Wheatcroft, Jory Simpson and Ronald Levine, Director, Postgraduate Education, and various program directors.

Preamble

The training, mentorship and career success of medical students, residents and fellows remains core business of the Department of Surgery. The education mission is led by Dr Rutka, together with the Vice Chair Education, Dr Najma Ahmed. Dr Ahmed is a recognized national leader in surgical education, and recipient of the D. R. Wilson Award in Post Graduate Education, a national leadership award given by the Royal College for excellence in postgraduate education.

Dr Ahmed is also Clinician-Educator at the Royal College, one of only two surgeons on this national committee of Royal College career educators. Under Dr Rutka's leadership the surgical education mission in all domains, undergraduate, post-graduate, fellowships and faculty development have flourished, with thought leaders and innovation driving impact. The goals of the Educational Pillar of the Department of Surgery, Strategic Plan: *Aspire, Advance. Achieve* are detailed herein. surgery.utoronto.ca/strategic-plan-2018-2023-aspire-advance-achieve

Objectives

- 1 - To provide medical students with high-quality clinical experiences
- 2 - To assist surgical trainees with navigating the Canadian job market
- 3 - To support faculty members through middle and later-career transition periods
- 4 - To promote physical and mental wellness in trainees and faculty members

Strategies

- Organize medical students into resident-led teams during clerkship rotations
- Update the undergraduate written exams to reflect the learning experience
- Implement Competency-Based Medical Education in all resident specialties
- Institute consistency across all fellowships
- Seek alternative sustainable funding for the Surgeon-Scientist Training Program
- Connect residents to accessible career-planning resources
- Provide faculty members with an array of support services
- Develop a well-guided approach for late-career transitioning

Over the last 5 years, 73 faculty members have been successfully recruited to our Department as Surgeon-Teachers or Surgeon-Educators as follows:

Clinical adjunct = 34;
 Clinical Part-time = 9;
 Clinical Full-time = 32

The Department of Surgery enables the successful career of junior faculty surgeon-teachers through faculty development. The following faculty members have completed the Education Scholar Program, at U of T. This program of training is intended to develop key competencies necessary for career success as a clinician teacher. Khalid Syed, Jory Simpson, Sebastian Tomescu, and Sarah Ward are members who have completed the Education Scholars Program in the last 5 years.

In addition, Dr Ahmed, Vice Chair Education is a Royal College Clinician Educator, one of only two surgeons across the country to hold this post.

Educational scholarship, leadership and creative professional activity related to surgical education is an area of significant focus for our faculty members. Many faculty members pursue promotion based in a portfolio focused on high-level achievement in these areas, having achieved national or international recognitions for their efforts.

Each year, Faculty members and trainees garner significant recognition through their teaching and leadership awards in the domain of surgical education. (**Appendix C**)

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, Dr Jeremy Hall, 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. Undergraduate Education is an essential part of the Department of Surgery's Education portfolio and we seek 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. The Department of Surgery has made significant investments related to improving the learning climate and training outcomes of undergraduate students. Surgical education is an exciting and dynamic field that has evolved novel learning techniques and teaching styles as well as constant advancements in technology. A number of exciting, learner focused innovations and new programs have been introduced into the curriculum, and Undergraduate education in the Department reflects these changes. The core surgical rotation for undergraduate students continues as

an 8-week platform. This rotation is divided into a 1-week “Prelude to Surgery” preparatory course, which has been designed to give the students an opportunity to practice skills essential for their surgical rotations. Over the last year the prelude course has been assessed and monitored and will increasingly utilize electronic resources, such as the e-learning modules, case-based learning, and technical skills acquisition resources. Students continue to report that residents are of great value during this week and further emphasis will be placed on the training and development of a resident-based learning platform. We are proud of our post-graduate trainees, for their skill, talent and commitment to the education of UG students.

The “Humanism in Surgery” program has been met with great success. This program involves patients as teachers to give clerks a sense of the patient perspective in surgery. These sessions occur during the prelude course as well as in the final week of review. The Patient as Teacher program uses this patient-centred approach to promote and foster humanism in medicine. Patient-driven sessions are led by 2-3 cancer survivors who share their personal stories, experiences with the health care system, and perspectives on how their illness has impacted their lives. Students listen, engage in dialogue, and ask questions. This collaboration actively involves patients and survivors in the education process as partners in teaching, feedback, and evaluation.

The Patient as Teacher program has been integrated into the 3rd year surgical clerkship for undergraduate medical students at the University of Toronto. The program consists of 3 interactive workshops (of 60-75 minutes each) and a reflection piece.

Workshops 1 and 2 are patient-driven sessions led by 2 cancer survivors who become valuable teachers to medical students. In these sessions that are facilitated by a trained facilitator in health care, patient teachers will discuss how illness has impacted their lives and reflect on their experiences with the health care system. Students will have the chance to engage in dialogue with patient teachers and ask questions. In doing so, students will be able to expand their understanding of how illness impacts patients and their families through engaging with patients and learning from their personal stories.

Workshop 3 is a reflection session facilitated by a clinical educator and faculty member that will provide a safe space for students to critically reflect on personal experiences and assumptions, on the effects of surgery and chronic illness, and on the patient-surgeon relationship. After participating in the first two workshops, students will produce a [creative reflection \(royalcollege.ca/rcsite/canmeds/canmeds-framework-e\)](https://royalcollege.ca/rcsite/canmeds/canmeds-framework-e) piece in which they juxtapose what they learned from the first two workshops with an event or experience during their surgery clerkship. The reflection piece will form the basis for the group discussion during this last workshop. In 2018, this innovative program has been expanded to include all sites and is being replicated by other medical schools.

The core surgical rotations consist of two 3-week clinical opportunities including a mandatory 3-week general surgery rotation as well as a 3-week surgical subspecialty selective. Students are expected to attend a number of learning environments including various elective clinics, the emergency/trauma room as well as operating room.

The final week of the course includes review sessions, didactic teaching brief sessions and student evaluations. Assessments include mid-rotation and final clinical evaluations completed by preceptors as well as a multiple-choice question examination and oral case presentation. The multiple-choice question platforms have changed from the NBME exam to a University of Toronto derived exam bank administered through ExamSoft. Multiple-choice questions have been developed through faculty input as well as resident offerings using the University of Toronto MCQ blueprint. We continue to expand this exam bank with formal and informal meetings. All questions are vetted through our subspecialty faculty representatives.

The Undergraduate Education Committee continues to meet regularly. Division, Surgical leader in undergraduate education (SLUE), resident and student representatives as well as Academy coordinator attend and discuss issues surrounding rotations, evaluations and upcoming accreditation issues. The role of the SLUE has recently expanded. These leaders are now instrumental in ensuring preceptor evaluations are

completed in a timely fashion and are designated point contacts for student concerns and ensuring that faculty members at large are kept apprised of changes in the undergraduate curriculum. Finally, the undergraduate education committee continues to provide pre-clerkship advice and innovation to programs such as the SEAD and the Surgical Longitudinal Experience (SurgicLE), Student Surgical Skills Development (S3D) and the activities of the Surgical Interest Groups (SiG), to name a few.



R. Levine and M. Brown, Awards Ceremony 2018 Gallie Day

Postgraduate Medical Education

Post-graduate directors and trainees have felt the sustained support of Dr. Rutka's leadership throughout his term. He has been a tremendous supporter of the surgeon-scientist program, an enormously successful program at the University of Toronto.

Over the recent 5 years, there have been several search committees and appointments, led by Dr. Rutka, for new University Division Chairs. These newly appointed Chairs have been highly effective in leveraging the unique strengths of their Hospital divisions, enabling strategic faculty recruitment and elevating the mission of training and education. The University Division Chairs are listed here:

- 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
- Dr. Andres Lozano – Neurosurgery
- Dr. Terry Yau – Cardiac Surgery

The University Divisions together comprise the largest post graduate surgical training enterprise in North America, with approximately 274 residents in total, assigned to 7 fully affiliated training sites and a larger number of community and more remote rural sites. There are 11 surgical programs; 7 CaRMS entry and 4 sub-specialty programs.

Our surgical positions for all of our CaRMS entry specialty programs are highly sought after and all CaRMS entry surgical positions were filled in the first iteration, every year in the last 5 years. Most residents ranked the University of Toronto training programs as their first choice. We are fortunate to attract an unparalleled group of committed and talented trainees. Many of the surgical specialties also take international medical graduates (IMGs) and visa trainees from around the world.

The Program Directors and their administrative assistants have taken on the herculean task of leading, innovating and administrating the largest and arguably most complex training program in the county. This task is especially challenging during this period of transition to CBD. The current Program Directors are listed below:

- Dr. Savtaj Brar – General Surgery
- Dr. George Oreopoulos – Vascular Surgery
- Dr. Markku Nousiainen – Orthopaedic Surgery
- Dr. Abhaya Kulkarni – Neurosurgery
- Dr. Bobby Yanagawa – Cardiac Surgery
- Dr. Frances Wright – Surgical Oncology
- Dr. Helen MacRae – Colorectal Surgery
- Dr. Andrew Pierre – Thoracic Surgery
- Dr. Georges Azzie – Pediatric General Surgery

The first year of training is called Surgical Foundations, for all surgical trainees. In addition to attending the specialty-specific academic

endeavors, the Residents attend a series of didactic lectures to prepare them for Royal College Surgical Foundations exam, and to provide training in fundamental surgical skills. Surgical foundations is also the first surgical program to transition to Competency by Design, successfully led by Dr Ron Levine. This transition included the seminal tasks of developing and implementing entrusted professional activities (EPAs) as well as establishing a competence committee headed by Dr Ron Levine.

In 2018, Dr Mark Wheatcroft took over the creation and delivery of the Foundations Curriculum. The University of Toronto Surgical Foundations Program is the largest in Canada, welcoming approximately 65 new surgical residents per year. Each academic year commences with an induction program that includes the novel “Surgeon in Society” event, a series of lectures highlighting how surgeons can have influence on a societal level in addition to the individual patients they help. Previous landmark topics have included Firearms related trauma and gun control, and the opiate crisis.

Induction continues with “Prep-Camp”, a week-long intensive course delivered in early July on basic practical techniques, ranging from tube thoracostomy insertion, through skin suturing to bowel anastomosis. Prep-Camp takes place at the Mount Sinai Surgical Skills Centre, a class leading facility specializing in surgical simulation and assessment of practical skills. An examination at the completion of the Prep-Camp is required for successful completion of the Surgical Foundations year.

Following Prep-Camp, residents enter the clinical domain where they can begin work on achieving competency in their Entrustable Professional Activities (EPAs) for the Surgical Foundations Program. Running in parallel to their clinical work, the residents attend the Surgical Foundations lecture series every Tuesday morning throughout their first year in preparation for the Royal College Surgical Foundations exam. The strong interdisciplinary links that the Department of Surgery has enables us to engage many experts from UofT to be guest speakers at our lecture series.



Surgical Skills Camp – knot tying & suturing

There have been a number of initiatives in Surgical Foundations. These include:

- A national in-service exam for Surgical Foundations written by all residents across Canada has been developed.
- The introduction of Competency Based Teaching and Assessment within all Divisions in the Department of Surgery. Each of the various programs are in various stages of development and implementation. Most programs have attended the 2 Royal College workshops relevant to Competency By Design (CBD) implementation. CBD implementation and smart design continue to be an important area of endeavor for all Program Directors.
- 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.
- The establishment of a “Women in Surgery” group, started to support female medical students in their choice to consider training in Surgery. This was established by Carol-Anne Moulton, General Surgery, and now has evolved into what is known as the “Life in Surgery” Group. This Group meets several times a year. It is open to all medical students, residents, fellows and faculty. Dr Maral Ouzounian, Cardiac Surgery, is the course director.
- Case log tracking on POWER is now mandatory for all surgical residents. The Program Directors can monitor the operative experience of Resident at the various training sites.

As mentioned, in 2018, Surgical foundations successfully transitioned to CBD. 2019 saw the successful transitioning of Cardiac Surgery and Neurosurgery, with many processes in place to ensure their secure transition. In 2020, we look forward to seeing the following programs move into a competency by design model of training: general surgery, orthopedic surgery, pediatric surgery, and plastic surgery.

A number of post grad-training programs have undertaken significant innovations. Listed below are a few examples:

Thoracic surgery

- Developed and implemented Competency Committee.
- “Thoracic surgery boot camp” every July, run nationally for all new thoracic surgery residents across the country. This bootcamp has been running locally for UofT trainees for about 5 years.

Cardiac Surgery

- Surgical Simulation including technique-based simulation of isolated coronary anastomoses, valve replacements on pig hearts (Mt. Sinai Skills Center) and off pump CABG on pig models (SickKids Animal Lab) as well as scenario-based team simulation including OR disasters (Li Ka Shing) and pump disasters (Michener Institute).
- Unique cardiac catheterization lab experience at Thunder Bay. This was initiated as an out-of-the-box elective where our residents become the primary operators for diagnostic coronary

catheterization. This experience would not be possible in our academic hospitals due to excessive competition from cardiology fellows.

- Mentorship dinners. This was started by request from the residents who wanted an opportunity to meet specific surgeons, to hear their stories and to get advice on fellowship, staff positions, work-life balance and so on. The mentors have been UofT and non-UofT surgeons who the residents would otherwise not get to interact with in a more social setting.

Surgical Oncology

- Re-developed interview process with Anand Govindarajan; combination of multiple mini-interviews and longer interviews.
- Re-accreditation from Fellowship Council for our combined General Surgical Oncology/HPB position.
- Initiated competency committee.

General Surgery

- LeaPS course (Leadership Proficiency in Surgery) – organized by Dhruvin Hirpara + Fayez Quershay with Hala Muaddi and Dr Brenneman with a planned 3 session course for the year.
- New selection process – using the most up-to-date literature we are re-designing the selection process to help reduce bias including Multiple mini interviews, blinding of applications and reference letters, equity and diversity in the selections committee, and training in bias. We did MMI and bias training, but this year we are taking the next step to blinding etcetera.
- Competency Committee.



Poster Presentations 2018 Gallie Day

Clinical Fellows

The Department offers training to over 250 clinical fellows each year across all different specialty areas in Surgery. The current fellowship lead for the Department is Najma Ahmed (pg.postmd.utoronto.ca/about-pgme/boards-committees). Under Dr Latter's leadership, previously, 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 guidelines, developed and enacted by Dr. Latter continue to be respected by all Fellowship Directors.

The Department has developed its own website of information on Clinical Fellowships (surgery.utoronto.ca/fellowship-program). Links to all Divisions which offer Clinical Fellowships are found on this site. In 2017, Trauma Surgery became the first surgical discipline to achieve the status of an Area of Focused Competence by the Royal College.

The University of Toronto, Department of Surgery, is fortunate to be a magnet for fellowship training in essentially all aspects of Surgical Training. The majority of clinical fellows rank 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. In addition, these fellowships provide outstanding opportunities for academic development.

The relationship between Residents and Clinical Fellows and training experience of each group of learners is monitored. Many training programs have developed guiding principles, such that neither group of learners is disadvantaged, and that each is able to achieve their training and career goals.

Faculty Development

Teaching effectiveness and faculty development is supported by Teaching Effectiveness data. All teachers in the Department of Surgery are evaluated by the residents on POWER to generate a teaching effectiveness score (TES), as well as narrative comments. These data are collated to create an individualized report to each University Division Chair, Surgeon-in-Chief and Program Director, as well as Dr Rutka. Faculty with chronically poor scores meet with the Departmental Chair and PGME Director to discuss strategies to improve teaching performance. Our Faculty members find these data and especially the comments to



be hugely informative and assist them to improve their performance on an ongoing basis.

Faculty Development Day was introduced in 2011 and it is held annually in November. Over the years, it has grown to attract a large number of faculty. Faculty Development Day has evolved to include the Departments of Anesthesia, Otolaryngology and Head and Neck Surgery. (surgery.utoronto.ca/faculty-development-day-2019)

In November of 2018, the Department of Surgery held its first Career Advancement Workshop with a specific focus on Gender issues within the Department. This workshop was attended by senior leaders, as well as mid and junior level faculty. This workshop, along with many concurrent forces within the University have enabled safer conversations about equity and diversity issues within the Department of Surgery.

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 called Distributed Medical Education and the Department of Surgery has been crucial in the success of this initiative. To meet this mandate, the Department of Surgery has increased the exposure of trainees to training at Community affiliated Hospitals.



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**RESEARCH
REPORT**

8 RESEARCH REPORT



F. Rudzicz and M. Fehlings, 2020 Ben Alman Research and Science Rounds

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

The Research Committee in the Department of Surgery is led by the Vice-Chair of Research, Dr. Michael G. Fehlings.

In addition to the Department's notable research productivity, its Surgeon Scientist Training Program (SSTP), now in its 35th year, provides the infrastructure for residents from all surgical specialties to receive graduate training in the highest quality research programs available in Toronto. Over 330 trainees have graduated from our SSTP, two thirds of whom have gone on to academic faculty positions.

There are over 110 clinician scientists or non-clinician scientists in the Department, who direct research programs across all research disciplines and clinical areas. In addition, there are close to 150 clinician-investigators who include research

activities as part of their day-to-day work. Our faculty members produce research of the highest quality, resulting in publications in journals such as *Nature* and the *New England Journal of Medicine*. Indeed, the Department of Surgery consistently ranks in the top three academic institutions worldwide in terms of number of publications each year. This research work is focused on improving the outcome for the patients we treat, and has resulted in scores of improvements in patient care that have become common practice worldwide.

Research plays a central role in our Department and our research activities are a distinguishing characteristic of the Department of Surgery.

There is no doubt in the upcoming years our research activities will continue to expand, with new avenues of investigation being developed, and improvements in our research infrastructure to increase the breadth and depth of our work, ultimately improving the outcome for our patients.

In 2014 we celebrated the 40th Gallie Day. The theme was “Commercialization and Research”. Commercialization and innovation are driving forces in discoveries and leads to translation to practical clinical solutions. The Gordon Murray Lecturer was Dr. Geoffrey C. Gurtner from Stanford University.

In 2015, the Gallie Day theme was “Is Bigger Better? Opportunities, Challenges and Limitations of Big Data in Health Research”. Dr. Clifford Ko from UCLA, was the Gordon Murray Lecturer. Electronic posters were introduced for the poster sessions, which was extremely well received.

The first Strategic Planning retreat was held in January 2015 with over 65 staff and residents participating throughout the day. The theme was “Embracing the Continuum from Surgeon Scientist Trainee to Faculty Scientist”.

The second Research Strategic Planning Retreat held in January 2016 was extremely successful. The theme of the retreat was “The University-Hospital Collaboration in Fostering Excellence in Surgical Research: Better Alignment for Better Results”. The importance of surgical research as the foundation upon which the Department and hospital-affiliated



J. Rutka and A. Kirk, Gallie Day 2017

Research Institutes grow and continue to flourish on a local, national, and international scale was discussed. With continued success in publications, citations, funding, and patents, the Department of Surgery’s Strategic Plan prioritizes the sustained and expanded support of the SSTP and faculty scientists. Dr. Trevor Young, Dean of the Faculty of Medicine, spoke of the importance of the Department’s work within the Faculty of Medicine’s contribution to the Canadian medical landscape. He commented on the growth in clinical and research output during Dr. Rutka’s term as Chair.

The 2016 Gallie Day theme was “Knowledge Translation (KT): Making Research Matter”. The symposium, “Knowledge Translation: The Next ‘Blue Ocean’” featured 4 exceptional speakers. KT represents an enormous opportunity or “Blue Ocean” for academic surgeons to link discovery with practical translation and hence have real impact. The Gordon Murray Lecturer was Dr. Mohit Bhandari (Canada Research Chair in Evidence-Based Orthopaedics, McMaster University, Hamilton, Ontario, Canada). His talk was entitled, “To Succeed, We Must Often Fail”. Professor Bhandari’s lecture was an inspiring account of his experiences as a successful academic surgeon. His central message was that one should not be discouraged by failure—but use these challenges as learning opportunities to drive success. Over 80 e-posters were judged and 10 oral presentations.

Translational Research retreats were organized by the newly named Chair of Translational Research, Dr. Marc Jeschke. The 1st Translational Research Retreat was held in March 2018 with an excellent external invited speaker and an amazingly stimulating agenda. Translational Research retreats will continue to be held on a yearly basis. The April 2019 Retreat was also attended by an outstanding speaker.

The Gallie Day 2017 theme was “Transplantation/Regenerative Medicine”. The Transplantation and Regenerative Medicine symposium was entitled, “Generative Medicine Solutions for Human Disease: Where Are We Now? Where Are We Going?”. The Gordon Murray Lecturer was Allan D. Kirk, (David C. Sabiston, Jr. Professor and Chairman, Department of Surgery Duke University School of Medicine;

Surgeon-in-Chief, Duke University Health System, Durham, NC USA). His lecture was entitled, “Co-stimulation blockade for organ transplantation”. One of the articles Dr. Kirk spoke about was “More surgeons must start doing basic science – They say they don’t have time or incentive to do research – and that’s dangerous for translational medicine”.

2018 Gallie Day theme was “Innovation: Pushing the Boundaries of Surgical Care”. Our Gordon Murray Lecturer, symposium speakers and complete day complemented the brilliance of the Department of Surgery at the University of Toronto. The symposium was entitled, “Innovation: Pushing the Boundaries of Surgical Care”. The Gordon Murray Lecturer was Susan E. Mackinnon (Sydney M. Shoenberg, Jr. and Robert H. Shoenberg Professor, Surgery Chief, Plastic and Reconstructive Surgery, Department of Surgery, Washington University School of Medicine, Barnes-Jewish Hospital, St. Louis, Missouri, USA), Her magnificent talk, “A celebration of academic surgery and the path to successful innovation”, not only highlighted her amazing scientific journey, but gave us a glimpse into her path from graduate student to Chief and Professor.

The 2019 Gallie Day theme was “Cancer Care: Advances in Cancer Research from Cell to the Clinic”. Translational Research was introduced this year with two Translational Research oral presentations and several e-poster presentations. This year’s theme on cancer care from bench to bedside was a triumphant success. Our Gordon Murray Lecturer, symposium speakers and complete day complemented the brilliance of the Department of Surgery at the University of Toronto. The



Gallie Day 2019 Diane Simeone Lecture



Gallie Day 2019 Dr. Diane Simeone and Dr. James Rutka

symposium was entitled, “Advances in Cancer Research: From Cell to the Clinic”. The Gordon Murray Lecturer was Diane M. Simeone (Laura and Isaac Perlmutter Professor of Surgery and Pathology; Director, Pancreatic Cancer Center; Associate Director of Translational Research; Perlmutter Cancer Center; NYU Langone Health; New York, NY). Her outstanding talk, “A new paradigm for clinical trials in pancreatic cancer”, enlightened the audience on the new hypothesis around treatments surrounding pancreatic cancer.

The Department of Surgery places tremendous emphasis on the research training of its surgical residents. Under the leadership of Dr Fehlings, a number of innovative resident-focused research initiatives have been initiated:

- a) A Town Hall meeting of all staff and SSTP residents plus key stakeholders is held annually as an informative meeting intended as an informal discussion forum of key issues related to research and research training in the Department of Surgery.
- b) A PGY 1 & PGY 2 Research Orientation to give perspectives and insights regarding training in science while a resident embarks on a career as a surgeon scientist.



- c) Annual SSTP Career Night for the SSTP trainees. The focus here is how to plan the next steps of a combined research and clinical practice career. Other items covered include how to best plan your fellowships, how to be successful when looking for jobs, how to maintain work-life balance, and more.
- d) An SSTP Meet and Greet evening for the new and continuing SSTP residents to meet each other and to interact with surgical staff. Many fundamental points are made including how SSTP residents should choose their supervisors and projects carefully. Funding for salary support is critical.
- e) An SSTP Grant Writing Workshop is now held annually. The first Workshop was held in April 2018. SSTP residents were strongly encouraged to attend these workshops. Staff who have successfully received grants were invited speakers as well as the Grants & Awards Editor, and Research and Business Development Manager.

In the past 5 years, the faculty in the Department of Surgery have been successful in receiving multiple millions of dollars on a yearly basis for their high impact research endeavours as enumerated below:

2014-15:	\$62,989,834
2015-16:	\$87,439,358
2016-17:	\$93,553,660
2017-18:	\$88,260,483
2018-19:	\$74,832,070

Finally, the Department of Surgery Faculty continue to distinguish themselves through the receipt of numerous prestigious international and national awards: The Order of Canada awards continue to be awarded to Surgical staff: Geoffrey Fernie, John Hagen, Wayne Johnston, Shaf Keshavjee, Laurence Klotz, Bernard Langer, Andres Lozano, Agostino Pierro, James T. Rutka, Charles Tator, Bryce Taylor, John Trachtenberg, James Waddell. Bernard Langer and Charles Tator were inducted into the Canadian Medical Hall of Fame. Several faculty have been made Fellows of the Royal Society of Canada: Eleftherios Diamandis, Peter Dirks, Michael G. Fehlings, Wolfgang Kuebler, Andres Lozano, James T. Rutka, Subodh Verma.

With this report, it is clear that the Research Enterprise in the Department of Surgery continues to do extremely well, and is a continued source of great pride and accomplishment for the entire Department.



B. Langer and J. Langer



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**BEST
PRACTICE IN
SURGERY**

BEST PRACTICE IN SURGERY



R. McLeod and J. Rutka, Lavina Lickley Lifetime Achievement Award

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

Best Practice in Surgery is the University of Toronto (U of T), Department of Surgery's quality improvement program. Best Practice in Surgery provides resources for practicing and in-training surgeons as well as other members of the perioperative team. Best Practice in Surgery aims to be a comprehensive repository for quality-related surgical initiatives, programs and research that are undertaken at the University of Toronto affiliated hospitals. Best Practice in Surgery was created in response to the U of T Department of

Surgery Strategic Plan which named Quality and Best Practices as a strategic pillar in 2012. The Best Practice in Surgery program is based on the success of and lessons learned from the Division of General Surgery's quality initiative, Best Practice in General Surgery (BPIGS). Best Practice in Surgery is led by Dr. Robin McLeod, Vice Chair of Quality and Best Practices, and includes representatives from all Divisions of Surgery as well as the Departments of Anaesthesia, Gynaecology as well as other health professionals from the U of T hospitals.

Vision Statement

To ensure that all patients having surgery at the U of T affiliated hospitals receive high quality, person-centered care resulting in optimal clinical outcomes and patient experience.

Goals

- Promote the use of best-evidence by developing and implementing clinical practice guidelines
- Encourage a person-centered approach to surgical care to optimize our patients' experience
- Collaborate with stakeholders in hospitals, other Departments and Institutions to ensure patients receive high quality multidisciplinary care
- Measure our performance and outcomes
- Provide education to our residents and fellows so they can undertake or participate in quality initiatives
- Use this platform to perform clinical trials when evidence is lacking

Over the past 5 years, the Best Practice in Surgery has developed and implemented several locally tailored clinical practice guidelines. Below is a brief overview of the clinical practice guidelines:

Management of Acute Pancreatitis

A guideline with recommendations for managing acute pancreatitis was completed in 2012. Surgeons, critical care physicians and gastroenterologists collaborated. Guideline recommendations have been adopted across all U of T hospitals and this guideline was published in the Canadian Journal of Surgery.

Preoperative Fasting

Although the evidence supporting this guideline is decades old, a recent survey of practice illustrated that almost all hospitals are still encouraging patients to fast for a much longer period than is necessary. The Best Practice in Surgery has developed a guideline and reminder cards in the form of lanyards for all frontline staff to assist in reducing the length of fasting for elective surgical



patients. Other ongoing targeted implementation strategies include providing slides, educational rounds, newsletter blasts and audit feedback.

Enhanced Recovery After Surgery

The Enhanced Recovery After Surgery (ERAS) guideline for patients undergoing colorectal surgery was developed in 2012 by a multidisciplinary group of general surgeons, anaesthesiologists, nurses, dietitians and physiotherapists. With a grant from the Council of Academic Hospitals of Ontario, the ERAS guideline was implemented in fifteen hospitals in Ontario. In 2017, as a result of our successful implementation of an ERAS Guideline for Elective Colorectal Surgical Patients, the Best Practice in Surgery developed an ERAS for All Surgical Patients Guideline as well as Guidelines for ERAS for Pancreatic Surgery and ERAS for patients with a Stoma.

Currently, the Best Practice in Surgery is undertaking a study to assess whether ERAS is sustained at the University of Toronto affiliated teaching hospitals. It is expected that this study will be completed in 2020.

Mechanical Bowel Preparation

In 2008, the Best Practice in General Surgery group developed a guideline on the use of Mechanical Bowel Preparation (MBP) prior to elective colorectal surgery. Our recommendations were simple: no MBP for patients having colorectal procedures with the exception of patients

having a low anterior resection (LAR). These recommendations were implemented city-wide using a knowledge translations strategy, which was successful in changing practice. This guideline was revised in 2017 because of new evidence supporting the use of both oral and intravenous antibiotics in patients having a bowel preparation.

Surgical Site Infection (SSI) Prevention

In 2017, the Best Practice in Surgery in collaboration with the Antimicrobial Stewardship developed a guideline to help prevent SSIs for all patients undergoing elective surgery. The guideline provides recommendations on:

- Antibiotic use, type, duration and dose
- Perioperative normothermia
- Preoperative skin preparation and hair removal
- Staphylococcus aureus decolonization

Prescription and Management of Opioids for Patients after Elective Surgery

In response to the opioid epidemic, the Best Practice in Surgery is undertaking the development of a guideline to help reduce the amount opioids prescribed after surgery. This is being developed in conjunction with members of the Department of Anaesthesia. A survey of current prescribing habits for opioids has been completed. A systematic review has been undertaken and guideline recommendations are being developed.

Surgical Wound Care

In collaboration with the Toronto Central LHIN, a guideline on the postoperative management of surgical wounds has been completed. The working group consisted of surgeons from a variety of disciplines from the U of T hospitals, wound care nurses, members of the Toronto Central LHIN as well as community care nurses. An evidentiary search was performed but there was limited evidence available on this topic. The working group came to consensus on the recommendations for the management of care of surgical wounds.

On May 16, 2018 a meeting was held which included the members of the working group; surgeons,

surgical residents and nurses who represented the hospitals; leaders from the Toronto Central LHIN; community nurses and patient advisors. At this meeting, the guideline recommendations were discussed and finalized and an implementation strategy developed and provided input on a knowledge translation strategy to implement the guideline. The guideline has been recently submitted for publication in the Canadian Journal of Pain.

Blood Conservation

Red blood cell transfusions have been identified as an overused treatment. The need for judicious restrictive use of red blood cell transfusions to improve patient outcomes, enhance post-operative recovery, limit healthcare costs, and optimize the use of limited resources, has been highlighted by the Choosing Wisely Campaign. Despite these recommendations and level-1 evidence supporting a restrictive approach to red blood cell transfusions, transfusion practices vary significantly. While transfusions are necessary in some cases, a considerable proportion is unnecessary. A guideline which standardizes preoperative management of anemia and the perioperative use of red blood cell transfusions for elective surgery in order to reduce the use of unnecessary red blood cell transfusions was developed. Implementation strategies are now being developed.

Management of Small Bowel Obstruction

Small bowel obstructions (SBOs) are one of the most common indications for hospitalization. However, there is great variability in the management of SBOs. While most are adhesive in nature and can be managed conservatively, delays in care can result in bowel ischemia, sepsis, and mortality. The ideal approach to such patients involves identifying the right patients for the right treatment early on. There is evidence that the use of Gastrografin can be used to identify the site of the obstruction and potentially help in resolving the obstruction. A guideline is being developed in collaboration with GI radiologists. In addition to developing and implementing guidelines, the Best Practice in Surgery also oversaw the following quality improvement programs:

Patient Experience Advisory Committee

During the 2016-17 academic year, we held three patient engagement meetings which included patients, surgeons, and other health care providers. The overall goal was to understand patients experience and identify gaps in care. Following these meetings, most of the patient advisors agreed to be part of an advisory group for the Best Practice in Surgery. This year the patient advisors:

- attended the Surgical Wound Care Guideline meeting. Two representatives told their stories about their post-operative wound care. All three participated in the discussion and provided the patient perspective.
- were involved in the IMPACTS grant
- participated in Health Quality Ontario's Ontario Surgical Quality Conference event where Dr. Erin Kennedy gave a talk on the value of patient involvement

The members of the patient group continue to provide input on all guidelines and their implementation.

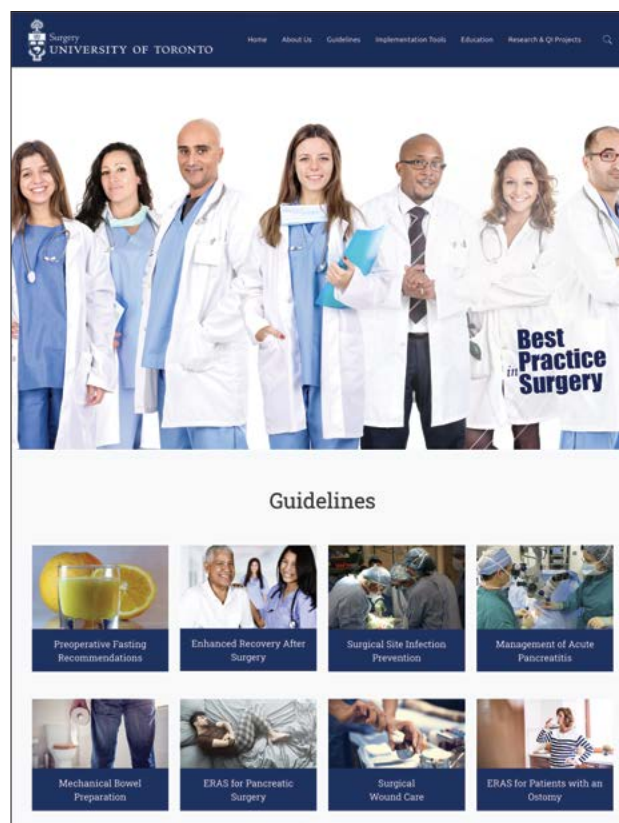
Education for Surgical Trainees

The Surgery QI Curriculum has now completed its third year and involved sixty-four residents, its largest cohort thus far. A total of thirteen teams/small groups, which were supervised by a faculty mentor. The course consists of two interactive seminars starting in October of the academic year and in between trainees are expected to develop a QI project and do some field work and data collection with the help and supervision of mentors. The course does not focus solely on successful implementation but equally on the “learning by experience” that occurs in the process of formulating an aims statement, qualitative data collection and working and collaborating with colleagues towards a shared goal. Despite trainees being in their first year of training, projects completed demonstrated a mature level of understanding of challenges and process. It is our hope that this experience will inoculate in our trainees a commitment to QI and encourage and empower those who have an interest in research to pursue it. As always, many thanks go to our faculty mentors for their time, our judges, and the staff at the Department of Surgery without which this would not be possible.

The 2017-18 academic year also saw the launch of a pilot QI surgery course for U of T surgical fellows. The course included a total 8 fellows from different specialties. The course was tailored to better consider the level of clinical maturity of the participants and allow for a more self-directed learning approach. This pilot was well received by the fellows but certainly an experience with lessons to learn. We look forward to building on and learning from this experience to expand and improve the course for the upcoming academic year.

Expanding our Scope

To expand our scope and reach, the Best Practice in Surgery has developed a website and app, as well as started a Twitter account. In September 2017, we launched our website, bestpracticeinsurgery.ca. On the site, we provide access to all of our guidelines and associated implementation tools. The Best Practice in Surgery newsletters and publications are also easily accessible. Since our launch, over 300 people have signed up for our newsletter through the website and we have an average of 3,000 unique visitors per month. The Best Practice in Surgery now has an app available in both the Google Play Store and Apple Store. These apps are meant to be used by healthcare professionals at point of care.



In 2018, we launched the Best Practice in Surgery Twitter page (@UofTBPS), as a platform for instant communication, dissemination, and global collaboration towards quality improvement. Dhruvin Hirpara, our social media manager and second year surgical resident at UofT, has been spearheading this effort. Since its launch, the account has accrued nearly 200 followers from around the globe and its content has gained approximately 20,000 impressions (or views) since January 2018. Don't forget to tweet to us @UofTBPS and to use the #UofTBestPractice hashtag to label your tweets!

We have also been invited to present our work at local and national meetings including the Ontario Surgical Quality Conference hosted by Health Quality Ontario; Perioperative Care Congress; Canadian Anesthesia Society; and the Canadian Surgery Forum.

Over the past 5 years, the Best Practice in Surgery has published over 10 peer-reviewed journal articles relating to quality improvement in surgery.

Best Practice in Surgery
UNIVERSITY OF TORONTO
GET INVOLVED!

The Best Practice in Surgery is partnering with OpenLab to create surgery specific Patient Oriented Discharge Summaries (PODS).

If you're interested in creating a POD for a specific surgery, please email us at bestpractice@surgery@utoronto.ca

DOWNLOAD our new app!

Search "Best Practice in Surgery" and look for our logo. How to download in the App Store or Google Play.

CONTACT
Emily Pearsall, MSc
Manager, Best Practice in Surgery,
Department of Surgery,
University of Toronto
emilyp@uoft
bestpractice@surgery@utoronto.ca

1st College St, 9th Floor
Toronto ON
M5T 1P5

WELCOME! This month we are talking about optimal management of both degenerative cervical myelopathy (DCM) and traumatic spinal cord injury (SCI). Dive into the QI article below to find out more. Don't forget that we have also launched our new App, available in iTunes and the Google Play store and as always, keep an eye out for the latest EPS emails and updates.

QI @UofT
Kudos to Michael Fehlings and Albert Yee from the Division of Neurosurgery and Orthopedics at UofT who led the development of a guideline on the optimal management of both degenerative cervical myelopathy (DCM) and traumatic spinal cord injury (SCI). An extensive review of the literature was performed and summarized in a systematic review. Then an international, multidisciplinary group was brought together to develop clinical practice guidelines in a process that adhered to methodology proposed by the GRADE Working Group. The most recent clinical research was summarized to develop guideline recommendations for the management of patients with mild, moderate, and severe myelopathy. In developing the traumatic SCI guideline, controversial questions of management, including the timing of surgical decompression and the use of methylprednisolone were reviewed. Other SCI guideline recommendations included the role of magnetic resonance imaging in clinical decision-making and prognostication: the type and timing of prophylactic anticoagulation and rehabilitation strategies. The guidelines were funded by ACSpine, the Cervical Spine Research Society, and the American Association and Congress of Neurological Surgeons Section on Neurotrauma and Critical Care. For further information, the guideline can be found online at <http://journals.sagepub.com/doi/10.1177/1544201919849111>

In addition to this endorsement, Jeff Wilson, Division of Neurosurgery has received a CHR grant to track outcomes in patients having mild degenerative cervical myelopathy to help understand what the best treatment is for patients suffering for these conditions. Congratulations to all!

More QI @UofT
We want to know about all of the QI projects happening around the city so we can:
• promote the work currently being undertaken in Toronto;
• help minimize duplication of work by connecting people doing similar projects;
• give kudos, when kudos are due; and,
• provide help if required.
Please email Emily Pearsall at bestpractice@surgery@utoronto.ca to tell us the details about your QI work or learn more about what Best Practice in Surgery can offer.

KUDOS
We want to congratulate Dr. Michael Castmann, a neurosurgeon from St. Michaels Hospital, for being one of the recipients of this year's University of Toronto's Presidents' Impact Award. He has received the honour for his significant contributions to traumatic brain injury research, the development of neurosurgical procedures, and for his professional and public education and advocacy.

If you would like to stop receiving this newsletter, please email bestpractice@surgery@utoronto.ca and ask to be removed.

Follow us on Twitter! [@UofTBPS](https://twitter.com/UofTBPS)

New and Ongoing Initiatives

Department of Surgery's 2018-2023 Strategic Plan

This year, the U of T Department of Surgery released its 2018-2023 Strategic Plan: *Aspire, Advance, Achieve*. As part of the plan, the Best Practice in Surgery set out 5 goals for the next 5 years.

1. Improve the quality of patient care and experience through the development of guidelines
2. Measure and evaluate quality initiatives and patient experiences
3. Establish the Department of Surgery as a leader in quality improvement
4. Incorporate research and evaluation in the quality improvement framework
5. Expand opportunities for education in quality improvement

IMPACTS Grant

High-quality randomized clinical trials provide the stimulus for quality improvement and are critical for the generation of best practices in surgery. However, despite their profound impact on patient care there remains a scarcity of these studies. While this is well recognized, the considerable time commitment and prerequisite research infrastructure are significant challenges to their design and execution. The paucity of high-quality clinical trials to help guide surgical and perioperative care has led to substantial healthcare practice variability and inefficiency.

The Innovative, Multicentre, Patient-centred Approach to Clinical Trials in Surgery (IMPACTS) program was established with the purpose of conducting patient-important and pragmatic clinical trials more efficiently by addressing the current barriers that exist in the current clinical trial paradigm using novel approaches to research methodology and technology. IMPACTS incorporates several innovations as platform trials, response-adaptive randomization, and an integrated-

consent model. These methods will allow for increased patient accrual, optimized efficiency, thus reducing the time to achieve meaningful results.

IMPACTS is currently collecting data on areas of perioperative and surgical practice heterogeneity and clinical uncertainty in order to create a database of high impact issues that exist currently in the surgical community and patient care.

NSQIP

We continue to collaborate with the U of T affiliated hospitals which participate in NSQIP. This is expanding so we will collect data through NSQIP to assess uptake of guideline recommendations. The goal of this collaboration is to determine if there are gaps in care, address these gaps with evidence-based guidelines and then audit practice to assess update of the guidelines.





10

**FACULTY
DEVELOPMENT**

FACULTY DEVELOPMENT



Continuing appointment review of Dr Jeff Wilson: N. Ahmed, J. Spears, J. Wilson, M. Fehlings, O. Rotstein

Ori Rotstein

The engagement and valued recognition of faculty members was identified as a priority strategic direction. This encompasses the development of a culture in which all faculty have equitable and equal access to achieve their academic potentials. Faculty development initiatives are overseen by Vice Chair Dr. Ori Rotstein.

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. 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.

Innovation

The changing landscape of medical collaboratives demands recognition of those incorporating bioengineering, technology, and entrepreneurial activities into their career paths. Many faculty members have been successful with acquiring patents and intellectual property rights over their surgical work, yet without formal recognition from an academic career standpoint. As such, Chair support has allowed for the creation of a new appointment within the Surgeon-Investigator track entitled *the Surgeon-Entrepreneur*. Faculty members can now reach promotion through their innovative pursuits in accordance with a set of newly developed benchmarks that consider the natural lifecycle of product development. Chair support has also allowed for newly forged relationships with the Faculty of Engineering and the Biomedical Zone (A St. Michael's Hospital, Li Ka Shing Knowledge Institute, and Ryerson University collaborative) to execute guest speakers, learning sessions, and hands-on workshops in the upcoming academic year.

Surgery
UNIVERSITY OF TORONTO

**CAREER ADVANCEMENT IN SURGERY:
FOCUS ON ISSUES OF GENDER**

Nancy Baxter • Gillian Hawker • Reena Pattani and Sharon Straus • James Rutka

THURSDAY, OCTOBER 4TH, 2018
Li Ka Shing Institute, St. Michael's Hospital
30 Bond Street, Toronto ON

RECEPTION: 6:15PM
PROGRAM: 6:30 - 8:30PM
RSVP: sylvia.perry@utoronto.ca

JOINT LECTURE

THE DEPARTMENTS OF
MEDICINE AND SURGERY
present

**" Burnout...Resiliency...Wellbeing...
What's this about? Does it matter?"**

DR. DAVID A. ROTHENBERGER
Professor, Colon and Rectal Surgery
Department of Surgery, University of Minnesota
Director of the Emerging Physician Leadership Program
University of Minnesota Medical School

**MONDAY
MAY 7TH, 2018
5:00 - 6:00PM**
The Banting Institute
100 College Street, Room 131

Surgery
UNIVERSITY OF TORONTO

Medicine
UNIVERSITY OF TORONTO

Wellness

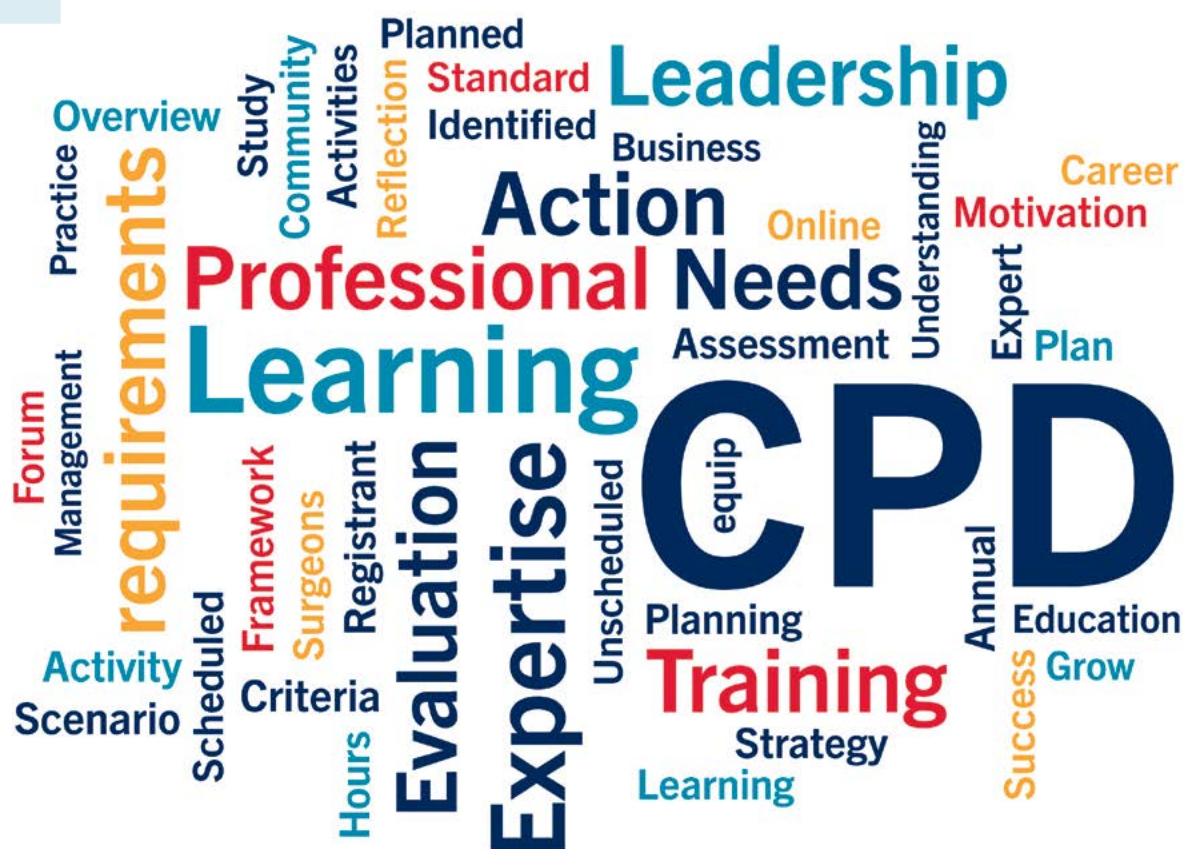
The issue of physician burnout has come to the forefront of the medical career in recent years. However, the academic research is lacking with respect to surgeon-specific burnout factors, particularly those of Canadian surgeons. Chair support and a select committee have allowed for significant efforts into the wellbeing of Department faculty members. These include a complete literature scan to evaluate the current landscape of physician/surgeon stress and risk factors and a comprehensive faculty-wide survey to evaluate career stressors and satisfaction. Following its interpretation, the Chair and committee have established a partnership with qualitative researchers from the Li Ka Shing Knowledge Institute (St. Michael's Hospital) who will be conducting focus groups and individual interviews to gain full scope into the issues affecting Toronto surgeons, as well as assisting with the development of interventional strategies.



11

**CONTINUING
PROFESSIONAL
DEVELOPMENT**

1 CONTINUING PROFESSIONAL DEVELOPMENT



Prepared by Dr. Ralph George MD, FRCSC, Director, CPD

The engagement and valued recognition of faculty members was identified as a priority strategic direction. This encompasses the development of a culture in which all faculty have equitable and equal access to achieve their academic potentials. Faculty development initiatives are overseen by Vice Chair Dr. Ori Rotstein.

Goals

- CPD programing for community surgical specialists.
- Professional/academic development for university surgical specialists.
- International events to encourage partnerships, knowledge exchange, and sharing experience.
- These goals are to be met incorporating up-to-date adult learning principles and best practices.
- In working to these goals, we partner with the broader UofT Faculty of Medicine CPD as both provider and accreditor, as well collaborating in scholarship and research.

2015-2019

- 25 events per year on average led by Department of Surgery members as Course Director. Fluctuation as some events are every 2 years (i.e. 29 events 2017-2018/ 24 events 2018-2019 = 51 events last 2 years).
- Over 3000 registrants in last year alone. 5 events skill lab/hands-on training in last year.



Highlights in the past few years have included the initiation of technical workshops in Transanal TME, Breast Oncoplastics, and Endobronchial Ultrasound. A large event such as the Annual Update in General Surgery draws 500 participants and remains the largest General Surgery specific event in Canada. International meetings include BETHUNE Round Table in Global Surgery (with strong underdeveloped nation representation), the Toronto International Sarcoma Conference, and the biannual Breast Cancer Symposium.

University wide faculty CPD awards have been captured by members of the Department of Surgery; including the 2018 Ivan Silver Innovation Award (Dr. Shady Ashamalla – Transanal TME) and the David Fear Fellowship (Dr. Sandra DeMontbrun – simulation/assessment research).

Exciting new research is linking the OR safety technology “Black box” (developed by Dr. Teodor Grantcharov’s group, UofT) to surgical QI and morbidity rounds.

Other Activities

- Department Chair funds supported surgical CPD director to complete 6 months of certificate program in CPD Leadership.
- The Department of Surgery plays an active role in the broader Faculty of Medicine CPD program; participating in the assessment of all surgery-led events, contributing to multi and cross discipline events and academic professional development programs.
- All surgical programs with a target audience that include community-based specialists are now required to have that demographic represented on their planning committees.
- All programs have enhanced requirements of needs assessment and participant feedback linked to accreditation.
- Even large auditorium-based programs are expected to incorporate elements of adult learning (feedback, reflection, discussion, assessment).
- Added in past years is an academic focused professional development event shared with anesthesiology. Emphasis includes procedural based teaching/feedback and adapting to the new competing based environment.

Summary

CPD is a major commitment for the Department of Surgery. It has a funded Director appointed by the Chair. Quality programs target community specialists as well as academic faculty development. The Department of Surgery actively participates and contributes to the overall Faculty of Medicine CPD program. That strong connection provides additional and shared expertise and academic oversight for our events and scholarly endeavors.



12

**GLOBAL
SURGERY**

GLOBAL SURGERY



Henry Marsh Global Surgery Symposium 2016

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

The Lancet Commission on Global Health estimates that 5 billion people from low- and middle-income countries lack access to safe and affordable surgical care. As a result, surgically treatable conditions such as postpartum hemorrhages and burns become life sentences; individuals are no longer productive members of society or perish from unnecessary complications. With a robust and talented cadre of

surgical educators, the Department of Surgery is well-positioned to contribute to surgical capacity-building in disadvantaged regions. Through the support of the McLaughlin Chair and executive oversight of Drs. Avery Nathens, Andrew Howard and Lee Errett, the Department of Surgery has significantly increased its commitment to international outreach over the past five years.



Global Surgery logo

Office of International Surgery

The Office of International Surgery (OIS) was established by Drs. Massey Beveridge and Andrew Howard in 1999. With Dr. Howard serving as current Director, the Department of Surgery continues to support the OIS. Core activities include the oversight of surgical initiatives in Africa, Prakash Foundation Fellowships, events, and teaching missions.

Surgery in Africa

Ptolemy Project

Since 2000, the Ptolemy Project offers full text downloads of all University of Toronto libraries to approximately 700 practicing surgeons in low- and middle-income countries as specified by the World Health Organization. The largest concentration of users are trainees from the College of Surgeons of East, Central, and Southern Africa (COSECSA).

COSECSA Partnership

Dr. Andrew Howard serves as the overseas examiner for the COSECSA orthopaedics examinations. He has also traveled to Addis Ababa to implement a paediatric orthopaedic surgery curriculum. In conjunction with collaborators Royal College of Surgeons of Ireland and Dr. Brian Cameron (McMaster University), Dr. Howard also oversees interactive learning modules and a journal club for the COSECSA trainees. These activities have led to a measurable increase in evidence-based medical knowledge as demonstrated by test scores.

Career Designation

The Chairholder implemented the new appointment role of Surgeon – Global Health in 2016. This career designation allows individuals to reach promotion on the basis of leadership and/or innovation in clinical and academic capacity-building activities in low- and middle-income countries.

Endowed Support

Prakash Foundation Fellowships

The Chairholder and Advancement Office have been fortunate to cultivate long-term donor support from A.K. Prakash. The funds aid 1-2 surgical fellows from low- and middle-income countries in receiving training at one of Toronto's teaching hospitals. Over the past five years the Prakash Foundation has welcomed Drs. Samuel Hailu (Ethiopia), James Balogun (Nigeria), Faith Muchemwa (Zimbabwe), Tewodrus Zerfu (Ethiopia), Grace Muthoni (Kenya), Geletaw Tessema (Ethiopia), Hanna Getachew (Ethiopia), and Misgana Workneh (Ethiopia).

Greg Wilkins-Barrick Chair in Global Surgery

Dr. Mark Bernstein (N/S, TWH) is the inaugural Greg Wilkins-Barrick Chair in Global Surgery, an endowed position that provides salary support for international surgical trainees and learning opportunities in resource-depleted regions. Since 2014, Dr. Bernstein has served as mentor and supervisor to trainees from Egypt, Cambodia, Sudan, Kenya, and Indonesia. He has also facilitated the establishment of a new neurosurgery unit at Kiambu District Hospital, supported fellow Dr. Anick Nater in performing outcomes research in Zambia, as well as assisting with travel costs for medical trainees on teaching missions.

George R. Swan Chair in Global Surgery

As of spring 2019, Dr. Lee Errett (C/S) is the inaugural George R. Swan Chair in Global Surgery. This endowed position will support sustainable surgical care solutions and learning opportunities in Nunavut, China, Jamaica, and Ukraine.

Events

Annual Symposia

The annual Global Surgery Symposium is entering its fifth year; a well-received initiative spearheaded by the Chair in 2015. Keynote speakers have included Dr. Henry Marsh (St. Georges Hospital, London), Dr. Andrew Leather (King's College London), Dr. Brian Cameron (McMaster University), and Dr. Richard Gardner (CURE Ethiopia). Faculty and trainees also present on their international efforts and lead engaging discussion.

Bethune Round Table

The Bethune Round Table, an annual meeting initiated by University of Toronto, is instrumental in fostering global surgery awareness across the country as it moved from city to city. Chair support was essential in Bethune Round Table in Global Surgery 2018: The Role of the Trainee. Toronto hosted 250 global participants from June 5-7 at Women's College Hospital and provided an exciting weekend of trainee presentations, breakout groups, poster displays, and networking opportunities.

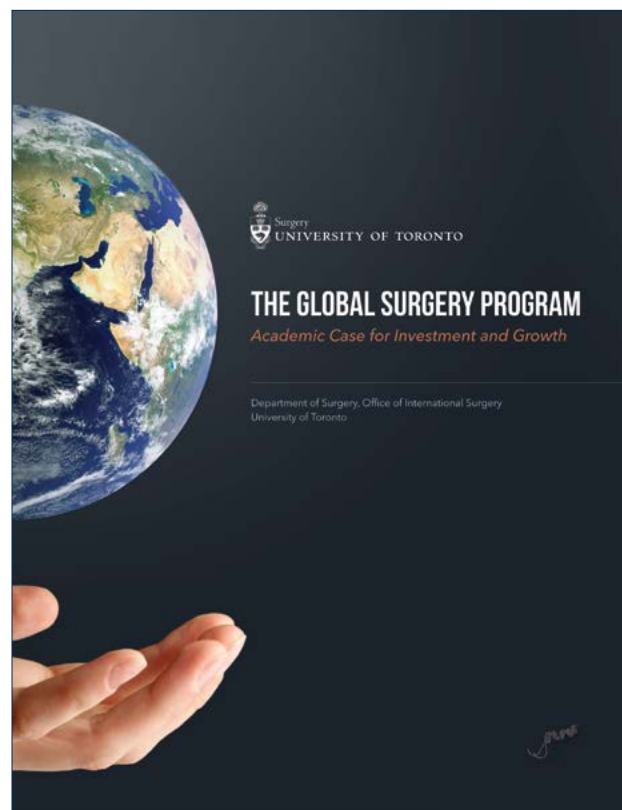
Publications

Global Surgery Abroad

This prospectus highlights the important work undertaken by faculty members in disadvantaged regions around the world. It serves not only as a showcase of achievements, but as a valuable piece for advancement efforts as well. The Department will release newly updated version in the upcoming academic year.

The Academic Case for Investment

Under the supervision of the Chair, Dr. Nathens, and Dr. Howard, a business case for investment in global surgery has been developed. The document serves as a comprehensive blueprint for all international activities, combining the Department's vision of sustainable capacity-building with stakeholder opportunities and key performance indicators.



Faculty and Trainee Involvement

Global Surgical Scholar Program

The Department has established a partnership with the Global Health Education Initiative program, overseen by the University's postgraduate medical education division. Known as the Global Surgical Scholar Program, the partnership supports Department learners in a two-year certificate program consisting of formal mentorship from a globally-involved faculty member and an evidence-based curriculum surrounding global health program development.

Faculty and Resident Involvement

For a complete overview of the international work of faculty members and trainees, please refer to the prospectus and business case (surgery.utoronto.ca/global-surgery).

A close-up photograph of a surgeon's hands in white gloves performing a procedure on a bone specimen. The bone is held in a yellow, rusted metal vise. The surgeon is using a surgical instrument, possibly a scalpel or a similar tool, to work on the bone. The background is a blurred clinical setting. A large, semi-transparent number '13' is overlaid on the right side of the image.

13

**SURGICAL
SKILLS CENTRE**

12 SURGICAL SKILLS CENTRE



Surgical Skills Centre

Prepared by Oleg Safir, Director. Lisa Satterthwaite, Manager, Surgical Skills Centre Mount Sinai

Hospital, Department of Surgery, University of Toronto

The University of Toronto Surgical Skills Centre (SSC) at Mount Sinai Hospital is a unique educational institute offering exceptional programs for surgical, medical, industry and affiliate groups within Toronto and extending globally to international attendees. Since 2012 and under the continued direction of Dr. Oleg Safir, D.H. Gales Director, the lab has continued to expand its offerings and as a result established itself as a world leader in medical education curricula.

Over the past 5 years there have been several milestones met of exemplary value within the Surgical Skills Centre.

Since 2014 we have hosted, in conjunction with Mount Sinai Hospital the annual Pair and Share event. This program reflects the interprofessional working and leadership connections within the hospital and its staff. In 2014 the program was awarded the Platinum Level Quality Healthcare Workplace Award.

In July 2014 the inaugural Preparatory Camp was initiated. This two-week all-day program engages the new incoming PGY 1 surgical residents (N = 68) to basic topics within surgical residency training needs such as instrument identification, knot tying and chest tube insertion to name but a few.

The session includes didactic lectures along with hands on technical skills training and competition events. Our residents as educators are the primary leaders of the program but also included are nurse educators, industry leaders, various departments and faculty in order to enrich the program with an interprofessional approach to teaching and learning. The program follows the Royal College of Physicians and Surgeons Competence by Design (CBD) plan and therefore embraces the attitudes of consistent feedback and assessments which include a multiple-choice exam and an Objective Structured Assessment of Technical Skills Exam (OSATS) in which all residents must obtain a pass mark of 80%.

All results are reviewed with residents and reported to Program Directors for inclusion within portfolios. Residents come from all surgical disciplines but also include the Department of Oral and Maxillofacial Surgery, Department of Obstetrics and Gynecology, Department of Otolaryngology Head and Neck as well as residents from the Northern Ontario School of Medicine (NOSM). We continue PREP camp with a Phase II component each fall as a continuation of Phase I but focus on more complex skills engaging faculty educators as well as offering retraining for any skill deficiencies noted from Phase I assessments. PREP camp continues to date with annual appraisals and reviews to enhance the resident education experience.

Along with PREP camp divisional specific “boot camps” are supported over the summer months to include Plastics, General Surgery, Neuro, Urology and Vascular. These surgical programs allow residents to focus on surgical approaches specific to their program and are supported by divisional faculty. The Toronto Orthopaedic Boot Camp (TOBC) directly follows PREP camp with a 2-week intensive course for orthopaedic residents. The program is in its 10th year of delivery.

Our 5-year journey continues with a wide variety of research projects. We have supported several important journal submissions that include: Bagli D, Odeh R, Penna F, et al (Lisa Satterthwaite). (N/A) **A Practice Platform for Systematic Development of Micro-Surgical Instrument Technique.**

Darius Bagli, Rakan Odeh, Frank Penna, Ethan Grober, Nicolas Fernandez, Armando Lorenzo, Lisa

Satterthwaite, Adam Dubrowski Cureus (): e. doi: 10.7759/Cureus. Journal of the American College of Surgeons, September 2014, deMontbrun S., Satterthwaite L., Grantcharov T., “**Establishing Passing Scores for Technical Performance in Surgery: Lessons Learned From a 10-Year Experience of Resident Assessment**”.

Volume 219, Issue 3, Supplement, Page S122 and the Annals of Surgery July 2016 “de Montbrun, Sandra L.; Roberts, Patricia L.; Lowry, Ann C.; More “**Implementing and evaluating a national certification technical skills exam: The Colorectal Objective Structured Assessment of Technical Skill (COSATS)**”. de Montbrun, Sandra L.; Roberts, Patricia L.; Lowry, Ann C.; Ault, Glenn T.; Burnstein, Marcus J.; Cataldo, Peter A.; Dozois, Eric J.; Dunn, Gary D.; Fleshman, James; Isenberg, Gerald A.; Mahmoud, Najjia N.; Reznick, Richard K.; Satterthwaite, Lisa; Schoetz, David Jr; Trudel, Judith L.; Weiss, Eric G.; Wexner, Steven D.; MacRae, Helen. July 2016 - Volume 264 - Issue 1 - p 1-6.

Research is a fundamental component of our vision and mission statements for which we support all resident requests.

In September 2018 we were very proud to be honored with the Association of Medical Education in Europe (AMEE) ASPIRE Award for Simulation. The award was presented at the annual meeting in Helsinki, Finland.

A major achievement for the SSC took place in August 2018 with the publication of our book



entitled, “Boot Camp Approach to Surgical Education”. The book encompasses 20 years of knowledge in surgical education from a plethora of authors ranging from practical common-sense approaches to the Feasibility and Management of skills labs to the Future of Medical Education: Simulation-Based Assessment in a Competency by Design Curriculum. The book has been favorably reviewed and continues with a large global distribution profile.

In the fall of 2018, the SSC in conjunction with the Mount Sinai Hospital SimSinai Centre underwent its fourth accreditation with American College of Surgeons (ACS). Since 2009 the SSC has remained in good standing with the ACS and continues to be involved with all aspects of the Accredited Education Institutes (AEIs) committees and congress meetings. The SSC also manages and supports the SimSinai Centre which focuses on human patient simulation training, Advanced Cardiac Life Support and BLS certification and research. The SimSinai Centre utilizes high fidelity mannequins to delivery programs for team training and communications in a variety of settings.

The SSC has been active with surgical and medical education for over 20 years celebrating its 20th anniversary in September 2018. We host annually over 10,000 turnstile learners along with over 300 programs. Our dedicated long-time staff contribute to this success and we look forward to many more successful years ahead.

Please feel free to visit our websites uoftssc.com and simsinaicentre.com for more information on programs as well as annual reports.

A person's back is shown from the side, wearing a white brace over a light-colored t-shirt. A hand is holding a white skull above a model of a human spine. The spine model has yellow intervertebral discs. The background is a blurred indoor setting. A large, light blue number '144' is overlaid on the spine model.

144

**SPINE
PROGRAM**

1 SPINE PROGRAM



Michael G. Fehlings and Albert Yee, Co-Directors, Spine Program

Executive Summary

The University of Toronto (U of T) has a long-standing impact in education, research and clinical management related to spinal disorders. To reflect this impact and in response to an external review in 2007 the U of T Department of Surgery Spine Program was established in 2009. This occurred thanks to the strong support of the Department of Surgery, and the two divisions of Neurosurgery and Orthopaedic Surgery. The program has since evolved into an internationally recognized entity enhancing clinical care, research, and education. Since its inception, the program has focused on collaboration, innovation, education, teaching, and research and acted as an important academic platform integrating spinal surgery units and research programs across the affiliated hospitals in

the Toronto Academic Health Sciences Network (TAHSN), particularly the three main adult hospitals: University Health Network- Toronto Western Hospital (UHN-TWH); Sunnybrook Health Sciences Centre (SHSC); and St. Michaels Hospital (SMH), as well as the Pediatric hospital The Hospital for Sick Children (SickKids). Globally, the program has been strengthening robust relationships with high profile spine research societies and spine health networks.

Driven by its vision of “Innovation, and excellence in the delivery of spine care with a unique collaborative program of clinical expertise, research, teaching, and education”, the program continues to provide a productive framework for city-wide collaboration in clinical activity, research, fellow and resident education, advocacy, strategic planning, adopting of robust academic calendar

of events including Visiting Professorship series, a key Knowledge Translational Research Day “SpineFEST”, Research Update meetings, and Journal Clubs. The program also provides training at the fellowship and residency level with courses on surgical skills, a joint orthopaedic and neurosurgical Royal College Mock Oral examination preparation course, a Traumatic Spinal Cord Injury Course as well as a number of subspecialty spine symposia.

Governance

The Spine Program is co-governed by the U of T Department of Surgery as an integrated program under the two divisions of Neurosurgery and Orthopaedic Surgery and Co-Directed by Professors Michael Fehlings (Neurosurgery) and Albert Yee (Orthopaedic Surgery). The program collegially moves forward initiatives with the support of the Program Council and the two committees of education and research.

The Program brings together a broad interdisciplinary array of clinicians, researchers and educators focused on disorders of the spine and spinal cord. The Program’s uniqueness draws from about 30 interdisciplinary faculty with areas of interest spanning the continuum from bench to bedside, to community, including not only neurosurgery, orthopaedic surgery but also paediatric surgery, radiation oncology, radiology, chiropractic, physical and occupational therapy, nursing, physiology, Biomaterial and biomedical engineering, laboratory medicine and pathobiology, injury prevention, pain management, and a broad variety of relevant research disciplines.

Education

The U of T Spine Program is one of the world’s largest spine units and is widely respected for a high level of clinical care delivery, volume of translational research, and excellence of educational programs. Our unit has trained over 200 fellows from around the world with major focus in complex pediatric and adult spine surgery. Our comprehensive and

integrated multidisciplinary program combines outstanding expertise in Orthopaedic surgery and Neurosurgery with non-operative disciplines drawn from a broad spectrum of specialties from Paediatrics, to adult trauma, spine deformity, spine oncology, MIS surgery, chronic pain, complex cervical, to complex intradural spine pathology. A focussed spine curriculum has been developed to guide training in “general” spine surgery and in a variety of focused subspecialty disciplines. An on-line registry has been developed to log cases completed by the fellows which assists in tracking the case experience.

Fellowship

The U of T Spine Program offers one-year comprehensive core fellowship training to fellows from Canada and overseas. Each year the Program trains 12 to 15 fellows joining our program from all over the world. Over 200 fellows have been trained in Toronto over the past 20 years. In addition to the one-year core clinical fellowship our program offers opportunity for training in clinical, translational and basic research as well as enriched training in a number of clinical subspecialty areas including complex cervical, intradural pathology, oncology, minimally invasive surgery, deformity, pediatric spine and trauma.

In 2017/18, based on a publication on core competencies for **spine fellowship training** in Canada [surgery.utoronto.ca/sites/default/files/CSS%20Spine%20Fellowship%20Curriculum.pdf], we have adopted a more formal curriculum-based approach to the education of our fellows. This opportunity builds upon competencies that may be acquired during a general first fellowship year, followed by a second year catered to advanced/ focused cognitive and procedural competencies. In 2015 The program has established a **fellow surgical case-log program** based upon the national training competencies. Additional offering of selective **rotation**/observership opportunities have also been facilitated to incoming fellows over the last 4 years with some fellows choosing to pursue this added educational offering.



SpineFest 2019

Educational Activities

The U of T Spine Program offers multiple educational opportunities for fellows and residents. The Program organizes several **annual courses, research update meetings, and journal clubs** as it continues to foster excellence of education in clinics and research. Chaired by **Dr. Stephen Lewis-TWH**, the **Annual Fellow Surgical Skill Course** has marked its 11th anniversary this year. The Program has also held several hands-on courses for residents over the years which have been organized by Dr. Eric Massicotte.

On a national level, our program continued to engage in the training of the wider community of residents, fellows and staff. As the Program hosted the national spinal community at the Canadian Spine Society 19th Annual Scientific Conference in Spring this year, a national surgical skills satellite course was organized by Drs. Eric Massicotte (TWH), Jeff Wilson (SMH), and Jeremie Larouche (SHSC) in collaboration with Dr. Scott Paquette of UBC. The course was focused on case-based discussions and included an intensive exposure to spinal navigation systems.

In 2015, the program initiated its joint city-wide Orthopaedics & Neurosurgery Royal College of Physician and Surgeons of Canada (RCPSC) **Mock Oral Prep Course** for senior residents. The course marked its 5th anniversary this year

and was co-chaired by **Professor Fehlings and Yee** and included U of T spine fellows who assumed a key educator role in presenting cases, leading discussions, and quizzing residents on several Royal College format cases.

Several **city-wide Spine fellows Journal Club** (CME accredited) are held every year. These are Co-Chaired by Drs Fehlings and Yee with participation from city-wide surgeons and discussions lead by our spine fellows. The Journal Club discusses hot-off-the press articles and systematic reviews with controversial issues supported with local case examples.

Twice a year the Program continues to organize a research update meeting bringing together scientists, clinicians, nurses, research coordinators, and trainees including fellows, residents, Surgeon Scientist Training Program (SSTP) trainees, post-doctoral fellows, graduate students and under graduate medical students to present current research fostering awareness of the breadth of fundamental and translational spine research being conducted at University of Toronto Spine Program. The meeting is Co-Chaired by **Drs Carlo Ammendolia** (Mount Sinai Hospital-MSH) and **Karl Zabjek** (UHN-Toronto Rehab).

In 2017 the program initiated an Annual **Traumatic Spinal Cord Injury Course** Co-Chaired by Drs Fehlings and Sukhvinder Kalsi-Ryan. The course trains fellows and senior residents on traumatic SCI and management, clinical trials, trauma room management and classification of disease severity. The course covers information related to disease and pathology, epidemiology, fracture classification and severity of injury classification.

Our **key annual knowledge translation day “SpineFEST”** [surgery.utoronto.ca/spinefest] has marked its 11th annual this year. Co-Chaired by Professors Fehlings and Yee, the Day represents collaborative, innovative and cutting-edge advances from across the citywide hospitals. SpineFEST is a vibrant academic platform for the spinal community disseminating scientific knowledge translation and advances in spine surgery as well as research. The course is CME accredited and has been nominated several times

for the U of T Woolf Award for Excellence in Program Development and Coordination.

Over the past years, the program has been fortunate to collaborate with the multiple hospitals and research units across Toronto to undertake a **quarterly hospital-based professorship series** associated with the **U of T-GTA Spine Rounds**, a CME accredited rounds organized by Dr. Joel Finkelstein of Sunnybrook Health Sciences Centre.

In addition, the Program facilitates several symposia, special lectures and rounds including **The Tator –Turnbull SCI Symposia** organized by **Dr. Fehlings**, and the newly initiated **Sunnybrook-Toronto Rehab Visiting Professorship** co-organized by **Drs. Yee and Kalsi–Ryan**. Periodically, the **U of T Spine Program**, through the leadership of **Dr. Fehlings**, collaborates with the U of T Division of Neurosurgery to host spine speakers at the **Botterell Symposium in Neurosurgery** and **The Keith Professorship Symposium**. Other symposia include the **biennial China-UofT MSK/ Spine Symposium** chaired by **Dr. Yee**, and the recently revived **Professionalism Rounds** chaired by **Dr. Finkelstein** to refine communication and interview skills of residents and fellows.

List of visiting professor and keynote speakers below:

VISITING PROFESSORSHIP		
2019 Feb	Greg Kawchuk	Alberta
2018 May	Ashwini Sharan	Thomas Jefferson
2018 Feb	Marcel Dvorak	BC
2017 Sep	Ziya Gokaslan	Brown
	Peter Varga	Budapest
	Laurence Rhines	Anderson-TX
	Charles Fisher	BC
	Stefano Boriani	Milan
2016 May	Mark Bilsky	Cornell
2016 April	John Kostuik	K2M (Baltimore)
2015 Nov	Stefan Parent	Montreal
2015 Oct	Yu Liang	Jiao Tong
2015 Feb	Fackson Mwale	McGill
2014 Nov	Robert Dunn	Capetown
2014 April	David Choi	UCLH
2013 Oct	Alwin Crawford	Cincinnati
2013 Apr	Alexander Rabchevsky	Kentucky Chandler
2012 Nov	Charles Fisher	BC
2012 May	Mauro Alini	Switzerland
2011 Sep	Thomas Oxland	BC
2010 Oct	Charles Johnston	Texas
2009 Oct	Satoshi Tani	Jikei

Clinical Care and Research Perspectives

Our Program is evolving as a translational research hub to foster collaborative efforts in multi-centre clinical trials and to improve data sharing between the research institutes. There are a number of clinical trials in progress or recently completed across our city-wide clinical research units (RISCIS, Riluzole in Spinal Cord Injury Study; INSPIRE, the neuro-spinal scaffold in treatment of AIS A

thoracic acute spinal cord Injury; EPOSO, surgery versus radiotherapy in metastatic disease of the spine; VERTEX, VX-210 in acute traumatic cervical spinal cord injury; and the successfully completed Lumbar Spinal Stenosis Study). In this respect, a citywide **Clinical Trials & Research Studies Night** is being held once a year to connect trialists, fellows and residents, nurses and research managers

to raise awareness and open a productive dialogue around the studies being conducted. The U of T Spine Program also actively participates in a new initiative to enhance translational research in surgery which has been put together by Dr. Marc Jeschke.

Innovation and Advocacy Efforts

Our program has contributed toward numerous initiatives to enhance innovation and knowledge translation of research discoveries to clinical practice. With collective efforts led by **Dr. Fehlings** we have developed the **AOSpine Clinical Practice Guidelines for the Management of Patients with Acute Spinal Cord Injury and Guidelines for the Management of Patients with Degenerative Cervical Myelopathy**. The Guidelines were approved and published in the Global Spine Journal [journals.sagepub.com/toc/gsj/7/3_suppl] and currently being implemented at the global clinical practice level. At the provincial level, **Dr. Raj Rampersaud** (TWH-UHN) and colleagues continue to lead important efforts toward enhancing triage and care of many of our ‘elective’ patients with degenerative conditions of the spine. Arising from the success of Inter-professional Spine Assessment and Education Clinic (ISAEC) pilot, the Ministry of Health and Long-Term Care (MOH-LTC) – the provincial expansion of the Low Back Pain (LBP) framework is progressing well and garnering interest by inter-professional health professionals. Leveraging the expertise of Advanced Practice Providers (APPs) link with primary care, Practice Leads (PL) are facilitating the triage of potential surgical patients through to our city-wide adult spinal centres. Moreover, **Dr. Michael Fehlings** has also led efforts at the provincial level aimed towards enhancing access to patients with urgent and emergent spinal conditions. In “**Time is Spine**” **Dr. Fehlings** and his team, supported by analyses from the Institute for Clinical Evaluative Sciences (ICES) database, are advocating for **timely surgical intervention** within the first 24 hours after injury as critical for minimizing complications and maximizing recovery for **patients with SCI**. **Dr. Larouche**, with U of T Surgeon

Scientist Training Program (SSTP) resident (**Dr. Matthew Guttman**) and senior author **Dr. Avery Nathens** have recently completed a study utilizing the TQIP (American College of Surgeon) database that further validates the opportunity for **timely surgical fixation** in spine trauma injured patients. Sunnybrook recently established a Division of Spine Surgery (Dr. Joel Finkelstein Division Head Clinical Lead, and Dr. Farhad Pirouzmand Division Quality Lead) to enhance coordination of urgent spine care.

Global Outreach

Over many years, our program has been selected as a host site for training and knowledge dissemination for multiple travelling fellowships including the Cervical Spine Research Society (CSRS) in 2015, the Canadian Orthopaedic Association (COA) hosted Canadian French Belgium Swiss (CFBS) Fellows in 2019, and the Scoliosis Research Society (for the past several years). Our Program has been ranked as top host site for excellence in hospitality and education and training programs.

Our Program through efforts of **Drs Fehlings, Yee and other faculty** have hosted multiple high-profile society meetings with proven excellence and outstanding organization efforts. We hosted The Annual meeting of the Cervical Spine Research Society 2015; AO Spine Tumor Knowledge Forum 2017; International Society for the Advancement of Spine Surgery in 2018; the International Neurotrauma Society 2018; the Canadian Spine Society 2019; and most recently the Global Spine Congress 2019. In November 9-10 this year we are also hosting the AOPEER Course: Principles of Clinical Research which will be directed by **Dr. Fehlings**.

Strategic Planning

The UofT Spine Program conducted several strategic planning summits over the past decade revisiting the mandates outlined in the initial external review of 2007 and in the subsequent 2013 external review. While examining the



Program's Strengths-Weaknesses-Opportunities-Threats (SWOT analysis) and outlined recommendations, the 2017th summit discussed the past and current state of the Program and developed a roadmap for the next decade.

The 2017 summit outlined the Program's interdisciplinary composition, the support of the U of T Department of Surgery, the Division of Orthopaedic Surgery, the Division of Neurosurgery and the synergistic collaborations across the affiliated hospitals. The collaborative efforts have extended to the provincial level with the Ontario Ministry of Health and Long-Term Care (MOH-LTC), the Local Health Integration Networks (LHINs) which is now being restructured provincially with the establishment of Ontario Health Teams, and Rapid Access Clinics (e.g. Low Back Pain RACs) that leverage the expertise of Advanced Practice Providers (APPs) in spine care triage. There is a strategic emphasis also to leverage interactions at the national level with the Canadian Spine Society (CSS, Dr. Yee, President 2019-21), Bone and Joint Canada (Dr. Yee, Co-Chair) and the global spinal community with organizations including AOSpine (Dr. Fehlings), the Cervical Spine Research Society (CSRS, Dr. Fehlings Past-President), the Scoliosis Research Society (SRS) and the North American Spine Society (NASS). The U of T Spine Program has had success in developing and championing best practice in spine care through initiatives including the ISAEC model to enhance assessment of patients with degenerative spine issues, "Time is Spine" (Dr. Fehlings) pathway to enhance spinal triage and care access to patients with urgent

spinal cord injury, as well as the development of international Guidelines for the Management of spinal cord injury (SCI) and degenerative cervical myelopathy (DCM). These efforts have positioned the Program as an international Centre of Excellence for advancing spine care delivery and education.

In the education session of the 2017 Summit, we highlighted our program's involvement with the development of a robust competency-based fellowship training curriculum at the national level through the CSS which is complemented by elective rotation across the citywide spine hospitals and with a currently mandated city-wide spine case log. The fellowship offers a package of intensive annual courses including a surgical skills cadaver course (Dr. Stephen Lewis), semi-annual research update meetings, hospital-based rounds and Spinal Cord Injury workshop, in addition to quarterly journal clubs and hospital based as well as Annual SpineFEST visiting professorships. Our Program has developed a 2nd year subspecialty fellowship year for fellows who have successfully completed their initial general spine fellowship with opportunities to further one's expertise in subspecialty areas including trauma, MIS, adult and/or paediatric deformity, complex cervical, and complex intradural spine pathology. The Program has also set out to develop Areas of Focused Competence (AFC) Spine Diploma through the Royal College of Physicians and Surgeons of Canada, and efforts are underway with task force formed of local and national faculty working synergistically with the CSS. With our outstanding surgeons, educators, scientists and administrative team our Program is uniquely positioned to leading and coordinating efforts toward the accreditation of spine fellowship at the local and national level.

While witnessing the changing environment of spine care our summit also stressed the challenges around optimizing clinical practice and resources. Our Program brought together our members and key colleagues from MOH-LTC Health System Quality and Funding, Toronto Central Regional Cancer Program, Clinical Programs and Quality – Cancer Care Ontario, CritiCall Ontario, and Provincial Neurosurgery Committee, to raise awareness around the challenges related to spine care delivery, including funding and under-

capacity of fellowship trained spine surgeons in the Greater Toronto Area (GTA) to care for a population of 6 million. The cost effectiveness of spine surgery in the care of DCM for our aging population was also taken into consideration for future follow-up on funding and policy making.

Through the Ontario Brain Institute the summit provided an exposure to the integrated informatics platform for Neurosciences with context on Spine Informatics and Clinical Research. Brain CODE is a cutting-edge model of a standardized data collection across research institutes which provides pan-provincial data in an open source format with real time dashboards to enable access and improve patient assessment and patient care through evidence-based medicine. This led to two main strategies 1) spine informatics and the development of data sharing and data management platform capturing surgical and non-surgical intervention and 2) the creation of a U of T clinical translational research fostered by central database capturing city-wide research and clinical studies from bench to bedside to community. The strategies are in ongoing dialogue. Opportunities to improve REB process around the city and to leverage more resources for data sharing are being examined at the U of T - hospitals executive levels. With the provincial roll out of both a degenerative spine quality based procedure (QBP) funding model as well as a spine triage assessment model in the form of RACs in fiscal 18/19, there remains opportunity to better harmonize and enhance the coordination of spine care as well as the collection of patient reported outcome measures (PROMs) within the U of T spinal hospitals and beyond. A central funding model for the Program with a partisan support from the hospital's research institutes is foreseen as a potential opportunity to leveraging our collaborative clinical outcome research initiatives.

At an organizational level, the Program, with the empowerment and the support of the key stakeholders at the U of T and the affiliated hospitals is set to evolve in the near future as a potential U of T Spine Division with multiple units of education, clinical training, and research.

Funding

The Department of Surgery and the two Divisions of Orthopaedic Surgery and Neurosurgery jointly fund the program with \$50,000 annually as partial support to the administrative salary and benefit. The Program activities is supported by donations from four main industry partners (DePuy Synthes, Medtronic, Zimmer Biomet, and Stryker) which total approximately \$100,000 and is coordinated through Ms. Nadia Jaber and the U of T Advancement Office. These funds are used to support the U of T Spine Program coordinator (Ms. Nadia Jaber), partial salary support for one spine fellow which is rotated between hospitals, and the various educational and research programs which we undertake.



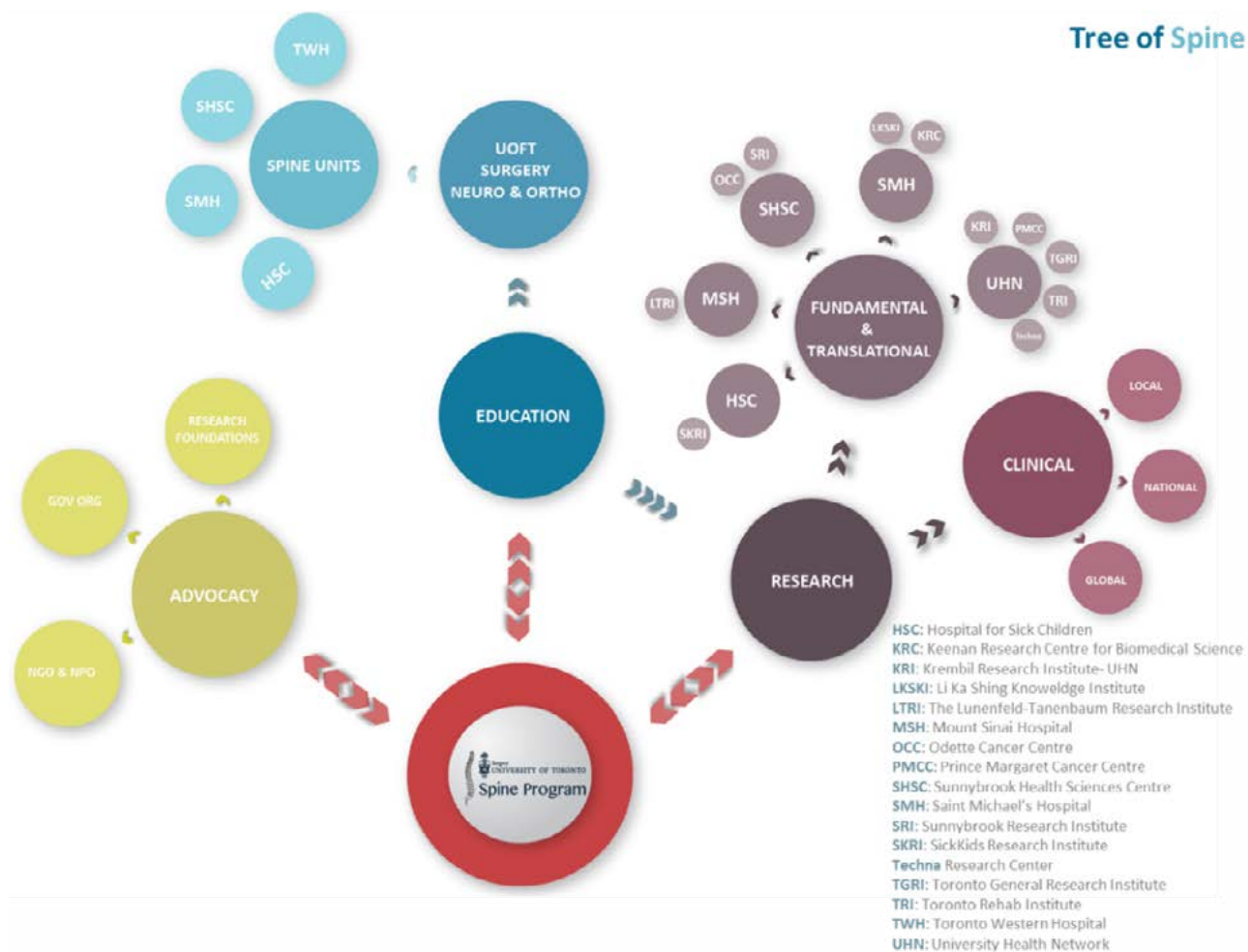
Branding and Communication

The U of T Spine Program has a logo which conforms to U of T standards and which enhances the branding of the program. The U of T Spine Program has a dynamic website [live-surgery.panth.discoverycommons.ca/spine-program], publishes a regular newsletter [surgery.utoronto.ca/spine-newsletter-0] and is active on social media including LinkedIn [[in/uoftspine/](https://www.linkedin.com/company/uoftspine/)] and Twitter [[@UofTSpine](https://twitter.com/UofTSpine)]. The online media has been acting as platform for positioning our program brand in the local and global digital arena while raising awareness and

fostering continuity among our former fellows. Of note, at the Global Spine Congress in Toronto this year (a meeting which attracted almost 2000 registrants), our UofT Spine Program exhibited a booth showcasing our UofT Program. The booth attracted considerable traffic and further enhanced the global visibility of the UofT Spine Program.

In closing, over since its inception in 2009, The University of Toronto Spine Program has created a unique identity for spine thanks to the remarkable collective efforts of the faculty, program council, trainees, and committees. The Co-Directors of the U of T Spine Program owe a debt of gratitude

to our excellent program coordinator Ms. Nadia Jaber and to the U of T Department of Surgery, Divisions of Orthopedics and Neurosurgery and our industry sponsors. After his visit to the U of T Spine Program, Dr. Daniel Riew (Professor of Orthopedic Surgery at Columbia University Medical Center’s College of Physicians and Surgeons-NYC, Co-Chief, Spine Division, Director of Cervical Spine Surgery and Co-Director of the Columbia Spine Fellowship) commended the Program and the leadership with the following quote: “Michael, Albert and the entire U of T Spine Team! You have built the premier research and educational program for spine in the world”.

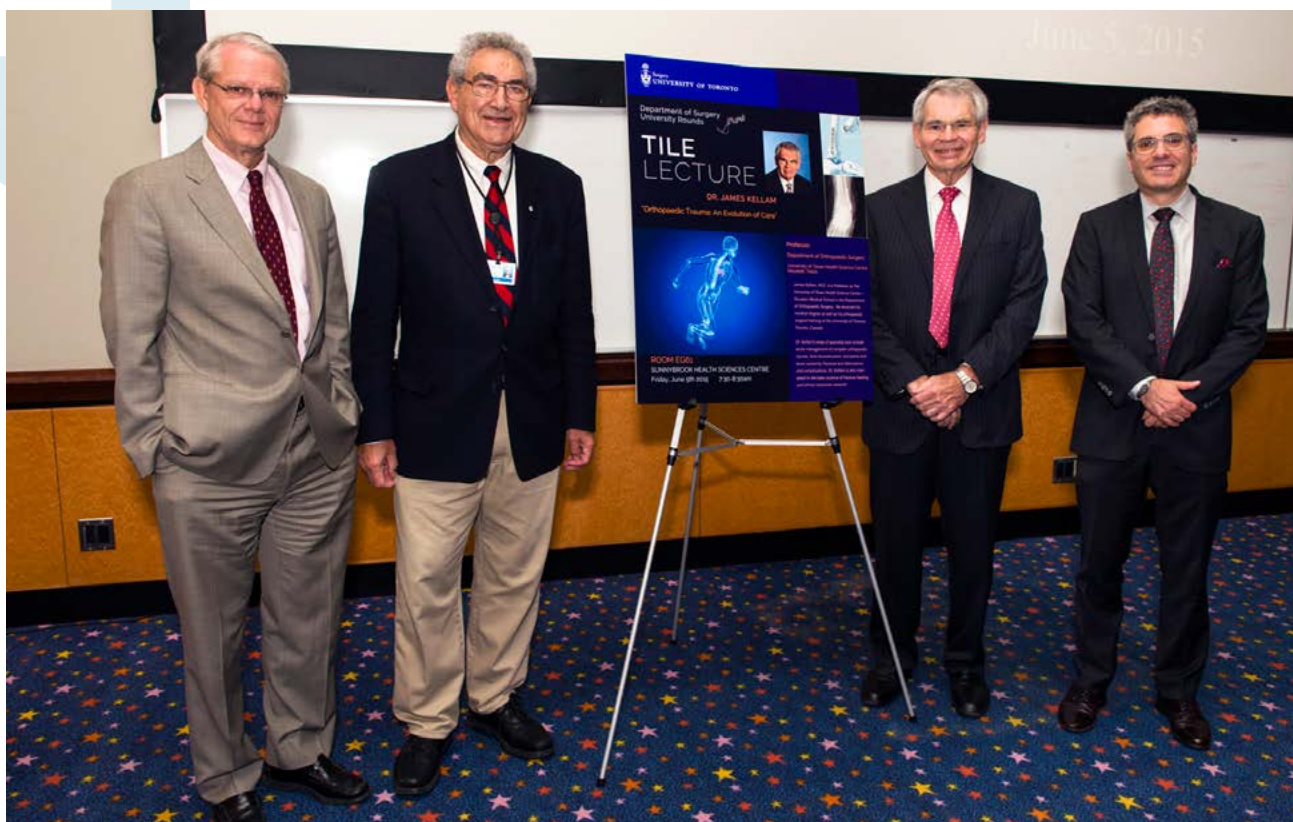


15

**TRAUMA
PROGRAM**



TRAUMA PROGRAM



2015 Tile Lecture in Trauma: J. Rutka, M. Tile, J. Kellam, A. Nathens

Avery B. Nathens, MD, PhD, MPH, FRCSC, FACS, Director, Trauma Program

The University of Toronto Trauma Program was created in 2011 and is a collaborative within the University Department of Surgery across the three trauma programs at St. Michael's Hospital, Sunnybrook Health Sciences Centre, and SickKids. It was created to better integrate trauma-related activities pertaining to education, outreach, research, and quality improvement. It also serves to create a larger profile for trauma within the University and to promote the Department of Surgery externally as a centre for excellence in trauma. The annual volumes across the three sites make it one of the largest trauma programs in North America.

At its inception, the Program was also designed so that the centres can speak with one voice in regional planning, working with EMS and developing local policies related to trauma care. In 2016, the Greater Toronto Area Regional Trauma Network (GTA RTN), which reports through to Critical Care Services Ontario (CCSO) within the Ministry of Health assumed selected components of this role. This Network has strong representation from all of the centres within the Program and from a practical standpoint, the GTA RTN takes direction from the University of Toronto Trauma Program leadership.

Direction of the program is set through a University of Toronto Trauma Steering Committee, chaired by Dr. Avery Nathens with representation from each of the trauma centres. There have been some changes in leadership across the centres over 2014–19 as outlined below:

St. Michael's Hospital: Dr. Sandro Rizoli (2014–2018); Dr. Bernard Lawless (interim, 2019–)

Sunnybrook Health Sciences Centre: Dr. Homer Tien (2014–2016); Dr. Avery Nathens (2016–present)

SickKids: Dr. Paul Wales (Department of Surgery) with Dr. Suzanne Beno as co-lead (Department of Emergency Medicine)

Dr. Tien assumed a larger regional role as medical director of ORNGE, the Ontario air ambulance provider in 2016.

The Program has been valuable in moving forward several initiatives and in creating stronger collaborations within the city. Several examples follow.

University of Toronto Trauma Fellowship

The University of Toronto Trauma Fellowship Program provides an opportunity for general surgeons who have completed their residency programs to rotate across both adult trauma centres over the course of a year. With a rotation of 6 months at each centre, they are exposed to all of the trauma surgical faculty over both sites and experience a diverse case mix. Many of these fellows participate in electives in other Divisions (e.g. vascular surgery, cardiac surgery) to enrich their training and several have combined their trauma fellowship with one in Critical Care at the University of Toronto. Over 2014–2019, the program has been very successful in recruiting 12 fellows from across Canada, the United States and Australia. The fellows are successful in obtaining faculty positions and have populated trauma centres across Canada including Winnipeg,

McGill, Toronto, Hamilton, Edmonton, and Sherbrooke, with several assuming leadership positions in their respective trauma programs.

Tile Lecture in Trauma

The annual highlight of the University of Toronto Trauma Program is our Tile Lecture in Trauma. The Tile Lecture was named in recognition of Dr. Marvin Tile, who was the surgeon-in-chief at Sunnybrook between 1985 and 1995 and was the world authority on the treatment of pelvic and acetabular trauma, was past president of the AO Foundation in Switzerland, and has been named to the Order of Canada for his contributions in clinical surgery, teaching, and research. The lectureship was named in 2014, making 2019 the sixth annual Tile Lecture. The Lectureship provides an opportunity to bring world renowned surgeons to Toronto who can share their experiences with the entire Department as part of University Grand Rounds. In addition, the lectureship brings together all of the trauma faculty across the three sites in the form of a city-wide journal club and research symposium over a two-day period every June. Over academic years 2014–19, the Tile Lecturers have reflected the diversity of the expertise across the Divisions in the Department and over academic 2014–2019 included:

2019 Dr. Rochelle Dicker – General Surgeon

Closing the revolving door of violence:
Addressing social determinants of health
through hospital-based violence intervention

2018 Dr. Elon Glassberg – General Surgeon

Medical and organizational lessons from the
Israeli humanitarian medical aid mission
to the victims of the Syrian civil war

2017 Dr. Thomas Scalea – General Surgeon

The past, present, and future of
endovascular care for trauma

2016 Dr. Geoffrey T. Manly – Neurosurgeon

Traumatic Brain Injury: A precision
medicine approach

**2015 Dr. James Kellam –
Orthopaedic Surgeon**

Orthopedic Trauma: An Evolution of Care

Visiting Professor in Injury Prevention

The Program was fortunate to receive a grant from the Dr. Tom Pashby Sports Safety Fund to support an annual visiting professor in Injury Prevention over 2015–2017. In addition to the visiting professor, the grant also provided an opportunity to bring together the Toronto injury prevention community through an annual research symposium. This brought together scientists from the University of Toronto (including



Holland Bloorview and Toronto Rehabilitation Institute), York University, Ryerson University, as well as representatives from the Ministries of Health Promotion and Sport and Transportation, creating new opportunities for collaboration.

The visiting professors in injury prevention over 2015–17 included:

2017 Dr. Brent Hagel (University of Calgary)

Preventing Sport and Recreation Injuries
in Children and Adolescents

**2016 Dr. Dennis Durbin (Children’s
Hospital of Philadelphia)**

Motor Vehicle Safety Research in Children

**2015 Dr. Fred Rivara
(University of Washington)**

Gun violence: research on prevention
and its uses in advocacy

Sports concussion in youth: what
we know and what we don’t

With grant funding ending in 2017, this program was folded into the University of Toronto Interdisciplinary Trauma Conference.

University of Toronto Interdisciplinary Trauma Conference

The University of Toronto Interdisciplinary Trauma Conference (ITC) provides an opportunity for continuing education and outreach pertaining to trauma care for providers in South Central Ontario. The conference has been held since 2011 and attracts ~300 physicians, nurses, and paramedics from across the region on an annual basis. While the ITC provides education on advances in trauma care to providers, there is typically a theme and keynote address to consolidate the learnings. Over 2014–19, the themes and keynote speakers were:

**Collateral Damage: Helping the helpers
cope with traumatic injury (Feb 2015)**

Keynote: John Carnochan – Former Detective Chief



ITC Conference

Superintendent at Strathclyde Police in Scotland:
“David’s Story”: Born to fail, the perfect storm.

**Road Traffic Trauma, Anatomy of a Crash:
Fundamental concepts in management,
sequelae and prevention (Feb 2016)**

Keynote: Dr. Hugh Scully, Founding Fellow,
FIA Institute for Motor Sport Safety and
Sustainability, Professor of Surgery and Health
Policy, University of Toronto: The critical role
of healthcare providers in motorsport safety

**Violence Close to Home: Intentional injuries
in vulnerable populations (Oct 2017)**

Keynote: Dr. Joseph Ibrahim and Susan
Ono, Orlando Regional Medical Center,
The Pulse Night Club Shooting

**Mass Casualty in the Canadian
Context (June 2019)**

Keynote: Dr. Jon Witt, Department of Emergency
Medicine, University of Saskatchewan: Experiences
and Lessons Learned from the Humboldt Tragedy

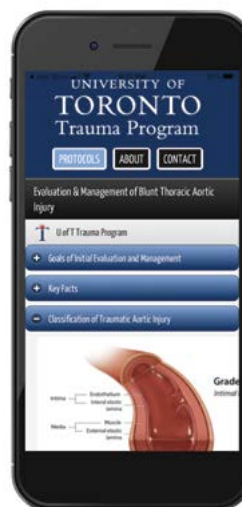
GTA Trauma Forum

In the spring of 2016, a group of almost 40
trauma leaders from the University of Toronto
Trauma Program, prehospital care providers, and
government met at the Sunnybrook Centre for
Prehospital Medicine to connect key individuals
and share information. The purpose of the forum
was to bring together key stakeholders from the

point of injury to rehabilitation and beyond to
better understand the trauma system, and identify
opportunities for improvement. This included
a discussion of a number of processes including
the first call to 9-1-1, the differences between
urban and rural responses for paramedics, and
access to trauma centres either directly or through
ORNGE. The group considered a number of
opportunities to enhance the system including
better communication between prehospital and
hospital providers, structured feedback to paramedics
following a trauma case, access to patient outcomes,
and information sharing. As a result of this forum,
there are now data sharing agreements between
pre-hospital and hospital providers and better
communication to enhance quality improvement
activities between EMS and the trauma centres.

University of Toronto Trauma app

The University of Toronto Trauma app was made
available in 2012 and is a collaborative effort
across the trauma centres to make available care
protocols to the University of Toronto community
and beyond. It has over 20,000 downloads from
149 different countries. The content is distributed
freely on the web and is available on both android
and iPhone platforms. It is designed to be used
in real time and provides direction on evaluation
of blunt and penetrating trauma, resuscitation
and supportive care including pain management
and venous thromboembolism prophylaxis.



A close-up photograph of a person's hands. The left hand is positioned above a document, while the right hand holds a silver pen over a bar chart. The document features a bar chart with several vertical bars of varying heights. The background is dark, and the overall scene suggests a professional or academic setting. A large, light blue number '16' is overlaid on the right side of the image.

16

**REPORT OF
FACULTY
MEMBERS**

REPORT OF FACULTY MEMBERS



Emphasis on Surgeon Stress and Burnout

The Need for Change

Over the past decade, occupational stress has established itself on the forefront of concerns in the medical profession. Dr. Charles Balch defined burnout as a clinical syndrome with diagnostic criteria of 1) Emotional exhaustion 2) A decreased sense of personal accomplishment and 3) Depersonalization - A detached or negative response to patient care (Balch, 2009).

A study conducted by the American College of Surgeons (ACS) in 2008 reported that nearly 40% of

surgeons are experiencing burnout and 30% display symptoms of depression (Shanafelt, 2009). The ACS study was the first of its kind and demonstrated a serious epidemic among surgeons with a strong association between burnout and medical error, work-life balance, and career satisfaction.

While stress is an individual experience, burnout affects institutions when hospitals expend costs to rectify medical errors and absenteeism from stress leave. In 2012 the Canadian Medical Association (CMA) estimated that burnout-associated early retirement and reduced clinical hours costed Canada \$213.1 MN annually. Thus, it is clear that negative stress has a ripple effect from individual to system, and yet the systems are currently providing far too little support.

The Department of Surgery's Response

The Department of Surgery at the University of Toronto prioritized this issue due to the negative threats it poses to patient safety, personal well-being, and system-level stability. However, academic research within the Canadian surgical context is highly limited. In response to this discrepancy, a steering committee was formed with the ultimate goal of facilitating improvement in the stress levels of our faculty members as well as contributing to the body of knowledge surrounding surgeon wellness. Our steering committee is comprised of Dr. Ori Rotstein (General Surgery, St. Michael's Hospital), Dr. Giuseppe Papia (Vascular Surgery, Sunnybrook Health Sciences Center) and Ms. Joanna Giddens (Strategic Plan Coordinator, Department of Surgery). The steering committee initially sought leadership support by discussing the issues and need for change with the hospital Surgeon-in-Chiefs and several Division Heads, which was positively received by all.

The Survey

A Department-wide survey was administered to determine the scope of occupational burnout for Toronto surgeons, identify specific stressors, quantify the impact of stress on the surgeon's quality of life and evaluate the effectiveness of coping mechanisms. The committee developed a comprehensive survey similar to the ACS survey and successfully obtained REB approval before its dispersion. A comprehensive and anonymous survey was administered to all full-time clinical faculty members within the Department of Surgery in November of 2018 until January 2019.

The survey response rate was approximately 41% with 112 responses from 272 potential participants. The reported demographic (gender, age, ethnicity, marital status) and professional characteristics (specialty, rank, hours worked, etc.) were overall representative of the Department's profile. However, it was the third section of the survey that provided the most telling dimensions of faculty wellbeing. The first component of this section utilized the Maslach Burnout Inventory to examine occupational burnout. These questions examined mental and physical fatigue, and emotional toll of the surgical

career. The second component used the PRIME-MD Patient Health Questionnaire to look at physical wellbeing, depression, anxiety, substance abuse, and detachment from duties. The third component examined individual quality of life through the SF-12 Questionnaire. The final component looked at job satisfaction and sense of accomplishment through the Employee Satisfaction Index.

Survey Analysis

The majority of respondents did not display high levels of exhaustion or depersonalization with respect to the surgical profession itself. Faculty members genuinely enjoy their clinical work and do not allow external stressors to compromise their quality of care (*Figures 15.1 to 15.4*).

Figure 15.1

I feel I treat some patients as if they are impersonal objects.

ANSWER CHOICES	RESPONSES	
Never	54.53%	53
A few times per year or less	26.26%	26
Once per month or less	8.08%	8
Once per week	4.04%	4
A few times per week	6.06%	6
Every day	2.02%	2

Figure 15.2

I feel exhilarated from working closely with my patients.

ANSWER CHOICES	RESPONSES	
Never	5.05%	5
A few times per year or less	5.05%	5
Once per month or less	6.06%	6
Once per week	17.17%	17
A few times per week	39.39%	39
Every day	27.27%	27

Figure 15.3

I deal with patients' concerns very effectively.

ANSWER CHOICES	RESPONSES	
Never	0%	0
A few times per year or less	0%	0
Once per month or less	1.01%	1
Once per week	2.02%	2
A few times per week	26.26%	26
Every day	70.71%	70

Figure 15.4

I deal with emotional problems at work very calmly.

ANSWER CHOICES	RESPONSES	
Never	3.03%	3
A few times per year or less	4.04%	4
Once per month or less	10.10%	10
Once per week	13.13%	13
A few times per week	29.29%	29
Every day	40.40%	40

They are able to stay level-headed; effectively dealing with patient concerns and keeping emotional extremes in balance. There is also a great deal of personal satisfaction due to the belief that the work is worthwhile and having a positive impact in the community (Figure 15.5).

Figure 15.5

I feel like I've accomplished many worthwhile things.

ANSWER CHOICES	RESPONSES	
Never	3.03%	3
A few times per year or less	8.08%	8
Once per month or less	12.12%	12
Once per week	14.14%	14
A few times per week	25.25%	25
Every day	37.37%	37

There was sufficient evidence to state that our faculty members are indeed experiencing stress and displaying signs of depression. Rates of burnout, frustration, and dissatisfaction with work-life balance were fairly consistent with that of the ACS study, implying that there are stressors unique to the surgical profession (Figures 15.6 to 15.10).

Figure 15.6

I feel burned out from my work.

ANSWER CHOICES	RESPONSES	
Never	11.11%	11
A few times per year or less	29.29%	29
Once per month or less	22.22%	22
Once per week	7.07%	7
A few times per week	20.20%	20
Every day	10.10%	10

Figure 15.7

I feel frustrated by my job.

ANSWER CHOICES	RESPONSES	
Never	5.05%	5
A few times per year or less	22.22%	22
Once per month or less	19.19%	19
Once per week	13.13%	13
A few times per week	23.23%	23
Every day	17.17%	17

Figure 15.8

Over the past 4 weeks, has your emotional health limited your ability to perform your work as optimally or as carefully as usual?

ANSWER CHOICES	RESPONSES	
Yes	23.71%	23
No	76.29%	74

Figure 15.9
Over the past 4 weeks, how often have you felt downhearted?

ANSWER CHOICES	RESPONSES	
Never	2.06%	2
A few times per year or less	5.15%	5
Once per month or less	10.31%	10
Once per week	20.62%	20
A few times per week	46.39%	45
Every day	15.46%	15

Figure 15.10
How satisfied are you with your current work-life balance?

ANSWER CHOICES	RESPONSES	
Entirely satisfied	9.28%	9
Mostly satisfied	29.90%	29
Moderately satisfied	23.71%	23
Somewhat satisfied	21.65%	21
Not at all satisfied	15.46%	15

‘Resources for managing patient care and being a physician/surgeon seem to be dwindling and causing moral issues and feeling “valued” as health care providers.’

The feedback section provided tremendous insight into these stressors and unsurprisingly the majority lay with the Ministry of Health & Long-Term Care, the government of Ontario, the hospitals, and research institutes. These included issues such as constrained hospital resources, scheduling complexities, and patient demands. Unfortunately, the Department of Surgery has minimal jurisdiction over these domains, but we can certainly aim to strengthen inter-institutional relationships, support systems, and effective coping mechanisms.

The feedback also allowed us to identify Department-specific stressors.

‘Bullying is real, especially among those in power who continue to be given a free pass. It’s a know but don’t tell atmosphere.’

‘My largest frustration comes from the lack of fairness towards new surgeons. I feel taken advantage of and without recourse, since the ones taking advantage also have an excessively large influence on my future employment.’

The first area was collegial support, which refers to the support systems provided by those in leadership positions, bullying and/or harassment, and a general sense of camaraderie in the workplace. Several faculty members disclosed abusive power dynamics, gender and/or racial bullying, and exclusion of junior-level staff. These issues were also cited in the ACS data, particularly in the smaller surgical divisions. For instance, vascular surgeons consistently demonstrated weaker support systems in addition to higher stress levels and greater tendencies towards suicidal thought patterns.

‘The job stress and expectations are high, but it’s not just the patients and the volume of work. There are many factors that add to the stress, especially performance expectations, bullying, demands set at all levels, high temper individuals, working for free...could go on. My career will end early because of stress. It is a shame. Never thought this would happen to me. Stigma burnout is a major deterrent for dealing with or recognizing the issue.’

‘The Clinician-Scientists have contracts that request a majority of time doing clinical work (80%) and university contracts specifying a requirement for working weeks to be primarily academic (80%). This is fundamentally in conflict.’

The next stressor was a lack of transparency surrounding role expectations and funding sources. Both survey responses and managerial feedback indicate that our faculty feel burdened by competing academic responsibilities, as well as how they will be compensated and/or recognized for research time. Many reported feeling unnoticed or poorly recognized for hard work, and perceived favouritism among senior-level staff.

Looking Ahead

Following the survey analysis and redaction of identifiers, the committee shared its findings with the Department. The committee has also partnered with Drs. Janet Parsons, Emma Richardson, and Karen Pope at the Li-Ka Shing Knowledge Institute's Advanced Health & Research Centre for the next phases of qualitative research analysis. Focus groups and individual interviews will be conducted in early 2020 and facilitated by qualitative research scientists. The findings will be used to further inform the scope and severity of the identified stressors within the Toronto surgical environment, evaluate job dis/satisfaction and work-life balance, and inform decision-making surrounding plausible strategies for implementation. This will be made possible from the generous support of the Department of Surgery, Sunnybrook Health Sciences Centre and St. Michael's Hospital.

The committee is also looking forward to presenting its initial findings at various events and conferences in 2020, as well as publishing the first academic studies examining burnout in Canadian surgeon. This has been a groundbreaking exploration for both the Department of Surgery and Canadian surgical profession, and we look forward to many more future successes.



REPORT OF LEARNERS

17 REPORT OF LEARNERS



For the past several years, Dr Rutka has held breakfast meetings with the first year medical students throughout the year. In these sessions, Dr Rutka encourages the medical students to consider career paths in surgery, and answers their many questions about surgery as a profession.

Over the past 6 years, the medical students at UofT have completed survey questions regarding their experience as learners on the various surgical rotations. As can be seen from the various tables, the quality of the education experience has generally improved for medical students since 2014 (Figure 17.1). The variety of patients and procedures accessible to students varied considerably over the past 6 years, and it is an area we are continuing to focus on (Figure 17.2). In recent times, the medical students did not feel as though they were given appropriate responsibility for patient care (Figure 17.3).

We will strive to improve upon the medical students' perception of safety of the patients they cared for, our ability to observe medical students take a patient history (Figure 17.4), and feedback provided early enough to medical students during their rotations on the various surgical services (Figure 17.6).

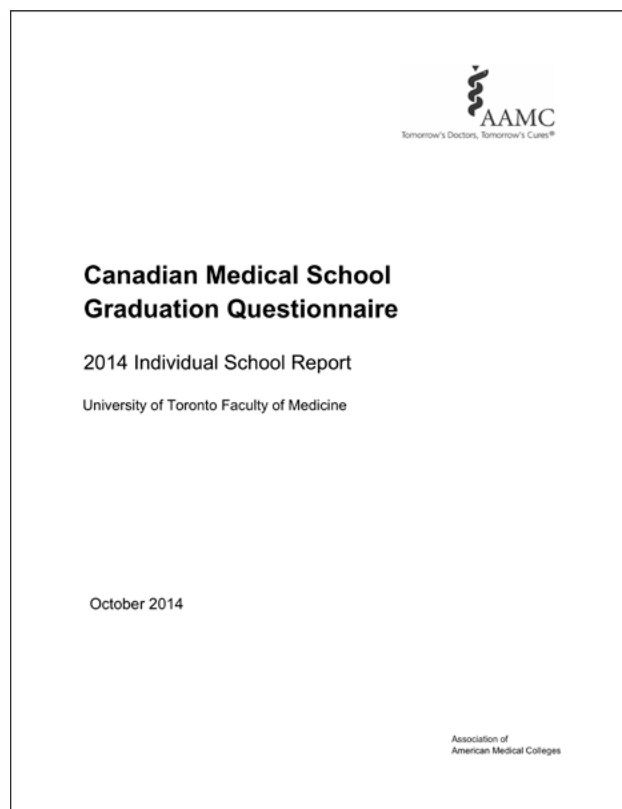


Figure 17.1. Please rate the quality of your educational experience.

ANSWER CHOICES	2014	2015	2016	2017	2018	2019
Poor	9.8%	3.2%	1.6%	4.6%	5.1%	4.5%
Fair	16.8%	11.9%	15%	9.2%	11.4%	12.4%
Good	30.1%	25.4%	38.6%	28.1%	21.7%	31.6%
Very good	28.3%	37.3%	28.3%	34%	35.4%	28.2%
Excellent	15%	22.2%	16.5%	24.2%	26.3%	23.2%
Count	173	185	127	153	175	177
Mean	3.2/5	3.63/5	3.43/5	3.64/5	3.66/5	3.53/5
Standard deviation	—	1.05	0.98	1.08	1.13	1.11

Figure 17.2. I had sufficient access to the variety of patients and procedures required to complete my education experience.

ANSWER CHOICES	2014	2015	2016	2017	2018	2019
Strongly disagree	1.2%	0.5%	1.6%	0%	1.7%	0%
Disagree	18.1%	5.4%	4%	7.8%	7.5%	9%
Neither agree nor disagree	13.3%	15.1%	4%	11.8%	—	—
Agree	53.6%	57.8%	68.5%	54.2%	63.2%	59.6%
Strongly agree	13.9%	21.1%	21.8%	26.1%	27.6%	31.4%
Count	166	185	124	153	174	156
Mean	3.6/5	3.94/5	4.05/5	3.99/5	3.17/5	3.22/5
Standard deviation	—	0.79	0.75	0.83	0.63	0.59

Figure 17.3. I was given appropriate responsibility for patient care.

ANSWER CHOICES	2014	2015	2016	2017	2018	2019
Strongly disagree	2.4%	0.5%	3.2%	0.7%	2.9%	1.9%
Disagree	18.6%	7.6%	8%	8.5%	17.2%	12.2%
Neither agree nor disagree	13.2%	17.3%	12%	19.6%	—	—
Agree	54.5%	56.8%	56%	50.3%	59.2%	57.7%
Strongly agree	11.4%	17.8%	20.8%	20.9%	20.7%	28.2%
Count	167	185	125	153	174	156
Mean	3.5/5	3.84/5	3.83/5	3.82/5	2.98/5	3.12/5
Standard deviation	—	0.83	0.95	0.88	0.7	0.68

Figure 17.4. A faculty member of resident observed me taking a patient history.

ANSWER CHOICES	2014	2015	2016	2017	2018	2019
Strongly disagree	3%	3.8%	2.4%	1.3%	4%	1.3%
Disagree	27.4%	9.2%	12%	10.5%	20.7%	21.2%
Neither agree nor disagree	11%	10.8%	8.8%	18.3%	—	—
Agree	42.7%	56.2%	57.6%	45.8%	52.3%	47.4%
Strongly agree	15.9%	20%	19.2%	24.2%	23%	30.1%
Count	164	185	125	153	174	156
Mean	3.4/5	3.79/5	3.79/5	3.81/5	2.94/5	3.06/5
Standard deviation	—	0.99	0.97	0.96	0.77	0.75

Figure 17.5. A faculty member or resident observed me performing a physical examination.

ANSWER CHOICES	2014	2015	2016	2017	2018	2019
Strongly disagree	2.4%	2.7%	1.6%	2%	3.5%	1.3%
Disagree	26.8%	8.1%	9.6%	9.8%	19.1%	17.9%
Neither agree nor disagree	14%	11.9%	6.4%	15.7%	—	—
Agree	43.3%	57.3%	61.6%	47.7%	53.8%	50%
Strongly agree	13.4%	20%	20.8%	24.8%	23.7%	30.8%
Count	164	185	125	153	173	156
Mean	3.4/5	3.84/5	3.9/5	3.84/5	2.98/5	3.1/5
Standard deviation	—	0.93	0.89	0.97	0.75	0.73

Figure 17.6. I received feedback early enough to allow me time to improve my performance.

ANSWER CHOICES	2014	2015	2016	2017	2018	2019
Strongly disagree	0.6%	1.1%	0.8%	1.3%	4%	3.8%
Disagree	19.3%	8.1%	9.6%	3.9%	16.2%	17.3%
Neither agree nor disagree	13.9%	23.8%	17.6%	19%	—	—
Agree	52.4%	48.1%	54.4%	55.6%	61.3%	53.2%
Strongly agree	13.9%	18.9%	17.6%	20.3%	18.5%	25.6%
Count	166	185	125	153	173	156
Mean	3.6/5	3.76/5	3.78/5	3.9/5	2.94/5	3.01/5
Standard deviation	—	0.89	0.87	0.81	0.71	0.76



18

**DIVISION
REPORTS**

1. ANATOMY



Cindi Morshead, Professor and Chair, Division of Anatomy

The past five years has been an exciting and busy time in the Division of Anatomy. The Faculty of Medicine made Anatomy one of the fund-raising priorities in order to renovate and rejuvenate our facilities and expand our capacity to provide the new curriculum for the MD program. The \$10M renovations are nearing completion and have provided our Division with state-of-the-art facilities for teaching and training more than 2,500 students that enroll in anatomy each year. The infrastructure updates to the student and faculty laboratories and facilities will afford new learning opportunities for the undergraduate, graduate and post-graduate students and researchers that undertake anatomical teaching and learning. Enormous gratitude goes to the staff and faculty of our division who have gone to extraordinary lengths to ensure that the students continued to receive excellent training and educational experience throughout these massive renovations.

We have just completed a project to revitalize the JCB Grant's museum housed in the Division of Anatomy. The division has been, and is, the source of many of the world's leading anatomical reference works, including the "An Atlas of Anatomy" by Dr. John Charles Boileau Grant, first published in 1943. Now in its 15th edition, Grant's Atlas of Anatomy remains one of the most widely used anatomical atlases in the world. The anatomical dissections which form the core upon which the atlas is based, are housed in the JCB Grant Museum, making it a resource that is unique to the University of Toronto. The museum remains a learning space valued by students from a variety of programs including Medicine, Dentistry, Rehabilitation Sciences, Physical and Health Education and Kinesiology, Arts and Science and the School of Graduate Studies at the University of Toronto. Students from OCAD University, the Michener Institute, Faculty of Medicine Summer

Student programs and Sheraton College Art Programs are also supported by the JCB museum.

The Division has undergone administrative and technical support changes in the past five years. We said goodbye to staff and faculty who have retired and moved on to new positions, as well as welcomed new faces and fresh ideas that will further complement our vision for the Division going forward. Two of our professors, Dr. Mike Wiley and Dr. Ian Taylor, retired in June of 2015. Both were exceptional teachers and award-winning educators who were inspirational to all who knew them, students and faculty alike. We were sorry to see the departure of Dr. Mubarak Bidmos, Assistant Professor, Teaching stream. Dr. Bidmos was with the Division for a short time but his contributions were significant. In January 2017, Dr. Maryam Faiz was recruited to the Division of Anatomy as an Assistant Professor, Tenure Stream. She is an exceptional young scientist who brings expertise and innovative tools and ideas to tackle important issues in regenerative medicine and stem cell biology. In July 2017, Dr. Danielle Bentley joined the Division as an Assistant Professor, Teaching Stream. Her outstanding teaching portfolio and innovative teaching practices make her an excellent addition to the Division.

With the launch of the new Foundations Curriculum in the MD Program in September of 2016, the gross anatomy, neuroanatomy, embryology and histology content has been entirely reformatted and is now delivered through the preclerkship curriculum. Lead by Dr. Barbara Ballyk and Dr. Mike Wiley/presently Dr. Danielle Bentley (embryology), this enormous undertaking is at the forefront of teaching innovation and design. Dr. Anne Agur designed and implemented a new dissection-based anatomy course for graduate students in the Biomedical Communications program and other graduate departments. Dr. Judi Laprade undertook the design of a new Arts and Science course for advanced anatomical study and Dr. Danielle Bentley designed a new course for the Medical Radiation Science program. These courses are a part of our initiatives to meet the needs of the bright, passionate and enthusiastic graduate and undergraduate students at the University of Toronto.

Our research faculty has successfully acquired new research funding from federal and provincial granting agencies including NSERC, Canadian Institute for Health Research, Ontario Institute of Regenerative Medicine, Stem Cell Network, Canada First Research Excellence Fund, Connaught New Investigators, Connaught Innovation Award, and the Heart and Stroke Foundation. Three United States patent applications were granted to investigators in the Division. Our research endeavours continue to be recognized nationally and internationally. Dr. Hong Sun is the incoming president of the Toronto Chapter - Society for Chinese Bioscientist in America. Dr. Maryam Faiz was awarded the Women's Brain Health Initiative Award from the Heart and Stroke Foundation. In the past 5 years, the Division has received over \$5 million to support our research endeavours and have published 165 papers in peer-reviewed journals in both basic science and clinical journals.

The Division continues to attract outstanding trainees and they have been the recipients of many prestigious accolades. Students have received the Vanier Canada Scholarship, CIHR studentships, Heart and Stroke Foundation Graduate Scholarship in Science and Technology, Ontario Graduate Scholarships and IMS entrance awards. Graduate students and Post-doctoral fellows have received numerous poster and platform presentation awards at national and international meetings. In the past five years, we have trained 50 graduate students, 22 postdoctoral fellows and over 50 undergraduate students.



C. Morshead and M. Fehlings

Our outstanding faculty continue to receive awards for their teaching excellence. Professor Barbara Ballyk has received two W. T. Aikins Awards, for Excellence in Individual Teaching and for Course Program Development and Coordination in Undergraduate Medical Education. This is the Faculty's most prestigious award for sustained commitment to, and excellence in, undergraduate teaching. She has also received the Dr. Mary Hollington Teaching Award, The Class of 8T9 Medical Alumni Award and the Teaching Excellence Award MD program. Dr. Cindi Morshead has received the Lister Prize – Department of Surgery, Excellence in Graduate Teaching and Mentorship – mid-career award and the Excellence in Undergraduate Teaching in Life Science Award for sustained excellence in teaching in a Basic Science Department in the Faculty of Medicine. The “FEAT” (Functionally Enhanced Anatomy Training) program, developed and lead by Dr. Judi Laprade, was honoured in 2017 as a community champion program at the University of Toronto. Internationally, Dr. Anne Agur was presented with the Henry Gray Distinguished Educator Award, the highest award for human anatomy education by the American Association of Anatomists and the Honored Member Award for her distinguished career in recognition of her scholarship, mentoring of research, and education of students, from the American Association of Clinical Anatomists. She was also elected Fellow of the American Association of Anatomists (FAAA).

The past five years have been both challenging and rewarding, highlighting the spectacular faculty and staff we have in the Division. With the continued support of the Department of Surgery, Faculty of Medicine and MD program, the teaching and research in the Division of Anatomy will continue to grow and flourish over the coming years.

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2. CARDIAC SURGERY



Terrence Yau, Professor and Chair, Division of Cardiac Surgery

Overview

The Division of Cardiovascular Surgery continued its tradition of superb clinical care and excellence in academic endeavours. Approximately 6,000 major cardiac operations were performed annually at University of Toronto-affiliated hospitals, with outstanding outcomes. In addition to longstanding hospital-based clinical registries, Integration with international resources for outcomes assessment and quality metrics such as the Society of Thoracic Surgeons National Database proceeded during this timeframe. The achievements of our faculty were recognized most concretely as a number of our surgeons were recruited to lead programs at the Texas Children's Hospital (Chris Caldarone), University of California – Los Angeles (Glen van Arsdell), and the Cleveland Clinic Abu Dhabi

(Gopal Bhatnagar). We were fortunate to recruit an outstanding group of young surgeons (Mitesh Badiwala, Bobby Yanagawa, Maral Ouzounian, Christoph Haller, Jennifer Chung, Steve Singh and Ting Zhang) as they commenced their careers in academic cardiac surgery. David Barron, an internationally recognized leader in congenital heart surgery, was recruited from Birmingham, UK, to lead the Division of Cardiac Surgery at the Hospital for Sick Children. Divisional faculty such as Tirone David serve as surgical ambassadors to the global community of cardiac surgeons with continuing international visits to lecture and operate. Richard Weisel was appointed as the eighth Editor-in-Chief of the *Journal of Thoracic and Cardiovascular Surgery* in its 88 year history. Our faculty continued longstanding records of success in clinical, translational and basic science research, mentoring surgical residents and students to multiple research awards.

Recruitment

2014-15

Mitesh Badiwala was recruited to join the Cardiac Surgery group as a Surgeon-Investigator at the University Health Network / Peter Munk Cardiac Centre.

Cedric Manlhiot was recruited to spearhead the Cardiovascular Data Management Center, which will integrate clinical data on cardiovascular disease from across the University of Toronto.

2015-16

Bobby Yanagawa was recruited to join the Cardiac Surgery group as a Surgeon-Investigator at St Michael's Hospital.

2017-18

Christoph Haller was recruited to join the Cardiac Surgery Group as a Surgeon-Teacher at the Hospital for Sick Children.

2018-19

Jennifer Chung was recruited to join the Cardiac Surgery Group as a Surgeon-Investigator at the University Health Network / Peter Munk Cardiac Centre.

Steve Singh was recruited to join the Cardiac Surgery Group at Trillium Health Partners.

David Barron was recruited from Birmingham to lead the Division of Cardiac Surgery at the Hospital for Sick Children.

Ting Zhang was recruited to join the Cardiac Surgery Group as a Surgeon-Teacher at Trillium Health Partners.

Promotions

2014-15

David Latter was promoted to the rank of Full Professor.

Mark Peterson was promoted to Associate Professor

2015-16

Osami Honjo was promoted to Associate Professor

Joseph Noora was promoted to Assistant Professor

2017-18

Anthony Ralph-Edwards was promoted to Assistant Professor

Bernard Goldman attained Professor Emeritus status

2018-19

Ed Hickey was promoted to Associate Professor

Maral Ouzounian was promoted to Associate Professor

Lee Errett was appointed as the inaugural George Robert Swan Chair in Global Surgery

Hugh Scully attained Professor Emeritus status

Richard Weisel attained Professor Emeritus status

Leadership Changes/Progressions

2014-15

Richard Weisel was appointed as the Editor-in-Chief of the *Journal of Thoracic and Cardiovascular Surgery*

Chris Caldarone was appointed Surgeon-in-Chief and Chief of Perioperative Services at SickKids.

Gideon Cohen stepped down as the Division of Cardiac Surgery Residency Program Director after five years of exemplary service. He was appointed Chair of the Endocarditis Working Group as well as Co-Chair of the ECLS Working Group, both at Sunnybrook Health Sciences Centre.

RJ Cusimano was appointed as the interim Program Director for the Division of Cardiac Surgery.

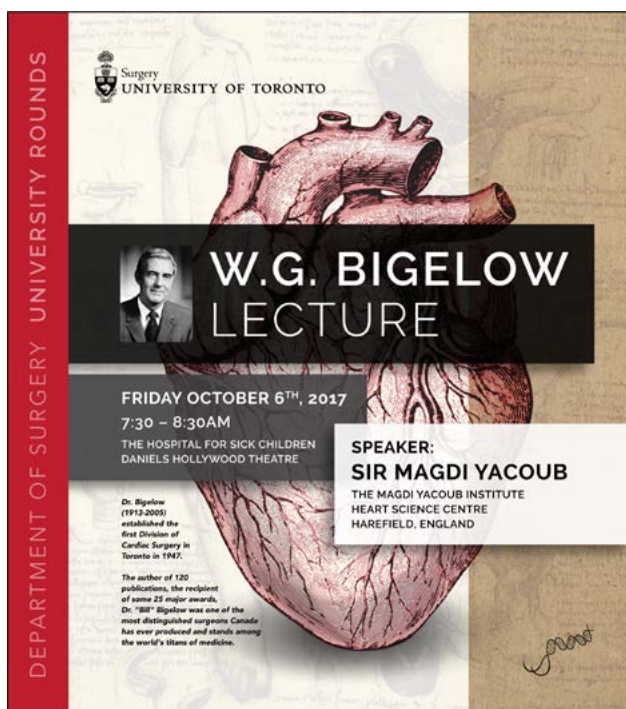
Lee Errett retired from the Division of Cardiac Surgery at St Michael's Hospital.

Stephanie Brister retired from the Division of Cardiac Surgery at UHN.

2015-16

David Latter was named as Director of MD Admissions and Student Finances for the Faculty of Medicine.

David Latter stepped down as Chair of the Fellowship Educational Advisory Committee, on which he had served for 8 years.



2016-17

Glen Van Arsdell was appointed in October 2016 as Chair, Division of Cardiac Surgery, U of T

David Latter was appointed as Director, MD Admissions and Student Finances, U of T July 1, 2016

John Coles was appointed as the Clinical Fellowship Coordinator for Cardiac Surgery, U of T

Robert Cusimano was appointed as the Program Director for the Division of Cardiac Surgery at U of T

Bernard Goldman retired from the Division of Cardiac Surgery at Sunnybrook.

2017-18

Shafqat Ahmed of Trillium Health Partners became affiliated with the University of Toronto.

Stacey O'Blenes of Southlake Regional Health Centre became affiliated with the University of Toronto.

2018-19

Terry Yau was named as Chair of the Division of Cardiac Surgery at the University of Toronto.

Bobby Yanagawa was named as Program Director for the Residency Program of the Division of Cardiac Surgery.

Chris Calderone was recruited from the Hospital For Sick Children to become the Chief of Congenital Heart Surgery at Texas Children's Hospital.

Edward Hickey was recruited from the Hospital For Sick Children to become the Surgical Director of the Adult Congenital Heart Program at the Texas Children's Hospital.

Glen Van Arsdell was recruited from the Hospital For Sick Children to be the Chief of Congenital Cardiac Surgery at the University of California – Los Angeles.

Gopal Bhatnagar was recruited from Trillium Health Partners to become the Chief of Cardiac Surgery in the Heart and Vascular Institute of the Cleveland Clinic, Abu Dhabi.

Highlights – Division

2014-15

The Division held a Retreat on November 22, 2014 to evaluate city-wide performance metrics using risk-adjusted data from the Cardiovascular Data Management Center. Although the data was still in development stages, this was the first time that risk-adjusted comparative data was directly available amongst the University of Toronto Cardiac Surgery centres.

2015-16

January 2016 the members of the Division of Cardiac Surgery co-hosted and presented at the 4th Annual *Valve Symposium 2016* at the Li Ka Shing Institute.

2017-18

The Division hosted a CVS Trainee Education Session in October alongside the Bigelow Lecture. The Division hosted the Heart Centre Retreat in November.

2018-19

The first Divisional newsletter was published. Multiple mentorship and career dinners were held for the residents, with Maral Ouzounian, Jennifer Chung, Ed Hickey and Kevin Teoh featured as resident advisors / mentors.

Highlights – Faculty

2014-15

John Coles' work was published in Nature Communications.

Chris Feindel serves in key administrative roles including as the Provincial Chair of Cardiac Surgery for the Cardiovascular Care Network.

Ed Hickey presented novel patient care data at the plenary session of the American Association for Thoracic Surgery using NASA concepts of threat and error. This “flight plan” approach to each patient’s care has captured the interest of a number of major centers.

Ed Hickey and **Terry Yau** successfully launched an innovative program to provide long-term mechanical circulatory support to patients with complex congenital heart disease.

Osami Honjo had his clinical outcomes research presented at nearly all the significant societal meetings in the past year.

Maral Ouzounian solidified a multidisciplinary team to provide surgical management for thoracic aortic disease.

Vivek Rao continues to serve as the director of the Trillium Gift of Life Network.

Hugh Scully serves as a Canadian representative on the Board of Governors for the American College of Surgeons.

Glen Van Arsdell, in partnership with the McMaster Population Health Research Institute, initiated an international, prospective, 15–20 site, 3000 patient study on tetralogy of Fallot. This is the first congenital cardiac surgical study of that scope.

Subodh Verma together with **Muhammad Mamdani** of the Applied Health Research Centre at St Michael’s Hospital launched the CARDIOLINK platform of clinical trials across five pillars. These include randomized control trials in five distinct areas. Aneurysm surgery (ACE

The poster is for a University Rounds lecture. At the top left is the University of Toronto logo. The title 'W. G. BIGELOW LECTURE' is in large white letters. To the right, 'DR. JENNIFER S. LAWTON' is in yellow. Below her name are her titles: Richard Bennett Dornall Professor of Surgery, Chief, Division of Cardiac Surgery, Program Director, Cardiothoracic Surgery Residency Program, Director, Cardiac Surgery Research Laboratory, and Cardiac Surgeon-in-Charge, Johns Hopkins University. A small portrait of Dr. Bigelow is shown with a bio: 'Dr. Wilfred G. Bigelow (1913-2005) established the first Division of Cardiac Surgery in Toronto in 1947. The author of 100 publications, the recipient of some 25 major awards, Dr. "Bill" Bigelow was one of the most distinguished surgeons Canada has ever produced and stands among the world's titans of medicine.' The lecture title is 'The Marvel of Cardiac Surgery, From Systemic Hypothermia to the Manipulation of Ion Channels'. The date and time are 'FRIDAY, OCTOBER 4TH, 2019 7:30 - 8:30AM'. The location is 'Daniels Hollywood Theatre, The Hospital for Sick Children, First Floor, Elm Wing'. Learning objectives are listed: 'To understand the relationship of systemic hypothermia to modern cardiac surgery; to appreciate the value of scientific investigation and translational research; to understand how the manipulation of an ion channel has the potential to improve cardiac surgery outcomes.' A 'LIVE WEBCAST LINK' is provided: <http://webcast.uts.ca/nywebcast/6-118831490>. The background features a blue and white abstract design with a Wi-Fi symbol.

trial of antegrade cerebral protection strategies), Valvular surgery (CAMARA-1 trial of different approaches to repair mitral valves); Atrial fibrillation (SEARCH-AF trial, evaluating novel ways to detect postoperative atrial fibrillation); peripheral artery disease (EXTINGUISH - evaluating colchicine in secondary prevention in PAD) and innovative community based interventions (ENABL-NP Nurse practitioner based approach to reduce hospitalizations following cardiovascular surgery). The SEARCH AF trial is funded for \$600,000 by Industry partners.

2015-16

Garnering national media attention, **Mitesh Badiwala** and **Christopher Feindel** helped lead a multi-disciplinary medical team in a complicated ‘marathon’ surgery on a 33-year old healthy and active patient whose heart was extensively damaged by endocarditis and had to be rebuilt with an operation dubbed ‘UFO surgery’ – underscoring just how rare the more than 10 hour surgical procedure was.

Gideon Cohen was a part of the team at Sunnybrook Health Sciences Centre which performed the first transeptal mitral valve replacement in Canada.

Fuad Moussa launched the Sunnybrook Hybrid Coronary Revascularization Program.

Glen Van Arsdell conducted a 2.5 day, hands-on congenital heart disease surgery course with 3D print models which provided participants the opportunity to perform five surgical procedures on their own 3D print models, including cases of tetralogy of Fallot, complete transposition of the great arteries with intact ventricular septum, two different forms of double outlet right ventricle and hypoplastic left heart syndrome.

Bobby Yanagawa started the St Michael's Hospital Cardiovascular Surgical Tissue bank including but not limited to blood, valves, bypass conduits, myocardium and aortic tissue collection for translational studies.

Mark Peterson and **Maral Ouzounian** are founding members of the Toronto Aortic Collaborative and the Canadian Thoracic Aortic Collaborative and sit on the Executive of both groups.

Mark Peterson and **Subodh Verma** are currently conducting a multicenter randomized clinical trial in aortic surgery called the ACE Study. 115 patients are currently being recruited and randomized to either axillary artery or innominate artery cannulation for cerebral protection during aortic arch surgery.

2016-17

Maral Ouzounian established the annual Heritable Aortic Disorders Symposium, a national collaboration among cardiologists, cardiac surgeons and geneticists interested in heritable aortopathies. She also leads collaborations with international registries including the International Registry of Aortic Dissection and the Montalcino Aortic Consortium.

Ronald James Baird (1930–2017) passed away March 26, 2017

Maral Ouzounian, UHN, Assistant Professor successfully passed her CARs

2017-18

Jimmy Yao passed away July 5, 2018.

John Coles has been recognized for his 3D printed model teaching for residents in CHD.

2018-19

Robert Yanagawa passed his continuing appointment review.

Faculty Honors/Awards

2014-15

Christopher Caldarone is an Associate Editor for the *Journal of Thoracic and Cardiovascular Surgery*.

Stephen Femes was recognized with the Charles Tator Mentorship Award in 2015.

Maral Ouzounian received First Place in the Moderated Poster Competition at the AATS entitled "David vs. Goliath: Valve-sparing root replacement improves outcomes compared to Bentall procedures in patients with aortic root dilatation".

Krishna Singh was appointed as a research scientist and Assistant Professor.

Subodh Verma was inducted into the College of New Scholars at the Royal Society of Canada.

Richard Weisel is the Editor-in-Chief for the *Journal of Thoracic and Cardiovascular Surgery*.

2015-16

Daniel Bonneau proctored at a number of Canadian and US centres in Perceval Valve implantation.

Christopher Caldarone was appointed as the **Dr. Robert B. Salter** Chair in Surgery for his ongoing responsibilities and commitment to world-leading research and academic activities. He continues as Surgeon-in-Chief and Chief of Perioperative Services at the Hospital for Sick Children.

George Christakis received the John Provan Surgical Educator Award for undergraduate medical education across Canada. This award recognizes outstanding contributions to undergraduate surgical education in Canada. He contains as Director of Undergraduate Surgical Education, University of Toronto.

Gideon Cohen was appointed Chairs of the DSMB Edwards Maverick Trial as well as the DMC Edwards Transcatheter Tricuspid Repair

System Early Feasibility Study. He became Director of the University of Toronto's Division of Cardiac Surgery Wetlab Program.

John Coles was also awarded the Ontario Centre of Excellence Award for 2015.

R.J. Cusimano was appointed as the Program Director for the Division of Cardiac Surgery, University of Toronto. He also won the 2016 Lynda L. Mickleborough Award for Excellence in Cardiac Surgery Teaching at TGH.

Tirone David was awarded the Lifetime Achievement Award from the American Association for Thoracic Surgery.

Lee Errett was appointed the first Professor of Global Surgery at the University of Toronto.

Stephen Fremes received the 2016 Bernard Goldman Award for Excellence in Cardiac Surgery Teaching at Sunnybrook as well as the Charles H. Tator Surgeon Scientist Mentoring Award, University of Toronto. He was reappointed as the Bernard S Goldman Chair in Cardiac Surgery.

Edward Hickey shared his expertise around the world as an invited speaker at many venues. This year he drew parallels between the National Aeronautics and Space Administration "threat and error" model and pediatric cardiac surgery.

Osami Honjo received the 2016 William G. Williams Award for Excellence in Cardiac Surgery Teaching at the Hospital for Sick Children.

David Latter was the recipient of the 2016 James Yao Award for Excellence in Cardiac Surgery Teaching at St. Michael's Hospital.

Ren-Ke Li received a 3 year grant from the Ontario Research Fund – Research Excellence Program, for his submission "Pre-clinical Development of a Novel Umbilical Cord Perivascular Cell-based Therapy to Prevent Heart Failure". Ren-Ke was also elected as Fellow of the International Academy of Cardiovascular Sciences.

Mark Peterson was inducted as a new member of the American Association of Thoracic Surgery. He was also appointed to the Executive Committee of the Canadian Thoracic Aortic Collaborative as well as the Critical Illness Steering Committee at St. Michael's Hospital.

Subodh Verma has been selected as a member of the 2015 cohort of the College of New Scholars, Artists and Scientists of the Royal Society of Canada. Subodh is an internationally renowned cardiac surgeon-scientist and holds a Canada Research Chair in Atherosclerosis.

Subodh Verma served on the panel of the 2016 Canadian Cardiovascular Society Guidelines for the management of dyslipidemia for the prevention of cardiovascular disease in the adult and sits on the panels for the upcoming updates of the Canadian Cardiovascular Society Guidelines for Atrial Fibrillation and Canadian Diabetes Association Clinical Practice Guidelines.

2018-19

Charles Cutrara received the National Quality, Innovation and Teamwork Award, presented by the CCHL (Canadian College of Healthcare Leaders).

Charles Cutrara also received an award from the province of Ontario, the Minister's Medal, which honors Excellence in Health Quality and Safety. He also won the Hazel McCallion Award in Quality of Care, New Improvement – 1st Place, in recognition of PPATH – Putting patients at the heart: a seamless journey for cardiac surgery.

Bobby Yanagawa was awarded the William Horsey Post-Graduate Teaching Award.

Research Grants - Faculty

2014-15

Christopher Caldarone continues CIHR-funded research on pulmonary vein stenosis and participates as site-PI for the CIHR-funded CORRELATE trial.

John Coles and his group secured approximately \$1M of research funding over the course of the last two years, from various sources including commercial opportunities.

Stephen Fremes holds one grant as Co-Investigator from the CIHR, “Left Atrial Appendage Occlusion Study III (LAAOS III) and was Co-Investigator on another CIHR Operating Grant, “SodiUm SeleniTe Administration in Cardiac Surgery (SUSTAIN CSX-trial)”.

Fuad Moussa, participating as Co-Investigator, continues his CIHR-funded research on “Multicentre study designed to determine if point of care testing and ROTEM/Platelet works tests affect the rate of transfusion after cardiopulmonary bypass.

Subodh Verma holds one grant from the Canadian Institutes of Health Research (“In vivo and translational role of endothelial autophagy in the regulation of vascular diseases”) and two from the Heart & Stroke Foundation (“The role of autophagy in cardiovascular disease: A bench to bedside translational approach” and “Elucidating the role of BRCA1 as a target to improve endothelial function, promote angiogenesis and attenuate atherosclerosis”). He is also co-principal investigator on a grant from the Canada Foundation for Innovation–John R. Evans Leaders Fund (“Molecular pathology of cardiovascular disease: understanding how gene expression is perturbed in clinical samples”).

2015-16

Christopher Caldarone is Principal Investigator of the “Pilot Trial: The Safety and Feasibility of Losartan Therapy for treatment of Pulmonary Vein Stenosis in Pediatric Patients.”, Labatt Family Heart Centre Innovation Fund, \$24,930.

John Coles is collaboratively leading a research consortium organized to discover and develop new treatments for childhood dilated cardiomyopathy (DCM), which is the most common form of heart muscle disease in children and, in advanced cases, can only be treated by heart transplantation. This research project was selected for funding and was among the 10 projects funded across Canada through Blueline Biosciences. The

project received \$210,000 in funding for Integrin-Linked Kinase (ILK) as a novel cardiac target.

As Co-Investigator **Stephen Fremes** was awarded \$91,433 for “Screening and Management Risk factors in TAVI; an interdisciplinary Endeavor(SMARTIE)” by the Sunnybrook AFP Innovation Fund.

Osami Honjo: Principal Investigator “Death after circulatory transplant project”, \$150,000 from James Cummings Foundation grant.

Osami Honjo: Principal Applicant, “Development of Computational Models to Aid in the Diagnosis and Treatment of Failing Fontan Circulation”, The University of Toronto, The Faculty of Applied Science and the Faculty of Medicine EMHSeed Program, Total Funding \$67,500.

Osami Honjo: Principal Applicant, Ted Rogers Centre for Heart Research: New Ideas Grant, “Development of a novel device for treatment of failing Fontan circulation”, Total Funding \$32,500.

Osami Honjo: Developing the Toronto Fontan Cannula as a Bridge for Failing Fontan Circulation, Grant, Principal Investigator: Total Funding , \$50,000 PMCC Innovation Award.

Osami Honjo: Principal Investigator Labatt Family Heart Centre Innovations Fund: Efficacy of Extracorporeal Controlled Whole Body Reperfusion with or without a Neuroprotective Agent in a Rodent Cardiac Arrest Model, Total Funding \$25,000 (Canadian dollar).

Fuad Moussa: Principal Investigator and Co-Investigator for the “Black Box” study to improve OR efficiency and quality control.

Subodh Verma: Principal Investigator of the CIHR-supported grant entitled “In vivo and translational role of endothelial autophagy in the regulation of vascular disease” and Co-Principal Investigator of a HSFO awarded grant entitled “Randomized trial of mitral valve repair with leaflet resection versus leaflet preservation–Multicenter Study from the Canadian Mitral Researchers (CAMRA)”. As

Principal Investigator, he also recently closed out two HSFO-funded projects that focussed on autophagy and the role of BRCA1 in endothelial function, angiogenesis and atherosclerosis.

Subodh Verma: Principal Investigator of the Boehringer Ingelheim supported trial “Effects of empagliflozin on cardiac structure, function, and circulating biomarkers in patients with type 2 diabetes” and Co-Investigator of the trial “Post-surgical enhanced monitoring for cardiac arrhythmias and atrial fibrillation (SEARCH-AF)” that has received funding from Bristol-Myers Squibb and Boehringer Ingelheim.

Bobby Yanagawa: Successful PSI funding for Amine Mazine with Bobby Yanagawa as PI. \$20,000 funding for one year. Project title: “The Role of Inflammazome in Human Rheumatic Heart Disease”.

2016-17

Subodh Verma and colleagues are initiating a randomized clinical trial to evaluate the impact of evolocumab in coronary artery bypass patients. This project is budgeted for approximately \$7M.

2018-19

Dr. Christoph Haller:

1. (FUNDED: Since May 2017) Closed-circuit ex-vivo perfusion of the heart in a porcine DCD transplant setting; Principal Investigator. Labatt Family Heart Centre. Labatt Heart Centre Innovation Fund. \$21,527.10 CAD. Research Grant.
2. (FUNDED: Since May 2017) High intensity focused ultrasound histotripsy to treat congenital cardiac disease. Co-Investigator. Labatt Family Heart Centre. Labatt Heart Centre Innovation Fund. \$24,781.00 CAD. Research Grant.
3. (FUNDED: Since Nov 2015) Efficacy of extracorporeal controlled whole-body reperfusion with or without a neuroprotective agent in a rodent cardiac arrest model. Co-Investigator. Labatt Family Heart Centre. Labatt Heart Centre Innovation Fund. \$24,997.00 CAD. Research Grant.

Dr. Osami Honji

1. (FUNDED: Since April 2018) Development of mechanical circulatory assist system for failing single ventricle Fontan physiology. Principle Investigator. Heart and Stroke Foundation of Canada. Grant-in-Aid 2018–2019. \$284,913.00 CAD. Research Grant.
2. (FUNDED: Since May 2017) Closed-circuit ex-vivo perfusion of the heart in a porcine DCD transplant setting. Co-Principal Investigator (Supervisor). PI: Dr. Christoph Haller. Labatt Family Heart Centre. Labatt Heart Centre Innovation Fund. \$21,527.10 CAD. Research Grant.
3. (FUNDED: Jan - Dec 2018) Design of mechanical circulatory support for failing Fontan circulation. Principal Investigator. Saving Tiny Heart Society Foundation. \$41,000.00 USD. Research Grant.

Visiting Professors

2014-15

Robert S. Bell, Deputy Minister, Ministry of Health and Long-Term Care presented the 2014 Bigelow Lecture entitled “From the perspective of Surgeon, CEO and Deputy Minister, How should we manage public reporting of outcomes?” on October 3, 2014

Deepak L Bhatt, from the Brigham and Women’s Hospital, Harvard Medical School, delivered joint St Michael’s Hospital Cardiac Surgery - Heart and Stroke/Richard Lewar Centre of Excellence rounds on the topic “Innovative Agents. Transformative Trials. Healthier Hearts.”

Ross D Feldman, from the Memorial University of Newfoundland, delivered the Fall 2015 Asha Verma Memorial Lecture entitled “Heart Disease in Women: You’ve come a long way...?”

David A Hess, from the Robarts Research Institute of Western University, delivered the Winter 2015 Asha Verma Memorial Lecture entitled “Angiogenesis - Bench to Bedside and Implications for peripheral artery disease”

Neelam Khaper, from the Northern Ontario School of Medicine, Lakehead University, delivered joint St Michael’s Hospital Cardiac

and Vascular Surgery rounds on the topic “The antiproliferative role of metformin”

Douglas Zipes, from the Krannert Institute of Cardiology at Indiana University School of Medicine, delivered the 2015 Landmark Lecture on “Birth and maturation of cardiac electrophysiology as a speciality”

2015-16

Niv Ad, Chief of Cardiac Surgery and Director of Cardiac Surgery Research at Inova Heart and Vascular Institute delivered the 2016 Dr. Raymond Heimbecker Visiting Lecture in Cardiac Surgery.

William E. Cohn, MD, Director of the Center for Technology and Innovation CHI St. Luke’s Health – Baylor St. Luke’s Medical Center spoke on “Fostering a Culture of Physician Innovation in Cardiovascular Devices” at The Sprott Department of Surgery Surgical Grand Rounds January 15, 2016.

John W Eikelboom, MB BS, MSc of McMaster University spoke on the topic “NOAC antidotes come of age” at the St Michael’s Hospital Joint Cardiac Surgery and Cardiology Rounds on January 25, 2016.

John A. Eleftheriades, MD William W.L. Glenn Professor of Cardiothoracic Surgery and Director of the Aortic Institute at Yale-New Haven delivered the Wilfred Bigelow Lecture entitled “Thoracic Aortic Aneurysms: Reading the Enemy’s Playbook” on October 2nd, 2015.

Ross D Feldman, MD of the Memorial University of Newfoundland spoke on the topic “Heart Disease in Women: You’ve come a long way...?” at the St Michael’s Hospital Joint Cardiac Surgery, Vascular Surgery and Cardiology Rounds on September 28, 2015.

Ishwarlal Jialal, MD, PhD of UC Davis Medical Center spoke on the topic “The Role of Inflammation in Metabolic Syndrome” at the St Michael’s Hospital Joint Cardiac Surgery and Cardiology Rounds on May 16, 2016.

Daniel Paquette, MD of the Fédération des médecins omnipraticiens du Québec (FMOQ) spoke on the topic “Aiming for a higher standard in CME:

Lessons from FMOQ” at the St Michael’s Hospital Cardiac Surgery Rounds on November 3, 2015.

Douglas P Zipes, MD of the Indiana University School of Medicine delivered the 9th Annual Landmark Lecture “The birth and maturation of cardiac electrophysiology as a speciality” on October 5, 2015 at the Li Ka Shing Knowledge Institute of St. Michael’s Hospital.

2016-17

Joseph Woo, MD of the Stanford University School of Medicine Norman E. Shumway Professor and Chair, Department of Cardiothoracic Surgery; Professor, by courtesy, Department of Bioengineering delivered the Wilfred Bigelow Lecture entitled “Are Surgeons Going Green?? The Quest for Natural Reconstruction, Recovery and Renewables.”

2017-18

Sir Magdi Yacoub, MD of the Imperial College in London, Harefield Heart Science Centre, and Aswan Heart Centre, delivered the Wilfred Bigelow Lecture entitled “The Glory and the Threat of Science and Medicine.”

2018-19

Pedro J. Del Nido, MD, Chairman, Department of Cardiovascular Surgery, Boston Children’s Hospital; William E. Ladd Professor of Child Surgery, Harvard Medical School, delivered the Wilfred Bigelow Lecture entitled “What is a Surgeon Scientist in the 21st Century: Lessons from the Banting.”



Sir Magdi Yacoub Bigelow Lecture 2017

10

3. GENERAL SURGERY



Carol Swallow, Bernard and Ryan Langer Chair, Division of General Surgery

Awards

Major Extramural, Faculty of Medicine & Department of Surgery Awards to General Surgery Faculty

a. for Academic Contributions

2014/15

Bernard Langer, inducted into the Canadian Medical Hall of Fame

Agostino Pierro, appointed Honorary Officer of the Most Excellent Order of the British Empire (OBE) by Her Majesty the Queen

Agostino Pierro, Italian Chamber of Commerce of Ontario Arts, Science and Culture Award

Teodor Grantcharov, Canada Research Chair Tier 2

Nancy Baxter and **David Urbach**, CIHR-IHSPR Article of the Year Award

John Hagen, Royal College of Physicians and Surgeons of Canada, Mentor of the Year, Region 3

Tim Jackson, Faculty of Medicine David Fear Fellowship

Paul Karanicolas, Department of Surgery Roscoe Reid Graham Scholarship

2015/16

Najma Ahmed, Royal College of Physicians and Surgeons of Canada D.R. Wilson PGME Award

Anand Govindarajan, Department of Surgery Bernard Langer Surgeon-Scientist Award

Teodor Grantcharov, Department of Surgery Charles Tator Surgical Scientist Mentorship Award

2016/17

Robin McLeod, Royal College of Physicians and Surgeons of Canada Duncan Graham Award

Jaime Escallon, The National Merit Award of the Republic of Colombia

Paul Karanicolas, American College of Surgeons Traveling Fellowship

Bernard Langer, Lifetime Achievement Award, University of Toronto

Bernard Langer, University of Toronto Arbor Award for outstanding volunteer service

Paul Greig, Department of Surgery Bryce Taylor Faculty Mentorship Award

Fayez Quereshy, Department of Surgery Bernard Langer Surgeon-Scientist Award

2017/18

Ori Rotstein, Dedication of the American College of Surgeons 2016 Surgical Forum

Frances Wright, James IV Travelling Fellowship

Nancy Baxter, Department of Surgery Bryce Taylor Faculty Mentorship Award

Catherine O'Brien, Department of Surgery George-Armstrong Peters Prize

Carol Swallow, Department of Surgery Charles Tator Surgical Scientist Mentorship Award

2018/19

Robin McLeod, Inaugural Department of Surgery Lavina Lickley Award for outstanding and sustained contributions

Avery Nathens, Department of Surgery Bryce Taylor Faculty Mentorship Award

Sandra de Montbrun, Department of Surgery George-Armstrong Peters Prize

b. for Teaching

2014/15

Lloyd Smith, North York General - Special Commendation Integrated Medical Education Awards, Excellence in Community-Based Teaching (Community Hospital setting)

Shiva Jayaraman, St. Joseph's - Special Commendation Integrated Medical Education Awards, Excellence in Community-Based Teaching

Homer Tien, Sunnybrook - Department of Surgery Tovee Award for Undergraduate Teaching

2015/16

Georges Azzie, Hospital for Sick Children - Department of Surgery Tovee Award for Postgraduate Teaching

Sandra de Montbrun, St. Michael's Hospital - Department of Surgery Surgical Skills Lab Teaching Award

2016/17

Najma Ahmed - University of Toronto Faculty of Medicine Award for Excellence in Postgraduate Medical Education: Teaching Performance, Mentorship and Advocacy

Teodor Grantcharov - University of Toronto Faculty of Medicine Award for excellence in Postgraduate Medical Education: Development and Innovation

2017/18

Shady Ashamalla - Faculty of Medicine Education Achievement Award: Ian Silver Innovation Award

Sandra deMontbrun - Faculty of Medicine Award for Excellence in Postgraduate Medical Education: Development / Innovation

Jory Simpson - Faculty of Medicine Education Achievement Award: Education Development Fund

2018/19

Fayez Quereshy - Faculty of Medicine WT Aikens Award for Excellence in Individual Teaching in Clerkship

Jory Simpson - Department of Surgery Tovee Award for Undergraduate Teaching

FRIDAY 6 APRIL 2018 7:30-8:30 AM
TORONTO WESTERN HOSPITAL - AUDITORIUM

PALMER LECTURE

DMITRY OLEYNIKOV, MD FACS
Joseph and Ethel Bell Endowed Professor of Surgery
Chief, Minimally Invasive and Robotic Surgery
Director, Center for Robotic Surgical Technology
University of Toronto Faculty of Medicine
Department of Surgery

"The Future of Surgery is Robots!"

OBJECTIVES:

- Learn how robotic technology can improve the surgical experience
- Define the value of robotic surgery
- Explore new robotic technologies

JOHN A. PALMER
Senior Faculty member of the Department of Surgery at the University of Toronto, and the Joseph and Ethel Bell Endowed Professor of Surgery at the Toronto General Hospital. He was a leader in the development of minimally-invasive surgical techniques and the development of the first robotically-assisted laparoscopic hysterectomy. He is a past recipient of the University of Toronto's Distinguished Alumni Award and the University of Toronto's Distinguished Alumni Award.

LIVE WEBCAST LINK
<http://meduaf.utoronto.ca/webcast/18-7900096>

UNIVERSITY OF TORONTO

Major Faculty of Medicine & Department of Surgery Awards to GS Residents, Graduate Students and Fellows

2014/15

Usmaan Hameed, Complex Surgical Oncology Fellowship Program – Department of Surgery, Zane Cohen Clinical Fellowship Achievement Award

Gallie Bateman 1st Prize, Oral Presentation: Karineh Kazazian

- The protrusional protein polo-like kinase 4 (PLK4) enhances cancer invasion. Sup: C. Swallow

Gallie Bateman 2nd Prize, Oral Presentation: Andrea Covelli

- Examining health-beliefs: Why mastectomies are on the rise. Sup: A. Nathens

Gallie Bateman 3rd Prize, Oral Presentation: James Byrne

- When is dead “dead”? Identifying the unsalvageable patient for the purpose of performance improvement. Sup: A. Nathens

Gallie Bateman 2st Prize (tie), e-Poster Presentation: Seemann, Natasha

- The complex phenomenon of stress in the operating room. Sup: C-A Moulton

Gallie Bateman 2st Prize (tie), e-Poster Presentation: Ashton Conner

- Insights into tumour evolution from whole genome sequencing of metachronous pancreatic ductal adenocarcinoma. Sup: S. Gallinger

2015/16

Gallie Bateman 1st Prize, Oral Presentation: Marisa Louridas

- Practice does not always make perfect: Need for selection curricula in modern surgical training. Sup: T. Grantcharov

Gallie Bateman 3rd Prize, Oral Presentation: James Byrne

- Timing of VTE prophylaxis in severe traumatic brain injury: A propensity-matched cohort study. Sup: A. Nathens

Gallie Bateman 1st Prize, Poster Presentation: Peter Szasz

- Setting performance standards for technical and non-technical competence in General Surgery. Sup: T. Grantcharov

Gallie Bateman 2nd Prize, Poster Presentation: James Jung

- Approach to asymptomatic paraesophageal hernia: Elective laparoscopic hernia repair or watchful waiting? Sup: T. Grantcharov

Gallie Bateman 3rd Prize, Poster Presentation: Stephanie Mason

- Persistent morbidity requiring urgent readmission after major burn injury: A population-based analysis. Sup: M. Jeschke, A. Nathens

2016/17

Cindy Boulanger Gobeil, Complex Surgical Oncology Fellowship Program – Department of Surgery, Zane Cohen Clinical Fellowship Achievement Award

Gallie Bateman 1st Prize, Oral Presentation: James Byrne, Sup: A. Nathens

McMurrich 1st Prize, Oral Presentation: Sergio Acuna, Sup: N. Baxter

McMurrich 2nd Prize, Poster Presentation: David Cyr - Sup: C. Swallow

2017/18

Gallie Bateman 1st Prize, Oral Presentation: Ashton Connor, Sup: S. Gallinger

McMurrich 3rd Prize, Oral Presentation: Abdikarim Abdullahi, Sup: M. Jeschke

McMurrich 1st Prize, e-Poster Presentation: Hwan Hee Oh, Sup: M. Jeschke

McMurrich 2nd Prize, e-Poster Presentation: Olga Brashavitskaya, Sup: C. Swallow

2018/19

Andrea Covelli, Complex Surgical Oncology Fellowship Program – Department of Surgery, Zane Cohen Clinical Fellowship Achievement Award

David Berger Richardson – Department of Surgery DR Wilson Award for Undergraduate Teaching by a Resident

Gallie Bateman 2st Prize, Oral Presentation: Fahima Dossa, Sex-based disparities in the hourly earnings of surgeons in Ontario’s fee-for-service system. Sup: N. Baxter

Gallie Bateman 3rd Prize, Oral Presentation: Matthew Guttman, Fixation of traumatic spinal fractures within 24 hours reduces complications in the absence of neurologic injury: A retrospective cohort study from the ACS Trauma Quality Improvement Program database. Sup: A. Nathens

Gallie Bateman 2st Prize, e-Poster Presentation: Shelly Luu, Expression of the plk4 inhibitor fam46c predicts better survival following resection of gastric adenocarcinoma (GCA). Sup: C. Swallow

Gallie Bateman 3rd Prize, e-Poster Presentation: Dave Mealiea, A window into oncolytic virotherapy: Using a novel zebrafish model to quantify the anti-tumor effects of vaccinia virus in colon cancer. Sup: J.A. McCart

McMurrich 2nd Prize, e-Poster Presentation: Stephanie Tung, Management of high patient-reported pain scores in non-curative pancreatic adenocarcinoma: A population-based analysis. Sup: J. Hallet

GS Divisional Awards to Faculty

2014/15

Peter Stotland, Robert Mustard Mentorship Award

2017/18

Ralph George, Marcus Burnstein Outstanding Presentation Award, University of Toronto Annual Update in General Surgery

Nancy Down, Robert Mustard Mentorship Award

Anand Govindarajan, Nicolas Colapinto Teaching Award

2018/19

Barb Haas, Marcus Burnstein Outstanding Presentation Award,

University of Toronto Annual Update in General Surgery

Peter Stotland, Robert Mustard Mentorship Award

Barb Haas, Nicolas Colapinto Teaching Award

GS Divisional Awards to Fellows

2014/15

Usmaan Hameed, Complex Surgical Oncology Fellowship Program – General Surgery Divisional Nominee, Zane Cohen Clinical Fellowship Achievement Award

2016/17

Cindy Boulanger Gobeil, Complex Surgical Oncology Fellowship Program – General Surgery Divisional Nominee, Zane Cohen Clinical Fellowship Achievement Award

2017/18

Markus Ziesmann, Trauma and Acute Care Fellowship Program – General Surgery Divisional Nominee, Zane Cohen Clinical Fellowship Achievement Award

2018/19

Andrea Covelli, Complex Surgical Oncology Fellowship Program – Division of General Surgery, Paul Greig Fellowship Award (Divisional Nominee, Zane Cohen Clinical Fellowship Achievement Award)

The poster is for a Palmer Lecture by Dave R. Williams, titled "Perspectives on Surgery and Spaceflight". It features a circular portrait of Williams in a space helmet on the left and a photograph of him in a space suit on the right. The text includes the University of Toronto logo, a live webcast link (http://webcast.utoronto.ca/rywebcast?id=113330100), the lecture title, and learning objectives. The lecture is scheduled for Friday, 1 March 2019, from 7:30 to 8:30 AM at Mount Sinai Hospital Auditorium, 3rd Floor, 500 University Ave. A "PLEASE NOTE" section at the bottom states that there will be a brief signing following the University Rounds from 8:30-8:55 AM outside the auditorium.

Faculty Hires, Promotions, Successful Continuing Appointment Reviews, Departures, Major Appointments

New Faculty

a. Full Time

2014/15

Adena Scheer, Breast Surgical Oncology, St. Michael's Hospital – Clinical Mentor: R. George; Research Mentor: N. Baxter

Eran Shlomovitz, Interventional Radiology and Advanced MIS/ACS, University Health Network – Mentor: A. O'Krainec

Julie Hendrick-Hallet, HPB Surgical Oncology, Sunnybrook – Mentor: C. Law

Jory Simpson, Breast Surgical Oncology, St. Michael's Hospital – Clinical Mentor: R. George; Academic Education Mentor: N. Ahmed

2015/16

Savtaj Brar, Surgical Oncology, Mount Sinai Hospital – Clinical Mentor: C. Swallow, N. Coburn; Academic Education Mentor: N. Ahmed

Mantaj Brar, Colorectal, Mount Sinai Hospital – Clinical Mentors: Z. Cohen, EH. MacRae; Research Mentors: N. Baxter, E. Kennedy

Usmaan Hameed, Surgical Oncology, North York General Hospital – Clinical Mentor: P. Stotland; Research Mentor: V. Yang

Gonzalo Sapisochin, HPB Surgical Oncology & Transplant, UHN-TGH – Clinical Mentors:

P. Greig, S. Gallinger; Research Mentor: P. Karanicolas

Augusto Zani, HSC, Pediatric General Surgery – Clinical Mentor: A. Pierro; Research Mentor: Janet Rossant

2016/17

Barb Haas, Trauma/ACS, Sunnybrook – Mentor: Avery Nathens

Luis Teodoro da Luz, Trauma, Sunnybrook – Mentor: Neil Adhikari (ICU)

Sami Chadi, Colorectal, University Health Network – Mentors: Fayez Quereshey, Nancy Baxter

Melanie Tsang, HPB, St. Joseph's – Mentor: Shiva Jayaraman

2017/18

Anthony de Buck van Overstrataen, Colorectal, Mount Sinai Hospital – Clinical Mentor: Zane Cohen; Academic Mentor: Erin Kennedy

Preeti Dhar, ACS/Critical Care, UHN-TGH – Clinical Mentors: Alice Wei and Jeff Singh, Critical Care; QI Mentor: Tim Jackson

David Gomez Jaramillo, ACS/Trauma, St. Michael's Hospital – Clinical Mentor: Joao Rezende Neto; Research Mentor: Robert Fowler

Jesse Pasternak, Endocrine, UHN-TGH – Clinical Mentor: Lorne Rotstein; Research Mentor: David Urbach

2018/19

Trevor Reichman, HPB UHN-TGH, Associate Professor; Director of HPB Fellowship Programs

Blayne Sayed, HPB Transplant, Hospital for Sick Children/UHN, Assistant Professor

Reto Baertschiger, Pediatric Surgical Oncology, Hospital for Sick Children, Assistant Professor

b. Adjunct Clinical Professors

2015/16

Robert Bendavid, North York; Alexander Iskander, Humber River; Laura Musselman, Mississauga; Bharat Sharma, Barrie; Rupert Abdalian (cross appointment from Dept Medicine, Division Gastroenterology), North York

2016/17

Shima Kassirian, North York; Kaes Al-Ali, Cobourg; Kalkidan Belay, Mississauga

2017/18

Vitaly Bard, Mississauga; Claude Burul, North York; Mohammad Tabari, Scarborough

2018/19

Fahima Osman (Assistant Prof), North York; Natalya Zhang, North York; Milan Ernjakovic, Mississauga; Laura Vanderbeek, Mississauga; Sailaya Nallapeni, Scarborough General

Faculty Promotions

2014/15

To Associate Professor:

Sean Cleary, University Health Network
Manuel Gomez
Erin Kennedy, Mount Sinai
Tom Harmantas, St. Joseph's

To Full Professor:

Calvin Law, Sunnybrook

2015/16

To Associate Professor:

Paul Karanicolas, Sunnybrook

2016/17

To Associate Professor:

Anand Ghanekar, University

Health Network

Anand Govindarajan, Mount Sinai
Tim Jackson, University Health Network

To Full Professor:

Najma Ahmed, St. Michael's
Anna Gagliardi, Scientist, University Health Network
Frances Wright, Sunnybrook

2017/18

To Associate Professor:

Greg Fairn, St. Michael's
Shiva Jayaraman, St. Joseph's
Bernard Lawless, St. Michael's

To Full Professor:

Natalie Coburn, Sunnybrook

2018/19

To Associate Professor:

Rebecca Gladdy, Mount Sinai
Fayez Quereshy, UHN
Alexandra Easson, Mount Sinai

To Full Professor:

Ian McGilvray, UHN
Paul Wales, Hospital for Sick Children
Georges Azzie, Hospital for Sick Children
Joao Rezende Neto, St. Michael's

Successful Faculty Continuing Appointment Reviews

2014/15

Anand Govindarajan, Mount Sinai (Mentors: J.A. McCart, N. Baxter, R. McLeod)

2015/16

Shady Ashamalla, Sunnybrook (Mentors: A. Nathens, P. Karanicolas, A. Smith)

Karen Devon, Women's College (Mentors: L. Rotstein, M. McKneally)

Anand Govindarajan, Mount Sinai (Mentors: A. McCart, N. Baxter)

Paul Karanicolas, Sunnybrook (Mentors: A. Nathens, G. Guyatt)

Barto Nascimento, Sunnybrook (Mentors: H. Tien, A. Nathens)

Joao Rezende Neto, St. Michael's (Mentors: S. Rizzoli, W. Kuebler)

Fayez Quereshy, UHN (Mentor: A. O'Krainec)

2016/17

Sandra deMontbrun, St. Michael's (Mentors: Robin McLeod, Ori Rotstein, Najma Ahmed, Teodor Grantcharov, Helen MacRae)

Nicole Look Hong, Sunnybrook (Mentor: F. Wright)

Jory Simpson, St. Michael's (Mentors: R. George, N. Ahmed)

2017/18

Junaid Bhatti, Sunnybrook

Agostino Pierro, Hospital for Sick Children

Adena Scheer, St. Michael's Hospital (Mentors: R. George, N. Baxter)

2018/19

Julie Hallet, Sunnybrook (Mentors: N. Coburn, N. Wright)

Augusto Zani, Hospital for Sick Children (Mentors: A. Pierro, J. Rossant)

Eran Shlomowitz, UHN (Mentor: A. O'Krainec)

Departed Faculty – Full Time

2016/17

Sean Cleary, UHN (now at Mayo Clinic, Rochester)

2017/18

Ted Gerstle, HSC (now at Memorial Sloan-Kettering Cancer Center, New York)

Barto Nascimento, Sunnybrook

2018/19

Alice Wei, UHN (now at Memorial Sloan-Kettering Cancer Center, New York)

Sandro Rizoli, St. Michael's (now Chief of Trauma at Doha, Qatar)

David Grant (retired)

Paul Greig (retired from clinical practice, now Professor Emeritus)

Major Faculty Appointments

2014/15

Homer Tien, Chief Medical Officer, Ornge

Robin McLeod, VP, Clinical Programs and Quality Initiatives, Cancer Care Ontario

Natalie Coburn, Hanna Family Chair in Surgical Oncology Research

Shady Ashamalla, Head, Division of General Surgery, Sunnybrook

Allan Okrainec, Head, Division of General Surgery, UHN

Paul Sullivan, Head, Division of General Surgery, St. Joseph's

J Andrea McCart, Research Director, University of Toronto Division of General Surgery

Tim Jackson, Program Director, MIS Fellowship

Frances Wright, Director, University of Toronto Division of General Surgery Fellowship Council

2016/17

Fred Brenneman appointed Program Director, General Surgery Residency Training Program

Madeline Ng, BSc appointed new Program Coordinator, General Surgery Residency Training Program

Nancy Baxter named Associate Dean of Academic Affairs at Dalla Lana School of Public Health

David Urbach appointed Surgeon-in-Chief and Medical Director, Perioperative Services, Women's College Hospital

Najma Ahmed appointed Vice-Chair of Education, Department of Surgery

Avery Nathens appointed Medical Director, Trauma Quality Programs, American College of Surgeons

Sean Cleary, appointed Associate Professor, Mayo Clinic, Rochester

Lorraine Tremblay, appointed President, Trauma Association of Canada for 2018-2020

2017/18

Ted Gerstle, appointed Chief of Pediatric Surgery, Memorial Sloan Kettering Cancer Center, New York

2018/19

Alice Wei, Co-Director, Surgical Initiatives, David M. Rubenstein Center for Pancreatic Cancer Research, Memorial Sloan Kettering Cancer Center, New York
Trevor Reichman, Director of HPB Fellowship Programs, UHN

General Surgery Annual Assembly

Tovee Lecturers

2014/15

Lena Napolitano, University of Wisconsin, “Surgical critical care: An essential component of Acute Care Surgery”

2015/16

John Tarpley, Vanderbilt University, “Global surgery: Challenges, disparities, initiatives and prospects – An interim report from a Sub-Saharan perspective”

2016/17

Patricia Roberts, Lahey Clinic, “The development of COSATS (colorectal objective structured assessment of technical skills) – Lessons learned”

2017/18

Ronald DeMatteo, University of Pennsylvania, “The critical contribution of translational research”

2018/19

John C. Alverdy, University of Chicago, “Incorporation of microbiome sciences into your scientific thinking and surgical practice”

Notable Divisional Events

2015/16

Full Accreditation of General Surgery residency training program by Royal College of Physicians and Surgeons of Canada mandated External Review, October 2015.

2016/17

The Division of General Surgery sponsored a Syrian family of four to relocate to a home of their own in Toronto, in an effort led by Zane Cohen and residents Hala Muaddi, David Berger-Richardson, Khaled Ramadan and Fouad Youssef, who also assisted them in adapting to the Canadian milieu.

Mount Sinai Hospital and the University of Toronto Department of Surgery hosted a Festschrift in honour of Zane Cohen. Graduates of the U of T Colorectal Fellowship Program came from all around the world to celebrate Dr. Cohen’s career.



Zane Cohen Centre Team

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4. NEUROSURGERY



Andres Lozano, Dan Family Chair, Division of Neurosurgery

Overview

The Division of Neurosurgery continued in its tradition of strong performance in the academic, research, clinical and teaching domains with steady continued leadership. Dr. Andres Lozano was renewed as Division of Neurosurgery Chairman for a second five-year term following a successful external review. Under the leadership of Residency Program Director Dr. Abhaya Kulkarni, our Neurosurgery Residency Program successfully completed its external review held in 2015 (following a successful six-year review by the Royal College of Physicians and Surgeons in 2012).

Approximately 6,000 cases were performed each year across our four main teaching hospitals. Over the five-year period, Neurosurgery faculty and residents published 1,643 papers in top-tier journals including Cell (4), Nature (12), Nature Communications (8), Nature Genetics (5), Nature Medicine (3), Nature Neuroscience (4), New England Journal of Medicine (9), Lancet, Lancet Neurology (4), Lancet Oncology (4), Lancet Psychiatry (3), JAMA (2), JAMA Neurology (6) and Science Translational Medicine (2). Our neurosurgeons and affiliated neuroscientists continued to enjoy success in highly competitive funding competitions, capturing over \$162.7M in research grant funding. 3 new endowed chairs were

established for a total of 17 endowed chairs in the Division (16 chairs as of Jun 30, 2019 due to a Faculty departure/loss of one chair at St. Michael's Hospital).

Neurosurgery Faculty members continued to receive some of the most prestigious distinctions and appointments in our discipline, with highlights including the Royal Society of Canada (Dr. Peter Dirks), Order of Canada (Drs. Rutka and Lozano as Officers, Dr. Michael Tymianski as Member, and Dr. Charles Tator promoted within the Order as Officer), Canadian Academy of Health Sciences (Drs. Michael Cusimano and Karen Davis), Canadian Sports Hall of Fame (Dr. Tator), Canada's Top 40 Under 40 (Dr. George Ibrahim), American Academy of Neurological Surgery (Dr. Gelareh Zadeh), SNS Winn Prize (Dr. Michael Taylor) and AANS Cushing Medal (Dr. Rutka). 7 of our residents were awarded 8 McKenzie Prizes in Neuroscience Research (with one resident winning in two years)—the most prestigious neurosurgical resident awards in the country—in this reporting period. Our residents have now won two-thirds (28 Prizes, with one resident winning in two years) of the 42 Prizes awarded since 2000—in addition to garnering other highly competitive awards and fellowships.

As well, our Faculty were selected for key leadership positions in their hospitals, with Dr. James Drake appointed as Surgeon-in-Chief (Hospital for Sick Children), Dr. Todd Mainprize as Deputy Surgeon-in-Chief and Division Head (Sunnybrook Hospital), Dr. Julian Spears as Division Head (St. Michael's Hospital), Dr. Peter Dirks as Division Head (Hospital for Sick Children), Dr. Gelareh Zadeh as Deputy Division Head and as Program Medical Director, Krembil Neuroscience Centre (Toronto Western Hospital) and Dr. Leo Da Costa as Interim Medical Director, Centre for Neurovascular Intervention (Sunnybrook Hospital).

Our city-wide clinical fellows program was very fortunate to benefit from additional "Michael and Amira Dan Fellowships in Neurosurgery at the University of Toronto", originally established in 2011 for a five-year period. These fellowship training positions are an invaluable addition to our academic mission. In addition, since 2013 Dan Family support has been instrumental in the establishment of our city-wide Brain Tumor Bank at the University of

Toronto. We remain extremely grateful to the Dan Family for their strong longstanding commitment to neurosurgical education and excellence in Toronto.

In 2014, the Toronto program ascended to the number one position in terms of number of publications, citations and institutional h-index among neurosurgery programs in North America (J Neurosurg. 2015 Sep;123(3):561-70). 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

2016-17

Jefferson Wilson, St. Michael's Hospital

2017-18

George Ibrahim, Hospital for Sick Children
Nir Lipsman, Sunnybrook Hospital

Promotions

2014-15

Andres Lozano, to University Professor
Abhaya Kulkarni, to Full Professor
Taufik Valiante, to Associate Professor
Gelareh Zadeh, to Associate Professor

2016-17

Mojgan Hodaie, to Full Professor
Farhad Pirouzmand, to Associate Professor

2018-19

Gelareh Zadeh, to Full Professor
Sunit Das, to Associate Professor

New Endowed Chairs

3 new endowed chairs brought us to a total of 17 endowed chairs in the Division (16 chairs as of Jun 30, 2019 due to a Faculty departure/loss of one chair at St. Michael's Hospital).



UofT Neurosurgery Team at Baseball Tournament in Central Park, NYC.

2014-15

Wilkins Family Chair in Neurosurgical Brain Tumour Research – Gelareh Zadeh

2016-17

Harold and Esther Halpern Chair in Neurosurgical Stroke Research – Michael Tymianski

2016-17

Crean Hotson Chair in Skull Base Surgery – Fred Gentili

Research Grants

Our Faculty neurosurgeons and Division affiliated neuroscientists captured over \$162.7M in research grant funding over this 5 year period. They were successful in obtaining funding from highly competitive agencies, including the Canadian Institutes of Health Research (CIHR), Natural Sciences and Engineering Research Council (NSERC), National Institutes of Health (NIH), U.S. Department of Defense, Canadian Cancer Society Research Institute, Michael J. Fox Foundation, Terry Fox Research Institute, among many other granting agencies and philanthropic and private sector 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, focused ultrasound, Parkinson's disease, spinal cord injury, stem cells and stroke.

Residents and Fellows Honours/ Awards/ Positions Held

In each year from 2014 to 2019, our residents were awarded McKenzie Prizes in Neuroscience Research, the most prestigious neurosurgical resident awards in the country. The 7 winners of 8 Prizes (one resident winning in two years) in this reporting period are listed below. Toronto Neurosurgery continued its historically strong performance in this competition, having now won 28 of the 42 McKenzie Prizes (66.6%) awarded since 2000 (as of Jun 30, 2019).

2014-15

George Ibrahim: Clinical Neuroscience Research
Shobhan Vachhrajani: Clinical Neuroscience Research

2015-16

Ryan Alkins: Clinical Neuroscience Research
Teresa Puzner: Clinical Neuroscience Research
Deep Guha: Clinical Neuroscience Research

2016-17

Deep Guha: Basic Neuroscience Research

2017-18

Christopher Ahuja: Basic Neuroscience Research

2018-19

Farshad Nassiri: Basic Neuroscience Research

In addition, our residents have been successful in winning other highly competitive awards and fellowships, selected highlights of which include the Academy Award, AANS Brian D. Silber Award, AANS Sanford J. Larson Award, AANS Technology

Development Grant, Alzheimer Society Research Program Scholarship, Canada Cambridge Scholarship, CIHR Brain Star Award, CIHR Canada Graduate Scholarship, CIHR Vanier Scholarship, CIHR Fellowships, CNS Charles Kuntz Scholar Awards, Governor General's Gold Medal, K.G. McKenzie Prize, NREF Fellowships, NSERC Scholarships, PARO Trust Resident Teaching Award, Queen Elizabeth II/William Kerr Scholarship in Science and Technology, and Stanford SPARK Scholar Award.

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 2014 to 2019. Highlights include appointments to the Royal Society of Canada and Order of Canada (2 as Officer, 1 as Member, and 1 promotion to Officer); induction to the Canadian Academy of Health Sciences (2) and Canadian Sports Hall of Fame; receipt of the very prestigious Winn Prize from the Society of Neurological Surgeons and Cushing Medal from the American Association of Neurological Surgeons; and naming to Canada's Top 40 Under 40 list.

2014-15

- James Rutka won the Canadian Cancer Society 2015 Robert L. Noble Prize.
- Charles Tator was awarded the 2014 Medal of Honour from the Canada's Research-Based Pharmaceutical Companies (Rx&D) Health Research Foundation.
- Andres Lozano was named to the rank of University Professor, the highest and most prestigious rank at the University of Toronto, effective July 1, 2014.
- Gelareh Zadeh received the 2015 American Brain Tumor Association Young Investigator Award.
- Michael Taylor received the 2015 William E. Rawls Prize from the Canadian Cancer Society.
- Gelareh Zadeh received the Ross Fleming Surgical Educator Award from the University of Toronto.
- James Rutka received an Honoris Causa degree, from Bahcesehir University, Istanbul.

2015-16

- James Rutka was elected as an Officer of the Order of Canada.
- Charles Tator and Albert Aguayo (Neurology, McGill University) were co-awarded the Wings for Life 2016 Lifetime Achievement Award for Spinal Cord Injury.
- Michael Taylor was awarded the Department of Surgery's Lister Prize
- James Rutka was awarded the 2015 Margolese National Brain Disorders Prize.
- Andres Lozano was the only neurosurgeon in the world to be named to the Thompson Reuters select list of highly cited researchers for 2015 in the category of Neuroscience and Behavior (highlycited.com).
- Michael Fehlings was ranked #5 in the world for the period of 2010-2012 for number of papers published in all areas of neuroscience by Elsevier and Thompson Reuters in their assessment of Faculty of Medicine researchers.
- Andres Lozano was elected to the European Academy of Sciences.

2016-17

- Michael Tymianski was appointed as a Member of the Order of Canada, and Charles Tator was promoted from Member to Officer of the Order of Canada.
- Mojgan Hodaie was presented with the Grand Cross of the Legion of Honor of Monisaraphon by the Kingdom of Cambodia for her efforts in international neurosurgery.
- Michael Fehlings received the 2017 Mentor of the Year Award from the Royal College of Physicians and Surgeons.
- Charles Tator was inducted into Canada's Sports Hall of Fame in the Builder category.
- Andres Lozano was inducted as an Officer of the Order of Canada.
- Michael Cusimano received the Biomedical Science Ambassador Award from Partners in Research.
- Victor Yang received the Department of Surgery's George Armstrong-Peters Prize.
- Two of Abhaya Kulkarni and James Drake's papers were featured in the Journal of Neurosurgery's supplement "Best of 2016," which includes the year's 10 best papers.

2017-18

- Peter Dirks was elected to the Royal Society of Canada.
- Gelareh Zadeh was elected to the American Academy of Neurological Surgery.
- Michael Cusimano was elected to the Canadian Academy of Health Sciences.
- Gelareh Zadeh was appointed as Program Medical Director for the Krembil Neuroscience Centre at Toronto Western Hospital.
- Andres Lozano received a Doctor Honoris causa degree from the University of Sevilla, Spain.
- James Drake won the “Award for Life Time Outstanding Contribution to Research and Clinical Practice” from the International Federation of Neuroendoscopy.
- James Rutka received a Lifetime Achievement Award from the Isaac Foundation.
- Gelareh Zadeh was elected Vice President of the Society of Neuro-Oncology for 2017-2019.
- Andres Lozano received the 2017 Bachmann-Strauss Prize for Excellence in Dystonia Research.
- Abhaya Kulkarni received the 2018 Award for Excellence in Postgraduate Medical Education.
- Karen Davis was elected as President-Elect of the Canadian Pain Society.

2018-19

- James Drake (Head, Division of Neurosurgery, Hospital for Sick Children) was appointed as Surgeon-in-Chief at Sick Kids Hospital, effective September 28, 2018.
- Peter Dirks was appointed as Head, Division of Neurosurgery, Hospital for Sick Children.
- Leo Da Costa was named Interim Medical Director of the Centre for Neurovascular Intervention at Sunnybrook Hospital, effective January 1st, 2019.
- Karen Davis was inducted as a fellow of the Canadian Academy of Health Sciences.
- Michael Taylor received the 2019 H. Richard Winn, M. D. Prize.
- Michael Cusimano received the President’s Impact Award from the University of Toronto.
- Abhaya Kulkarni was awarded the Medal of Honour from the Spanish Society of Pediatric Neurosurgery.
- James Rutka received the AANS Cushing Medal at 2019 AANS Annual Scientific Meeting.



Dr Rutka receiving Cushing Medal from the American Association of Neurological Surgeons

- Karen Davis received the Distinguished Career Award from the Canadian Pain Society.
- George Ibrahim was named to Canada’s Top 40 Under 40 list for 2019.

Visiting Professors

E. Harry Botterell Visiting Professorship in Neurosurgery

- Hugues Duffau, Montpellier University Medical Center, France, 2014-15
- Shekar Kurpad, Medical College of Wisconsin, 2015-16
- Philip A. Starr, University of California, San Francisco, 2016-17
- Not held, 2017-18
- Not held due to Celebration of 95 Years of Neurosurgery at the University of Toronto, 2018-19

E. Bruce Hendrick Visiting Professorship in Pediatric Neurosurgery

- Mark Souweidane, Weill Cornell Medical College, USA, 2014-15
- Ian Pollack, Children’s Hospital of Pittsburgh, 2015-16
- Michel Zerah, Hopital Necker Enfants Malades, Paris, 2016-17
- Jeffrey H. Wisoff, New York University, 2017-18
- John Ragheb, Nicklaus Children’s Hospital, Miami, 2018-19

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

- Luca Regli, University of Zurich, 2014-15
- Jörg-Christian Tonn, University of Munich, 2015-16
- Kee Park, Harvard Medical School, 2016-17
- Bernhard Meyer, Technical University of Munich, 2017-18
- Aaron A. Cohen-Gadol, Indiana University, 2018-19

Alan and Susan Hudson Lectureship

- Alan Hudson, Past CEO, University Health Network, 2014-15 (inaugural)
- Patrick J. Gullane, University of Toronto, 2015-16
- Raymond Sawaya, MD Anderson Cancer Center, University of Texas, 2016-17
- Jacques J. Morcos, University of Miami, 2017-18

Crean Hotson Lectureship in Skull Base Surgery

- Miguel Arraez, Carlos Haya University Hospita, 2018-19 (inaugural)

Arthur and Sonia Labatt Brain Tumor Research Centre Annual Academic Lectureship

- William Weiss, University of California, San Francisco, 2014-15
- Robert Wechsler-Reya, Sanford-Burnham Institute, USA, 2015-16
- Jeremy Rich, Cleveland Clinic, 2016-17
- Nada Jabado, McGill University, 2017-18
- Mitchel Berger, University of California, San Francisco, 2018-19

Harland-Smith Lectureship

- Guilherme Ribas, University of Sao Paulo, 2018-19 (Host, Neurosurgery)

Labatt Chair in International Neurosurgical Education Lectureship

- Henry Marsh, St. George's Hospital, London, UK, 2015-16 (inaugural)
- Robert Dempsey, University of Wisconsin, 2016-17
- David J. Fairholm, University of British Columbia, 2017-18
- Gail Rosseau, George Washington University, USA, 2018-19

Charles H. Tator-Barbara Turnbull**Lectureship Series in Spinal Cord Injury**

- Ole Kiehn, Karolinska Institute, 2014-15
- Jan Schwab, Ohio State University, 2015-16
- Claes Hultling, Karolinska Institute, 2016-17
- Dalton Dietrich, University of Miami, 2017-18
- Mark Tuszynski, University of California San Diego, 2018-19

University of Toronto Spine**Program Visiting Professorship**

- Jan Schwab, Ohio State University, 2014-15
- Daniel Riew, Columbia Medical Center, USA, 2015-16
- Zoher Ghogawala, Tufts University, 2016-17
- Sandy Emery, West Virginia University, 2017-18
- Praveen Mummaneni, University of California, San Francisco, and Guillaume Lonjon, Paris Descartes University, 2018-19

Division Firsts

2014-15

- **The 1st Annual Alan and Susan Hudson Lectureship**, organized by Dr. Fred Gentili, took place on April 24, 2015. The inaugural lecturer was Dr. Hudson, past President and CEO of the University Health Network, whose talk was entitled “My life and career – lessons learned”.
- Our Division ranked first in terms of number of publications, citations and institutional h-index among neurosurgery programs in North American. *J Neurosurg.* 2015 Sep;123(3):561-70.

2015-16

- **First shooting range/dirt bike outing for residents.** On October 3, 2015 our Division held a Chairman's welcome event for residents. This year's activities included a visit to the shooting range and a motorcycle/ATV tour.
- **New alumni series.** We launched a new monthly e-series “Alumni Focus—Where Are They Now” in December 2015.
- On February 12-14, 2016, Division of Neurosurgery Faculty convened for a strategic planning retreat at The Crane resort in Barbados.

2016-17

- **The James and Mari Rutka Surgeon Scientist Training Fund.** James Rutka and his wife, Mari Rutka, announced The James and Mari Rutka Surgeon Scientist Training Fund, which will support the Surgeon Scientist Training Program at the University of Toronto.
- **The 1st Annual Annual Labatt Chair in International Neurosurgical Education Lectureship,** organized by Dr. Julian Spears, took place on February 19, 2016. The inaugural lecturer was Dr. Henry Marsh, Senior Consultant Neurosurgeon, St. George's Hospital, London, UK, whose talk was entitled "The Duty of Candour - Why is it so difficult for doctors to be honest?".

2017-18

- We recognized our Faculty with high teaching scores in 2016-17 (Michael Fehlings, Todd Mainprize, Farhad Pirouzmand, Taufik Valiante, Victor Yang and Gelarah Zadeh) at a celebratory dinner on Dec 12, 2017.

2018-19

- **95th Anniversary of Neurosurgery.** On Friday October 12 we celebrated 95 Years of Neurosurgery in Canada at the University of Toronto with a day full of presentations by our outstanding new Faculty (Drs. Paul Kongkham, Ivan Radovanovic, Suneil Kalia, Jefferson Wilson, Victor Yang, Nir Lipsman and George Ibrahim) and superstar Alumni (Drs. Lily Angelov, Cleveland Clinic; Adrian Laxton, Wake Forest Univ.; Allan Levi, Univ. of Miami; Scellig Stone, Harvard Univ.; and Adrienne Weeks, Dalhousie Univ.). Dr. Andres Lozano provided an opening Chairman's overview and update on Toronto Neurosurgery. This was followed by the morning session (new Faculty) co-chaired by Drs. Michael Tymianski, Abhaya Kulkarni and Todd Mainprize and the afternoon session (Alumni) co-chaired by Drs. James Rutka, Julian Spears and James Drake. In between the sessions, we held our annual Horsey Resident Prize Competition for Clinical Research—which was won by Justin Wang (PGY2, supervisor: Dr. Gelarah Zadeh). Over 100 participants

convened at the Li Ka Shing Knowledge Institute, St. Michael's Hospital to hear the achievements of our faculty, residents and alumni.

- **First 3D lecture.** On April 5th, the 2019 Harland-Smith Lecture was jointly hosted by the Divisions of Anatomy and of Neurosurgery at the University of Toronto. This year's special visiting professor was Dr. Guilherme Ribas from the University of Sao Paulo Medical School, who gave a highly engaging lecture entitled "Anatomy-guided Microneurosurgery for Cerebral Intrinsic Lesions" at the Li Ka Shing Institute, St. Michael's Hospital. Dr. Ribas also presented a second lecture—in 3D—to our residents as part of Brain School. This was the first 3D lecture in the history of our Division, requiring a specialized silver screen and dual 3D projectors and glasses.
- **The 1st Annual Crean Hotson Lectureship in Skull Base Surgery,** organized by Dr. Fred Gentili, took place on April 26, 2019. The inaugural lecturer was Dr. Miguel Arraez, Chairman of Neurosurgery, Carlos Haya University Hospital; Chairman, World Federation of Neurosurgical Societies Foundation, whose talk was entitled "Surgery of the Petrous Apex Region: Lessons learned".

Leadership Changes/ Progressions

2014-15

- Julian Spears was selected as Interim Head, Division of Neurosurgery, St. Michael's Hospital.

2015-16

- James Rutka was re-appointed as the R.S. McLaughlin Professor and Chair of the Department of Surgery for a second five-year term.
- Andres Lozano was re-appointed as the Dan Family Chair in Neurosurgery for a second five-year term.



University of Toronto Residency Program Graduates

2014-15

Ryan Alkins, Sumit Jhas, Osaama Khan, Safraz Mohammed, Shobhan Vachhrajani and Jefferson Wilson

2015-16

David Cadotte, Brian Drake, George Ibrahim, Anthony Lau, Nir Lipsman and Kashif Parvez

2016-17

Abdulrahman Aldakkan and Alireza Mansouri

2017-18

Shelly Wang and Christopher Witiw

2018-19

Naif Alotaibi, Vivek Bodani and Allan Martin

- Todd Mainprize was appointed the Head of the Division of Neurosurgery at Sunnybrook Hospital.

2016-17

- Todd Mainprize was appointed as Deputy Surgeon-in-Chief at Sunnybrook Hospital.
- Gelareh Zadeh was appointed the Head of the Division of Surgical Oncology at University Health Network.

2017-18

- Julian Spears accepted the role of Division Head of Neurosurgery at St. Michael's Hospital.
- Gelareh Zadeh was appointed as Program Medical Director for the Krembil Neuroscience Centre at Toronto Western Hospital.

2018-19

- James Drake was appointed as Surgeon-in-Chief at the Hospital for Sick Children.
- Peter Dirks was appointed as Head, Division of Neurosurgery, Hospital for Sick Children.
- Gelareh Zadeh was appointed as Deputy Head, Division of Neurosurgery, Toronto Western Hospital.
- Leo Da Costa was named Interim Medical Director of the Centre for Neurovascular Intervention at Sunnybrook Hospital.

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5. ORTHOPAEDIC SURGERY



Peter Ferguson, Albert and Temmy Latner Chair, Division of Orthopaedic Surgery

Introduction

After 5 years as Chair (preceded by one year as interim Chair) of this incredibly talented, accomplished and world-renowned Orthopaedic Division, this review allows me the opportunity to reflect on our achievements and accomplishments along with our challenges and disappointments. Although I feel that the former far outweigh the latter, it is imperative to critically appraise the shortcomings of the Division and develop a cogent plan to rectify them. At the same time, successes need to be celebrated and built upon.

In 2013, our Chair Dr. Ben Alman announced that he would be departing the University of Toronto to take up the Chairman's position at Duke University. I was Residency Program Director at the time

and was asked to take the position of Interim Chair while an international search took place. Although I initially did not apply for the position, several of my senior colleagues, contemporaries and residents encouraged me to pursue it. After much consideration, I ultimately decided to apply and was ultimately incredibly humbled and honoured to be named the 8th Chairman of Orthopaedic Surgery at the University of Toronto.

One of my initial steps was to meet with all of the faculty one-on-one to gain their perspective on the functioning of the Division and the challenges they anticipated facing in the years ahead. Our Division had just completed its pilot Competency Based Curriculum (CBC) in which a subset of residents trained in a unique and innovative learning environment with enhanced technical skills, ongoing formative evaluations, improved rotation

efficiency and a competency rather than time based schedule. This curriculum has gained international recognition and has formed the basis for the Royal College of Physicians and Surgeons of Canada's Competency by Design project. Our faculty largely felt that the pilot project was a success, but had some concerns about our plan to institute the curriculum for all residents across our Division. Furthermore, they felt that the Division had lost connection with its history and roots, which is both long and storied. The concern about job opportunities for Canadian Orthopaedic surgeons is well documented and many faculty members feared that our residents would no longer be able to find jobs. Communication with faculty was sporadic and rudimentary, relying on an extremely outdated website and emails. These were some of the more common comments that I heard.

After an initial period of administrative reorganization and committee restructuring, we embarked on a strategic planning process to define our priorities for the upcoming 5 years. This bold and ambitious plan is entitled "Global Leadership through Innovation and Collaboration".

Vision

Leading global transformation of orthopaedic care, education and research.

Mission

We prepare and education orthopaedic surgical leaders, contribute to our communities, and improve health locally and globally through discovery, innovation, application and dissemination of knowledge

Values

- excellence in patient care
- leadership
- innovation
- effective teamwork and partnerships
- social responsibility
- accountability

These statements succinctly summarize our priorities from 2016-2021. Now in the 3rd year of the plan, we have successfully met several of the specific goals and objectives in education, research, clinical care, quality improvement and faculty development. I am

incredibly enthusiastic about the opportunity to see all components of this plan brought to fruition and to embark on the next phase of our strategic mission. Although the history of our Division is legendary, with the achievements of Bob Salter, Joe Schatzker, Marv Tile and Bob Jackson all part of orthopaedic lore, I am convinced that the future is equally bright.

Divisional Administrative Structure

The Division of Orthopaedic Surgery at University of Toronto is part of the Department of Surgery and is accountable to the Chair of Surgery, Dr. Jim Rutka. The Division consists of 6 core fully-affiliated teaching hospitals (Sunnybrook Health Sciences Centre including the Holland Centre), Hospital for Sick Children, St. Michael's Hospital, Mount Sinai Hospital, University Health Network-Toronto Western Hospital and Women's College Hospital. Most residents get their Community Orthopaedics experience at the Michael Garron Hospital. There are 71 fully affiliated faculty members at these core hospitals in addition to 8 non-clinician scientists. Furthermore, we have faculty members appointed at St. Joseph's Hospital, Trillium Hospital, North York General Hospital, Scarborough Hospital and Southlake Hospital, where undergraduate medical students and family medicine residents gain orthopaedic exposure and orthopaedic residents can undertake electives.

Orthopaedic Council

The Orthopaedic Council meets every second month. Membership includes:

- University Chair (Peter Ferguson - Chair of committee)
- Vice-Chair Research (Albert Yee)
- Program Director (Markku Nousiainen)
- Associate Program Director (Veronica Wadey)
- Associate Program Director and Undergraduate Education Director (Jeremy Hall)
- Fellowship Director (Johnny Lau)
- Division Head, Sunnybrook (Albert Yee)

- Division Head, Hospital for Sick Children (Andrew Howard)
- Division Head, St. Michael's Hospital (Tim Daniels)
- Division Head, Mount Sinai Hospital (David Backstein)
- Division Head, Toronto Western Hospital (Rod Davey, interim head)
- Division Head, Women's College Hospital (John Theodoropoulos)
- Division Head, Michael Garron Hospital (Paul Wong)
- Chief Administrative Resident (Hilary Felice)
- Divisional Administrator (Dan Stojimirovic)
- Assistant Divisional Administrator (Polina Mironova)

The mandate of the Orthopaedic Council is to approve financial decisions in the Division, develop priorities to achieve the strategic plan, develop manpower initiatives among the hospitals and oversee all components of research and education. Other committees in the Division including Resident Program Committee, Fellowship Committee, Research Committee and Quality Improvement Committee are all reportable to the Orthopaedic Council.

Resident Program Committee

Our residency program is the largest in Canada and one of the largest in North America. We have 11 new residents entering our program every year including 7 from North American medical schools (Canadian Medical Graduates), 2 from international medical schools (International Medical Graduates) and 2 Visa trainees from the middle east (Saudi Arabia, UAE, Kuwait, Qatar, Bahrain, or Oman). We currently have 49 residents in our training program, 46 of whom are on clinical rotation and 3 of whom are in our Surgeon-Scientist Program, undertaking full time graduate research studies.

The program committee meets monthly. Membership includes:

- Program Director (Markku Nousiainen - Chair of committee)
- University Chair (Peter Ferguson)
- Associate Program Director - Evaluations (Veronica Wadey)



- Associate Program Director – Transitional Years (Jeremy Hall)
- Site Representative, Sunnybrook (Diane Nam)
- Site Representative, Hospital for Sick Children (Mark Camp)
- Site Representative, St. Michael's (Henry Ahn)
- Site Representative, Mount Sinai (Paul Kuzyk)
- Site Representative, Toronto Western (Jas Chahal)
- Site Representative, Michael Garron (Paul Wong)
- Chief Administrative Resident (Hilary Felice)
- Senior Resident Representative (James Wu)
- Junior Resident Representative (Hayley Spurr)

The function of the Program Committee is to administer the training program, including the formal teaching curriculum, residency evaluations and remediation plans, resident schedules, resident selection and other educational initiatives.

Fellowship Committee

We have one of the largest Orthopaedic fellowship programs in the world, with over 60 clinical fellows in all orthopaedic subspecialties. Approximately half of our clinical fellows are Canadian and half are international, originating from the United States, Europe, Middle East, Asia, South America and Australasia. The majority of our clinical fellows pursue academic positions upon completion of their training and develop into academic leaders.

The fellowship committee meets quarterly and membership includes:

- Johnny Lau, Toronto Western (Fellowship Director, Committee Chair)
- Peter Ferguson, Mount Sinai (University Chair)
- Markku Nousiainen, Sunnybrook (Residency Program Director)
- Danny Whelan, St. Michael's
- John Theodoropoulos, Women's College
- John Murnaghan, Sunnybrook
- Veronica Wadey, Sunnybrook
- Unni Narayanan, Hospital for Sick Children
- Paul Kuzyk, Mount Sinai
- Bill Kraemer, Michael Garron Hospital
- Justues Chang, fellow
- Aaron Frombach, fellow
- Tosanwumi Okoro, fellow
- Michael Najfeld, fellow
- Marissa Bonyun, fellow
- Ibrahim AlShaygy, fellow
- Evangelos Tyrpenou, fellow
- Jackie Ngai, fellow

The fellowship committee is responsible for approving new fellowship requests within the University Division, monitoring the educational quality of fellowships and planning of the annual fellowship research day.

Research Committee

Our Division continues to have a significant impact in orthopaedic research worldwide. Opportunities for basic, clinical and translational research are varied. Experts in research in stem cell therapy, developmental genetics, cancer biology, bone



Ortho Residents Class of 2016

biology and fracture healing, nanotechnology, biomechanics, tissue engineering, clinical epidemiology, surgical education, health policy and administration and ethics are all members of our faculty either as clinicians or non-clinician scientists.

Membership of the research committee includes:

- Albert Yee, Sunnybrook, Vice Chair Research (Committee Chair)
- Peter Ferguson, Mount Sinai (University Chair)
- Jas Chahal, Toronto Western (Clinician Scientist)
- Aileen Davis, Toronto Western (Non-Clinician Scientist)
- Tim Dwyer, Women's College (Clinician Scientist)
- Rajiv Gandhi, Toronto Western (Clinician Scientist)
- Marc Grynepas, Mount Sinai (Non-Clinician Scientist)
- Rita Kandel, Mount Sinai (Non-Clinician Scientist)
- Simon Kelley, Hospital for Sick Children (Clinician Scientist)
- Paul Kuzyk, Mount Sinai (Clinician Scientist)
- Diane Nam, Sunnybrook (Clinician Scientist)
- Aaron Nauth, St. Michael's (Clinician Scientist)
- John Theodoropoulos, Women's College (Clinician Scientist)
- Veronica Wadey, Sunnybrook (Clinician Scientist)
- David Wasserstein, Sunnybrook (Clinician Scientist)
- Danny Whelan, St. Michael's (Clinician Scientist)
- Cari Whyne, Sunnybrook (Non-Clinician Scientist)
- Hilary Felice (Chief Resident)

The function of the research committee is to coordinate and promote collaborative research efforts across the city, organization of the annual resident research day, offer internal review of pending peer review grants, and promote research opportunities to medical students.

Quality Improvement Committee

This committee has recently been formed to enable our Division to meet its goals of Quality Improvement (QI) in the strategic plan. With development of a Department of Surgery QI committee, we realized that Orthopaedic representation was crucial. The University of Toronto has recently developed a Master's Program in QI and our initial 2 faculty member graduates of this program will spearhead our initiatives.

The committee meets quarterly and membership includes:

- Sarah Ward, St. Michael's Hospital (Committee Chair)
- Jesse Wolfstadt, Mount Sinai
- Hans Kreder, Sunnybrook
- Jeremie Larouche, Sunnybrook
- Maryse Bouchard, Hospital for Sick Children
- Rod Davey, Toronto Western
- Raj Rampersaud, Toronto Western
- Peter Ferguson, Mount Sinai (University Chair)

The mandate of this committee is to monitor and coordinate quality efforts across the University Division, develop strategic priorities in QI and patient safety, liaise with the departmental QI committee and the resident program committee.

Faculty development and mentorship are important factors in the successful academic promotion of our staff. There is a clearly defined early career review process administered by the Department, the Continuing Appointment Review. Early career faculty members meet with their hospital division head, surgeon-in-chief, defined academic mentor and the University Chair 1 and 2 years after their appointment to ensure that commitments on the part of both the faculty member and the relevant institutions are being met. There is a formal 3 year review, after which the faculty member's annual appointment becomes automatic. There is an annual faculty development day organized by the Department and we have recently instituted a junior faculty development workshop to address topics such as promotion, wellness, medico-legal issues and mentorship. Our faculty members have been invariably successful at this 3 year review and ultimately at the very rigorous academic promotion process.

Our division has a large alumni contingent in the orthopaedic community in Canada and across the world. When one considers both our large fellowship and residency programs, our outreach is significant. Our ability to connect with our alumni however remains limited. The University does not have a complete up to date list of our alumni and the only method we have currently of communicating with this group remains via email. We have begun developing our own list through advertisement in the Canadian Orthopaedic Association website. We have also been able to engage our alumni through our new website and will be starting a "Where are they now?" section to feature alumni on a regular basis. In the past 4 years we have been recognizing alumni 15, 20 and 25 years after graduation from our program on our resident graduation day. We have also begun recognizing our most esteemed alumni by establishment of the Toronto Orthopaedic Hall of Fame.

Administrative Achievements

Restructuring of Divisional administration with establishment of Vice-Chair Research position, 2 Associate Program Director positions and an assistant Divisional administrator position. In particular the 2 Associate Program Director positions and second administrator position positions us to meet the University's recommended guidelines on program support.

Completion of a comprehensive and ambitious Strategic Plan entitled "Global Leadership through Innovation and Collaboration" to establish divisional priorities from 2016-2021 (Appendix 1).

Establishment of a divisional logo and motto (Leadership. Innovation. Impact.)

Extensive branding campaign.

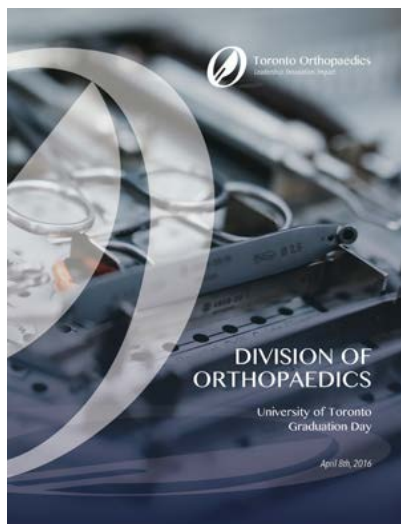
Creation of a new user-friendly divisional website (uoftorthopaedics.ca). Key features include faculty and resident profiles, research initiatives, Hall



New Division of Orthopaedics Logo



Orthopaedic Surgery Strat Plan



Orthopaedic Grad Day Brochure 2016



Orthopaedic - Hall of Fame Award

of Fame, resident/faculty schedules automatically linked to iOS/Android devices, educational material for undergraduate/postgraduate students.

Establishment of named lectureships (Gordon Hunter Memorial Lecture, Stefansky Lecture)

Establishment of partnerships with industry (Stryker, Zimmer/Biomet, RBC, etc.) to support divisional activities.

Creation of junior faculty development workshop to address topics such as practice management, promotion, wellness, medico-legal issues and mentorship.

Creation and adoption of standardized academic search and interview process.

Recruitment of 23 new Faculty members, all of whom were former residents or fellows in our program.

Successful completion of Continuing Appointment Review for 10 faculty members – Mark Camp (Hospital for Sick Children), Jas Chahal (Toronto Western), Tim Dwyer (Women’s College), Patrick Henry (Sunnybrook), Richard Jenkinson (Sunnybrook), Simon Kelley (Hospital for Sick Children), Paul Kuzyk (Mount Sinai), Aaron Nauth (St. Michael’s), Sarah Ward (St. Michael’s), David Wasserstein (Sunnybrook)

Successful Promotion to Associate Professor for 10 faculty members – Veronica Wadey (Sunnybrook), Rajiv Gandhi (Toronto Western), Oleg Safir (Mount Sinai), Sevan Hopyan (Hospital for Sick Children), Amr Elmaraghy (St. Joseph’s), Danny Whelan (St. Michael’s), Simon Kelley (Hospital for Sick Children), Markku Nousiainen (Sunnybrook), Diane Nam (Sunnybrook)

Successful Promotion to Professor for 7 faculty members – Albert Yee (Sunnybrook), Tim Daniels (St. Michael’s), Andrew Howard (Hospital for Sick Children), Darrell Ogilvie-Harris (Toronto Western), Raj Rampersaud (Toronto Western), Unni Narayanan (Hospital for Sick Children), Peter Ferguson (Mount Sinai Hospital)

Recognition of 15, 20 and 25 year alumni at graduation day

Establishment of the Toronto Orthopaedic Hall of Fame to recognize our most esteemed alumni.

Education

Our Division has historically been acknowledged as world leaders in orthopaedic education and this reputation has continued, if not been enhanced, over the past 5 years. The most important contribution has been in the field of Competency Based Medical Education (CBME), a recent worldwide pedagogical initiative. This educational paradigm shifts the focus from the teacher to the learner and is essentially a program that is developed around observable activities or competencies, that can be evaluated rigorously. In 2009, our Division was the first surgical program in the world to undertake a pilot study on a completely Competency Based curriculum, starting with 3 trainees per year. For the next 4 years these trainees participated as a parallel stream to our regular training program. After extensive internal and external review by our University and the Royal College of Surgeons of Canada, I can confidently state that this pilot was an overwhelming success, with all of our trainees passing their Royal College exam, the majority after only 4 years of training. Upon my assuming the role of Interim Chair in 2013, we made the decision to institute this Competency Based Education paradigm for all new residents entering our program and we have continued this throughout my mandate. This continues to be a resounding success with all residents passing their Royal College exams on the first attempt. This program has met with significant international interest and our faculty members, now recognized as authorities in CBME, have travelled throughout the world lecturing to orthopaedic and non-orthopaedic specialty groups on the topic. We have also published extensively on our experience. Our program has formed the basis for the Royal College of Physicians and Surgeons of Canada Competency By Design initiative.

The most significant issue in resident training over the past several years has been the perceived lack of jobs for graduating orthopaedic surgeons in Canada. There were essentially 2 reasons for this – the first being the global financial crisis in 2007-2008, which increased the financial pressure on senior surgeons to continue working; the second being the successful challenge to forced retirement on the basis of discrimination by age. As a result of these,



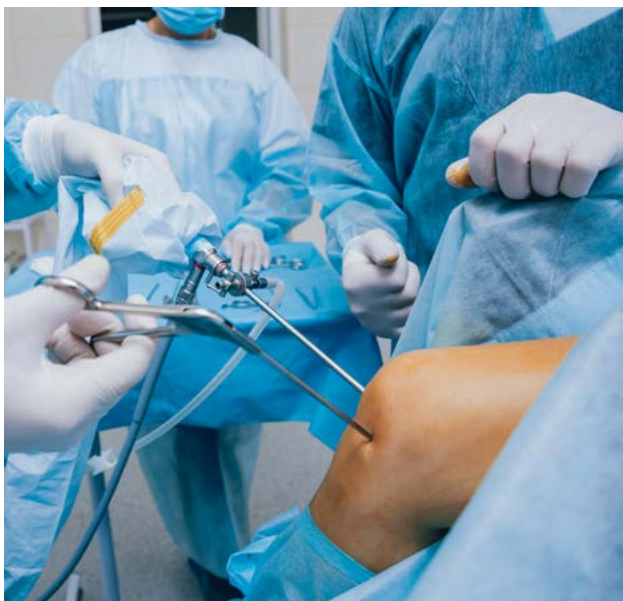
several senior surgeons have continued to utilize hospital resources that otherwise would have been used to hire younger surgeons out of training. This trend has changed recently however, at least for trainees of our program. The significant majority of trainees from our program in the past 5 years (over 80%) are currently in permanent hospital jobs, mostly in southern Ontario. The “Sunnybrook Transition Program”, developed and piloted by the orthopaedic surgeons at Sunnybrook Hospital, establishes a senior-junior surgeon mentorship model whereby elective operating resources gradually transition from the senior to the junior surgeon over a 2-6 year period of time. Several of our faculty members have been hired under this model. It has garnered interest across Canada within orthopaedics and other specialties. Although we are still facing the challenge of underemployed orthopaedists, the future is appearing brighter than in the past.

There have been significant changes to the undergraduate education curriculum at the University of Toronto over the past several years. The majority of these changes conspire to reduce the exposure of medical students to the musculoskeletal system and treatment of disorders thereof. As a result, medical students often have to seek out opportunities on their own often with little guidance or mentorship. We have been able to continue to train high quality students and residents through several initiatives. The undergraduate surgical education director is from our division (Dr. Jeremy Hall), and he plays the dual role of Associate Program Director with a portfolio that includes the transition, or junior years of residency. He therefore has the unique opportunity to interact with undergraduate

medical students of all levels. We have developed an Orthopaedic Career Night for medical students early in their 1st year to introduce them to our specialty. In an attempt to broaden our diversity, we have also introduced a Women in Orthopaedics Night.

We continue to attract clinical fellows from around the world to our various subspecialty programs. We have by far the largest orthopaedic fellowship program in Canada and one of the largest in North America. Furthermore, we are the largest fellowship program in the Department of Surgery at the University of Toronto. A new Divisional Fellowship Director (Dr. Johnny Lau) has recently been named to take over the important job of coordinating fellowship education across the city. Initiatives including the annual Fellowship Research Day, with establishment of new awards in fellowship education and research, has increased the profile of fellow contributions to the Division. A formal fellow education program, focusing on practice-related issues, is being developed.

There are several Continuing Medical Education courses that are longstanding in our division including the annual Upper Extremity Update and the biennial Foot and Ankle course. Several other MSK-related courses are run by other Departments at the University. We are exploring options to increase our profile in CME, which could also potentially increase divisional revenues.



Education Achievements

Adoption of a program-wide Competency-Based-Curriculum, the first surgical CBME Curriculum worldwide. Successful transition from our inaugural pilot project from 2009-2013.

Development of a smartphone based evaluation platform (Elentra), pilot development program for the Postgraduate Medical Education office.

Establishment of our faculty as world leaders in CBME, various publications and invited lectures. Membership in the International Competency Based Medical Educators collaborative (Dr. Ferguson, Dr. Nousiainen).

Development of our Surgical Boot Camp, a novel surgical skills curriculum, that has garnered international recognition (Society for Surgical Education award) and that several orthopaedic programs internationally have adopted.

Development of novel CanMEDS OSCE to assess intrinsic roles as communicator, collaborator, manager, scholar, advocate and professional

Development of centralized assessment process to mitigate “assessment fatigue” for faculty.

High level of success on annual CaRMS residency match.

Re-establishment of middle-east residency partnerships.

100% success of residents on Royal College of Surgeons of Canada specialty exam.

Over 80% of graduating residents over past 5 years in permanent jobs.

Establishment of Orthopaedic Career Night/Job Fair for residents.

Establishment of Orthopaedic Career Night for medical students.

Establishment of Women in Orthopaedics Night

Case of the Month for medical students on Website

Numerous teaching awards for residents and faculty:
Excellence in Postgraduate Education (University of Toronto) 2013, 2019 – P. Ferguson, 2014 – O. Safir

Excellence in Community Based Teaching
(University of Toronto) 2015 – W. Kraemer, F. Mastrogiacomo, 2018 – D. Dipasquale, I. Mayne

Donald R. Wilson Award (Royal College of Physicians and Surgeons of Canada) 2015 – P. Ferguson

Surgical Skills Center Distinguished Educator Award 2015 – J. Hall

Bruce Tovee Undergraduate Teaching Award (Department of Surgery) 2016 – D. Dipasquale, 2017 – J. Hall

DR Wilson Award for Outstanding Resident Teacher (Department of Surgery) 2018 – R. Perlus

Establishment of Preparation for Practice curriculum for fellows.

Establishment of teaching and education awards to recognize outstanding fellows and fellowship educators.

Creation of formal junior resident-junior faculty partnerships.

Research

Regardless of the metric utilized, our Division continues to be one of the most academically productive Orthopaedic units in North America. For 2018/2019 our faculty members have secured almost \$9.6 million in peer reviewed funding, mostly from major agencies such as the CIHR or NSERC. This number has remained largely stable over the past 6 years. The majority of this funding has been obtained by our non-clinician scientists or a select number of clinician scientists.



Given the decreasing amount of peer review funds that are available through these agencies, the future of the surgeon-scientist remains somewhat uncertain. Clinician scientists, often with extensive clinical obligations, have to compete with full time scientists for the limited amount of funding that is available. A collaborative model, whereby clinician scientists form partnerships with basic or translational researchers, remains the most viable option going forward to continue maintaining high quality research.

Publications and invited lectures also continue to be significant, a sign of our significant academic footprint and our strong clinical units.

Established by Dr. Bernie Langer in the Department of Surgery in the 1970's, the Surgeon-Scientist Training Program (SSTP) continues to be one of the jewels in the Department's crown. This program enables residents interested in an academic career to pursue either an MSc or PhD in the middle of their clinical training. Residents take time away to dedicate their time to research and recommence their training on completion. This program has

produced an enormous number of surgeon-scientists in our Division – approximately 40% of our faculty are graduates of this program and almost 60% of new recruits in the past 5 years. This experience uniquely positions our trainees for a career in academic orthopaedics and has allowed us to continue to remain at the forefront of inquiry and innovation. The definition of “Surgeon-scientist” has expanded in recent years to include experts not only in basic and translational research but clinical epidemiology, quality improvement, surgical education, medical leadership and medical ethics. Despite its enormous advantages in developing academic surgeons, however, this program is expensive to maintain. The Department of Surgery has traditionally been responsible for funding the salaries of these trainees at the level of a clinical resident. With increased numbers of residents seeking this experience in recent years, the budget has become unsustainable. A recent report carried out by Dr. James Wright of the Division of Orthopaedic Surgery has recommended several changes in the financial administration of this program to enable it to continue. These include limiting the number of residents entering the program and transfer of the salary support funding to the surgical division and the supervisor. As a result, our Division is faced with an additional \$60,000 expense per year, which is currently provided by our annual tithe, but which has resulted in diversion of funds from other activities. The Orthopaedic Surgeon Scientist Training Fund has been founded, starting with a personal commitment of \$50,000 by the Chair, to help offset some of the costs to the division. The research by our trainees continues to be highlighted in our annual Resident Research Day in November where senior residents present their longitudinal research projects. These projects, supported by supervisors, often result in multiple publications for our trainees and positions them well for academic careers.

Under Ben Alman, our former Chair, the Toronto Musculoskeletal Extra-Departmental Unit was formed to coordinate musculoskeletal research across the city. The initial budget was largely provided by 2 hospital based research institutes, in the anticipation that others would follow suit. This University-based Unit unfortunately was disbanded early in my tenure, ostensibly because a director could not be recruited (despite the position being offered to

at least 2 well known musculoskeletal researchers) and because the other research institutes ultimately did not come on board with financial support. This has ultimately resulted in challenges in developing formalized cooperative research initiatives across the city. The position of Vice-Chair of Research in the Division was created with a mandate to help navigate the significant logistical challenges that includes different REBs in each hospital and variable strategic foci of the different hospital based research institutes, that may not include musculoskeletal health.

Despite these current challenges, we continue to be a highly productive division that produces more academic orthopaedic surgeons than any other university in Canada and than many in North America. We are developing strategies to allow us to adapt to the changing environment of research and to increase our collaborative efforts so that output is under the brand of Toronto Orthopaedics rather than individual hospital units.

Research Achievements

Appointment of Vice-Chair research and reorganization of research committee to include significant number of non-clinician scientists.

Maintenance of high level of peer reviewed funding (approaching \$10,000,000 annually).

Numerous publications and invited lectures by faculty members.

Numerous publications by trainees.

Novel research day curriculum including research boot camp for junior residents, lectures on clinical epidemiology, quality improvement and surgical education, appraisal of literature.

Successful completion of Surgeon Scientist Training Program by 9 trainees including 6 MSc and 3 PhD.

Leadership of Canadian Orthopaedic Research Association by several faculty members.

Appointment of Endowed Chairs in Musculoskeletal Research, Spine Research and Sports Research at Sunnybrook Hospital.

Recruitment of non-clinician scientists to faculty at Toronto Western Hospital and Sunnybrook Hospital.

Creation of Orthopaedic Surgical Scientist Program Training Fund with \$50,000 personal commitment from Chair.

Robin Richards Award in Upper Extremity Research established.

Creation of the Junior Faculty Research Award for most promising academic career.

Lawson Fund seed grants for resident research projects.

Participation in the CREMSs program for undergraduate medical summer student research projects.

Quality Improvement and Patient Safety

Quality Improvement (QI) has recently emerged as a crucial component of the daily function of health organizations. The Department of Surgery has a QI committee under the direction of Dr. Robin MacLeod, with representation from all divisions in the Department. Orthopaedics has perhaps been somewhat slower than other divisions to adopt QI initiatives, ostensibly because members of our division, albeit committed to QI, lacked any formal training. A Master's Program in QI has recently to fruition and within the past 3 years we have recruited 3 new faculty members who have completed this program and therefore have an academic interest in QI.

With this critical mass of QI specialists we have recently formed a divisional committee with a mandate to oversee and prioritize initiatives within our division. Planned activities include standardization of reporting of adverse events and

establishment of standardized perioperative orders sets for common procedures across the university.

Achievements

Formation of Divisional QI Committee with representation from all divisional teaching hospitals.

Recruitment of 3 faculty members with Master's level training in quality improvement and patient safety.

Several faculty publications pertaining to quality improvement.

Summary

It remains a privilege and an honour to serve as the Albert and Temmy Latner Chair of this talented and impressive Division. We have achieved much in the past 5 years yet I am not satisfied with the status quo. I would like to see significant progress in the areas highlighted in this reports. I believe that we have the people in place to see many of these changes come to fruition. I am most proud of the large number of new recruits that we have in our division, 23 over the past 5 years. These individuals, all of whom are products of our residency or fellowship programs, are well positioned to take our division to even greater heights in the future. I look forward to helping them grow and develop into established academic orthopaedic surgeons over the next 5 years. I have enormous pride in the past accomplishments of our storied division but am even more enthusiastic about its future achievements.

6. PLASTIC AND RECONSTRUCTIVE SURGERY



Plastic and Reconstructive Surgery Residents



Christopher Forrest, Chair, Division of Plastic and Reconstructive Surgery

Introduction and Overview

The Division of Plastic and Reconstructive Surgery at the University of Toronto has a rich and storied heritage. It is the largest Plastic Surgery teaching program in North America. It has produced leaders and innovators who have had significant and major influences on training, research and clinical paradigms. It has been integral in the creation of the Surgeon-Scientist training program and has been the origin of important and highly relevant clinical and research break-throughs and discoveries. This program has a large academic footprint and the division can boast of a strong global connection.

Divisional Organization

This is the largest academic division in North America. We have grown during my tenure to 59 staff surgeons, 3 senior scientists, 28 residents and 19 fellows and have 12 teaching sites. Currently there are 13 full professors, 8 associate professors, 20 assistant professors and 17 lecturers that make up the division.

The geography ranges from Michael Garron Hospital in the east end of the city to Trillium Health Sciences Centre in the west (56 km) and from St. Michael's Hospital in the south to North York General Hospital as the northern boundary (23 km). This can be a challenge.

The teaching sites include:

- The Hospital for Sick Children
- University Health Network: Toronto General Hospital and Mount Sinai University Health Network: Toronto Western: The Hand Unit
- St. Michael's Hospital Sunnybrook Health Sciences Centre Ross
- Tilley Burn Centre
- Women's College Hospital
- St. Joseph's Health Science Centre
- Michael Garron Hospital (formerly Toronto East General Hospital) North York General Hospital
- Trillium Health Partners
- Resident Aesthetic Clinic (The Mississauga Clinic)

Divisional Administration

I have always held the philosophy of trying to include everyone in the functioning of the division and give each person some level of responsibility and accountability. I have felt that this provides an important opportunity for engagement and connectivity. To this end, during my term, I have created an Executive Committee (see next page)

that meets as needed but is always available for consultation and discussion. Furthermore, I feel that as the most crucial business of the division happens at the monthly RPC meetings, it is important as the Chair to be present and appropriately interactive. I have also created a position of Director of Alumni Relations and appointed Dr. Ron Zuker to this post. With the addition of new teaching sites, the RPC has grown accordingly. As Competency By Design filters in to the division over the next year, there will be the need for an additional committee that may dovetail into the RPC.

I meet every 2 weeks with our Program Administrator, Ms. Kathy Pavlovic and we continue twice a year General Assembly Meetings. These have sporadic attendance from the staff, I suspect in part due to geography. Executive meetings are held prior to the General Assembly Meetings and as needed. Furthermore, I maintain the philosophy that the combination of good food and fine wine in an off-site location can facilitate the opportunities for high level discussion and focused productivity and as the result I host a series of dinner meetings throughout the year with targeted staff that I have found very useful. As such, I would state that the administrative organization of the division is robust and effective.



DIVISION INFRASTRUCTURE

Chair: Christopher R. Forrest, MD, MSc, FRCS, FACS

Program Administrator: Kathy Pavlovic, CMEA

EXECUTIVE COMMITTEE

Executive Committee Chair & Division Chair

Christopher R. Forrest, MD, MSc, FRCS, FACS

Program Director

Kyle Wanzel, MD, MEd, FRSC(C)

Senior Resident and Education Coordinator

Joan Lipa, MSc, MD, FRCS, FACS

Junior Resident and Education Coordinator

Heather Baltzer, MSc, MD, FRCS

Clinical Fellowship Director

Toni Zhong, MD, FRCS

Undergraduate Coordinator

Melinda Musgrave, MD, PhD, FRCS

Research Director

Gregory H. Borschell, MD, FACS, FAAP

Quality Improvement Coordinator

Karen W. Wong, MD, MSc, FRCS

Resident Wellness Director

Karen Cross, MD, PhD, FRCS

PLASTIC SURGERY ASSEMBLY

Chair

All surgeons and senior scientists

RESIDENCY PROGRAM COMMITTEE

Program Director—Chair of the Committee

Division Chair

Research Director

Program Administrator

Junior Resident Representative

Senior Resident Representative

Hospital and Program Representatives:

- Hospital for Sick Children
- Michael Garron Hospital
- North York General
- Resident Aesthetic Clinic
- Ross Tilley Burn Centre
- St. Josephs' Health Science Centre
- St. Michael's Hospital
- Sunnybrook Health Sciences Centre
- Toronto General Hospital
- Toronto Western Hospital/Hand Program
- Trillium Health Partners
- Women's College Hospital

Division Finances

The running of a division this size requires some capital. My philosophy of having an investment in the division through administration of a divisional membership “dues” has supplanted the concept of a “tithe” or “levy” and I have been successful of administering this through the Advancement Office in the Faculty of Medicine at the University of Toronto, resulting in the distribution of a tax receipt to each staff. I have also been successful in lowering this amount from

\$3300 to \$1900 per year per staff. Staff compliance has been close to 96% routinely. Divisional dues are used specifically for administrative salary support and the annual graduation dinner. They are not used to support other line items in the annual budget such as social events, etc.

Revenue sources to the division also include CME events (50% comes back to the division), industry support, donations. I am grateful to the Department of Surgery for partial administrative support. There is no divisional Chair at this time.

I have supplemented the Program Directors salary an additional \$10K per year from divisional funds.

I have spent a considerable amount of time and effort working with the Advancement Office in the Faculty of Medicine raising the profile of the division in promoting opportunities for philanthropic support. To date, I would say that the impact of these efforts has been meagre but I continue to solicit for these avenues and would hope that the division is positioned well for an endowed Chair or other form of giving opportunity.

The biggest threat to divisional financial stability came this past year with a sudden loss of support for trainees in the Surgeon-Scientist Training Program, previously funded through Dr. Rutka's Department of Surgery. This past year left the division with an \$80K shortfall that I had to resolve in part through the fund I established 3 years ago with a personal \$100K 5-year commitment and creative divisional financial re-organization. Traditionally, support for SSTP trainees is guaranteed by their supervisors but this has been inconsistent.

Major Accomplishments During My Term as Chair

I would characterize the primary accomplishments during my term have focused on the creation of an effective communication platform and enhanced web presence, improved divisional engagement/sense of community and a strong emphasis on divisional profile through the career advancement of its staff, increased presence on a national and international stage, provision of the best educational experience possible for the residents and fellows and engagement of alumni and community partners on a foundation of excellence in patient care. Turnover of staff has been minimal. There have been 3 staff departures (one went into Plastic Surgery residency program training in the US, one transferred into an editorial role and the other lost his licence through

CPSO proceedings). There have been 3 retirements and 9 recruitments in addition to the addition of a new teaching site (North York General Hospital).

Accomplishments of the Chair have included:

Reconfiguration of the divisional administrative infra-structure

Complete overhaul of the divisional website uoftplasticsurgery.ca

Enhancement of the teaching and scheduling activities on the website for the residents

Strong campaign for engagement at all levels (under-graduate, post-graduate, fellow, alumni, community partners, industry)

Philanthropic strategic engagement

Enhanced and improved communication strategies with Newsletter, WGO (What's Going On), social media (see appendices)

Increased profile through presence and participation at national and international meetings (Alumni and Friends events)

Staff recognition with creation of annual awards Above and Beyond Award

Early Career Award Lifetime Recognition Award Chairs Recognition Award Ronald Zuker Award

Enhanced opportunity for non-downtown hospitals to participate in rounds (Professors Rounds, M&M rounds, etc) with web links and teleconferencing access.

Awards and recognition

- Toni Zhong - Belinda Stronach Chair, George Armstrong-Peters Prize Greg Borschel - George Armstrong-Peters Prize
- Ron Zuker - CSPA Lifetime Achievement Award, Dean's Alumni Award



Gallie Day Reception

- Marc Jeschke - George Armstrong-Peters Prize, Lister Prize, Chair, Burn Research Mitch Brown - Bruce Tovee Award
- Nancy McKee - CSPA Lifetime Achievement Award

Recruitment of strategic new staff

- Karen Wong Riff - HSC Kristen Davidge - HSC Karen Cross - SMH
- Blake Murphy - SMH Heather Baltzer - TWH Anne O'Neill - TGH Alan Rogers - RTBC Siba Haykal - TGH Sharon Kim - Trillium

Successful Continuing Appointment Reviews Steve McCabe - TWH

- Toni Zhong - TGH Karen Wong Riff - HSC Laura Snell - SBHSC Anne O'Neill - TGH

Creation of special interest groups (Research, Complex Wound, Burn, Peripheral Nerve, Breast)

Generation of GTA Lecture series and Professors Rounds with focus on national and internationally recognized speakers: creation of a hub for important people in our specialty to see what is going on here

Reduction of divisional dues

Growth of community teaching centres with acquisition of NYGH

Resident enhancements: Retreat, divisional branding (labcoats and outerwear), out-sourcing for craniofacial and flap educational opportunities

Creation of a social program (cooking classes, sketch night, sports activities, wine tasting, communication and career planning)

Creation of annual dinner with the Chair for each of the PGY years

Creation of Resident-Fellow Interaction Policy
Creation of Social Media Policy
Creation of a Resident-Fellow Interaction Committee

Creation of Quality Improvement position (Refer to Dr. Karen Wong Riff's report in Appendix)
Creation of SSTP fund (\$100K personal 5-year donation)

Post-graduation employment initiative to help residents obtain jobs
Stipends for R/D and P/D

Reconfiguration of Resident Aesthetic Clinic

Enhanced research profile within Department of Surgery at UoT (division members have won the George-Armstrong Peters Prize 3 times and Lister Prize once during my tenure)

Recognition of division greats (Hall of Fame and CSPA) Successful promotions of key staff

David Fisher - Professor Mitch Brow - Professor Rob Cartotto - Professor

Jeff Fialkov - Associate Professor Toni Zhong - Associate Professor Jim Mahoney - Professor

Michael Weinberg - Assistant Professor Annual meetings with all staff - Goals and Objectives

Focus on Women in Surgery and Diversity (Dr. Laura Snell) Creation of Medical Student Career Night

Promotion of new divisional leaders (NEAL, Rotman programs) Growth of the numbers of residents entering SSTP

Symposium, Obstetrical Brachial Plexus Palsy Workshop, Pediatric Upper Extremity Symposium, Robin Sequence Symposium



K. Davidge and J. Semple

100% success rate in Royal College Exams for graduates Successful transition of PD (Mitch Brown to Kyle Wanzel) Creation of Division Research Whiteboard on website Creation of Chair's Medal for alumni recognition Appointment of Dr. Ron Zuker as Director of Alumni Relations Global Outreach

Appointment of Dr. Chris Novak:
Division Research Assistance

New programs:
Gender Confirmation Program CVA

Education

The biggest strength of this division lies in its clinical diversity and high volume and the opportunity to provide an exceptional educational experience to any trainee in almost any clinical arena.

Undergraduate

Some years ago, it became apparent that medical student exposure to Plastic and Reconstructive Surgery was limited to those who had an interest in a career and did electives and those who used it as an elective during their clerkship years as an easy way to get through their surgical rotations. A study done by our Program Director showed that 85% of medical students have 1 hour or less exposure to our specialty. There was also a decline in the number of people applying to our program. Three years

ago, I started the Medical Student Career Night which was designed to provide beer and pizza and showcase the depth and breadth of what we do. Each year we have had between 120 to 135 students from medical schools across the province attend and we have seen an increase in numbers of applicants. We have been blessed with superb choices of residents and routinely match well each year in CaRMS.

Unfortunately, this past year was associated with a 10% failure to match rate in the graduating UoT class which I consider to be a huge failure of government. Several excellent candidates for Plastic Surgery did not match (likely as the result of focusing on a single program without backup plan) and I worry that as the result, potential applicants may think before applying to a competitive program. We also had a reduction from 4 to 3 resident positions which impacted us. I am hopeful this coming year will restore our numbers. Dr. Melinda Musgrave is the Undergraduate Education Coordinator for the Department of Surgery and is focused on enhancing the educational experience for the medical students. A report by her is included in the Appendix.

Post-graduate

I believe that we provide the best possible educational experience to our residents given the scope of practice that exists in our program. The Boot Camp, Surgical Skills Labs, Journal Clubs, M&M Rounds, CanMeds seminars and Monday morning Plastic Surgery School provide a fertile opportunity for superb didactic teaching. This has been coupled with two dedicated and passionate Program Directors (Mitch Brown and Kyle Wanzel) who have worked hard to engage the residents and ensure success. I have enjoyed the opportunity to work with them both and have appreciated their support and focus on the resident's experience.

I have facilitated the opportunity for all senior residents to attend the ASMS Craniofacial Course and the Duke Flap course for the purposes of practical training. Additional experiences for the residents have included an annual Resident Retreat in June as well as a Social Program where educational opportunities on cooking, photography, communication etc. have been provided for them. Attendance at meetings and CME events is facilitated when these are local (eg: all our residents

were provided registration courtesy of the division when the CSPS meeting was held in Toronto in 2012). Registration for the Toronto Aesthetic and Breast Meetings are waived for local residents. Dr. Jamil Ahmad who runs the Resident Aesthetic Clinic has also been instrumental in facilitating resident attendance at a number of aesthetic meetings.

Challenges in resident education include the number of rotations available for seniors including 4 opportunities for community experience (Trillium, Michael Garron, St. Joes and most recently North York General). It is likely not sustainable to maintain resident presence at all these sites. I also feel that for some rotations, 4 months is not sufficient to provide a comprehensive experience and would advocate for 6 months. There are some where perhaps 3 months is enough. Geography and traffic are challenges when residents are expected to be present at Friday Professor's Rounds and M&M's (downtown at Princess Margaret Hospital) and return to base hospital to start the day.

And finally, Competence By Design has begun in the resident education system and will obviously have a significant impact on the learning process. We have begun to run this out with the PGY-1's and it will have a more complete introduction in 2020. We have been fortunate in having Dr. Wanzel as a passionate and effective advocate for this process.

Fellowship

Our division has between 17 to 23 fellows each year. I am passionate about making sure these individuals who have uprooted their families, travelled many miles and in many cases, incurred financial disadvantage by coming to Toronto, have the best possible experience during their stay in our division. I also feel that this is one of the best ways that a program can extend its influence on a global basis. We currently have a network of fellows that extends to all continents and there is nowhere where the influence of the division is not felt.

Fellowships are offered at SickKids, St. Mikes, The Hand Unit, Toronto General Hospital, Women's College Hospital, Ross Tilley Burn Centre and Sunnybrook Health Sciences Centre. I appointed Dr. Toni Zhong as the Divisional Fellowship Director and she helps coordinate with the UoT

Fellowship Office. We provide fellowships in craniofacial (pediatric and adult), burn surgery, hand surgery, breast surgery, pediatric plastic surgery, general plastic surgery and microsurgery.

Support for fellowship salary is enabled by hiring Canadian trained surgeons who can bill for their services. Through industry support and with the help of the Advancement Office, funding has been generated for fellowships at Sunnybrook Health Sciences Centre, Women's College Hospital, The Hospital for Sick Children and Toronto General Hospital. It has become apparent that there is a growth opportunity to create a UoT Aesthetic Surgery Fellowship. There is no such fellowship in Canada and I am confident that we have the expertise to develop this. To this end, Dr. Toni Zhong and I are coordinating a series of meetings this fall to make this a reality in the next year.

It is important that fellows arriving in Toronto understand the working relationship with the residents. For the most part, resident-fellow interactions have been synergistic and beneficial to both parties. It is crucial that fellows be made aware of the extent of their duties which may extend to include call and coverage of the residents when attending educational sessions. This occasionally can be problematic at specific teaching sites.

I am happy that our division continues to attract a wide range of fellows from around the world but funding will remain a challenge.



Karen Wong CAR

CME

The division has a high level of activity in local CME events with the UoT brand and it is a great chance to showcase the talent that we have in our faculty and attract a number of visitors to the program. These annual courses and events include the Canadian Burn Association, Ralph Manktelow Upper Extremity Day, Lindsay-Thomson Pediatric Plastic Surgery Symposium, Toronto Breast Symposium, Toronto Aesthetic Symposium, Obstetrical Brachial Plexus Palsy Workshop, Pediatric Upper Extremity Symposium, Robin Sequence Symposium. Profits generated from these events are evenly divided between the Department of Surgery and the division and represent a revenue stream of \$25K to \$40K per year.

Research

The division has a rich history in research extending back to the original “Chicken Club” formed by a group of residents who worked with Dr. W. K. Lindsay investigating flexor tendon healing using a chicken foot model. This evolved into the Surgeon Scientist Training Program that we currently have between 3 to 5 of our resident trainees engaged in. The scope of research done within the division is broad ranging from basic science, development of app-based technologies, outcomes and epidemiologic studies, qualitative research, surgical simulation and education, and innovative areas of study such as “Black Box” analysis of OR procedures and the use of drones in the OR.

The Departmental job description of Surgeon-Scientist with a minimum designation of 50% of time devoted to research would suggest that we have 8 staff that fall into this category. The concept of the “Surgeon-Scientist” works exceptionally well at an institution such as SickKids and the Ross Tilley Burn Centre where salary support allows the opportunity for investment of time in research. It continues to remain a challenge where a drive for fee-for-service and clinical demands may divert the focus of staff.

This is a particular challenge for new appointees and I regret that our division does not have the financial resources to provide support for our

researchers. A model of support was developed in the Division of Vascular Surgery where philanthropic investment has allowed a 3-year substantial salary support package for new staff. This is an enviable model and I am working with the Advancement Office to see if there are similar opportunities that could be applied to my division.

My expectations of all staff are that they contribute in some way to the profile of the division and the easiest way is through research and publications. I do regular searches on PubMed to review what publications have come from our division members and try and highlight them in the WGO for the purpose of recognition. As the Chair, I try and lead by example and continue my appointment in the Institute of Medical Sciences and maintain a busy agenda of mentorship and supervision. During the past 5 years, I have supervised PhD candidates Alex Gordon and SSTP- graduate Dr. Dale Podolosky in addition to having a series of summer research students. My research has focussed on developing a robotic platform for craniofacial and cleft surgery as well as the creation of high fidelity surgical simulation training models.

The research done in the division is highlighted yearly with presentations by the residents at the Annual Resident Research Day featuring the Hoyle Campbell Visiting Professor. This has attracted a remarkable parade of well-known and iconic



Divisional Research Day 2018 - Dr. J. Catapano won for best basic science paper and Dr. N. Ziolkowski for best clinical paper

names during my tenure including Mike Bentz, Andrea Pusic, Pat Maxwell to name a few.

Residents meet with Dr. Greg Borschel, the division Research Director annually to discuss their research projects. All staff (academic and community) have the opportunity to supervise residents. The quality of the work done has been superb.

With Dr. Borschel, I started the concept of Research Dinner nights where an informal get-together to share ideas and discuss what is going on in the division may foster collaboration and spawn new avenues for research. These occur twice a year and are well attended.

The biggest threat to research has been the sudden loss of Departmental salary support for our SSTP trainees that resulted in the division having to back-fill \$80K in salary for this past year. Ideally supervisors have agreed to provide funding for the duration of resident trainee's time with them but in reality, this doesn't always happen, especially when our residents have supervisors in other divisions. Three years ago, working with the Advancement Office, I established a SSTP Fund and created a campaign for donations designed to support our trainees in research. I have made a personal \$100K donation over 5 years and have had very limited buy-in from other staff or alumni. Former PD Dr. Mitch Brown has very generously donated \$50K over 5 years to help but otherwise, there has been little traction to support this initiative. Strategies to help the SSTP have included early selection of trainees to maximize the opportunity for scholarship and grant application as well as more emphasis on supervisors guaranteeing support.

I had hoped that the position of Research Director would afford some energy and time to assist with the research profile of division staff but this has not been the case. To this end, I have appointed Senior Scientist Dr. Christine Novak to a 0.2 FTE divisional position with the mandate to help coordinate and assist staff across the division as needed. However, from a research profile point of view within the Department of Surgery, the division has had high visibility with the George Armstrong-Peters Award (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) being won by Greg Borschel, Marc Jeschke and Toni Zhong and the Lister Prize (awarded to an investigator who has shown outstanding and continuing productivity of international stature as evidenced by research publications, grants held, students trained and other evidence of stature of the work produced) being awarded to Marc Jeschke in the past 5 years. No other surgical division can boast of such profile.

Leadership

I am proud of the organization and coordination that exists within my division. I feel that my leadership style is democratic and collaborative and promotes collegiality and an open opportunity for communication. I would hope that leading by example has worked satisfactorily in allowing the members of the division to flourish and develop their academic careers. I feel that I put the priorities of the division and the individual members above my own. I have also made sure I have maintained a busy clinical practice and maintain volumes commensurate with the other 1.0 FTE staff. I have yearly Goals and Objectives meetings with all of the staff and have an open-door policy with respect to communication.

I have done my best to engage with residents in the program. Until a couple of years ago, I would hold yearly meetings with each one but found that these were not particularly fruitful. I now host annual small group dinners with each resident year which has proven to be much more effective in helping establish and generate relationships with the house-staff. I also set an example by attending all rounds, M&M's, Journal Clubs, social events, etc. when I am not travelling.

I have also worked hard to instill a sense of belonging and loyalty to the division for our alumni, through the establishment of "Alumni and Friends" events at national and international meetings, the creation of the unique "Chair's Medal" given to all alumni with a unique identifying number, regular WGO and Newsletter emails, creation of an "Alumni Hall of Fame" on the website and annual invitations to all alumni for the Graduation Gala Dinner in June.

I would say that our division works very well as a group. Like most close relationships with a large number of unique and opinionated personalities, there are times where consensus does not exist but the impact of these infrequent situations is transient and I am proud of the fact that there have been no significant divisive issues during my term as division Chair. We are able to maintain open channels of communication and mutual respect for each other and sort through any issues in a satisfactory manner.

I sit on the Senior Advisory Committee which meets monthly during the academic year and consists of the division Chairs, institutional Surgeons-in-Chief and the Department of Surgery Executive. This meeting is hosted by Department of Surgery Chair Dr. Jim Rutka. I have created an informal get-together of the Surgical Chairs which meets for dinner twice a year. This is a very useful opportunity to brain-storm about common problems and issues. I hold Division General Assembly meetings twice a year in which all staff members are invited. This is poorly attended and despite attempts to reconfigure this meeting, it does not attract a high level of engagement.

I represent The Hospital for Sick Children at the monthly Residency Program Committee meetings chaired by Program Director, Dr. Kyle Wanzel. This is where much of the resident related business of the division is carried out. I have an Executive Committee which may meet once or twice a year. This group may be called together at short notice to discuss any relevant issues as needed. My main divisional interaction is with the Program Director (Dr. Mitch Brown until July 2017 and now Dr. Kyle Wanzel). This is a highly effective working relationship and functions well. I work in the same practice group as the divisional Research Director, Dr. Greg Borschel and have access to him when we need to communicate. I also meet with our divisional administrative coordinator Ms. Kathy Pavlovic every two weeks. According to her estimates, she spends 90% of her time administering to the needs of the residency program and the rest to the needs of the division and myself.

I am very fortunate in having an effective administrative assistant at SickKids, Dyanne Bechard who takes on some of the responsibilities associated with the Chair position and I am most

grateful for her assistance. I am also immensely grateful for the remarkable support and mentorship by our Department Chair, Dr. Jim Rutka whose leadership has been inspiring and innovative.

Divisional Priorities and Future Directions: 2018-2023

In preparing this report, it has been a useful exercise to allow me to reflect on the journey our division has taken over the past 5 years and I am very proud to have had the opportunity to lead a remarkable group of dedicated and highly talented individuals. I believe we are stronger than we were 7 years ago. We have a division that is world class and highly focused on improving the lives of our patients and providing the best educational opportunity possible for all levels of trainees. I am continually impressed by the way that all division members extend themselves to go “above and beyond”. However, there is a price to be paid and I think it is very important to recognize the sacrifices that have been made in terms of life-style and the associated stresses of an academic appointment. Physician wellness is an area that deserves much attention. Despite these challenges, I am proud that we are able to recruit the best and brightest as faculty and trainees.

During my term as division chair, administrative changes within the institutions, program and personnel contractions, funding restrictions, increased demands on time and administrative responsibilities and external pressures on our health care system have added to the day to day challenges of working in academic surgery. I feel it is crucial to continue to foster recruitment of the best and brightest as staff and trainees and to continue to lead the academic mission of the division by training the next generation of surgeon-scientists. As such, I think it is necessary to take a close look at the care that we provide and do our best to improve efficiencies and opportunities for our patients. I feel that it will be crucial to not “rest on our laurels” but to take the opportunity to re-evaluate the traditional “program-based” approach and examine the traditional way that we have done things. As Plastic and Reconstructive Surgeons, we are used



Drs. M. Roy and K. Zuo for winning best clinical and best basic science awards at the 35th Annual Division of Plastic and Reconstructive Surgery Research Symposium

to being flexible and creative and I suspect the next few years in health care will call on these talents.

These represent important areas of focus for the coming 5 years Financial support for SSTP

Growth of the program - continuing to attract the best and the brightest Divisional size and extent of community partners

Number of incoming residents Fellowship support

Lack of financial support for Chair/lack of a Chair Inadequate financial support for PD and RD Impact of CBD

Disconnect between site Chiefs-of-Surgery and Chair position Site issues: Hand Unit, leadership for SMH, RTBC, TGH/TWH, WCH Income disparity between academic and community surgeons

Challenges with special interest groups and encroachment by other competing specialties Need for MD enhancers/extenders

Focus on MD wellness and burn-out Succession planning

Reliance on institutional and departmental financial support for new staff appointments Diversity

Royal College Review 2021

I have attempted to provide a high-level overview of the division in this report and highlight the

important achievements and potential challenges that have developed during my tenure. However, when one takes a more in-depth focus on what actually goes on in this division, it is a truly remarkable and out-standing entity and very hard to quantify in the confines of this report.

Acknowledgements and Thanks

It has been a privilege and a pleasure being at the helm of this division for the past 7 years and am grateful to many people for their hard work, sage advice, emotional support and dedication. Kathy Pavlovic has done a terrific job as the Program Administrator during my tenure with her great level of organization and parenting skills for the residents. I am grateful to Department of Surgery Chair, Dr. Jim Rutka who provides terrific support, encouragement and inspiration on a routine basis. I have been blessed with two superb Program Directors, Drs. Mitch Brown and Kyle Wanzel who do the heavy lifting when it comes to running the program. Research Directors Joel Fish and Greg Borschel have been passionate about the resident research experience and have elevated the quality of work done here to the highest level through the Surgeon Scientist Training Program and Annual Resident Research Day. I have thoroughly enjoyed working with the Department of Surgery staff at the Stewart Building and would like to acknowledge the support of both Sylvia Perry and Nancy Condo who are a delight to work with. Dr. Jamil Ahmad who runs the Resident Aesthetic Clinic and seems to know every important Plastic Surgeon in the world has done a remarkable job of coordinating the GTA Lecture Series, enhancing industry support and being a terrific ambassador for this program. Thanks to Darina Landa and David Grieco from the Faculty of Medicine Advancement Office for continuous and sustained effort in promoting this division. I rely heavily on my admin assistant Dyanne Bechard and am immensely grateful for her insights, observations and support in allowing me to do the job that I do. And perhaps, the best thing about this position is enjoying the success of the trainees that I have the privilege of influencing and training to be the best that they can be.

7. THORACIC SURGERY



2nd Vienna-Toronto Lung Transplant Academy in Toronto, Nov 2019



Thomas Waddell, Pearson-Ginsberg Chair, Division of Thoracic Surgery

Awards and Community Leadership

Dr. Shaf Keshavjee was appointed to the Council for the American Association for Thoracic Surgery for the second time in 2015 as Secretary-Treasurer and was recently elected to become President in 2021. He has been recognized with honorary degrees from both Queen's and Ryerson Universities and elected a Fellow of the Canadian Academy of Health Sciences. Dr. Keshavjee was made an Officer of the Order of Canada in 2014. He received the Dr. Joel Cooper Award from the Canadian Society of Transplantation

in 2016 and in 2018 received the American Society of Transplantation Innovation Award, the Canadian Society of Transplantation Lifetime Achievement Award. In 2019, Drs Keshavjee and Cypel shared the UHN Inventor of the Year Award.

Dr. Yasufuku was awarded the Gustav Killian Centenary Medal at the World Congress of Bronchology and Interventional Pulmonology in 2016 and delivered the Pasquale Ciaglia Memorial Lecture at the CHEST meeting in 2018. The Japanese Canadian Cultural Centre and Toronto General and Western Hospital Foundation co-hosted the Ninth Sakura Gala in 2018 at the Royal Ontario Museum in honour of Dr. Kazuhiro Yasufuku. Dr. Kazuhiro Yasufuku has been

appointed as Head of Endoscopy program at UHN in 2016 and Deputy Head of the Division of Surgical Oncology at UHN in 2017.

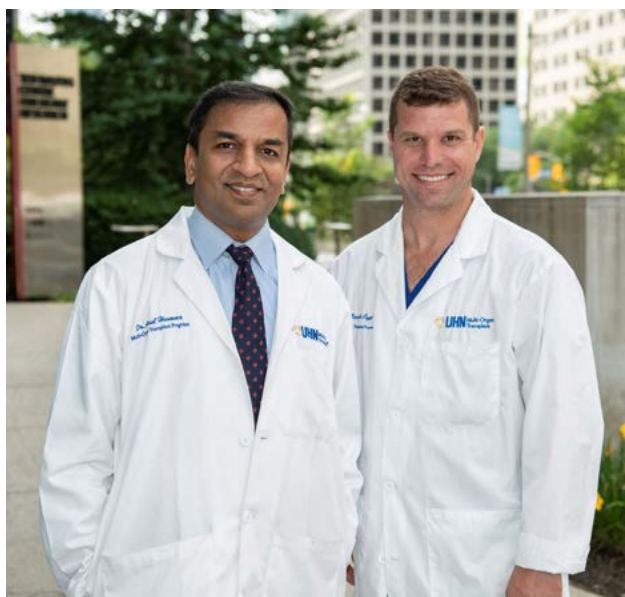
Dr. Gail Darling was appointed to a very important role within Cancer Care Ontario as the Clinical Liaison Lead for lung cancer, advising not only on surgery but all aspects of lung cancer care, including screening, radiation, and systemic treatments.

Dr. Marc De Perrot was appointed a member of the Mesothelioma Task Force for the International Association for the Study of Lung Cancer and became the Lung Site Group leader for the Princess Margaret Cancer Program in 2017. He was awarded a Pioneer Award from the Mesothelioma Applied Research Foundation (USA) in 2019.

Dr. Marcelo Cypel was appointed as Surgical Director of the UHN Multi-Organ Transplant Program in 2018.

Research and Innovation

Dr. Cypel won the George Armstrong Peters Prize for his success as a Surgeon-Scientist in the early phase of his career and also was awarded a Roscoe



Dr. Atul Humar and Dr. Marcelo Cypel, Surgical Director of the UHN Multi-Organ Transplant Program

Reid Graham Scholarship to help fund that research (2014-15). During the most recent 5 year period he not only renewed his Canada Research Chair in Lung Transplantation (term 5 years, total amount \$500,000 CAD) but was granted a Ontario Ministry of Research and Innovation Early Researcher award. Dr. Cypel was the Principal Investigator on a Canadian Cancer Society Research Institute grant on “In Vivo Lung Perfusion (IVLP) as an Adjuvant Treatment for Patients Undergoing Surgical Resection of Pulmonary Metastases of Bone and Soft Tissues Sarcomas” and a co-applicant on a CIHR grant entitled “Supervised in vivo lung perfusion strategy for treatment of cancer metastases to the lungs. Real time monitoring of chemotherapy by on-site analytical platform”. Dr Cypel received a CIHR Project Grant as the Principal Investigator, entitled: Lung Transplantation using Hepatitis C Positive Donors to Hepatitis C negative Recipients: A Safety trial (term 5 years, total amount \$612,000 CAD) and recently renewed and extended this project. Dr. Cypel was one of the first recipients of the new UHN Innovation Funds in Surgical Oncology for his project “Localized Therapies for Pulmonary Metastases Combining Immunotherapy with Interleukin-12 and Chemotherapy using in vivo Lung Perfusion”.

Dr. Keshavjee continued to expand his very large research enterprise with grants from CIHR – “Advanced therapeutic strategies for ex vivo repair of lungs for transplantation” (\$1.25M – 2015-2019), Genome Canada – “Novel Rapid Diagnostic Tools for Lung Transplantation: Bringing Omics to the Bedside”, (\$6M – 2015-19), the Cystic Fibrosis Foundation US – “IL-10 Gene Therapy & Halofuginol for lung allograft dysfunction & fibrosis”, and Cystic Fibrosis Canada with multiple operating, training, and infrastructure grants.

As an important basic scientist partner in our division, Dr. Mingyao Liu continued his string of continuous CIHR funding with a new 5 year grant in 2016 “Prevention of primary graft dysfunction after lung transplantation; a bench to bedside approach.” \$433K. Drs. Liu, Keshavjee and Cypel shared approximately 1.1M in funding from the Medicine by Design Canada First Research Excellence Fund in the Cycle 1 round.

Dr. Waddell received \$724K as PI of a Medicine by Design project – “Decellularization and recellularization for lung and airway regeneration” which led to a CIHR/NSERC Collaborative Health Research Program grant with Co-PI Dr. Cristina Amon – “Systematic Optimization of Regeneration of Airway Scaffolds”. He also received a new CIHR grant in 2018 – “Amelioration of Pulmonary Fibrosis Using Induced Progenitor-Like Cells via Rejuvenation of Stem Cells” \$735K, 2018–2023.

Dr. Yasufuku continues to grow his research program with funding from the Canadian Cancer Society in the form of an Impact Grant (\$200K) “Image-guided localization platform for minimally invasive lung surgery” in 2014 and then again in 2016 for a 5 year project on “Ultra-minimally invasive multi-modal image guided therapeutics of lung cancer” (\$1.25M). Dr. Yasufuku was recently awarded a National Sanitarium Association grant “Transbronchial Nanotechnology-mediated PDT of Peripheral Lung Cancer” (\$1M) and a CIHR project grant “Improving lung cancer patient bronchoscopy efficiency through a novel pairing of biosensors with EBUS-TBNA” (\$688,500).

Dr. Jonathan Yeung was recently recruited to our division as a very promising Surgeon-Scientist. He is off to a great start having received US\$50,000 from the AATS for a 1 year research project in 2018 – “Exploiting Clonal Heterogeneity for the Genomic Study of Esophageal Adenocarcinoma, an internal grant from the Division of Surgical Oncology at UHN entitled “Exploiting Intra-Tumoral Heterogeneity for the Study of Carcinogenesis in Esophageal Adenocarcinoma” (C\$75,000) and a 2 year research award from the STS (US\$80,000) for his project “Personalizing Therapy for Esophageal Adenocarcinoma Using Patient Derived Cancer Organoids,

Dr. Marc De Perrot continues his research into the basic biology of mesothelioma, funded for example by the Mesothelioma Applied Research Foundation in the US with his grant “Optimizing the radiation approach to mesothelioma with targeted immunomodulation therapy”.

The academic year of our Division always concludes with Pearson Day, an annual celebration



Lung transplant

of clinical and laboratory research by trainees in our Division. Dr. F.G. Pearson was a pioneer in General Thoracic Surgery, establishing Toronto as a leading center and training many of the future leaders of the specialty. He was most famous for surgical innovations in the staging of lung cancer via mediastinoscopy, for tracheal surgery, and for management of gastro-esophageal reflux disease. Dr. Pearson unfortunately passed away in August 2016. Over the last 5 years the Pearson Day Visiting Professors were Dr. Yolonda Colson from Brigham and Women’s Hospital in Boston, Dr. Tommy D’Amico from Duke University, Dr. Joe Shrager from Stanford University, Dr. Jean Deslauriers from Laval University and Dr. Dennis Wigle from the May Clinic.

Creative Professional Activity

Drs Shaf Keshavjee and Marcelo Cypel have received international recognition for their role in development of organ perfusion technologies in clinical transplantation, including founding of several companies and were recognized as UHN Inventors of the Year in 2019 for this work. This program has more than doubled the clinical volume of the UHN Lung Transplant Program and inspired significant investments in organ perfusion research here and around the world for other organs as well.

Dr. Marc De Perrot has led the development of the Surgical Pulmonary Hypertension over the last decade. He has built many aspects of this program,

including recruitment of surgical fellows to train specifically for this procedure, development of an international reputation attracting observers from all over the world, a complementary research program in the lab with both basic and translational aspects, and important collaborations with pulmonary medicine and interventional radiology. This program received additional funding from the Ministry of Health, in recognition of its important position as a national resource. This program also attracted a large 5 year commitment for financial support from Bayer Inc, to continue to build this as a leading global program in Pulmonary Thromboendarterectomy.

Teaching

Teaching remains a very important priority for our Division. The contribution of Division members collectively and individually is celebrated and recognized. Several members have received awards for their contributions to education.

For example, Dr. Kazuhiro Yasufuku won an Individual Teaching Award from the Wightman-Berris Academy (2014-15). He also won the Ivan Silver Innovation Award from the University of Toronto Faculty of Medicine's 14th Annual Education Achievement Celebration (2016-17). He also received the Distinguished CHEST Educator Award – a international recognition of excellence in continuing medical education (2017 and 2018). He also won the Dr. Michael Robinette Surgeon Educator Award from the Department of Surgery at University Health Network in 2018.

Dr. Andrew Pierre won the Department of Surgery Tovee Award in 2014-15, recognizing many years of commitment to teaching of surgery (2014-15). Dr. Najib Safieddine, from the Michael Garron Hospital, won the Dr. J.H. Fowler Excellence in Teaching Award from the Department of Family Medicine in 2014-15). Dr. Abdollah Behzadi, from Trillium Health Partners, was awarded the Dr. Norman Hill Award for Leadership in Education (2015-16).

Division members have also contributed through establishment of several new programs, courses or tools, including Dr. Safieddine who established the Department of Surgery Quality Improvement

teaching curriculum for residents in surgical programs in 2014-15, Dr. Marc de Perrot developed the world's first pulmonary endarterectomy simulator in an effort to decrease the length of time it takes new surgeons to learn this complex technique, and Dr. Laura Donahoe successfully organized a CATS Postgraduate Course at the 2017 Canadian Surgery Forum in Victoria, BC. Most importantly, Dr. Yasufuku and others have established a national Boot Camp to introduce new Thoracic Surgery trainees from across the entire country to new technologies in our specialty such as EBUS, navigation bronchoscopy and others. In 2018, Drs. Kazuhiro Yasufuku and Laura Donahoe received a DSO Educational Grant (\$20,000) to evaluate this program.

Each year the Division awards a number of Teaching Awards internally based on an exit poll of departing trainees. The Ernie Spratt Award was initiated in 2017 to recognize the special contribution of our community hospital partners in the teaching enterprise. These prizes include:

Gail E. Darling Award for Excellence in Undergraduate Teaching:

Dr. Andrew Pierre (2014-15 and 2017-18), Gail Darling (2015-16 and 2016-17),

Robert J. Ginsberg Award for Excellence in Postgraduate Teaching:

Dr. Marcelo Cypel (2014-15), Dr. Tom Waddell (2015-16, 2016-17, and 2018-19), Dr. Kazuhiro Yasufuku (2017-18)



S. Keshavjee, 2016

F. Griffith Pearson Award for Best Resident/ Fellow Teacher:

Dr. Jonathan Yeung (2014-15), Dr. Biniam Kidane (2015-16), Dr. Armen Parajian (2016-17), Dr. Anne-Sophie Laliberte (2017-18), and Dr. Pablo Perez (2018-19).

Ernie Spratt Award for Excellence in Postgraduate Teaching at a Community Hospital
Dr. Michael Ko (2016-17, 2017-18, and 2018-19)

Continuing Professional Development

For many decades, the Division has hosted the annual Toronto Thoracic Surgery Refresher Course and over the last 5 years a wide range of visiting faculty have attended from all over the world offering a global perspective with state of the art lectures. For the last 5 years Dr. Marcelo Cypel has been the course Co-Director. Visiting Faculty include: Dr. Milton Saute from Israel, Dr. Rob McKenna from Los Angeles, and Dr. Sean Grondin from Calgary (2014-15), Dr. James Bond from British Columbia, Dr. Walter Klepetko from Vienna, Dr. John D. Mitchell from Denver and Dr. David C. Rice from Houston (2015-16), Dr. Hiroshi Date from Kyoto, Dr. Moishe Liberman from Montreal, Dr. Raja Flores from New York, Dr. Shanda Blackman from the Mayo Clinic, and Dr. Olaf

Mercier from Paris (2016-17), Dr. Joel D. Cooper from Philadelphia, Dr. Joshua R. Sonett from New York, and Dr. John Reynolds (2017-18). Dr. Patrick Forde from Johns Hopkins University, Dr. Donald E. Low from Seattle, Dr. Tiago Machuca from Gainesville, Dr. Mark Onaitis from San Diego, and Dr. Dirk Van Raemdonck from Leuven (2018-19).

Over the last few years we have also expanded our Continuing Professional Development beginning with offering a special course in Endobronchial EBUS, led by Dr. Kazuhiro Yasufuku.

Dr. Marcelo Cypel has also developed significant learning opportunities in the field of lung transplantation and extracorporeal life support. Dr. Hiroshi Date from Kyoto was our first Visiting Faculty for this course in 2017, followed by Dr. Joel Cooper in 2018 and Drs. Tiago Machuca, Dr. Michael McMullen, and Dirk van Raemdonck in 2019.

Dr. De Perrot continues to organize a very well received course on thromboembolic lung disease for a variety of physicians including respirologists and primary care physicians.



18. UROLOGY



Neil Fleshner, Martin Barkin Chair, Division of Urology

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 spanning six fully affiliated University-based hospitals. During this time we have trained 20 residents and 28 fellows. The following are some highlights of this period:

During the 2014-15 year, grant capture totaled over six 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. Our Division collectively published 230 peer-reviewed papers. Drs. Robert Stewart

(Associate), Armando Lorenzo (Associate), Walid Farhat (Full) and Dean Elterman (Assistant) were promoted to higher ranks at the University.

Drs. Raj Satkunasivam, joined our faculty at the Sunnybrook. Dr. Laurence Klotz, was endowed with a Chair in prostate cancer research. Drs. Pippe-Salle and John Trachtenberg retired from our Division. Five of our residents were enrolled in the Surgeon Scientist Training Program (SSTP). Dr. Brian Lane was our Menkes Professor and Dr. Peter Albertsen was our Robson Professor.

During the 2015-2016, grant capture totaled over 4.8 million dollars in part due to the efforts of Michael Jewett, Neil Fleshner, Robert Hamilton,

Girish Kulkarni, Andrew Matthew, Bharti Bapat, Antonio Finelli and Keith Jarvi, who served as PI's or CO-PI's on peer-reviewed grants. Our division collectively published 229 peer-reviewed papers. Dr. Klotz, was awarded the Order of Canada.

Drs. Patrick Luke and Peter Schelgel were our Menkes and Robson lecturers respectively. Four of our residents were enrolled in the SSTP with two completing PhD's. Dr. Yonah Krakowsky joined our faculty based at Women's College Hospital.

During the 2016-2017 year, grant capture totaled over five million dollars. Drs. Michael Jewett, Neil Fleshner, Robert Hamilton, Girish Kulkarni, Andrew Matthew, Keith Jarvi, served as PI's or Co-PI's on peer-reviewed grants. Our Division collectively published 290 peer-reviewed papers.

Drs. Raj Satkunasivam departed the faculty at the Sunnybrook and Dr. Nathan Perlis joined at the UHN site. Drs. Michael Ordon and Robert Hamilton successfully completed their continuing appointment reviews. Dr. Laurence Klotz was awarded a Dean's Achievement award by the University of Toronto. Dr. John Honey retired and Dr. Ken Pace was appointed Vice-Chair of the Division of Urology. Dr. Robert Stewart received the Bruce Tovee Award from PGME.

Four of our residents were enrolled in the SSTP. Dr. Paul Russo was our Menkes Professor and Dr. Francesco Montorsi was our Robson Professor.



Division of Urology Hockey Team, Department of Surgery Tournament



Elterman CAR 2017

During the 2017-2018 year, grant capture totaled over 4 million dollars in part due to the efforts of Michael Jewett, Neil Fleshner, Robert Hamilton, Girish Kulkarni, Antonio Finelli, Andrew Matthew, Keith Jarvi, who served as PI's or Co-PI's on peer-reviewed grants. Our Division collectively published 264 peer-reviewed papers. Dr. Monica Farcas joined the faculty at the St Michael's site. Dr. Michael Robinette retired. Five of our residents are currently in the SSTP. Dr. Steven Nakada was our Menkes Professor and Dr. Martin Gleave served as our Robson Professor.

During the 2018-19 year, grant capture was just under 4 million dollars. Our faculty published 229 peer-reviewed papers. Drs. Vasu Venketeswaran and Tony Finelli were promoted to Full Professor and Dr. Andrew Matthew to Associate. Dr. Michael Fraser joined our faculty as to assist us in the area of informatics and biocomputing.

We hosted Dr. Simon Tanguay in February as our Menkes lecturer and Dr. Antoine Khoury as our Robson Visiting Professor in April. As a Division we are grateful for the Hold Em for Life Oncology Program. The final highlight of the year came by way of a \$10 Million donation from the McCain Family, which will allow us to move forward with the McCain Centre for Urologic Innovation.

10

9. VASCULAR SURGERY



Division of Vascular Surgery Faculty and spouses at 2016 Gallie Day Dinner event



Thomas Forbes, Chair, Division of Vascular Surgery

Introduction

It has been a distinct honour to serve as Division Chair since September 2014, following in the footsteps of Dr. Thomas Lindsay, and previously, Dr. K. Wayne Johnston. The University of Toronto's Division of Vascular Surgery was one of the first, and currently the largest, in Canada. Over the last 30 years many of the Canadian thought leaders in vascular surgery have trained in Toronto and research, discovery

and innovation achieved in our academic hospitals has benefitted patients nation-wide.

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. Our Division's clinical activities are based at three academic hospitals, St. Michael's Hospital, Sunnybrook Health Sciences Centre and University Health Network and three affiliate teaching sites, Humber River Hospital, Scarborough Hospital and Trillium.



Vascular Surgery Group 2015

The Division of Vascular Surgery at the University of Toronto has a long and established track record of clinical excellence, academic productivity, and leadership in education. The Division has received international acclaim with members having served in many leadership positions and as Presidents of major vascular surgery societies (CSVs, PVSS, SVS), Editor-in-Chief of the *Journal of Vascular Surgery* and Editor of the preeminent textbook in the field, *Rutherford's Vascular Surgery*, as well as leadership positions with the Vascular Surgery Specialty Committee of the Royal College of Physicians & Surgeons of Canada (RCPSC).

We continue to build our academic footprint and expand our research contributions which range from animal models of aneurysm pathogenesis, clinical trials and health methodology research, advanced imaging techniques and peripheral arterial disease, and collaborations with mechanical engineering regarding endovascular device development, among many others. The academic year culminates with our annual Research Day and the keynote, K. Wayne Johnston Visiting Lecture.

Our vascular surgery residency program attracts the best candidates across the country who will be tomorrow's leaders in our specialty. We also provide several fellowship opportunities for Canadian and international candidates,

including the newly developed Advanced Aortic Surgery Fellowship, a unique collaborative effort with our Cardiac Surgery colleagues.

As we look to the future, we are uniquely positioned to be a premier vascular unit globally and achieve research discoveries that unlock the mysteries of vascular disease and solve the problems that our patients face. The centralization of academic and research activity at the University of Toronto makes this vision possible. Toronto is the 4th largest city in North America and unlike the larger cities of Mexico City, New York and Los Angeles, has one medical school with a single Vascular Surgery program. Our surgeons treat patients at leading hospitals with top notch facilities, while performing research and teaching in one academic unit at a University that is consistently ranked in the world's top 20.

We are blessed to work with colleagues in the U of T Department of Surgery which has approximately 260 full-time faculty, 50 part-time faculty, 140 adjunct faculty and 40 research scientists located both on campus and at six fully affiliated teaching hospitals and two partially affiliated teaching hospitals. Our department's large faculty contributes extensively to three core missions: excellent clinical care, outstanding research productivity and the delivery of state of the art educational programs under the outstanding leadership of our Department Chair, Dr. James Rutka.

The U of T Division of Vascular Surgery is very proud of our past accomplishments, but we are eager to accomplish even more in the future as we pursue our Vision of – United in a Tradition of Leadership, Discovery and Excellence.

Highlights from the Last Five Years 2014 – 2019

These highlights are expanded upon in subsequent pages but the following is a brief list of the Division's accomplishments and highlights over the last four and a half years.

Strategic Plan

On a cold Saturday in February 2015, 23 enthusiastic surgeons from 5 hospitals came together to discuss our goals, our aspirations and the hurdles that stand in the way. Thanks to Dr. James Rutka, Chair of the Department of Surgery, for kicking off the day and providing some important perspective and guidance. The process would not have been possible without the expertise of David MacCoy of First Leadership Ltd. The resulting strategic plan document is included as Appendix II and is mentioned throughout this report.

City-Wide Privileges

An expedited process was developed with TAHSN and the credentialing offices of the three academic hospitals, permitting vascular surgeons with a primary appointment at one of these hospitals to obtain courtesy privileges at the other two to assist and learn from their colleagues.

City-Wide Rounds

City Wide Rounds are held quarterly and offer an opportunity for vascular surgeons and trainees to come together to discuss various topics and to meet and listen to visiting professors. These rounds are supported by unrestricted educational grants from industry and include several invited guest speakers each year.

International Fellowships

Historically, the international fellowship program was hospital based with each teaching hospital recruiting their own fellow and financing them through different mechanisms. Beginning in the 2015/16 academic year we adopted a model where we have 3 Clinical Fellows, one of which is externally supported. Thanks to the efforts of the Division Heads at the three academic hospitals and our Residency and Fellowship Program Directors, the three Surgeons-in-Chief have contributed significant amounts to the two unsupported clinical fellow positions allowing for small and equal contributions from the three academic enrichment funds to make up the gap. Rather than being based at one hospital, the fellows now rotate equally through the three teaching hospitals.

Advanced Aortic Surgery Fellowship

In collaboration with the Division of Cardiac Surgery, we began offering an Advanced Aortic Surgery Fellowship in July 2016. This two year clinical and research fellowship is open to cardiac and vascular trained surgeons and includes training in open and endovascular surgery for diseases of the thoracoabdominal aorta. This is a unique fellowship that involves the two Divisions (Cardiac Surgery and Vascular Surgery) and Fellows rotate equally among the three academic hospitals.

Research Day

The pinnacle of our academic year is our annual Research Day which is highlighted by our K. Wayne Johnston Lectureship. The stature of this day and quality of the work presented by our faculty and trainees as exponentially grown and as a result of a focused fund raising program, our Research Day will continue to be the highlight of the academic year, for many years to come.

Blair Foundation Innovation Fund

The Blair Foundation enhanced its ongoing commitment to research and development within the Vascular Surgery community through a research fund with The University of Toronto, for a three year term. This Fund supports investigator sponsored research in vascular disease, with recipients subject to internal U of T peer review.

Goerc Scholarships for Residents Enrolled in the Surgeon-Scientist Training Program (SSTP)

The U of T Department of Surgery's Surgeon-Scientist Training Program is a unique program where surgical residents receive top notch research training as they pursue a career as an academic surgeon. In support of these future leaders and academic vascular surgeons we introduced a scholarship program made possible through the generous donation from the estate of Mr. Frank Goerc. These Goerc Scholarships are awarded annually and ensure the continued support of our SSTP residents.

Research Support for New Faculty Recruits:

The University of Toronto's Division of Vascular Surgery had not previously provided Research Support to new recruits within the Division. This

is similar to other Divisions within the Department of Surgery. This changed with our efforts to partner with the University Department, Hospital Divisions, Hospital Research Institutes, Hospital Departments and Surgeons-in-Chief to provide Research Support for early career academic surgeons with full-time academic appointments within the Division of Vascular Surgery at St. Michael's Hospital, Sunnybrook Health Sciences Centre and University Health Network. The terms of Research Support are three (3) years upon initial date of appointment, renewable each year subject to successful completion of the individual's annual review, in which the Division Chair participates. The University Division provides the following Research Support depending on Academic Role Category:

- Surgeon-Scientist \$15,000 per year × 3 years
- Surgeon-Investigator \$10,000 per year × 3 years
- Surgeon-Teacher \$3,000 per year × 3 years

Blair Early Career Professors in Vascular Surgery

The University of Toronto's Division of Vascular Surgery and the Faculty of Medicine's Advancement Office secured a major gift that provides support for early career vascular surgeons and researchers. The Blair Foundation made a commitment of \$2.25 million, over 10 years, to establish three *Blair Early Career Professorships*, one each at Sunnybrook Health Sciences Centre, St. Michael's Hospital and University Health Network. This commitment is in addition to the existing Blair Foundation Innovation Fund, jointly established with the University of Toronto and the U of T Division of Vascular Surgery. Each *Blair Early Career Professorship* provides \$75,000 per year of support for a vascular surgeon and/or researcher within the first 5 years of their careers for a five year term. By making this donation the Blair Foundation continued its tradition of supporting excellence and discovery that advances our vision of becoming the world's premier academic vascular surgery program; the place where the most talented surgeons and researchers want to train and work, and where patients with complex vascular conditions want to be treated.



Al-Omran CAR, March 2017

Advancement & Philanthropy

Report prepared by Faculty of Medicine Advancement Office (see Appendix IV)

Division of Vascular Surgery Fundraising Totals 2012 - Present

FISCAL YEAR	TOTAL REVENUE
2012-2013	\$34,356.01
2013-2014	\$52,207
2014-2015*	\$84,842.97
2015-2016*	\$798,893.06
2016-2017*	\$2,601,733.64
2017-2018*	\$1,705,625.53
2018-2019 (Fiscal year not complete)*	\$276,592.24

*Years under Dr. Forbes' term as Chair of the Division

There has been a significant, sustained increase in fundraising activity and success as illustrated in the above chart, as well as the figure below. Fifty five (55) unique donors to the Division, including industry partners, U of T vascular alumni and faculty, grateful patients, and family foundations, comprise the healthy pipeline of supporters to the Division of Vascular Surgery.

The most significant philanthropic partner of the Division is the Bill and Vicky Blair Foundation, who have committed \$2.25 million over 10 years

to establish three professorships for early-career researchers at Toronto’s three main vascular centres: University Health Network, St. Michael’s Hospital, and Sunnybrook Health Sciences Centre. Never before has the Division received a gift of this amount, nor has there been a program established to support early career faculty, in partnership with three fully-affiliated teaching hospitals at the U of T. A profile was written on this ground-breaking gift in 2017 - Supporting the Next Generation of Vascular Surgeons (medicine.utoronto.ca/news/supporting-next-generation-vascular-surgeons).

This program came as a result of the successful stewardship of the Bill and Vicky Blair Foundation. The Blair Foundation originally made a \$150,000 gift in 2015 to establish the Division’s first ever Innovation Fund. The Innovation Fund facilitated a Division wide call for applications for two annual grants of \$25,000 in support of cutting-edge research and projects being led by faculty of the Division of Vascular Surgery that leverage the power of U of T’s collaborative medical network. A full report on the impact of this partnership can be referenced in Appendix IV – 2017-2018 Impact Report.

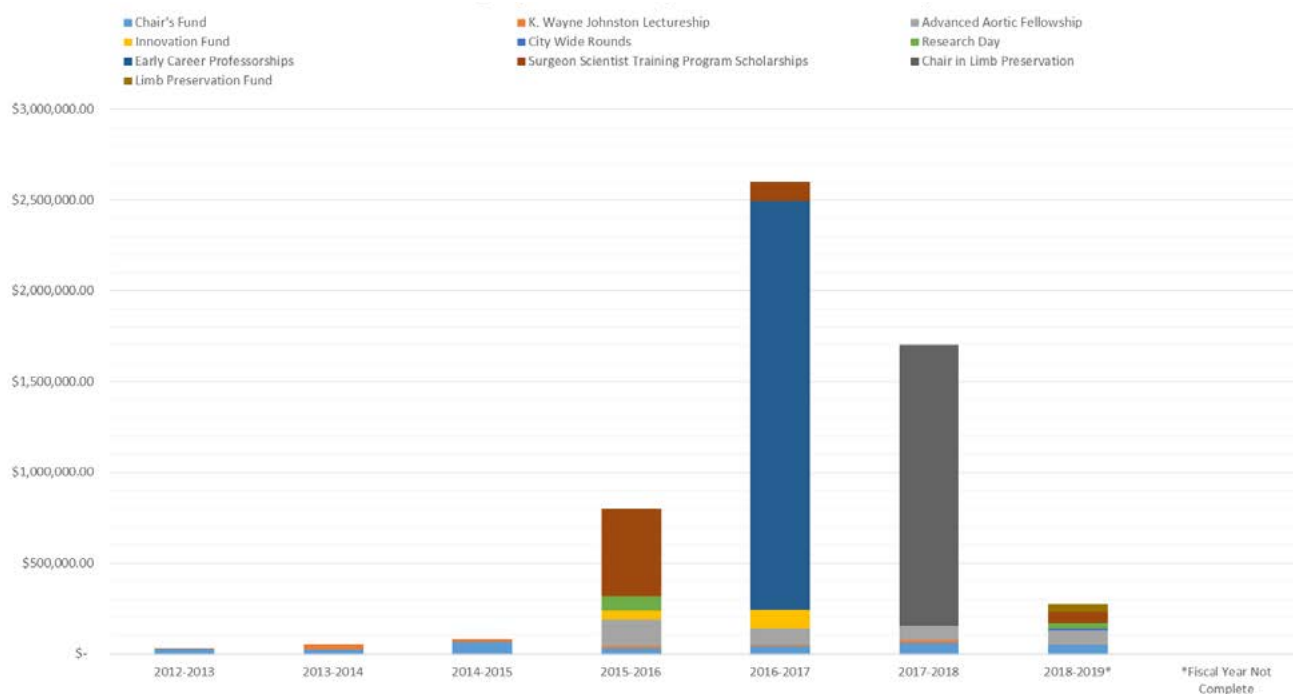
The Division has been a tremendous champion for the Department of Surgery’s top fundraising priority, the Surgeon-Scientist Training Program, establishing his own scholarship to support trainees in the Division, and inspiring other faculty to give, leading to \$110,000 in scholarship for vascular trainees in the program.

The John Ross and Patricia Quigley Chair in Limb Preservation best exemplifies this effort. A 10 year limited term chair was established in 2017-2018 with a \$1.5M gift to recognize top faculty talent to develop the sub-specialty, putting the Division on track to become a leader in field.

In addition to these larger partnerships, the Division has been instrumental in pursuing and securing annual support from industry partners toward the Division’s City-Wide Rounds, Research Day and Advanced Aortic Fellowship; all of which are key components of the Divisions ongoing education, research and clinical activity.

The Division of Vascular Surgery is one of the top performing Division in the Department of Surgery from a fundraising standpoint.

Figure 18.9: Division of Vascular Surgery Philanthropic Revenue Summary: 2012 – Present



Clinical Activity

St. Michael's Hospital

Report provided by Dr. Mohammed Al-Omran – Division Head, St. Michael's Hospital

The Division of Vascular Surgery at St. Michael's Hospital comprises five faculty members at the University of Toronto. Our scope of practice includes, but is not limited to, cerebrovascular disease, thoracic and abdominal aortic occlusive and aneurysmal disease, peripheral artery disease, hemodialysis access, vascular trauma, venous, and lymphatic disease. We have particular expertise in thoracic outlet syndrome, hemodialysis access, wound care with limb salvage, carotid body tumor, vascular trauma and advanced aortic aneurysmal endovascular therapies. We have a very active endovascular program in combination with our interventional radiology colleagues.

We direct a large-volume non-invasive diagnostic vascular laboratory on site at St. Michael's Hospital. The Vascular Laboratory is fully accredited by the Inter-societal Commission for the Accreditation of Vascular Laboratories. As well as providing valuable high-quality diagnostic services, the non-invasive diagnostic blood flow laboratory provides an excellent training environment for students at the Michener Institute as well as for the training of vascular surgery trainees in diagnostic theory and technique.

St. Michael's Hospital Division of Vascular surgery plays a key role in training residents and fellows in vascular surgery. The Vascular Surgery Residency Program is accredited through the Royal College of Physicians and Surgeons of Canada. We also have many international fellows who train with us at St. Michael's Hospital.

In addition to the clinical services we provide, we also have a wide range of research and education endeavors that are active. We have students completing master's and PhD programs as well as many undergraduate research students and postdoctoral fellows playing an active role in our research projects. These include

health services research, economic evaluation, knowledge translation, vascular biology basic and translational research, undergraduate and post-graduate curriculum development, and quality.

Sunnybrook Health Sciences Centre

Report provided by Dr. Andrew Dueck – Division Head, Sunnybrook

In 2014 the division was comprised of 4 full time surgeons. Subsequently, one surgeon retired from operating and call, but continues to be active in clinic, teaching and fundraising. A fifth surgeon was recruited following fellowship training in advanced limb preservation techniques.

Sunnybrook has an active division of vascular surgery that treats the entire spectrum of vascular disease. The divisional resource is comprised of 5 OR blocks per week, and 1.5 days in the cardiac cath lab to perform peripheral interventions per week. Within this envelop, the division does a healthy volume of aortic, peripheral, and carotid interventions. Roughly 30% of operative interventions are done as urgent, unscheduled activity.

Aortic Interventions

The volume of endovascular aneurysm repair is roughly 100 per year, with an additional 40 open aortic procedures. Since 2014, the division implemented a formalized approach to advanced aortic interventions (i.e. thoracoabdominal aortic aneurysm repairs) involving pre-planning and co-treatment of patients in collaboration with cardiac surgery, the CV ICU intensivists, the anaesthesiology team, perfusionists and nursing. This has been effective and Sunnybrook is in the lowest decile for mortality in the NSQIP database for advanced aortic interventions.

Peripheral Arterial Disease

The division performs the majority of percutaneous interventions in the cardiac cath lab, in a room specifically designed for peripheral interventions. There are roughly 275 peripheral interventions per year including iliac, superficial femoral

and tibial interventions. The division performs roughly 150 hybrid or open bypass procedures per year which are done in the operating room.

Carotid Artery Disease

Sunnybrook is a regional stroke centre, and therefore sees a high volume of patients suffering from strokes and TIAs. The division enjoys an excellent relationship with neurology and neurosurgery and does roughly 50-75 carotid interventions as either scheduled or unscheduled activity.

Trauma

Sunnybrook is the largest trauma centre in Canada, and therefore the division is exposed to a high volume of traumatic injury. Roughly 70% of the trauma volume is blunt trauma. The division has a high volume of blunt aortic injury, as well as bleeding and occluded extremity arterial cases. Many of these cases are performed in concert and collaboration with other services, particularly orthopedic surgery and trauma (general) surgery.

Dialysis Access

The division has collaborated with nephrology to create a multidisciplinary dialysis access clinic, attended by vascular surgery, nephrology and nursing. This has improved patient care by streamlining decision making and enabling faster access for patients to operative interventions.

Support for other operative services

Our division offer routine to support to other surgical services including cardiac surgery, the transfemoral aortic valve team, hepatobiliary service for portal reconstructions, urology service for caval reconstructions, otolaryngology for carotid body tumor resections, and general support to all services in the event of bleeding.

University Health Network

Report provided by Dr. Thomas Forbes – Division Head, UHN

The Division of Vascular Surgery at UHN is the largest, single site division in the country. The division is comprised of 6 surgeons who fill on call responsibilities and are clinically active in



Dr. T. Forbes and Dr. J. Rutka at Casa Loma 2017

the operating room, and 3 senior surgeons who contribute more administratively and academically with less clinical activity. Surgical activity is primarily sited at Toronto General Hospital, but the division provides onsite coverage for other hospitals in downtown Toronto including, Hospital for Sick Children, Mount Sinai Hospital, Princess Margaret Cancer Centre, Toronto Western Hospital and Women's College Hospital. There is also a relationship with St. Joseph's Health Centre where hemodialysis access clinics, as well as general vascular surgery clinics, are staffed and surgeons perform regularly scheduled dialysis access procedures. There is a new relationship with North York General Hospital whereby UHN has committed to provide emergency vascular coverage.

Over the last five years the surgical staff has seen some turnover with Dr. Tse moving to a community practice and the recruitment of Drs. Forbes, Byrne and Howe. Dr. Howe is the division's newest recruit and joins Dr. Byrne as a Surgeon-Scientist with three days a week of protected academic time which in her case is dedicated to the pathophysiology of atherosclerosis. Dr. Byrne's academic career explores small animal models of aneurysmal disease and he was recently awarded with the Wylie Scholar Award and became only the 2nd non-U.S. based surgeon to receive this recognition. Coincidentally, the first non-U.S. recipient was our very own Dr. Barry Rubin, currently the Medical Director of the Peter Munk Cardiac Centre at UHN.

As part of the Peter Munk Cardiac Centre our division works very closely with our Cardiology, Interventional Radiology and Cardiac Surgery

colleagues. The main clinical collaboration with Cardiac Surgery and Interventional Radiology is the Advanced Aortic Surgery Program where complex aortic patients are treated in a multidisciplinary environment where all options of therapy, whether it be open or endovascular surgery, are considered and performed. This clinical collaboration is supported and advanced by parallel academic and educational programs including an outcomes and population health research program led by Drs. Thomas Lindsay (Vascular Surgery) and Maral Ouzounian (Cardiac Surgery) and the U of T Advanced Aortic Surgery Fellowship of which UHN is a leading site.

The first graduate of this fellowship, Dr. Jennifer Chung, has joined the UHN Division of Cardiac Surgery, thereby strengthening this relationship. Another major research initiative is the collaboration between our division and the U of T Department of Engineering through the Center for Applied Vascular Engineering. CAVE is led by Drs. Forbes and Cristina Amon (Dean, U of T Engineering) and students and researchers use engineering principles and tools to investigate complex aortic and cardiac problems and medical device development and optimization. In addition, there continues strong working relationships with Interventional Radiology especially in the area of peripheral vascular disease. Both open surgery and peripheral vascular interventions are performed by interventional radiologists and several of the vascular surgeons in dedicated interventional suites and patients continue to be enrolled in the important BEST-CLI trial.

Continuing quality improvement and performance measurement is a priority of our division and the entire UHN Peter Munk Cardiac Centre. Our division was one of the first centers outside of the United States to participate in the Vascular Quality Initiative and we continue to do so. Dr. Graham Roche-Nagle is the lead on our quality initiatives which now includes our northern Ontario community partner, Thunder Bay Regional Health Sciences Centre. The UHN VQI registry is supported by a full time registry coordinator, Naomi Eisenberg. Dr. Roche-Nagle has now extended his leadership in the quality arena by taking on this portfolio nationally with the Canadian Society for Vascular Surgery.

From an education perspective, UHN continues to be a key site for all levels of vascular training at the University of Toronto. There is a steady stream of medical students, residents and fellows and our Program Director, Dr. George Oreopoulos, continues to make good use of the breadth of clinical experience at UHN, as well as opportunities with a newly acquired simulator, to ensure an optimal learning environment. He also leads all postgraduate surgical education at UHN in his role as Postgraduate Education Director.

As with other large, university affiliated, tertiary and quaternary care hospitals, our UHN division faces some challenges in the coming years. These include new structures and strategies to allow the division to prosper in an environment of increasing multi-hospital urgent and emergent commitments, increased complexity and resource intensity of scheduled clinical activity and decreasing numbers of primary vascular procedures which our training programs and clinical practices depend on. New relationships and networks are being developed with these challenges in mind.

Education

Undergraduate Medical Education

Report provided by Dr. Elisa Greco – Director of Undergraduate Medical Education

Undergraduate surgery over the last 5 years has taken on dramatic changes both at the pre-clerk and clerkship level. Prior to 2016, the pre-clerkship curriculum was a series of didactic lectures. Vascular surgery was granted 1 week during the first-year curriculum. The lectures were not standardized yearly, nor were the multiple-choice questions for the examinations. The third-year clerkship curriculum consisted of 8 weeks of surgery – 3 weeks of general surgery, and 2 2-week sub-specialty rotations. Upon Dr. Greco taking over as the Division Director of Undergraduate surgery for Vascular surgery in 2015 many changes were made.



Vascular Anastomoses Day, PGY1 Skills Teaching Session

With respect to the clerkship curriculum, the oral exam questions were re-written and updated. The rotation schedule changed to 3 2-week rotations (general surgery and 1 sub-specialty). We also developed a ‘Guide to Vascular Surgery’ for incoming clerks to our rotation that is available at all the core sites. This guide reviews the pertinent history and physical exam for the vascular patient and some common emergency room consultations. We have also begun developing (and continue to expand) on a surgical clerkship multiple choice question bank. Vascular surgery has had a very large contribution to this process. We have designed the questions in concordance with the University of Toronto MCQ writing standard.

With respect to the pre-clerkship curriculum, most change has occurred here. The University of Toronto had an entire over-haul of the curriculum in 2015 for implementation in the 2016/17 academic year. Dr. Greco had a very large part in shaping the Vascular surgery curriculum these students receive. With this the objectives of Vascular surgery were clearly laid out and updated. The curriculum was divided into ‘blocks’, Vascular surgery fitting into the Heart and Vascular block. This block was divided into 5 weeks, and Vascular had a part in 1 of those weeks shared with Arrhythmia.

Unfortunately, as part of the over-haul, Vascular surgery was now given only 1-1.5 hours of lecture time. It became very challenging to teach vascular surgery and engage the students. In addition, we were tasked at creating content video lectures for the students to watch during their ‘vascular week’. As such, Dr. Wheatcroft and Dr. Greco developed 10 core vascular surgery video lectures reviewing the

topics of aortic disease, peripheral vascular disease, carotid disease, venous insufficiency, and aortic dissection. The lecture has become standardized and case based to engage the students in their learning. In addition, we have developed a bank of MCQs for the pre-clerks as well following the standard MCQ guide for the University. Along with the MCQs, lecture and video, we also re-wrote the history and physical exam guide book (Integrated Clinical Exam course) the clerks received for Vascular Surgery.

Their current guide was written many years ago by a dermatology student. This was updated with history and physical exam information for the different vascular diseases. This was edited by the whole division and all had a chance to input and change what they saw fit. As such, a consensus document of sorts came from this for which the clerks now use. Finally, Problem Based Learning was changed to Case-Based Learning (CBL). A CBL was developed for each week of the pre-clerkship curriculum.

As such, we wrote, in collaboration with cardiology, a case that combined arrhythmia and vascular surgery encompassing many CaNMEDS roles, introducing new concepts, and asking thoughtful questions to the group. We have the opportunity at each site to be the staff lead on this CBL as part of our educational duties to the University. Again, the videos are complementary to the case. We also collaborated with our endocrinology colleagues to include the role of vascular surgery in the treatment of diabetic foot ulcers for the endocrinology CBL.

There are several initiatives that Vascular Surgery continues to be involved. The vascular surgery section of the Toronto Notes continues to be edited by members of our division. The Vascular surgery interest group meetings continue to be supported by the division of Vascular Surgery. In addition, the SEAD (Surgical Exploration and Discovery) Program, and now the new program “the Surgical Session” are fully supported by the Division of Vascular Surgery. Both programs allow first and/or second year medical students to spend a day in the operating room. We encourage all students to shadow and spend time in both clinic and in the operating room on days they have ‘white space’ (academic free time).

Finally, during this time Dr. Greco became the Assistant Director of Undergraduate Surgery for the Department of Surgery at the University level.

Undergraduate surgery has had some radical changes from 2014 to 2019 but Vascular Surgery has been at the forefront of these changes to ensure our curriculum is disseminated.

Vascular Surgery Residency Program

**Report provided by Dr. George Oreopoulos
– Residency Program Director**

a. Transition to Integrated (0+5) Pathway

In 2011, the University of Toronto embarked upon an integrated (0+5) Vascular Surgery Residency Program. Prior to that, the program was focused on (5+2) pathway trainees who had for the most part completed a general surgery residency program. Dr. George Oreopoulos was selected as the inaugural program director after a division wide search for candidates was held in the summer of 2011. The program is currently *fully accredited* by the Royal College of Physicians and Surgeons of Canada with a ‘regular review cycle’ and has also successfully completed a University of Toronto’s Postgraduate Medical Education (PGME) internal review with *no weaknesses identified* (September 2018, Appendix III).

In 2012, the program took in its first PGY-1 residents and for each subsequent year, the program has accepted 2 Canadian Medical Graduates (CMGs) and often has also accepted a sponsored IMG, all at the PGY-1 level. For the first 3 years of the program, transfer residents and 5+2’s were also accepted until such time as our first PGY-1’s had reached a ‘senior’ level (PGY-3). In general, the program has noted a more academically focused set of applicants, most of which have completed multiple vascular surgery electives, and who often have vascular surgery mentors with whom they had completed research projects relevant to vascular surgery. In addition, the program has noted a greater proportion of female trainees applying for and being accepted when compared to the previous paradigm (ie. 6/7 female applicants for 2019 CaRMS application cycle).

Along with this change to accepting beginner surgical trainees, the faculty have had to shift their focus to include teaching directed towards those at a junior level. This includes foundational training on off-service rotations such as: general surgery, thoracic surgery, cardiovascular surgery, critical care, medical subspecialty (CCU, nephrology), wound care, as well as interventional radiology and vascular laboratory (all residents become eligible for RPVI exams) rotations as well as a vascular surgery bootcamp in their first month of residency. PGY-1 and 2 residents participate in the mandatory Royal College of Physician and Surgeons Surgical Foundations Program for which the program director happens to be one of our own Vascular Surgery Faculty (Dr. Mark Wheatcroft). The Surgical Foundations Program has now converted to a Competency by Design (CBD) training model.

b. Expansion of program to include multiple training sites

Previously, Vascular Surgery 5+2 residents only rotated at the Toronto General Hospital and St. Michael’s Hospital sites. With the start of the integrated program in 2011, the program expanded its training sites to include Sunnybrook Health Sciences Centre, Trillium Health Partners (Mississauga), Humber River Regional Hospital, and The Scarborough Hospital. The last 3 sites are community practice settings. Each site has a different case mix, allowing residents to experience the entire breadth of Vascular Surgery including open surgical and endovascular cases (standard and advanced EVAR as well as peripheral intervention).



Vascular Surgery - Residents

Two of these sites (Sunnybrook and St. Michael's Hospital) are Level I adult trauma centres that afford residents the opportunity to participate in the care of patients with vascular injuries. Residents also participate in combined vascular and oncology cases, as well as less common clinical experiences such as Thoracic Outlet Syndrome and Vascular Malformation clinics and operative procedures. Four of the six training sites include exposure to well-developed venous surgical practices. The Program enjoys broad engagement by faculty from across all sites who participate in the academic half day, Residency Program Committee (RPC), CaRMS resident selection, and mentorship of University of Toronto Vascular Surgery residents.

c. Vascular Surgery Residency Program Academic Activities

Most significantly, approximately 1/2 of Vascular Surgery residents from the 0+5 pathway have participated in the University of Toronto's Department of Surgery Surgeon-Scientist Training Program (SSTP). This program is a minimum of 2 years and allows residents to receive research training and complete a graduate thesis and degree (MSc or PhD). Typically, residents enter this training stream lasting for 2-3 years after PGY-2, but a few have entered after PGY-3. Most Vascular Surgery residents complete SSTP training with a PhD. SSTP residents are all supervised by Vascular Surgery faculty members, as well as faculty from other divisions or departments. Residents have completed degrees in Clinical Epidemiology, Engineering, and several are completing degrees in Surgical Education related topics.

In addition to the SSTP, all residents participate in the mandatory academic half-day (Friday mornings) when a 2 year cycle of rotating seminar topics is covered with the aim of preparing residents for their Royal College Vascular Surgery certification exams. Residents receive protected time to attend the academic half day when faculty, fellows, and off-service trainees are left to cover the clinical responsibilities of the vascular service at the different hospital sites.

Beginner Vascular Surgery residents participate in the Department of Surgery's 'bootcamp' followed by

our specialty specific bootcamp when residents are introduced to basic vascular techniques with open surgical and endovascular training models (now including a 3D systems endovascular simulator). The specialty specific bootcamp has been positively reviewed and expanded to be offered at the national level to residents from across the country. In addition to faculty instructors, senior residents participate in peer to peer training which is seen as a critical to the success of the vascular bootcamp.

Residents attend a number of courses and meetings throughout their training including: ATLS, a foundations of clinical research course, The Winnipeg Vascular Meeting, and the Canadian Society for Vascular Surgery (CSVS). Residents are financially supported to attend scientific meetings to which their research has been accepted for presentation. In addition, senior residents are funded to attend a Vascular Surgery review course such as the 'Moore Course' put on by the Society for Vascular Surgery.

Vascular Surgery residents are required to complete a number of assessments during their training including the annual VSite exam, biannual joint OSCE examinations shared with McMaster University's Vascular Surgery Residency Program, CanMeds Portfolio review with PD, Medical Professionalism Essay competition, as well as outpatient clinic, ward collaborator, and in-training evaluation reports (ITERS). This data is reviewed twice per year by the PD with the residents and once per year by the Residency Program's Resident Promotions Committee which is run and chaired by our associate PD (Dr. Vucemelo).

Vascular Surgery residents are each expected to complete a research project and are required to submit their work for presentation at the program's annual Resident Research Day with competitions for best presentations from SSTP and clinical stream residents. Residents are strongly encouraged to attend the Vascular Surgery Division's regular Citywide rounds and are often actively participating in these events with case presentations. Residents also attend their individual hospital site's academic rounds and regularly meet with their assigned faculty mentors.

d. Residency Program Committee (RPC)

The RPC is involved in and accountable for all aspects of program delivery, evaluation, and innovation. The RPC is chaired by the Program Director and has faculty representation from each of our 6 training sites as well as junior, mid, and senior resident representatives who are all active participants on the committee. The RPC meets regularly to review and evaluate program activities and feedback from trainees has resulted in modifications to the curriculum including: selection of specific sites for the best off-service training experiences, alteration of academic half day teaching format, elimination of rotations that were not meeting expectations (ie. interventional cardiology) and the addition of new elective rotations (ie- transplant surgery).

e. Program Successes

Thus far, 100% of our graduating residents have passed their Royal College of Physicians and Surgeons Vascular Surgery certification examination on their first attempt. Almost every one of our residents has successfully completed their RPVI examination either while still in the program, or shortly after graduation. The Vascular Surgery Residency Program at the University of Toronto is the last program in subspecialty surgery where residents can graduate and be employed immediately without having to undergo fellowship training with almost all of our graduates moving on to permanent jobs within 6 months of graduating and a smaller number choosing to do international fellowships in areas that include limb salvage surgery and advanced aortic interventions. A number of University of Toronto Vascular Surgery training program alumni have sought out and hired newer graduates from the program, attesting to the desirability of the training we provide.

f. Future changes

The biggest incoming challenge is the shift to a competency based training paradigm (CBD) as mandated by the Royal College of Physicians and Surgeons of Canada (RCPSC). This is scheduled to occur for our specialty in 2020 and University of Toronto Vascular Surgery Faculty are actively

engaged at the level of the national specialty committee in driving these changes. The committee is currently chaired by Dr. Thomas Lindsay and both the PD (Dr. Oreopoulos) as well as the St. Michael's Hospital Vascular Educational Site lead (Dr. Elisa Greco) are working with the committee to formulate CBD 'entrustable professional activities' (EPAs) and required training experiences (RTEs) according to CBD principles. Residents and faculty already complete CBD evaluations as part of the Surgical Foundations Program and we will be trialing EPAs for residents and faculty as part of a 'soft start' to our CBD transition. The Postgraduate Medical Education office (PGME) has invested in and is building up the IT platform that will be required to track resident evaluations and milestones ('Elentra'), and the RPC has already established the terms of reference for our 'Competency Committee'.

National Vascular Surgery Bootcamp

Report provided by Dr. Mark Wheatcroft – Bootcamp Director

The University of Toronto National Vascular Bootcamp first took place in July 2016 and was the natural extension of the introductory course previously provided only to University of Toronto vascular trainees. The aim of Bootcamp is to provide a comprehensive practical introduction to endovascular and open vascular surgery to new trainees entering at the PGY1 level. All PGY1s in vascular surgery across Canada are eligible to attend. The course runs for 5 full days and provides a low stress learning environment in which to learn and practice skills specific to vascular surgery. A combination of high and low fidelity simulation is used with low ratio supervision by both experienced Faculty and senior residents from the U of T program. Industry support is essential due to the cost nature of much of the equipment that is used, but it is closely regulated by the PD and his staff to ensure the University rules are followed. A course fee is charged to the candidates home program and with educational grant support from industry, the course is run on a not for profit basis. In 2018 we were able to significantly

reduce the course fee due to the financial stability created by the previous 2 year's success.

Topics covered include: How to be a good resident, endovascular equipment, non-invasive vascular imaging, cross-sectional imaging, end to side anastomosis, carotid endarterectomy, EVAR, open AAA repair, SFJ dissection, radiation safety, operation note dictation, trauma and IVC injury, ultrasound guided vessel access, closure devices, peripheral angioplasty and stenting. The course usually has 8 to 10 candidates per year from across Canada. Candidates do a 30 question MCQ exam at the start and finish of the course and they are also formally assessed on performing an end-to-side anastomosis. Throughout the course, candidates are closely observed and given in-the-moment feedback by faculty. As each session is completed it is signed off in their Bootcamp Passports which they are able to keep and submit to their residency program director upon return from the course.

Based on feedback from the candidate's questionnaires, the format of Bootcamp is constantly changing in order to best suit their needs. In the 2018 course a major change was instituted where we began using video seminars to precede each practical session. Videos are provided to candidates ahead of time so they can be viewed outside of course time, thus removing the necessity of having a live seminar at the start of each session. This freed up on average 1 hour per session which could be used for extra hands on practice. This proved extremely popular with the candidates, not least because they can keep the material for future review. Since its inception, Bootcamp has received tremendous support from the entire Division; the Chair of Vascular Surgery, multiple Faculty, residents of all levels and administrative support have been superb, and instrumental to its success. The Division is proud



of Bootcamp's success and strengthening national reputation, supporting its continued important role in training Canada's vascular surgeons.

Research

Research Day (See Appendices V-VIII for programs)

K. Wayne Johnston Lecturer in Vascular Surgery

In recognition of Dr. Johnston's unprecedented contributions to our specialty of Vascular Surgery and the University of Toronto an annual lecture began in his name. Dr. Johnston was a founding member and President of the Canadian Society for Vascular Surgery and later became President of the Society for Vascular Surgery. He is a pre-eminent academic surgeon who served as Editor-in-Chief of the Journal of Vascular Surgery and Co-Editor of two editions of Rutherford's Textbook of Vascular Surgery. No other Canadian, and few internationally, have contributed more to academic vascular surgery than Dr. Johnston. In 2009 he was honored with the Lifetime Achievement Award by the Society for Vascular Surgery. In 2018 Dr. Johnston was honored as a Member of the Order of Canada for his outstanding achievement, dedication to the community and service to the nation.

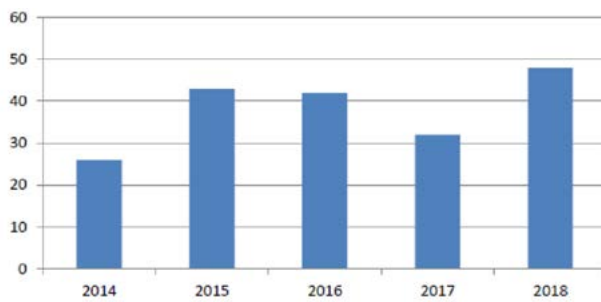
This lectureship was made possible through the generous donations of faculty, students and alumni.

2012	Joseph L. Mills	University of Arizona
2013	Lewis B. Schwartz	University of Chicago
2014	Philip P. Goodney	Dartmouth University
2015	Ronald L. Dalman	Stanford University
2016	Melina R. Kibbe	Northwestern University
2017	Marc Schermerhorn	BIDMC, Harvard University
2018	Julie Freischlag	Wake Forest Baptist Medical Center
2019	A. Ross Naylor	University of Leicester

Blair Foundation Vascular Surgery Innovation Fund

The Blair Foundation has continued its consistent commitment to research and development within the Vascular Surgery community through a research fund with The University of Toronto, for a three year term, with a gift of \$150,000. This commitment established the Blair Foundation Vascular Surgery Innovation Fund at the University of Toronto, which aims to support investigator sponsored research in vascular disease, with recipients subject to internal U of T peer review. The University of Toronto provides the receipt, processing, evaluation and decision-making infrastructure for the Program, and administers the funds to the selected recipient(s).

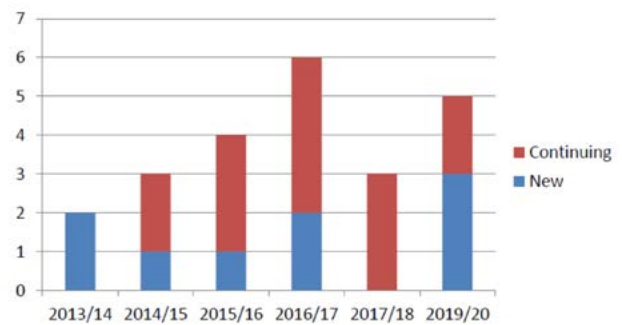
Publications



Surgeon-Scientist Training Program

The Surgeon Scientist Training Program (SSTP) has been vital to establishing the Department of Surgery at the University of Toronto as one of the leading academic Surgery Departments in the world. The SSTP began in 1983 and has trained 410 residents with 300 MSc and 110 Ph.D. students. Vascular Surgery residents enter the SSTP most commonly after their first two years of clinical surgery training and then spend 2-4 years in the SSTP pursuing a Masters or PhD level, thesis based graduate degree. During their graduate studies the residents are required to provide minimal if any clinical support. Funding and salary support during the SSTP program is separate from the resident's usual Ministry of Health funding

Vascular Surgery SSTP Residents



for clinical training, and comes from a variety of sources, the main ones being the Department of Surgery, the supervisor(s), the university division, research awards and external funding sources.

The U of T Division of Vascular Surgery prides itself on developing the next generation of academic leaders and Surgeon-Scientists. Many residents choose our training program specifically for this opportunity. Since we have transitioned to a direct entry residency training model we have seen an exponential increase in the number of vascular surgery residents who have entered the SSTP. This has resulted in financial stresses to both our Division and the Department and, as a result, this has been a major fundraising initiative with several scholarships and funds being developed in support of our residents.

These include:

- Dimitrios Oreopoulos Scholarship
- Goerc Scholarship
- Jim Woodford Scholarship
- TAVS Scholarship

Quality & Best Practices

Report provided by Dr. Graham Roche-Nagle – Quality & Best Practices

At present all 3 core academic sites input data into an international risk-adjusted, outcomes-based program to measure and improve the quality of surgical care with a quality database. Toronto

General Hospital became the first site outside the United States to input data into the Vascular Quality Initiative commencing in August 2010. In 2017 the CVQI a Canadian regional group was formed which includes sites from Ontario, Quebec, Nova Scotia and Alberta. Dr. Graham Roche-Nagle is the lead clinician for the CVQI as well as holding the position of Best Practice & Quality Chair on the Canadian Society for Vascular Surgery Executive. Sunnybrook Hospital have just joined VQI having been entering data into NSQUIP previously. St. Michael's Hospital had been a member of VQI from 2014–2016 but now enter data into NSQUIP. There are monthly Divisional Executive Conference Calls where quality is a standing item. Dr. Joe Papia served as the Best Practice & Quality representative 2014–2017 with Dr. Graham Roche-Nagle taking over in 2018. In addition at the departmental level, quality data is reviewed bimonthly and opportunities for improvement identified and acted upon.

Using data from VQI, Toronto General Hospital has concluded a number of quality projects. These include reduction in the length of stay after endovascular aneurysm repair with a cost saving of 6.6%, decrease in the contrast volume used in endovascular aneurysm repair and investigation of medium-term outcome data on peripheral vascular interventions, risk factor modification and smoking cessation strategies. Furthermore, huge emphasis has been placed on 1-year follow up with rates of > 95% being achieved. All residents in the program need to undertake a quality project in their first year to become acquainted with quality research techniques; testing a new process using the plan, do, study, act method. Quality projects have resulted in multiple national and international presentations and publications. The most pertinent are listed below.

Papadopoulos A, Devries S, Montbriand J, Eisenberg N, de Mestral C, Roche-Nagle G, Unplanned Early Hospital Readmissions in a Vascular Surgery Population. *Can J Surg.* 2019 (In print).

Liao E, Eisenberg N, Kaushal A, Montbriand J, Tan KT, Roche-Nagle G. Utility of the Vascular Quality Initiative in improving quality of care in Canadian patients undergoing vascular surgery. *Can J Surg.* 2019 Feb 1;62(1):66–69

de Mestral C, Salata K, Hussain MA, Kayssi A, Al-Omran M, Roche-Nagle G. Evaluating Quality Metrics and Cost After Discharge: A Population-based Cohort Study of Value in Health Care Following Elective Major Vascular Surgery. *Ann Surg.* 2018 Apr 18.

de Mestral C, Croxford R, Eisenberg N, Roche-Nagle G. The Impact of Compliance with Imaging Follow-up on Mortality After Endovascular Abdominal Aortic Aneurysm Repair: A Population Based Cohort Study. *Eur J Vasc Endovasc Surg.* 2017 Sep;54(3):315–323.

Tao MJ, Montbriand JM, Eisenberg N, Sniderman KW, Roche-Nagle G. Temporary inferior vena cava filter indications, retrieval rates, and follow-up management at a multicenter tertiary care institution. *J Vasc Surg.* 2016 Aug;64(2):430–437.

Kayssi A, de Mestral C, Forbes TL, Roche-Nagle G. Predictors of hospital readmissions after lower extremity amputations in Canada. *J Vasc Surg.* 2016 Mar;63(3):688–95

Faculty Development Strategic Plan

A one-day, Division retreat was conducted at Hart House on the University of Toronto campus on February 28, 2015. Guests included Department of Surgery Chair, Dr. James Rutka, and the retreat was facilitated by David MacCoy of First Leadership Ltd. Twenty-three members of the Division, from 5 hospitals, attended to engage in review and dialogue of the issues and shape a strategic plan for the future. Prior to the retreat interviews had been completed by an external consultant with twelve Division members and an on-line survey engaged twenty-one members. Any strategic process has two key strategic elements: deciding “what to go for” and working out “how best to get there”.

Members worked in facilitated large and small group sessions to identify challenges, key priorities and actions to be taken over the next five years and beyond. Strategic themes and activities were

developed to contribute to the preparation of this plan and move the Division toward the Vision.

New Academic Chairs & Professorships

a. Blair Early Career Professors in Vascular Surgery

The Vicky and Bill Blair Foundation continues its commitment to research and development within the Vascular Surgery community through a Professorship program at The University of Toronto, for a ten year term with an annual donation of \$225,000 (total donation = \$2.25 million). This commitment establishes three (3) Blair Early Career Professors in Vascular Surgery at the University of Toronto, one at each of the three main academic hospitals affiliated with the U of T Division of Vascular Surgery: St. Michaels Hospital, Sunnybrook Health Sciences Centre and University Health Network.

The objective of the Blair Early Career Professor in Vascular Surgery program is to support an individual vascular surgeon or scientist in pursuit of multiyear, longitudinal programs of investigation

with the ultimate goal of advancing long-term health outcomes and quality of life for Canadian patients with vascular disease. The primary focus of the Professorships is to support research in the field of vascular surgery – in the Department of Surgery – at each of the three academic hospitals affiliated with the University of Toronto Division of Vascular Surgery. Professorship recipients are expected to demonstrate improved understanding of the specific research area and/or contribute to improving patient care. Each Professorship provides \$75,000 of support per year for 5 years.

b. J. Ross & Patricia Quigley Chair in Limb Preservation

The J. Ross & Patricia Quigley Chair in Limb Preservation, a limited term chair, is a result of a generous donation in support of the advancement of clinical care, research and education in the prevention, diagnosis and treatment in the area of limb preservation. In aligning with the donor's interests the chair holder is a vascular surgeon at Sunnybrook Health Sciences Centre, with an interest and expertise in limb preservation who is responsible for leading a program that includes affiliated University of Toronto hospitals within the Division of Vascular Surgery.

The Chair funds support the individual chair holder as well as a limb preservation program under his/her direction. The total annual available funds are expected to be \$300,000 in the first year and \$250,000 in subsequent years.

Diversity and Equity

No organization can reach its potential without taking advantage of all of its members, or potential members, contributions and skills. Diversity within an organization has consistently shown to improve decisions, outcomes and overall performance. Besides these practical implications, it's just the right thing to do!

We recognize that diversity and equity goes beyond sex and gender, but in an effort to promote women in vascular surgery we have adopted several plans of action. First of all is recognition

DEPARTMENT OF SURGERY
HARLAND-SMITH LECTURE

PERSONALIZED VASCULAR THERAPY; ARE WE CLOSER THAN WE THINK

BENJAMIN W. STARNES MD, FACS
The Alexander W. Glower MD Endowed Chair in Vascular Surgery
Professor and Chief, Division of Vascular Surgery
Vice Chair, Department of Surgery
University of Washington

LEARNING OBJECTIVES:
At the completion of the talk, participants will be able to:
1. Describe the complexity associated with Fenestrated EVAR
2. Explain how 3-D printing can simplify the FEVAR procedure
3. Understand the long-term durability of FEVAR

FRIDAY, MARCH 2ND, 2018
The Allan Waters Family Auditorium
Li Ka Shing Knowledge Institute
St. Michael's Hospital
7:30-8:30AM

DRS. CARLTON SMITH & RITA HARLAND-SMITH
This lecture was endowed by Professor Emerita Carlton Smith in memory of his wife Rita Harland Smith. Both Drs. Smith and Rita Harland Smith were faculty members of the Department of Anatomy. The goal of the lectureship is to provide an opportunity to reflect on the fundamental relationships between anatomy and surgery.

LIVE WEBCAST LINK:
Join us at <https://zoom.us/j/510837720>

Harland-Smith Lecture Poster, 2018

of the challenges our female surgeons and trainees are confronted with. These include:

- Women are frequently steered towards specialties where “it’s easier to have a family”. These conversations don’t take place as often with men.
- Women are underrepresented in leadership positions, possibly because as they encounter opportunities for career advancement they encounter barriers that aren’t present for their male colleagues.
- Women residents receive fewer opportunities for independent operating than male residents.
- Women residents and surgeons are “not given the benefit of the doubt”. One adverse outcome will disproportionately impact resident evaluations and referral patterns, whereas male residents and surgeons are more apt to be given further chances.
- Women physicians need better representation on selection committees.
- There are biases against women surgeons by some patients.
- Subtle examples of intimidation are common in our everyday interactions. What one group or individual may see as good natured or fun can be seen as spiteful, mean and intimidating by another.
- Women physicians and residents experience the inappropriate sexual language, comments and physical contact that has been widely reported in other industries.

We need to have open and safe conversations about these important issues as our division strives to become a true meritocracy where the best and brightest advance, and all are given similar opportunities, regardless of sex, gender, religion, race, beliefs, background or socioeconomic factors.

Our division has supported several initiatives including Women in Vascular Surgery events and dinners and inviting both male and female speakers as part of our Visiting Professor and K.

Wayne Johnston Lectureship programs. Also, interested faculty and residents have been supported to attend the University of Michigan Women in Surgery Leadership Development Conference. Following the 2017 conference two of our residents, Drs. Gordon and Roy, submitted the following report that was circulated to our division.

Communications

During the last several years a regular communication strategy has been introduced in our Division. Regular newsletter and e-News blasts are sent electronically to trainees, division members and alumni to inform them of important news, events and accomplishments. Examples of these communications are included throughout these pages. Our division’s website has also been updated and is being kept current.

surgery.utoronto.ca/division-vascular-surgery

Our division has also been engaged in social media and has an active [Twitter account](#) with over 2,400 followers!



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**HOSPITAL
REPORTS**

1. MICHAEL GARRON HOSPITAL



Photo: tehn.ca/about-us/redevelopment



Carmine Simone, Surgeon-in-Chief, Michael Garron Hospital

The **Michael Garron Hospital (MGH)**, is a proud member of the Toronto East Health Network. We are amid construction on our new patient-care tower and hospital campus scheduled to be completed by 2021. In 2015, the former Toronto East General Hospital received an unprecedented 50 million dollars from the Michael Garron Foundation, making history as the largest donation ever in Canada to a single community hospital. The re-naming of our hospital did not change our primary focus of being a community hospital providing exceptional care but instead it brought an additional focus of research to our organization and to our Department of Surgery. The new facility, coupled with the MGH commitment to community-based healthcare, will ensure state-of-the-art equipment and patient-centered care

programs. This will enable us to continue to set a new standard in surgical care and surgical education.

Our Department vision is simple. We want MGH to be the best place to work as a community surgeon, the best place for our loved ones and patients to receive surgical care and the best place for our surgical learners to train.

The Department of Surgery at MGH has 4 core divisions, a shared division of critical care and a pediatric dentistry program. The Surgical Health Service completes approximately 11,500 – 12,000 operative cases per Fiscal Year (FY). The Department of Surgery accounts for the largest proportion of cases within the Health Service.



Dr. L. Tate, Dr. M.A. Aarts, Dr. L. Dvali and Dr. L. Erlich (Ophtho) representing MGH in The New Yorker photo challenge in April 2017

Along with the rest of the organization, our Department supports patient safety initiatives such as falls prevention, skin ulcer prevention, ventilator-associated pneumonia prevention and blood borne central line-related infections. Our Department embodies the spirit of “Setting a New Standard” by focusing our scholarly activity to the following areas:

1. Quality integrated surgical care
2. Multidisciplinary oncology care
3. Teaching
4. Innovation in models of care and care delivery

Quality Integrated Surgical Care

Dr. Mary-Anne Aarts is the MGH site lead for BPIGS, which encompasses multiple safety and quality initiatives standardized across the University of Toronto hospitals. Dr. Aarts has been instrumental in launching the Enhanced Recovery after Surgery (ERAS) initiative that improved multidisciplinary care surgical care at MGH and throughout Toronto. This initiative has been successful at TEGH

mainly due to the collaboration between the Departments of Surgery, Anesthesia and Nursing.

Our Division of Orthopedic Surgery sets the standard for fiscally responsible quality patient-focused care. They have successfully reduced the length of stay (LOS) for post-operative patients by standardizing surgical care, postoperative care plans and engaging the entire multiprofessional team. Our Division of Orthopedic surgery has been recognized for outstanding work in reducing the length of hospital stay of total knee arthroplasty patients at MGH and have presented their outcomes at the Quality Improvement and Patient Safety Forum (October 23, 2017) and at the Health Quality Transformation (October 24, 2017).

IDEAS presentation of TEGH multidisciplinary transition plan for our post-operative hip fracture patients.

The Head of the Division of Orthopedic Surgery transitioned from **Dr. Peter Weiler** to **Dr. Paul Wong** in 2017. Dr. Weiler continues to lead the group in resident education as evidenced by Teaching Effectiveness Scores (TES). Dr. Wong is working to develop new programs such as novel surgical approaches to hip replacement and same-day discharge after joint replacement. **Dr. William Kraemer** continues to grow our

We reviewed transitions to external rehab (Bridgepoint & Providence) for the fractured hip patient at TEGH

Authors: Jane Harwood, Manager Inpatient Surgery TEGH; Charissa Levy, Executive Director GTA Rehab Network; Mandy Lau, Flow Coordinator Providence Healthcare & Jackie Eli Clinical Director, Rehabilitative Care Program, Bridgepoint Health

Author Organization : Toronto East General Hospital in collaboration with Bridgepoint Health and Providence Healthcare



Improving & Driving Excellence Across Sectors

Summary

The overall objective for TEGH was to reduce both LOS and ALC days for our fractured hip population. Our goal was to improve patient flow from acute care to inpatient rehab at 2 of our main partners; Bridgepoint and Providence. Specifically, we focused on implementing activities that support Health Quality Ontario's fractured hip recommendations that patients should receive active rehabilitation in a post acute setting commencing by day 6 post-surgery.

Aim

Decrease the current average ALC days for TEGH fractured hip patients referred to Providence and Bridgepoint from 4.42 days to 3 days by October 1, 2014.

We utilized the QI tools by first mapping out the current state for the patient transition from acute care to a rehabilitation bed and overall length of stay. Once we had a clear picture of current state we were able to complete a gap analysis using the fishbone tool and completing a driver diagram. The group was able to assess areas of improvement and come to consensus on tackling the ALC wait time between transitions as reducing ALC waits improves flow and coordination on the acute side along with increasing or maintaining patient satisfaction.

Change Ideas

The goal of the early referral was to enable a faster response and bed offer resulting in discharge to rehab when patient medically stable; reducing the ALC days.

Acute care initiates an early referral (complete premonitory functional status, social, medical including operative information) day 1 post op. Early transition processes implemented in Rehab/LTLD (reviewing 7 offering bed within 24 hours.

Test of Change (PDSA) Initiated

Monitored Performance Indicators: Average Length of stay (acute care), # of ALC days (acute care), number and percentage of patients that could have had a weekend admission if rehab set up for admissions.

Reviewed results and made modifications (communication focus) and started PDSA cycle 2.

Measures

The following measures were established as part of the evaluation for each PDSA cycle for the early referral process:

- **Process Measures:** % of total fractured hip patients that have a referral sent to Providence and/or Bridgepoint day 1 postop
- % of patients transferred to Bridgepoint/ Providence once designated medically stable.
- **Outcome Measures:** Average total of ALC days to external rehab (goal: 3 days) for Bridgepoint and Providence
- **Balance Measures:** % of patients readmitted back to acute care/ ER post d/c from Providence or Bridgepoint within 30 days post op.
- % of patients that expressed satisfaction with their transition to rehabilitation facilities from TEGH
- Clinical outcomes following inpatient rehab stay and average length of stay (rehab/LTLD)

Results During IDEAS

TEGH Hip Fracture Patients Post Early Referral - March & April 2014

This graph represents the impact of changes at overall total length of stay and ALC for all patients. Overall AIM was to reduce overall total average length of stay from 7 days acute, 3.5 days ALC (10.5) to 6 days acute, 1.8 days ALC (7.8) by focusing on improving transition times to rehab by Dec. 2015.

Results Post Day 9

Introduced initiative to include internal rehab partners at TEGH under the same model of early referral. Promising results as of June - August 2014 ALC LOS 0 - 1 days. Providence results: Pre 6.8 days post 2.7 days ALC; Bridgepoint Pre: 4.6 days Post 1.20 days

Charts

Early Referral PDSA Cycles 1, 2 & 3: Data for April-August 2014

This graph represents the impact of changes at overall total length of stay and ALC for all patients. Overall AIM was to reduce overall total average length of stay from 7 days acute, 3.5 days ALC (10.5) to 6 days acute, 1.8 days ALC (7.8) by focusing on improving transition times to rehab by Dec. 2015.

LOS Report: Hip Fracture

This graph represents the impact of changes at overall total length of stay and ALC for all patients. Overall AIM was to reduce overall total average length of stay from 7 days acute, 3.5 days ALC (10.5) to 6 days acute, 1.8 days ALC (7.8) by focusing on improving transition times to rehab by Dec. 2015.

Organizational Enablers

- Time commitment to this project, course work while balancing regular work duties
- Data collection
 - Standing data collection period = quarterly
 - Manual pulling of data
- RM&B platform or data not available once patient is admitted
 - Need to obtain charts from health records and manually record data and "time stamps" of process

Sustainability

Stakeholder engagement is key to sustaining the gains we have made so we have plans to host ongoing sessions with Providence, Bridgepoint and TEGH staff.

Communication is at the core to any successful collaboration and sustainability; the group plans on continued dialogue regarding future opportunities and process gaps.

We continue to send post op day 1 across all three facilities and have experienced success but have had a high number of more complex non weight bearing patients.

Spread

As a part of our collaboration with the GTA Rehab Network through the Joint Acute Care and Rehab Cross Sector Hip Fracture Group the plan is to translate the learning's across the Toronto Central LHIN. The introductory meeting occurred October 17, 2014.

We initiated the same model of early referral with our internal TEGH rehab partners with similar success to date. Pre implementation 2.8 days ALC and post results 1 day.

Lessons Learned

- Data Matters! Projects gain more credibility with the reliability of data resulting in increased stakeholder engagement
- Collaboration and relationships are foundational to any change initiative and its sustainability
- Teams must be willing to fail, learn, fail again and improve along the way
- Change improvements can not be "person dependent"; they need to be entrenched in the key processes.
- Importance of integrating learning into practice
- Small, incremental changes can make a big difference
- Communication is key

Contact

Name: Jane Harwood
Title: Manager Inpatient Surgery Organization:
Toronto East General Hospital Email:
jharw@tegh.on.ca

www.ideasontario.ca

spinal surgery program and **Dr. Jihad Abouali** is growing our Sports Medicine practice. Our newest member of the Division of Orthopaedic Surgery, **Dr. Dmitry Tsvetkof**, joined us in July 2017.

The Head of Division of General and Thoracic Surgery transitioned from **Dr. Paul Bernick** to **Dr. Hany Sawires** in 2017. Dr. Bernick continues to be a leader in education in General Surgery evidenced by his profile in the Department of Family Medicine Annual Review in 2018. Dr. Sawires leads the growth of our multidisciplinary Breast Diagnostic Clinic (BDC). The clinic focuses on breast cancer diagnosis and treatment as well as welcoming patients with any and all breast health concerns. We welcomed **Dr. Caileigh Pilmer**, a GP-oncologist, in 2018 to our Breast Diagnostic Clinic, broadening our list of services provided to women in our BDC.

The Department of Surgery's thoracic surgery team (**Dr. Robert Zeldin**, **Dr. Carmine Simone**,

Dr. Simon Iu, **Dr. Sayf Gazala** and **Dr. Najib Safieddine**) is one of three Level 1 thoracic surgery programs in Toronto. The MGH thoracic surgeons and the Division of Respiriology have launched Toronto's first multidisciplinary **Chest Centre** which will serve as a "one-stop shop" for patients with any thoracic or respiratory health problem.

Dr. Sayf Gazala joined the Thoracic Surgery team at MGH in 2017 and brings further expertise in minimally invasive techniques. The thoracic surgery team has joined the National Positive Deviance Initiative by participating in the University of Ottawa outcomes database. This initiative aims at improving the national reporting of complications and facilitates the development of quality improvement projects throughout the country.

Dr. J. Cyriac and **Dr. M.A. Aarts** lead our Bariatric Surgery Program which is now reaching out to primary care to transition post operative follow up into the community.

Our Department is committed to supporting multidisciplinary surgical care to our community and strives to expand our services to include areas of specialization not otherwise offered at MGH. Our partnership with Sunnybrook Health Sciences Centre continues to grow and will expand to include:

1. Robotic Urology Surgery program;
2. Cardiac Surgery as part of our comprehensive cardiology program;
3. Radiation Oncology (credentialed through Department of Surgery) as part of our thoracic, breast, colon and prostate oncology programs.
4. Vascular surgery for our Vascular Access/Nephrology Clinic in the Dialysis Clinic;

Multidisciplinary Surgical Oncology

We continue to work with our partners at the Odette Cancer Centre (Sunnybrook Health Sciences Centre), the RS McLaughlin Regional Cancer Centre (Lakeridge Health) and the Simcoe Muskoka Regional Cancer Centre (Royal Victoria Hospital) to strengthen our partnerships to provide full-spectrum care to patients in Northeast Toronto and in the Barrie area. Our surgical oncology program continues to be a major focus for our Department. We are proud to represent our organization at Cancer Care Ontario (CCO) and have representation on several quality improvement committees in areas such as Lung Cancer, Esophageal Cancer, Prostate



Cancer, Colon Cancer and Palliative Care. MGH surgeons are participating in CCO working groups developing quality standards for Endoscopy (**Dr. C. Simone**), Lung Cancer Screening (**Dr. R. Zeldin**), Lung Cancer Treatment (**Dr. N. Safieddine, Dr. C. Simone**) and Prostate Biopsy (**Dr. R. Singal**).

The Thoracic Surgery program continues to be a major oncology focus for the organization. With strong collaborations with our Division of Medical Oncology and Respiriology, and our partnerships with Odette Cancer Centre, North York General Hospital, Royal Victoria Hospital and the University of Toronto Division of Thoracic Surgery, the MGH Thoracic Surgery Program is recognized as a shining example of collaborative, multidisciplinary, inter-hospital care providing exceptional service to the one of the largest geographic areas in the province.

Teaching

The MGH Department of Surgery is still one of the most popular Departments for learners and is recognized within the University of Toronto as a leader in surgical education. The Department accepts medical students, surgical residents, family medicine residents, internal medicine residents, and surgical fellows from within Canada and internationally.

The Department TES for residents has been higher than the University mean since 2013. Every year at least one of our surgeons have achieved the highest University TES within their respective Division. Of note, the Division of Orthopedics was the highest ranked division by orthopedic surgery trainees at the University of Toronto twice in the last 5 years.

The MGH **Department of Anesthesia and Pain Management** has established a core thoracic anesthesia rotation for PGY5 anesthesia residents that serves as an example of the collaborative spirit of our Health Service members.

Dr. Atul Kesarwani is involved in the Aesthetic Surgery Resident Teaching Program was invited as a visiting professor at the University of Rochester Medical Centre for facial plastic surgery (Nov 2016). **Dr. Jamie Cyriac** sits on the Postgraduate



Dr. R. Zeldin, Dr. Ornstein (Obs/Gyn), Dr. D. Lam (Anesthesia), Dr. R. Singal with the OR team in Kenya

Education Committee for General Surgery, **Dr. Paul Wong** sits on the Postgraduate Resident Committee for Orthopedics and **Dr. Najib Safieddine** sits on the Postgraduate Education Committee for Thoracic Surgery. **Dr. Brett Beber** is the Resident Wellness Director at the University of Toronto Division of Plastic Surgery. **Dr. Rajiv Singal** leads the fellowship in Endourology and GU MIS. **Dr. P. Bernick** leads the fellowship in Community General Surgery and **Dr. Jihad Abouali** was awarded a MGH Collaborative Education Research Grant. **Dr. Linda Dvali** received the Arnis Freiberg Faculty Teaching Award for outstanding contributions to Plastic Surgery Resident Education. **Dr. R. Zeldin** was a visiting professor at Mt. Sinai Medical System, St. Luke's Hospital, New York, NY (May 2017).

Dr. R. Singal has spent significant time working in Malawi, Kenya and Uganda to explore and develop programs enhancing surgical safety throughout Africa. Dr. Singal has established the Urology Global Health Fund at the University of Toronto to support and expand the urology training program in Zomba, Malawi, which he also helped create. In 2018, a team of MGH surgeons, nurses and anesthesiologists traveled to Kenya and now Dr. Singal is expanding his focus to include quality improvement in all surgical subspecialties.

Dr. N. Safieddine has been instrumental in the creation of the Surgery Quality Improvement Curriculum that has become an important addition to surgical residency training at the University of Toronto.

Innovation

Dr. R. Singal live-tweeted a robotic-assisted prostatectomy and continues to lead our Department in social media influence, which has heightened our profile. He has successfully co-ordinated case reviews, journal club discussions and topic reviews on Twitter.



We are expanding our telemedicine focus. We have been participating in Ontario Telehealth Network (OTN) clinics, like many centers, for several years. We have successfully launched Personal Computer Video Conferencing (PCVC) which enable the physician to be anywhere while the patient still registers at OTN clinics. We have now embarked on eVisits through the OTNHub that is completely secure 2-way video conferencing enabling patients and physicians to meet from anywhere.



Hon. Deb Matthews at Toronto East General's (now MGH) SurgiCentre, recognized as innovative, groundbreaking and patient-centered

We have re-located the endoscopy, bronchoscopy, cystoscopy and minor surgery suites to a large dedicated space creating a self-contained "surgicentre". This was a combined effort from Departments of Surgery, Medicine, Anesthesia and Nursing. As a result, we have been able to maximize efficiency in staff and equipment thereby driving down our costs and making a "one-stop shop" for patients in our community. Our efforts were recognized by the MOHLTC as "innovative and groundbreaking".

I am very grateful to have the opportunity to outline the accomplishments of our Department and I am looking forward to working with all our University colleagues and partners in the future.

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2. MOUNT SINAI HOSPITAL



Photo: Courtesy of Department of Medicine



Jay Wunder, Surgeon-in-Chief, Mount Sinai Hospital

The Department of Surgery at Mount Sinai Hospital has continued to be a leader in health care, clinical and translational research, and education in our unique programs as judged by the annual divisional reports documenting publications, grants, invited lectureships and awards. We have a core group of clinician scientists whose research is integrated between the hospital and the Lunenfeld-Tanenbaum Research Institute in support of translational research with the goal of improving patient outcomes. The educational experience at a the hospital is supported by having both the University of Toronto Surgical Skills Lab and it's Director at Mount Sinai Hospital, and this has led to improved skills acquisition and clinical competence of our trainees through development of novel models of education.

We are in the midst of a major multi-year structural renovation project throughout the hospital which will update a multitude of clinical program spaces. A new although temporary elective outpatient surgery department just opened. However on a much larger scale, an entirely new perioperative area is currently being built which will include 19 new operating rooms including an integrated guided therapeutics (GTx) suite, a new PACU with space for a block program, a new patient and family-centered area for same day surgical admissions as well as a family waiting area, and new shared space for all the clinical staff and as well as a new Medical Device Reprocessing Department (MDRD). This will not only modernize surgical services but will also allow expansion of our core surgical programs.

Although we have developed and grown a very strong surgical oncology presence at Mount Sinai Hospital, the medical oncology program has not kept pace and there are limited support programs for cancer patients. With senior executive team sponsorship we coordinated an internal followed by an external review of our cancer services by internationally recognized reviewers and received very positive recommendations. As a result the senior executive team approved that the hospital move forward with development of an integrated cancer program supporting both medical and surgical oncology and aimed at improving patient outcomes and the patient and family experience.

In a similar fashion, we have an academically very strong group of colorectal surgeons focusing largely on Inflammatory Bowel Disease (IBD) and a well known IBD-focused gastroenterology group. However the program is fragmented and lacking in resources, which if rectified could improve outcomes and the patient experience. This group recently also completed an external review and received strong recommendations for change that have been endorsed by the senior leadership team and if enacted could lead to better coordination and provision of services and improve the academic standing and output of this group.

Highlights Over the Past 5 Years

General Surgery

New recruits

1. Sav Brar – surgical oncologist, specializing in the management of patients with retroperitoneal sarcoma, colorectal cancer and gastric cancer. Sav co-hosted the My Gut Feeling Conference of the Stomach Cancer Foundation of Canada at Mount Sinai Hospital in 2018 as part of his role in promoting the gastric surgery program at the hospital. Sav was Chair of the Competency Committee for the General Surgery Residency Program in the Department of Surgery at the University of Toronto, and was recently appointed as the Residency Program Director. Sav is a PI

and Collaborator on 2 grants investigating health-related quality of life in patients with retroperitoneal sarcoma. He received the Colapinto Teaching Award from the University Division of General Surgery.

2. Mantaj Brar – colorectal surgeon recruited from the University of Calgary and specializing in Inflammatory Bowel Disease, minimally invasive procedures including total mesorectal excision (TME) for colorectal cancer, as well as epidemiology and health economics. Mantaj introduced the technique of minimally-invasive transanal excision of early rectal neoplasms using the TEMS platform to the hospital.

3. Anthony de Buck – colorectal surgeon recruited from Brussels, Belgium and specializing in Inflammatory Bowel Disease and colorectal cancer with a special interest in developing new laparoscopically assisted surgical techniques. During his first year in Toronto he completed a Masters in Clinical Epidemiology through IHPME at the University of Toronto which will help him in development of future clinical trials in IBD.

Carol Swallow is both Division Head of General Surgery at Mount Sinai Hospital, and the Bernard & Ryna Langer Chair of the Division of General Surgery, Department of Surgery, University of Toronto. She was elected to the American College of Surgeons Board of Governors and received the Charles Tator Surgeon Scientist Mentoring Award. She is known to be an excellent educator for all levels of trainees including at the graduate level, and her students have won awards for research presentations at multiple national and international meetings.

Rebecca Gladdy was promoted to Associate Professor. She is a surgeon-scientist who runs her own translational molecular biology laboratory focusing on sarcoma. She recently published an important research paper in *Oncogene* identifying therapeutic pathways in rhabdomyosarcoma using transgenic mouse tumor models, and received a Clinical Investigator Award from the Society of Surgical Oncology. She is part of multiple grants including a \$1.5M grant related to development of precision treatment protocols for patients with sarcoma and received a major CIHR grant this year to investigate the genetics of leiomyosarcoma.

Rebecca was twice recognized with an Outstanding Teacher Award by the Surgical Oncology Fellowship Program. Rebecca is founder of the highly successful Toronto International Sarcoma Symposium (TISS), co-founder of the Canadian Sarcoma Research and Clinical Collaborative (CanSarCC), and co-chair of the International Trans-Atlantic Retroperitoneal Sarcoma Working Group.

Andrea McCart is Director of the Ontario Peritoneal Malignancy/HIPEC (hyperthermic intraperitoneal chemotherapy) Program which she initiated at Mount Sinai Hospital and which serves the entire province of Ontario. She continues to run a translational research laboratory focusing on oncolytic viruses and is part of number of large collaborative research grants from CCSRI and Prostate Canada as well as the Terry Fox Foundation. Andrea is also Director of Research for the Division of General Surgery at the University of Toronto.

Alexandra Easson had a stellar year with 5 publications including two important senior author papers, one related to her interest in palliative care in surgical oncology and another about the very important topic of surgeon gender and patient preferences. She is a collaborator on 2 CIHR grants and 3 additional internal grants/clinical trials. Alexandra received a Wightman-Berris Academy Undergraduate Teaching Award, and as a result of all of these efforts was promoted to Associate Professor.

Rob Gryfe was awarded an internal Doctors of Cancer Surgery Innovation Fund Grant (Princess Margaret Cancer Centre) for investigation of the role of genetics in colon cancer.

Anand Govindarajan was promoted to Associate Professor and was awarded the B. Langer Surgeon Scientist Award. He recently became the Clinical Project Lead for the Survivorship Care Improvement Project at Cancer Care Ontario. Anand had two publications in the *New England Journal of Medicine*: he was co-author on Introduction of surgical safety checklists in Ontario, Canada, and first author on Outcomes of Daytime Procedures Performed by Attending Surgeons after Night Work. He holds a number of grants supporting investigations into Prehabilitation for Surgical Oncology Patients, and imaging techniques to

determine operability for HIPEC. Anand is Vice Chair of the Board of Examiners in General Surgical Oncology for the Royal College of Physicians and Surgeons of Canada, and Research Director for the General Surgical Oncology Fellowship Program at the University of Toronto.

Erin Kennedy was promoted to Associate Professor as a result of her incredible accomplishments. She and her colleagues implemented a physician assistant program at Mount Sinai Hospital to improve inpatient care in response to concerns related to resident workload and rotation dissatisfaction. The positive results of this program were published in the *Journal of the American Academy of PAs*, and demonstrated reduced resident workload and improved rotation satisfaction and patient care. As an example of her academic productivity, in just the past year she was awarded 2 CIHR grants, one as a PI, another as a Co-Investigator, and is also part of 3 additional CIHR grants. One CIHR grant for which she is PI is investigating a mobile iPhone app to help reduce readmissions following colorectal surgery. Erin is also the CCO GI Cancer Lead, and sits on the American Society of Colon and Rectal Surgeons (ASCRS) Rectal Cancer Coordinating Committee, as well as the Canadian Partnership Against Cancer (CPAC) Standards Committee. Erin is also the NSQIP lead at Mount Sinai Hospital.

Helen MacRae is the Program Director for the Colorectal Residency Program at the University of Toronto, Vice Chair of the Royal College of Physicians and Surgeons of Canada Colorectal Surgery Examination Board, as well as Clerkship Director at Mount Sinai Hospital. Helen developed the Technical Skills Curriculum for the American College of Surgeons (ACS), is a surveyor and reviewer for ACS, and sits on the ACS committee for Professional Activities for Retired Surgeons.

Zane Cohen retired from clinical practice and leads The Zane Cohen Centre for Digestive Diseases which is a clinical research facility, internationally acclaimed as a leader in the understanding and treatment of gastrointestinal diseases. The Centre's research focus is to determine the causes of hereditary familial cancers and Inflammatory Bowel Diseases (Ulcerative Colitis and Crohn's), with an emphasis on their genetic preconditions.

The unit has a collaborative team structure consisting of gastroenterologists, surgeons, psychiatrists, psychologists, pathologists, radiologists, molecular geneticists, genetic counsellors, epidemiologists, pediatricians and IT specialists.

Robin McLeod also retired from clinical practice and moved to Cancer Care Ontario as the VP of Clinical Programs and Quality Initiatives. She continues to run the hugely successful Best Practices in General Surgery (BPigs) program which is world renowned. She was elected President of the American Surgical Association, and received the Lavina Lickley Lifetime Achievement Award from the Department of Surgery. Robin was also awarded the College of Physicians and Surgeons of Ontario (CPSO) Council Award for excellence which characterizes the society's vision of an ideal physician.

Orthopaedic Surgery

New Recruits



1. Jesse Wolfstadt – orthopaedic surgeon specializing in trauma and lower extremity reconstruction, especially complex primary and revision knee arthroplasty. Jesse has

a major clinical and research interest in quality improvement and patient safety. He has already been successful in being awarded grant funding from the Orthopaedic Trauma Society (OTA) for a randomized clinical trial comparing open reduction and internal fixation vs distal femoral replacement for elderly distal femur fractures. Jesse also developed and implemented a standardized pathway for outpatient ambulatory fracture patients which has been very successful in preventing unnecessary hospital admissions and reducing trauma length of stays. The results of this successful program were recently published in the *Journal of Bone and Joint Surgery*.

2. Adele Changoor BSc, MSc, PhD earned her Bachelor of Science in Engineering and Masters of Science in Engineering from the University of Guelph, as well as her Ph.D. in Biomedical Engineering from École Polytechnique Montréal. She runs the orthopaedics biomechanics lab at

Mount Sinai Hospital/ Lunenfeld-Tanenbaum Research Institute and was appointed as an Assistant Professor in the Department of Surgery at the University of Toronto.

David Backstein is the orthopaedic division head. He helped implement a novel and successful Integrated Hip Fracture Inpatient Co-Management Model together with hospitalists that was associated with reduced length of stay, costs, time to surgery, and increased initiation of appropriate osteoporosis treatment. The positive results of this process improvement were published in the *Journal of Orthopaedic Trauma*. David secured a major donation for the division which has been rebranded as the Gluskin Granovsky Division of Orthopaedics. This will facilitate research, education and capital development. He initiated a successful outpatient day surgery program for total hip and knee arthroplasty patients at Women's College Hospital, and received a Distinguished Educator Award at Sinai Health System. David was also selected as a member in the prestigious American Association of Hip and Knee Surgeons.

Oleg Safir is the director of the University of Toronto Surgical Skills Center at Mount Sinai Hospital, which was chosen to receive an ASPIRE award for excellence in medical education by the International Association for Medical Education. Under Oleg's leadership the Skills Center successfully underwent re-accreditation by the American College of Surgeons. Oleg was also promoted to Associate Professor in the Department of Surgery at the University of Toronto. He received an Award for Excellence in Postgraduate Medical Education in the category of Development and Innovation for development of the Orthopaedic Boot Camp for training early year residents. This program has now been rolled out across the university in all surgical disciplines and is being modelled by many orthopaedic programs across the globe.

Paul Kuzyk received the Junior Faculty Research Award at the Annual Orthopaedic Research Day at the University of Toronto. This stems from his early career year over year accomplishments in both trauma and arthroplasty in terms of teaching, publications, research supervision and grant attraction. He initiated the young

adult hip preservation clinic, the femoral head osteochondral allograft program, and played an important role in development of the same day hip arthroplasty program at Women's College Hospital. He is already an associate editor for the Journal of Orthopaedic Trauma.

Allan Gross remains active in the division in patient care, education and research. He continues to be sought after as an educator and lecturer nationally and internationally. He is Chairman of Intellijoint Surgical, a Canadian-owned company which has developed an easy to use and practical navigation platform for improving outcomes for patients undergoing total hip arthroplasty.



Peter Ferguson became the Albert and Temmy Latner Chair, Division of Orthopaedic Surgery in the Department of Surgery, University of Toronto and just completed a very successful

5 year external review. Peter was also promoted to Professor. Peter was largely responsible for establishment of the Competency Based Curriculum (CBC) within the Orthopaedic Residency Program, that has gained international recognition and has formed the basis for the Royal College of Physicians and Surgeons of Canada's Competency by Design project. He also received the 2015 Royal College of Physicians and Surgeons of Canada AMS Donald R. Wilson Award for integrating CanMEDs roles into the orthopaedic residency training program.

Jay Wunder was reappointed as Surgeon-in-Chief. He secured a \$1.5M research grant from the Carlo Fidani Foundation together with Rebecca Gladdy and Irene Andrulis PhD to support Personalized Precision Medical Treatment for Patients with Soft Tissue Sarcoma. He was President of the Connective Tissue Oncology Society, the foremost international research, educational and clinical care society for patients with sarcoma and related diseases.

Urology

Our small urology group of 3 surgeon investigators working in the areas of male infertility and oncology have consistently been academic superstars year over year. Over the past year they published 30 peer reviewed papers and were awarded 12 peer reviewed research grants.

Keith Jarvi also holds a patent for a genetic marker to differentiate between different types of male infertility which was recently licensed to an American as well as a Chinese Laboratory Diagnostics Company. Keith is the Editor on the Canadian Urology Association Journal.

Kirk Lo was Vice President and then President of the American Society of Andrology, as well as President of the Society for the Study of Male Reproduction. One of his CIHR grants is developing a mobile app for fertility patients. He is an Editorial Board Member for the journal Nature – Scientific Reports.

Alex Zlotta's research has led to two particularly important publications, one in JNCI identifying Kallikrein-6 as a marker for aggressive prostate cancer, and the other in JCO showing that trimodality therapy for bladder cancer allows for bladder preservation instead of radical cystectomy. Alex was awarded a University of Toronto Division of Urology Faculty Postgraduate Teaching Award as well as the European Association of Urology's Platinum Award.

3. NORTH YORK GENERAL HOSPITAL



Photo: nygh.on.ca



Lloyd C. Smith, Surgeon-in-Chief, North York General Hospital

The past five years have been very good for the Department of Surgery at North York General Hospital. The volume of emergency cases has continually gone up. North York General is heavily invested in the Acute Care model of care for looking after these urgent cases. We have dedicated acute care services in General Surgery, Orthopedics, Plastic Surgery and Urology. This includes protected daytime OR time in each of these

areas. This model of care provides better access for our patients and improved surgical care. The acute care service in Urology is the first in Canada.

At NYGH we have worked very hard on keeping our surgical wait times low. Since 2012 we have been the provincial leaders in wait times for hip and knee replacement and cancer surgery. In 2018/19 North York General was once again given

the awards by Cancer Care Ontario for best wait times for wait 2 (decision to treat to surgery) for the sixth year in a row, and for wait 1 (referral to consult) for the fourth year in a row. We have also been able to operate on greater than 96% of our hip fractures within 48 hrs. We have been the provincial leaders in this for more than 5 years.

The number of learners in the Department of Surgery has been steadily increasing over the past 5 years. We currently get residents regularly in General Surgery and Plastic Surgery. We have also been getting many students on elective from the University of Toronto and other Universities. We have made an effort to keep fellows out in order to avoid interference with our residents learning.



The Department of Surgery at NYGH is heavily invested in multidisciplinary approaches to care. We have created three Integrated Care Collaboratives (ICC's) to promote interdisciplinary care and improve quality. We have ICC's for Breast Cancer, Colorectal Cancer, and Total Joint Assessment.

The Department of Surgery at North York General is also involved in many other quality initiatives. We were an early participant in NSQIP and have had many successful quality projects as a result of this. We were the second hospital in Canada to start using the "Black Box" to improve quality and safety in our operating rooms.

Overall the last five years have been challenging but very good for our Surgical Department. We look forward to the next five years and the new challenges that they will bring.

4. ST. JOSEPH'S, UNITY HEALTH TORONTO



Photo: en.wikipedia.org/wiki/St._Joseph%27s_Health_Centre



Christopher Compeau, Surgeon-in-Chief, St. Joseph's Health Centre

Within the University of Toronto surgical community St. Joseph's Health Centre has a strong reputation for both clinical excellence as well as being an outstanding site for undergraduate, graduate and post-graduate surgical education. This recognition applies to the breadth of all our surgical subspecialties including our surgical priority programs (hepatobiliary, thoracic surgery, bariatrics, upper extremity surgery and arthroplasties). Several of our surgeons have held 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. Chris Compeau – Chair, Examination Committee Thoracic Surgery, Royal College of Physicians and Surgeons; Dr. Kyle Wanzel – Program Director, Plastic Surgery, U of T; Dr. Shiva Jayaraman – Program Director, Canadian Surgery Forum). Several of our surgeons have also received both hospital and University awards in recognition of teaching excellence.


Over the past five years 5 of our surgeons were promoted to the level of Associate Professor at the University of Toronto (Dr. Tom Harmantas (General Surgery), Dr. Shiva Jayaraman (General Surgery), Dr. Kyle Wanzel (Plastic Surgery), Dr. Andres Gantous (Otolaryngology), and Dr. Amr El Maraghy (Orthopedic Surgery). Three surgeons were hired to replace retirees (Dr. Melanie Tsang (General and HPB Surgery), Dr. Victoria Cheung (Thoracic Surgery), and Dr. Hanmu Yu (Urology)) and bring to our department clinical expertise and an enthusiasm to teach.

A significant event affecting St. Joseph's Health Centre over this time frame was the merger between St. Joe's, St. Michael's Hospital and Providence Healthcare. Although the surgical programs currently maintain autonomy the potential for clinical integration and collaboration within this new network is exciting.

DIVISION HEADS

General Surgery	Paul Sullivan
Thoracic Surgery	Michael Ko
Orthopedic Surgery	George Vincent
Plastic Surgery	Craig Fielding
Urology	Ashis Chawla
Otolaryngology	Andres Gantous

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MISSION AND VALUES

Across three centuries, Providence, St. Joseph's and St. Michael's have been committed to fulfilling our tradition of compassionate quality care instilled in us by our founders, the Sisters of St. Joseph of Toronto.



Our mission describes our core role, who we serve and for what purpose. It's why we are here. Our core values guide the actions of employees, physicians, volunteers and learners in our goal of providing care to everyone with respect, compassion and dignity.

The mission and values are foundational to how our teams work together to deliver high quality care to all in need. They are embedded in processes for hiring and onboarding staff; in our decision-making and strategy deployment; and in how we communicate with, recognize and celebrate each other.

OUR MISSION:

Unity Health Toronto is a Catholic health care organization providing compassionate physical, emotional and spiritual care to all in need. We advance excellence in health care through world-class education, research and innovation.

OUR VALUES:

Human Dignity: We affirm that every person has sacred value and is worthy of respect.

Compassion: We enable health and healing by understanding each person's needs and by providing care with kindness and sensitivity.

Excellence: We strive to achieve the best care and quality through innovation and continuous improvement.

Community: Together we embrace diversity, trust and teamwork to fulfill human potential.

Inclusivity: We foster an inclusive, welcoming environment where everyone is treated equitably and without judgement.

OUR VISION:

The best care experiences. Created together.

5. ST. MICHAEL'S, UNITY HEALTH TORONTO

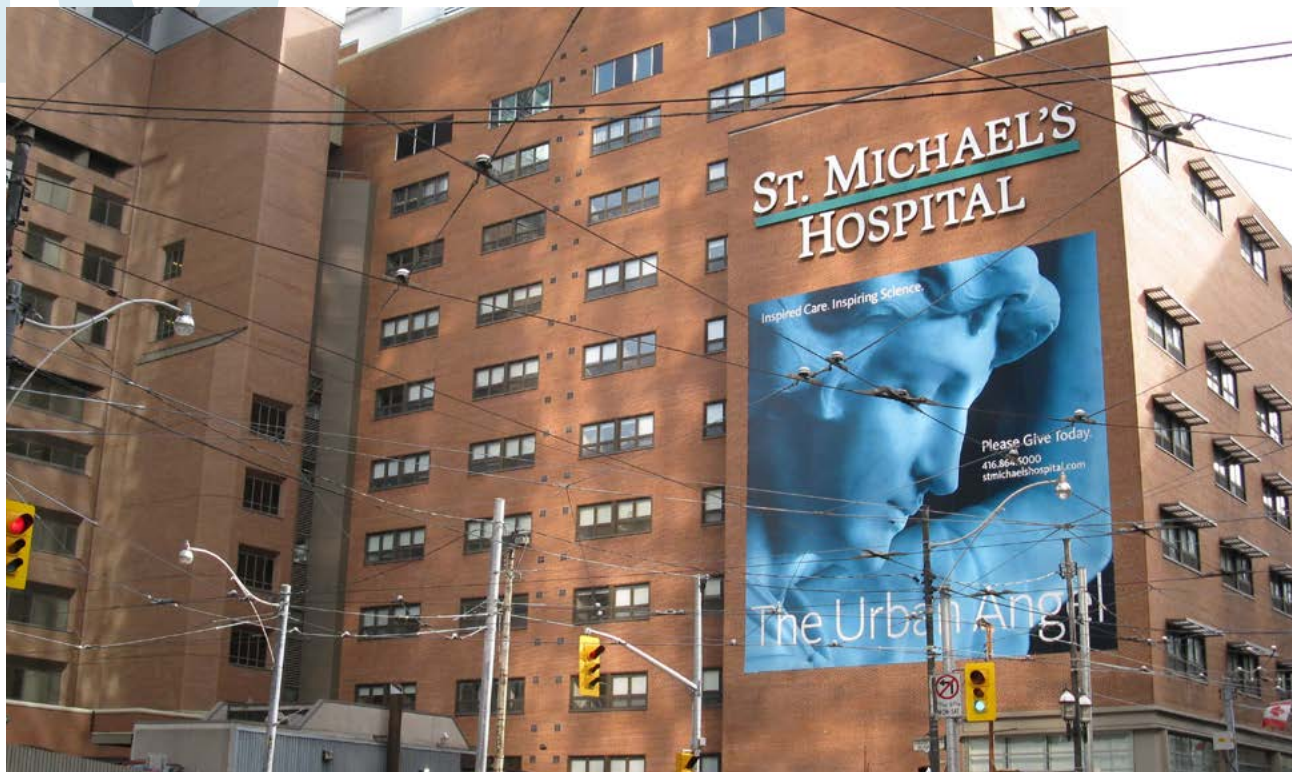


Photo: Geo Swan via Wikimedia Commons



Ori Rotstein, Surgeon-in-Chief, Unity Health Toronto

St Michael's Hospital (SMH) is a fully-affiliated hospital of the University of Toronto. It is a downtown hospital and Tier 1 provincial trauma centre with 486 in-patient beds, averaging 75,000 emergency room visits per year, and in excess of 15,000 inpatient surgical procedures. There are currently 15 Core OR's and 6 ambulatory ORs.

In August 2017, St. Michael's Hospital (SMH) merged with St. Joseph's Hospital (SJH) and Providence Healthcare (PHC) to become the new Unity Health Toronto. The Departments of

Surgery at SMH and SJH remain separate as there are currently no common programs between the two sites. Provincial centers for Hepatobiliary pancreatic and thoracic surgery located at St. Joseph's Hospital are strongly collaboration with St. Michael's Hospital. St. Michael's currently has 7 Divisions, Cardiovascular Surgery, General Surgery (includes Trauma and Thoracic), Neurosurgery, Orthopedic Surgery, Plastic Surgery, Urology and Vascular Surgery. We currently have 48 surgeons, 13 surgeon-scientists (27%), 16 surgeon-investigators (33%), and 19 surgeon-teachers

(40%). This matrix of faculty allows us to be a highly productive and vibrant Surgical Department with varying degrees of surgical expertise.

It is important to note that Otolaryngology, Ophthalmology, Obstetrics/Gynecology are separate surgical departments.

In 2014 St. Michael's embarked on a series of projects that would transform care at the hospital, including a 17 story patient care tower that would include 5 new state-of-the-art hybrid operating rooms. A renovated emergency room and several upgrades to improve the existing envelope.

In 2017 St. Michael's Hospital, Providence Healthcare and St. Joseph's Hospital join the Unity Health Toronto network. The goal of having three health care facilities under one network allows for quality patient care.

St. Michael's Hospital, Department of Surgery Leadership

- **Dr. Najma Ahmed:** Interim, Surgeon in Chief (Position previously held by Dr. Ori Rotstein: 2004- 2019)
- **Dr. Ken Pace:** Vice, Surgeon-in-Chief
- **Division of Cardiac Surgery:** Dr. David Latter
- **Division of General Surgery:** Dr. Nancy Baxter (end Aug 30, 2019) (Dr. Jory Simpson effective Sep 1, 2019)
- **Division of Neurosurgery:** Dr. Julian Spears
- **Division of Orthopedic Surgery:** Dr. Tim Daniels
- **Division of Plastic Surgery:** Dr. James Mahoney
- **Division of Urology:** Dr. Ken Pace
- **Division of Vascular Surgery:** Dr. Mohammed Al-Omran

Many members of the St. Michael's Department of Surgery hold various leadership positions at the hospital and the University.

- Dr. Earl Bogoch (O/S): Medical Director, Mobility Program, St. Michael's Hospital
- Dr. James Mahoney(P/S): Medical Director, Perioperative Services, St. Michael's Hospital
- Dr. Ken Pace (U/S): President, Medical Staff Association, St. Michael's Hospital

- Dr. Ralph George (G/S): Director, CIBC Breast Centre
- Dr. Sandro Rizoli (G/S): Director of Trauma (end Jan '19)
- Dr. Bernard Lawless (G/S): Interim, Director of Trauma (international search underway)
- Dr. Bobby Yanagawa (C/S): Program Director, Division of Cardiac Surgery, University of Toronto
- Dr. Robert Stewart(U/S): Program Director, Division of Urology, University of Toronto
- Dr. Julian Spears (N/S): Associate Program Director, Division of Neurosurgery, University of Toronto
- Dr. Najma Ahmed (G/S) V: Vice Chair of Education, Department of Surgery, University of Toronto (previous Program Director, Division of General Surgery, University of Toronto)
- Dr. Ori Rotstein (G/S): Associate Chair, Department of Surgery, University of Toronto Vice President, Research & Innovation, Unity Health Toronto
- Dr. David Latter (C/S): Head, Medical School Admissions, University of Toronto
- Dr. Andras Kapus (Res): Associate Vice-chair of Research, Department of Surgery, University of Toronto
- Dr. John Bohnen (G/S): Vice Dean of Clinical Affairs, Faculty of Medicine, University of Toronto

Clinical Activity

Division of Cardiac Surgery

Members:

- Head, Dr. David Latter
- Dr. Daniel Bonneau
- Dr. Mark Peterson
- Dr. Bobby Yanagawa (Recruit 2015)
- Dr. Subodh Verma

During the past five years, the division's OR cases and hours numbers have grown. Peaking 1300 cases and >4800 hours in FY19. Currently there are five attending cardiac surgeons. The divisional surgical activity involved the treatment of coronary artery disease and valvular disease. There

is expertise in mitral valve disease, particularly using mitral valve repair rather than placement. The recruitment of Dr. Mark Peterson (2007) had profound influence on divisional clinical activities, and in particular augmented the activity in minimally invasive cardiac surgery. With Dr. David Latter and in collaboration with cardiology, the institution developed a percutaneous aortic valve program. This program has grown considerably with support from government and the hospital; perform 72 TAVI cases in FY14 and increasing to 185 in FY 19. With cardiology as lead, the division is also part of a program in mitral valve clipping. 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.

Division of Vascular Surgery

Members:

- Head, Dr. Mohammed Al-Omran
- Dr. Charles de Mestral(recruit 2017)
- Dr. Elisa Greco(recruit 2015)
- Dr. Mohammed Qadura(Recruit 2016)
- Dr. Mark Wheacroft

With retirement/departures (Drs.Tanner, Campbell, Moloney) and recruitment (Greco, Qadura, de Mestral) in the past 5 years, the composition of this division has changed entirely since 2004. All new faculty were recruited through international searches. Obviously, these changes represent a considerable flux in the manpower of the division over the past 5 years. This has been particularly stressful for the junior surgeons who were starting their first faculty position. With the additions of Drs. Greco, Qadura and de Mestral to establish themselves alongside Drs. Al-Omran and Wheatcroft, it is felt that the Division is right-sized at present. Care delivery focuses across the range of vascular diseases, both open and endovascular, the latter in collaboration of the Department of Medical Imaging. The number of cases and hours has diminished over the past 5 years. This is attributable to a number of factors including departure/retirement of busy clinical surgeons, the change in practice towards more interventional approaches and the change in referral patterns for vascular surgery cases in the GTA and

surrounding area. Endovascular aortic surgery (EVAR) has reduced significantly at St. Michael's over the past ten years from 117 cases in FY09 to 70 cases in FY15, down to 53 cases in FY19. The levelling 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 scope of practice includes, but is not limited to, cerebrovascular disease, thoracic and abdominal aortic occlusive and aneurysmal disease, peripheral artery disease, hemodialysis access, vascular trauma, venous, and lymphatic disease. There is particular expertise in thoracic outlet syndrome, hemodialysis access, wound care with limb salvage, carotid body tumour, vascular trauma and advanced aortic aneurysmal endovascular therapies.

The Division directs a large-volume non-invasive diagnostic vascular laboratory on site at St. Michael's. the Vascular Laboratory is fully accredited by the Inter-societal Commission for the Accreditation of Vascular Laboratories. As well as providing valuable high-quality diagnostic services, the non-invasive diagnostic blood flow laboratory provides an excellent training environment for students at the Michener Institute and for the training of vascular surgery trainees in diagnostic theory and technique.

Division of General Surgery

Members:

- Head, Dr. Nancy Baxter
- Dr. Najma Ahmed
- Dr. John Bohnen
- Dr. Sandra de Montbrun
- Dr. Ralph George
- Dr. David Gomez (Recruit 2018)
- Dr. Teodor Grantcharov
- Dr. Bernard Lawless
- Dr. John Marshall
- Dr. Joao Rezende
- Dr. Ori Rotstein
- Dr. Adena Scheer (Recruit 2014)
- Dr. Jory Simpson

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.

Trauma and Acute Care Surgery Services (TACS): St. Michael's Hospital is a level 1 Provincial Trauma Centre sharing trauma call with Sunnybrook Hospital. While the Trauma Program per se is not formally under the auspices of General Surgery, the cadre of dedicated trauma surgeons reside within the Division of General Surgery. The services of Trauma and Acute Care Surgery (TACS) are very much integrated into the General Surgery activity including OR resource, recruitment, allocation of TACS rotations, sharing of faculty. In FY14, we received 541 Level 1 trauma cases (ISS>16) rising to 620 in FY19. With the increased density of population and change in epidemiology in trauma etiology in Toronto, it is anticipated that trauma numbers will increase over the next few years. It is noteworthy that the Director of Trauma, Dr. Sandro Rizoli, a member of the Division of General Surgery, departed in January 2019 to direct the national trauma centre in Doha, Qatar. He has been replaced as Trauma Director on an interim basis by Dr. Bernard Lawless until a search is completed for a new Director.

Over the past decade, 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 sites) meets quarterly and is committed to continued efforts to harmonize activity.

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. Over the past 5 years, there has been some change in personnel due to departures, retirements, and focused recruitment. Dr. David Gomez was recruited in 2017 and both Drs. John Marshall and Ori Rotstein have stopped attending on this service. This has resulted in a shortage of manpower in this area, with only 4 full time faculty surgeons (Drs. Lawless, Ahmed, de Rezende and Gomez). A search is currently underway for a director, as well as a new trauma member. 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 inpatient services has progressively increased, reflecting the increasing numbers of patients evaluated in our Emergency Department and either admitted directly to the ACS service or to the General Medicine service.

Promotion of Surgical Oncology: The Division has focused its oncology efforts in two areas; Breast cancer surgery, colorectal surgery and Foregut. It is noteworthy that hepatobiliary pancreatic and thoracic surgery, are not electively performed at St. Michael's, but with the merger with St. Joseph's Hospital we have access to these two provincial programs. Since 2005, delivery of cancer care at St. Michael's as an integrated service required partnering with external institution, most notably with our neighbouring cancer centre, Princess Margaret Hospital, to ensure expert and timely access to radiation oncology.

Breast Cancer Surgery: Over the past decade, 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 oncologist with expertise and interest in breast cancer. Dr. Jory Simpson joined the faculty in 2013 and Dr. Adena Scheer in 2014. Dr. Scheer is also trained in oncoplastic surgery. With have seen an increase in breast cancer surgery at the Institution with or without reconstruction, 435 in FY15 to 477 in FY19.

Colorectal Cancer Surgery: With the recruitment of Dr. Sandra de Montbrun in 2012, we now have three colorectal surgeons on faculty providing both laparoscopic and open approaches to surgery. The focus of this care is on the treatment of rectal cancers, with approximately half of the cases being rectal cancers. We have leading expertise in transanal excision of rectal cancers with over 10 years of experience with the Transanal Endoscopic Microsurgery (TEMS) platform. The colorectal group is moving toward the implementation of taTME– surgeons have been trained in this technique and a mentorship program has been initiated. The group is a city-wide leader in Non-Operative Management of Rectal Cancer– we have an open Phase II trial recruitment these patients, and have a multidisciplinary approach to management of NOM patients with Radiation and Medical Oncology. The service is assisted by a part time navigator who helps with our rapid referral program the ‘CRC-STAT’ program, from our broad network of family practitioners. There is considerable competition for colorectal cases in Toronto and we must strive to maintain/grown our case volumes.

Gastrointestinal Minimally Invasive Surgery including Bariatric Surgery: Over the past five years, the division has evolved its expertise in advanced MIS procedures. The two bariatric surgeons, Drs. Grantcharov and Rotstein have spearheaded the program since 2010, performing 145–159 cases per year over the past 5 years. While we were initially part of the University of Toronto Collaborative, as a surgical site receiving patients from the assessment centre at the Toronto Western Hospital, we have now evolved to a telemedicine-based referral system with patients referred from assessment centres in Windsor, Kingston, Sudbury and previously Thunder Bay. We have been approved to open a Bariatric Assessment Centre in collaboration with St. Joseph’s Hospital and Michael Garron Hospital to service the surgical needs for bariatric surgery in the downtown core of Toronto. This centre will be located at Providence Healthcare, part of the Unity Health Toronto and will open in October 2019. In addition to providing high quality patient care, this program has provided an excellent educational opportunity especially with respect to developing advanced laparoscopic skills.

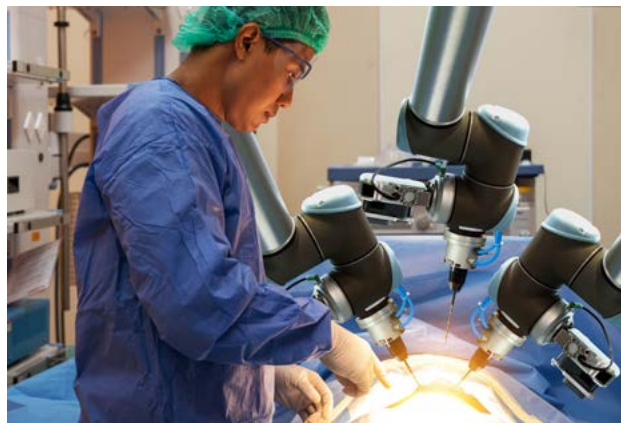
Division of Urology

Members:

- Head, Dr. Ken Pace
- Dr. Monica Farcas (Recruit 2018)
- Dr. Michael Ordon
- Dr. Robert Stewart

The Division has expertise in endourology/ stone disease, renal transplantation as well as a lesser focus on genitourinary oncology. The Division had a manpower issue with the departure of Dr. Jason Lee to the University Health Network to become the Director of Robotics and Simulation and the leave of absence of Dr. Robert Stewart. These departures/reductions has now been balanced by the permanent recruitment of Dr. Monica Farcas.

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 has afforded our faculty an opportunity to gain clinical expertise as well as investigative renown in this area.



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, it is used by urology as well as the Department of Obstetrics and Gynecology. In FY17, we performed 136 robotic procedures. While most centers, use the robot to do prostate cancer surgery, ours is unique in that 25% of our cases are performed on benign disease of the renal pelvis, usually particularly ureteral and ureteropelvic strictures. Only 15% of cases were for prostate cancer.

Renal Transplantation: The 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 as living donor transplantation in a ratio of approximately 70:30. Our surgeons perform laparoscopic organ retrieval in our living donor program. Two points are noteworthy- 1. In FY14 there was a marked shift from deceased donor to living donor; 2. In FY19, there was a marked reduction in total cases performed. We attribute this to reduced deceased donor availability, workload issues in the division reducing our on call nights and finally, cutbacks in our operating room availability due to hospital fiscal constraints.

Division of Plastic Surgery

Members:

- Head, Dr. James Mahoney
- Dr. Karen Cross (Recruit 2015)
- Dr. Melinda Musgrave
- Dr. Blake Murphy (Recruit 2019)

This is our smallest Division with four full-time faculty, with the recent recruitment being Dr. Blake Murphy (2019). Dr. Murphy does general plastic surgery but has interest and expertise in breast reconstruction as well as facial fracture care. The clinical expertise of the Division is in the area of general plastic surgery, breast reconstruction, and wound care.

Complex Wound Care: Under the direction of 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 has augmented the clinical care provided by the service. She has a spin-off company called MIMOSA which features an innovative device aimed at measuring blood flow patterns in healing wounds.

Breast Reconstruction: With the recruitment of Dr. Blake Murphy, the divisional work in

this area focuses on the use of implants and oncoplasty for breast reconstruction.

Division of Neurosurgery

Members:

- Head, Dr. Julian Spears
- Dr. Michael Cusimano
- Dr. Sunit Das
- Dr. Howard Ginsberg
- Dr. Richard Perrin
- Dr. Jefferson Wilson (Recruit 2016)
- Dr. Christopher Witiw (recruit 2019)

The Division of Neurosurgery has three areas of expertise, namely neuro-oncology, neurovascular disease and spine. The Division has selectively recruited in these areas to augment its capabilities. Most recently, two neurosurgeons with expertise in spine surgery (Wilson, Witiw) have been recruited to compliment the clinical activity of Dr. Howard Ginsberg and Dr. Henry Ahn (Orthopaedic –spine surgeon).

Neuro-oncology: Neuro-oncology is an active participant in the delivery of neuro-oncologic care in the province. As a major referral centre for brain tumours, the Division has progressively increased its annual surgical oncology numbers from 330 in FY05 to 360 in FY09, and to 430 cases in FY 2014, resulting in approximately a 20% increase. The referral networks have changed in the past 5 years, with less direct practitioner to practitioner referral and more system-based rotation of referrals. The vast majority of these are brain cancers, with additional lesser numbers of spine tumours.

Spine Program: The spine program at St. Michael's Hospital is comprised of four subspecialty spine surgeons, providing comprehensive surgical management of a full range of pathological conditions affecting the spine. These include traumatic injury, tumours, degenerative conditions, deformity and infections. The program is at the cutting edge of intra-operative imaging, incorporating 3-D navigation and intra-operative ultrasound to enhance patient safety and optimize outcomes. Furthermore, the program offers the most up to date minimally invasive surgical approaches to the spine. These serve to decrease

post-operative pain, reduce hospital length of stay and lessen the risk of complications.

Neurovascular Program: The Neurovascular Program at St. Michael's Hospital is considered the benchmark for collaborative care between the Division of Neurosurgery and the Department of Medical Imaging. This program continues to manage approximately 300 subarachnoid hemorrhages per year. It continues to lead in the Province of Ontario and Canada in its ability to treat complex cerebral aneurysms. The program treats approximately 180 cerebral aneurysms per year. This represents a considerable increase in the number of aneurysms performed previously of aneurysms that underwent endovascular repair, 60 in 2006; 120 in FY09, 170 in FY14, in addition to carotid revascularization, AVM embolization and allied cerebrovascular pathologies. This program has proven to be a model for collaborative interactions between surgery and medical imaging. One example of this collaboration is the Code ELVIS (Endovascular Large Vessel Ischemic Stroke) which brings into play rapid early assessment of stroke patients and direct transfer for care in the neuroangiography suite.

This program benefits from an international reputation and receives 2-3 fellows per year from all over the world, who seek minimally invasive cerebrovascular neurosurgery training.

The program is very active in the management of stroke prevention and acute stroke thrombectomy. Its Acute Carotid Clinic (ACC), originally supported by the Ministry of Health Innovation Grant, has proved to be a great success and continues to significantly reduce the burden of stroke in the Province of Ontario, by triaging and treating patients rapidly with severe carotid artery atherosclerosis.

Division of Orthopaedic Surgery

Members:

- Head, Dr. Tim Daniels
- Dr. Henry Ahn
- Dr. Amit Atrey (recruit 2017)
- Dr. Earl Bogoch
- Dr. Jeremy Hall

- Dr. Amir Khoshbin (recruit 2017)
- Dr. Aaron Nauth
- Dr. Daniel Whelan
- Dr. Sarah Ward (recruit 2016)
- Dr. James Waddell

The Division of Orthopaedic Surgery at St. Michael's has both depth and breadth of orthopedic expertise with 10 surgeons, three of whom have additional expertise in Trauma/fracture. Most of the orthopaedic cases are now volume-based or QBP-funded: Hip/Knee Arthroplasty, Foot and Ankle, Spine and Upper Extremity. This provincial approach to Orthopaedic care has helped decrease the wait times for surgery, all the while ensuring that appropriate hospital resources are directed to Orthopaedic care.



Hip and Knee Arthroplasty: Four of the surgeons have defined expertise in hip and knee arthroplasty, three of whom were recruited since 2015 (Drs. Ward, Atrey, Khoshbin). Of note, Dr. Khoshbin returned from his fellowship with expertise in 'anterior' approach to hip replacement, making St. Michael's one of two centres in the GTA offering this surgery. 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.

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 this service.

Sports Medicine and Complex Upper Extremity Surgery: Dr. Jeremy Hall and Dr. Aaron Nauth have assumed care of the majority of patients with orthopaedic upper extremity issues, previously shared by Dr. Michael McKee who moved to Banner- University Medical Centre and the College of Medicine as the Chief of Surgery in July 2017. The sports medicine component of this program is headed by Dr. Daniel Whelan and is integrated with the broader University of Toronto effort centred at Women's College Hospital.

Trauma: All members of the Division are active participants in the Trauma program, but Drs. Hall, Khoshbin, and Nauth have been specially trained in this area, including complex pelvic fracture reconstruction. 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 also coordinated the development of a multidisciplinary team to deal with major knee disruptions.

Education

The Department of Surgery at St. Michael's Hospital has an Education Council that meets regularly to monitor the quality of education, coordinate the teaching activities of the Department and to address any issues should they arise. Teaching Effectiveness Scores are reviewed on a regular basis along with the briefings that are conducted at arm's length by the Department of Surgery Education Coordinator. When problems are identified one or more of the council members are tasked with addressing the problem. These may include private meetings with individual teachers with recommendation for improvement, including attendance at workshops to improve the skill set of individuals with consistently low TES. The data is also discussed with the 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 Division. The Education Council also coordinates the Faculty Development Events. These events are typically over dinner with a guest speaker(s) on various subjects pertaining to physician/learner success in an academic setting.



Learning initiatives: Under the direction of Dr. Robert Stewart's leadership, our department augmented the regular University of Toronto UG curriculum with a number of other opportunities for students with the view of these might bring the surgical experience closer to the learner, hopefully making it less intimidating and more fun.

These include:

Pizza with the Professor Rounds: 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 of 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. The presentations are 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 of 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. Insights from these discussion are brought to our Education Council in the Department of Surgery for discussion and action as appropriate.

Popular Science: These lecture series is one which is inaugurated by Dr. Rotstein and has been a very successful endeavor 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.

Patient as Teacher: This is a new program developed by Dr. Jory Simpson integrating humanistic and patient-centered approaches into undergraduate surgical education. Previous patients volunteer their time to share their experiences and insights with third year medical students. The students learn about the surgical journey from the perspectives of patients through interactive workshops.

Faculty Development Evenings 2014-2019

May 29, 2017

An evening with Larry Rosen from Harry Rosen and Darren Mason from Andrews to discuss the Important of the first impression and how to present yourself for success

May 6, 2019

- Achieving Excellence in Undergraduate Surgical Education.
- Dr. Jory Simpson- Tips & tricks for Top Teaching
- Dr. Mara Goldstein- Generational Differences in Learners
- Dr. Dan Cojocaru- Stepping Out of the Shadow: A Pre-Clerkship Educational Initiative
- Dr. Jeremy Hall- How are We doing? How To Do Better?

There have been a number of other activities in which surgeons have been supported with a 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.

Research Activity

The Li Ka Shing Knowledge Institute (LKSKI) opened in the fall of 2010. The two tower centre

houses a basic science research centre in the west tower (now called the Keenan Research Centre for Biomedical Research) 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 atmosphere around research at the Institution has definitely aided in the recruitment of high level clinician-scientists to the Department.

Research Chairs and Professorships

Research chairs and professorships are essential to support a thriving academic mission. They provide critical support in the way of salary support and therefore time protection, but the discretionary monies provided are vital to fund nascent/early research projects. They bring exceptional profile to the individual and the Department. During the past 5 years, our Department has held 9 Chairs and 3 Professorships. Dr. Subodh Verma holds a Tier 1 Canada Research Chair.

Chairs: Endowed and Term 2014-2019

C/S	Dr. Subodh Verma	Canada Research Chair in Knowledge Translation and Quality of Care – Tier I
G/S	Dr. Teodor Grantcharov	Canada Research Chair in Simulation and Surgical Safety Keenan Chair in Surgery
G/S	Dr. Teodor Grantcharov	Canada Research Chair in Simulation and Surgical Safety
G/S	Dr. Ori Rotstein	Keenan Chair in Research Leadership
G/S	Dr. Sandra de Montbrun	Rae Early Career Professorship in Colorectal Surgery
G/S	Dr. Adena Scheer	Rae Early Career Professorship in Breast Cancer Decision Tool Development
O/S	Dr. Aaron Nauth	Term Chair in Fracture Care Research
V/S	Dr. Mohammad Qadura	Blair Early Career Professorship

The major areas of research and innovation are:

Trauma/Critical Care: Trauma/Critical Care research is performed across multiple division with a concentration in General and Orthopaedic Surgery. In trauma/critical care, methodologies include a. fundamental research in the areas of infection, inflammation and bone growth, b. clinical trials in surgery infection, resuscitation, urologic surgery and fracture management, c. Health Services Research in trauma and acute care surgery, and spine surgery and d. Knowledge Translation including complex wound care and prevention of osteoporosis. Two of our surgeons focus on surgical innovation, both spinning off companies in doing so- Dr. J. deRezende works in trauma device development and is one of the Founders of InventorrMD. Dr. Karen Cross has developed an image analysis device for healing wounds and is a Founder of the company MIMOSA.

Vascular Disease: In this area, research activity spans fundamental research, clinical trials and health services research. The fundamental sciences focuses on endothelial cell biology, vasospasm and the development of biomarkers for the prediction of peripheral arterial disease. On the clinical research side, activities focus on innovation (neurovascular/endovascular), health services research in access to vascular surgery and also large multicenter trials and registries. This activity spans several division including neurosurgery, cardiac surgery, and vascular surgery.

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 is located with like-minded researchers at the Labatt Brain Tumour Research Centre at the Hospital for Sick Children. Dr. Adena Scheer works in the area of Breast cancer decision tools.

Simulation/Education: Dr. Grantcharov is renowned for his innovation in assessment of surgical skills. With his colleagues, 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. Under Dr. Grantcharov's supervision, Dr. Sandra de Montbrun completed her PhD and 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.

Non-Clinical Scientists

A number of individuals are appointed in the Department of Surgery as full time scientists without clinical activity. The Department has recruited 5 full time scientists to work within various research groups over the past 15 years. These include Dr. Andras Kapus, Dr. Katalin Szaszi, Dr. Gregory Fairn, Dr. Wolfgang Kuebler and Dr. Tom Schweizer. The research interests of the first four fundamental scientists relate to infection/inflammation and wound healing. Their expertise in bioimaging brings important methodological skills to the Department and the Institution. All found hold funding from the Canadian Institute 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 Department of Neurosurgery. His expertise goes well with other Departmental members in the study of brain tumours, head injury, and effects of alcohol on the cerebellum.

Publications

In the most recent Annual Report of the University Department, 337 publications were attributed to our St. Michael's Hospital Department of Surgery, compared to 326 publications in 2014 and 173 in 2009.

Grant Funding

As a summative report, data from the Department of Surgery University of Toronto demonstrates and increase in funding from \$6.7 million in 2014-2015 to \$15.8 million in 2018-2019. Importantly, the number of members of our Department holding at least one research grant from the Canadian Institutes of Health Research, the major federal funding agency has increased from 11 in 2014 to 16 in 2019. Peer reviewed funding is also derived from the Heart and Stroke Foundation, The Kidney Foundation of Canada, the Physician's 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.

Surgical Outcomes Group

Inaugurated in 2018, this group meets every six month. The group was lead by Dr. Nancy Baxter and Dr. Mohammed Al-Omran, both health services researchers, and was intended to bring together surgeons who had recently joined the Department and had an interest in meeting like-minded individuals in the department. This group to date has spawned two projects using advanced analytics and artificial intelligence. One aimed at collecting and analyzing quality measure for vascular surgery care and a second aimed at using AI to evaluate cervical spine xrays for fractures. Other projects include using AI to help analyze and optimize usage of elective OR time.

Faculty Promotions 2014-2019

ACADEMIC YR.	NAME	DESIGNATION	DIVISION	PROMOTED TO	LAST PROMOTED	APPOINTED
2018/2019	WARD, Sarah	CT	O/S	Assistant	n/a	Oct-15
2018/2019	WHEATCROFT, Mark	CT	VS	Associate	n/a	Jun-12
2018/2019	REZENDE NETO, Joao	CI	GS	Full	n/a	Jan-13
2017/2018	DAS, Sunit	CS	N/S	Associate	n/a	Sep-10
2017/2018	FAIRN, Greg	RESEARCHER	G/S	Associate	n/a	Jul-12
2017/2018	LAWLESS, Bernard	CI	G/S	Associate	n/a	Jan-09
2016/2017	AHMED, Najma	CT	G/S	Full	Jul-10	Sep-01
2015/2016	SIMPSON, Jory	CT	G/S	Assistant	n/a	Jan-14
2015/2016	WHELAN, Daniel	CI	O/S	Associate	Jul-07	Jul-05
2014/2015	*LEE, Jason	CI	U/S	Assistant	n/a	Jan-19
2014/2015	PETERSON, Mark	CI	C/S	Associate	n/a	Jul-07
2014/2015	SCHWEIZER, Tom	RESEARCHER	N/S	Associate	n/a	May-08
2014/2015	BAXTER, Nancy	CS	G/S	Full	Jul-08	Oct-05
2014/2015	DANIELS, Timothy	CI	O/S	Full	Jul-04	Jul-93
2014/2015	GRANTCHAROV, Teodor	CS	G/S	Full	Jul-11	Nov-06
2014/2015	KUEBLER, Wolfgang	RESEARCHER	G/S	Full	n/a	May-08
2014/2015	LATTER, David	CT	C/S	Full	n/a	Jul-96

6. SUNNYBROOK HEALTH SCIENCES CENTRE



Photo: Courtesy of Sunnybrook



Avery Nathens, Surgeon-in-Chief, Sunnybrook Health Sciences Centre

Heads of Divisions

- Dr. G. Cohen, Cardiac Surgery
- Dr. A. Dueck, Vascular Surgery
- Dr. T. Mainprize, Neurosurgery
- Dr. A. Yee, Orthopaedic Surgery
- Dr. J. Fialkov, Plastic and Reconstructive Surgery
- Dr. R. Kodama, Urology
- Dr. S. Ashamalla, General Surgery

The Department of Surgery at Sunnybrook Health Sciences Centre is comprised of 72 full time faculty across 7 divisions. The Department is home to the Tory Trauma Program, the largest

trauma centre in Canada with over 2000 trauma activations per annum, the Odette Cancer centre, the 6th largest cancer centre in North America, the largest arthroplasty program in Canada, and the largest and only American Burn Association verified burn centre in Canada. Over 2014-19, the Ross Tilley Burn Centre and the Tory Trauma Program celebrated their 20th and 40th anniversaries, respectively.

The Department has embarked on two initiatives to improve the experience of staff and faculty. First, recognizing the value of diverse perspectives, the

Department appointed an Equity and Diversity lead (Dr. Laura Snell) to evaluate whether our environment provides an opportunity for each member to succeed and reach their full potential. Dr. Snell will provide her findings and recommendations toward the end of 2019. In the operating room, we have also embarked on a Joy in Work initiative to improve the morale of the staff in perioperative services.

Over 2014–2019, the Department increased its academic profile through the recruitment of 4 surgeon scientists and 5 surgeon-investigators. Department members assumed leadership roles in research including Dr. Karanicolas, Head, Clinical Trials Services, Sunnybrook Research Institute and Dr. Nir Lipsman as the Director of the Harquail Centre for neuromodulation. There were several successful fundraising initiatives directed at supporting our faculty, with 5 new chairs named and one professorship. Sunnybrook’s Department of Surgery now holds a total of 13 chairs.

The Department has a focus on surgical quality improvement and has expanded quality improvement activities through the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) and the Trauma Quality Improvement Program. The Surgical Quality Improvement Program has been recognized internally and fully incorporated into the OR Management structure. Performance improvement activities in the area of surgical site infections, occupancy, and flow are a major focus. Each of the surgical divisions has been charged with reviewing surgical mortality and unplanned return to the OR using a consistent and validated structure to offer maximal benefit to patients. The Department has been recognized twice for its quality of surgical care with an ACS NSQIP Meritorious Certificate for placing in the top 10% of all hospitals in North America. We have also been awarded a Certificate of Achievement Award by the Ontario Surgical Quality Improvement Network (Health Quality Ontario) for contributions since its inception in 2015.

Education remains a priority for the Department and led by Dr. Fuad Moussa, we have invested heavily into improving the experience of

undergraduate students with a new Lunch with the Professor series and brought the TEAM (Trauma Evaluation and Management® (TEAM®) to the Sunnybrook campus. We have also developed a program to embed military physicians and physician assistants into clinical care within the trauma service. This initiative provides an opportunity for these providers to maintain their skills in preparation for combat. In recognition for this work, distinguished representatives from the Canadian Special Operations Forces Command (CANSOFCOM) presented a plaque to Sunnybrook as the preferred trauma training centre for the Canadian Special Operations Forces.

In addition to hosting the annual Tile Lecturer in Trauma, the Department hosted several visiting professors including Dr. Karen Brasel, Oregon Health & Sciences University (2016) “Best Case, Worst Case, Helping Patients Understand Prognosis”, Drs. Anna Dare and Jim Turner (2016) “Lancet Commission on Global Surgery”, and Dr. John Fildes (2019) from the University of Nevada (Las Vegas) School of Medicine speaking on Lessons Learned from the One October Shootings.

To better serve patients and to enhance the potential for academic contributions, a new Division of Spine Surgery was created in 2019 with Dr. Joel Finkelstein named as the Division Head. This Division is comprised of a total of 6 surgeons from both neurosurgery and orthopedic surgery and has a mandate to provide care to patients with traumatic or malignant diseases of the spine, focus on improving the quality of spine care, and support academic collaborations.

The Department also created a Complex Wound Service in 2019 to provide higher level care across the organization. This service will serve the needs of in-patients with necrotizing soft tissue infections, decubiti, or challenging surgical wounds. The service is led by Dr. Shahrokhi and is comprised of an advanced practice nurse and two additional nurse experts in wound care.

Cardiac Surgery

The Division of Cardiac Surgery is comprised of four surgeons with a broad range of expertise and strong record of innovation in structural heart disease, the major focus of the Schulich Heart Program. Sunnybrook now performs over 150 TAVI's (Transcatheter Aortic Valve Implantation) per annum, the highest in the province. The team performed the first percutaneous transseptal mitral valve replacement in Canada (3rd worldwide) and continues to be the highest volume centre in the country. Beyond innovation, the Division has strength in cardiac surgical clinical trials through the leadership of Dr. Stephen Fremes.

Dr. Gideon Cohen serves as the Division Head and was reappointed for his second term in 2017. There was no recruitment or departures over 2014–2019.

Division members have held important leadership roles in surgical education. Dr. Cohen served as the residency program director to 2016, Dr. George Christakis as the University Departmental Director of Undergraduate Education (to 2017) and Dr. Fuad Moussa has remained the lead at Sunnybrook in undergraduate surgical education.

Members were also recognized for their educational contributions. Dr. Christakis was named the recipient of the 2015 John Provan Outstanding Surgical Educator Award. This honour is sponsored by the Canadian Association of Surgical Chairs and is awarded annually in recognition of outstanding contribution to undergraduate surgical education in Canada. He also received the Marvin Tile Award in recognition of his continued advocacy for students and significant contributions to both the University and Sunnybrook's Department of Surgery. Dr. Cohen won the University of Toronto Surgical Skills Centre Distinguished Education Award for Outstanding Contributions. This award recognizes those individuals who have made exemplary, innovative contributions to teaching and learning in the Surgical Skills Centre over the past year. Dr. Moussa won the Dr. E. Bruce Tovey Award for outstanding contributions to education within the University of Toronto Department of

Surgery as well as a Peters–Boyd Academy teaching award for undergraduate teaching at Sunnybrook.

Dr. Stephen Fremes continues to lead the Divisional activities in the research domain. He was reappointed as the Bernard Goldman Chair of Cardiac Surgery in 2016 with many research contributions related to coronary revascularization. He won the Department of Surgery Charles H. Tator Surgeon–Scientist Mentoring Award for his remarkable track record mentoring graduate students over his career. His contributions have also been recognized through his appointment as a statistical editor for the Journal of Thoracic and Cardiovascular Surgery. Over 2016–17, Dr. Cohen and his team were remarkable for two Canadian firsts in structural heart disease – implantation of the Caisson percutaneous trans-septal mitral valve and the Edwards Pascal percutaneous mitral valve repair system.

Vascular Surgery

The Division of Vascular Surgery has 5 staff members, 4 of whom are surgically active; the fifth (Dr. Maggisano) continues with outpatient clinics but no longer performs surgery or takes call. The division has a significant focus on distal angioplasty for limb salvage and has embarked on an initiative referred to as “Project Saving Legs” to raise awareness and to innovate in the development of the most advanced therapies to prevent amputation. Dr. Giuseppe Papia advanced the Project Saving Legs TM campaign by officially trademarking the initiative and continues to receive considerable publicity and helpful dissemination through the media. The Division also has a major focus on thoracoabdominal aneurysms and through collaboration with cardiac surgery and the use of open surgery and hybrid techniques (EVAR/TEVAR) has excellent outcomes.

Dr. Andrew Dueck is the Division Head and was re-appointed in 2018. Dr. Ahmed Kayssi (surgeon investigator) was recruited to the Division in 2017.

The Division members are fortunate to have been named to a number of Chairs or Professorships. Dr.

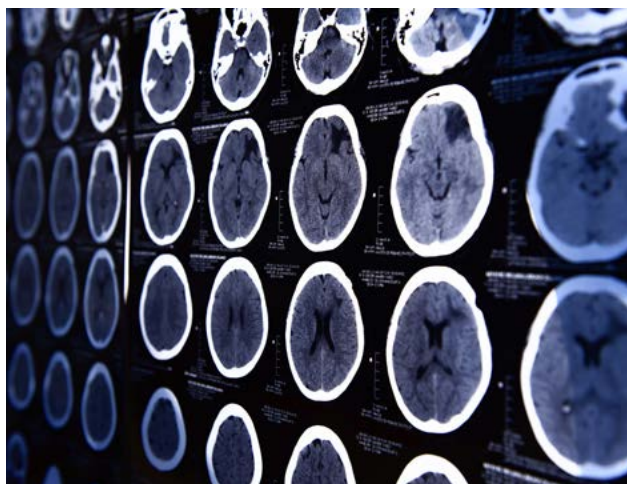
Andrew Dueck was appointed as the Maggisano Family Chair in Vascular Surgery taking over the position from the inaugural chairholder, Dr. Robert Maggisano. Dr. Ahmed Kayssi received the Blair Early-Career Professorship upon his recruitment and Dr. Giuseppe Papia was named the John Ross and Patricia Quigley Chair in Limb Preservation.

Members of the Division have also been very engaged in leadership activities. Dr. Papia was appointed as Chair of the Education Committee for the Canadian Society of Vascular Surgery and co-chaired the Department's Committee on Stress and Burn Out. He also led a national initiative on the development of a consensus statement on the use of the Surgical Safety Checklist through his role as Faculty Lead for Checklists at the Canadian Patient Safety Institute. Dr. Papia has also served on the Sunnybrook Medical-Dental Staff Association as treasurer and more recently as their vice president.

Undergraduate teaching has been a strength of the Division, with Dr. Dueck receiving an award for the best faculty teacher in the University Division of Vascular Surgery and Dr. Papia receiving a Peters-Boyd Academy clerkship faculty teaching award.

Neurosurgery

The Division of Neurosurgery has 8 faculty members who in addition to tremendous innovations in the area of neuromodulation make valuable contributions to the Stroke, Cancer, and Trauma programs.



Dr. Todd Mainprize transitioned to the role of the Division Head in 2016 for which he was previously interim. Over 2017/18, Drs. Nir Lipsman and Dr. Clement Hamani were recruited to the Division, setting the stage for tremendous program development in the area of functional neurosurgery.

The Division has made remarkable contributions to the field of neurosurgery. Dr. Todd Mainprize and his team accomplished a world's first, using focused ultrasound to deliver chemotherapy across the blood brain barrier. This landmark event was profiled in the Globe and Mail, CTV news and received considerable attention from the medical community.

Dr. Victor Yang's spinal navigation technology was recognized through an award at the annual meeting of the National American Spine Society for best innovation. Dr. Yang was also the recipient of the Sanford Larson Award for the best spine research paper at the American Association of Neurological Surgeons Annual Scientific Meeting. His 7D Surgical team was also awarded the Frost & Sullivan New Product Innovation Award in the category of image-guided surgical systems. His work was highlighted by the CBC and the Royal College and his team received the 2018 CNS Innovator of the Year award. Dr. Yang also won the University Department of Surgery's George Armstrong-Peters Prize. This prize is awarded to a young investigator who has shown outstanding productivity during his initial period as an independent investigator as evidenced by research publications in peer reviewed journals, grants held, and students trained.

Over 2017/18, the Harquail family gifted the Harquail Centre for Neuromodulation for which Dr. Nir Lipsman was named the Director. The Focused Ultrasound Foundation recognized Sunnybrook Health Sciences Centre as a Centre of Excellence, thanks to the pioneering work of physicist Kullervo Hynynen and clinical excellence and innovation through the work of Dr. Nir Lipsman. Sunnybrook's team led the first FUS-based interventions in major depression, obsessive-compulsive disorder and Alzheimer's disease.

To facilitate the delivery of high-quality neurovascular care for stroke and aneurysm patients, Sunnybrook established the Centre for

Neurovascular Intervention (CNVI) in early 2019 and Dr. Leo Da Costa was appointed as its inaugural Medical Director. The CNVI will consolidate much of the activity in cerebrovascular care and serve as a nidus for academic activity to advance this important strategic direction for Sunnybrook.

Dr. Leo DaCosta was awarded the Dr. William Dixon Sunnybrook Surgical Teaching Award (2017) to recognize his impact on trainees in their development and evolution as surgeons.

Orthopaedic Surgery

The Division of Orthopaedic Surgery includes 21 surgeons and one scientist across two sites: Bayview (uptown) and the Holland Centre (downtown). Areas of focus include trauma, particularly that of the pelvis and acetabulum, upper extremity reconstruction, hip and knee arthroplasty, spine, and sports medicine.

Over 2014–19, Dr. Albert Yee assumed the role of Division Head and Program Chief, Holland Bone and Joint Program, taking over from Dr. Hans Kreder. Dr. Murnaghan assumed the role of Medical Director of the Holland Centre transitioning the role from Dr. Jeff Gollish who oversaw the development of Canada's largest lower extremity arthroplasty program with over 2200 hip and knee replacements per annum. Dr. Richard Jenkinson was appointed the Head of Orthopedic Trauma for the Tory Trauma Program. Drs. Patrick Henry (surgeon investigator, upper extremity), David Wasserstein (surgeon investigator, sports medicine), Sebastian Tomescu (surgeon investigator, arthroplasty), and Dr. Bheeshma Ravi (surgeon scientist, arthroplasty) were all recruited to the Division. Dr. Richard Holtby, Dr. John Cameron, and Dr. Barry Malcolm retired from clinical practice.

Many of the Division members were recognized for their accomplishments locally and nationally. Dr. Richard Holtby received Sunnybrook's Marvin Tile award for meritorious service to the Department, as did Drs. Yee and Dr. Wadey. Dr. Gollish received Sunnybrook's Leo Stevens' Leadership Award. Dr. John Cameron won the University's

Thomas R. Loudon Award honouring him for his outstanding service in the advancement of athletics related to his contributions to sports medicine. Dr. Gollish was appointed as the Provincial Clinical Lead for Central Intake and Assessment Centres (CIAC) to enhance the efficiency of orthopedic care across Ontario. Dr. Albert Yee was named President of the Canadian Orthopaedic Research Society. Dr. Hans Kreder was appointed to the Canadian Orthopaedic Foundation Board of Directors. Dr. Jeff Gollish was appointed the Chair of the Standards Committee of the Canadian Orthopaedic Association. Dr. John Murnaghan was recognized for his longstanding contributions to orthopaedic education in Canada, being awarded the Canadian Orthopaedic Association Presidential Award of Merit. Dr. Bheeshma Ravi was selected as the Canadian Orthopedic Association North American Travelling Fellow.

Division members have been fortunate to be named to several research chairs to advance orthopaedic care. Dr. Cari Whyne, who leads a strong imaging and bioengineering group at Sunnybrook Research Institute was appointed as the inaugural Susanne and William Holland Chair in Musculoskeletal Research. Dr. Paul Marks was named the inaugural holder of the Susanne and William Holland Chair in Sports Medicine Research at Sunnybrook Health Sciences Centre and Dr. Joel Finkelstein was named the Feldberg Chair in Spinal Research.

The members of the Division have been recognized for their strengths in education. Dr. David Wasserstein received the University Division of Orthopedic Surgery undergraduate teaching award; Dr. Markku Nousianen has extended competency based surgical education to other specialties through his leadership. Dr. Wadey received the University of Toronto Faculty of Medicine Award for Excellence in Post Graduate Education, Development and Innovation. This award recognizes her longstanding commitment towards enhancing educational opportunities for trainees and is a competitive award where the recipient is selected from nominations across the entire Faculty of Medicine. Dr. David Stephen was selected to receive an AO Trauma North America Advanced Clinical Education Program Award for his contributions to education through the AO Foundation.

Plastic and Reconstructive Surgery

The Division of Plastic and Reconstructive Surgery includes 5 active surgeons with areas of expertise including craniofacial, hand surgery, and breast reconstruction. These three areas are well integrated into the trauma program (craniofacial, hand) and cancer program (breast reconstruction). The plastic surgeons also heavily support the melanoma program. The Division also includes the Ross Tilley Regional Burn Centre, Canada's largest and only American Burn Association verified centre with another 4 surgeons entirely dedicated to care of the burn patient.

Divisional leadership transitioned from Dr. Paul Binhammer to Dr. Jeffrey Fialkov. Dr. Manuel Dibildox (burn surgery) moved on to the Mayo Clinic to undertake a training program in plastic surgery and Dr. Alan Rogers was subsequently recruited to the burn centre as a surgeon investigator with a focus on quality and patient safety. Dr. Saied Nik was recruited as a scientist at Sunnybrook Research Institute (Biological Sciences Platform) with a focus on stem cells and skin regeneration but transitioned to another organization in 2018.

The Division has been productive from the research and development perspective. Dr. Antonyshyn and his team at SRI have developed innovative approaches to implant design using advanced imaging technologies that have since been commercialized and are in use at Sunnybrook and other centres. (calaverasurgicaldesign.com). Dr. Fialkov, working in conjunction with biomedical engineers at SRI has developed a bone stabilization device ("bone tape") for use in patients with craniofacial injuries. The initial flexibility and translucency provided by the bone tape facilitates the temporary stabilization and alignment adjustment of multiple fragments prior to permanent rigid bonding and allows for more precise alignment. Bone tape has recently been patented and is undergoing clinical trials. Dr. Jeschke has pioneered the use of 3-D printing for

skin replacement and was awarded a large grant by Toronto Hydro to support stem cell research. He also received the Lister Prize – the highest honour recognizing research in the Department of Surgery and was reappointed as the Chair of Burn Research.

The poster is for a presentation event titled "GEORGE & LISTER PRIZE WINNERS" at the University of Toronto. It features a central image of a wooden podium. On the left, Catherine Adell O'Brien, MD PhD, is listed with her presentation topic: "Phenotypic heterogeneity in cancer". On the right, Marc G. Jeschke, MD PhD FACS FCCM FRCS(C), is listed with his presentation topic: "Burn hypermetabolism - some burning questions?". Below the names are learning objectives for each presentation. At the bottom, the event is scheduled for Friday, November 2nd, from 7:30 to 8:30 AM at the Daniels Hollywood Theatre, 1st Floor, Burton Wing, The Hospital for Sick Children. A QR code and a public webcast link are also provided.

Members of the Division have been recognized for their leadership. Dr. Jeschke received Sunnybrook's Leo Stevens' Leadership Award and was also named the chair of the Translational Research Committee for the Department of Surgery. He was also appointed as chair of the Strategic Planning Committee for the Shock Society and the Elder Care Committee of the American Burn Association. In 2019, he was appointed president of the Shock Society. He was also appointed to the executive committee of the Surgical Infection Society. Dr. Cartotto was re-appointed to the Burn Science Advisory Panel of the American Burn Association to oversee the funding of burn trials by the US Department of Defense and is on the executive committee of the American Burn Association. Dr. Paul Binhammer was appointed President, Canadian Society for Surgery of the Hand. Dr. Joan Lipa chairs the American Society for Reconstructive Microsurgery Women's Microsurgery Group and was appointed as a Director of the American Board of Plastic Surgery. Dr. Laura Snell was appointed the inaugural lead for Equity and Diversity in Sunnybrook's Department of Surgery.

Division members have engaged in many educational initiatives, ranging from local outreach to capacity building overseas. Dr. Jeschke received the Educating Beyond Sunnybrook Award for local educational initiatives related to burn care. Drs Lipa and Snell have developed unique simulation program to better prepare trainees in advance of their experience in the operating room. They have developed a relationship with a technical partner (TouchSurgery) to produce an app to teach DIEP flaps (touchsurgery.com/simulation/diep-flap). This is used in combination with our surgical simulation laboratory to provide a comprehensive training experience for learners. Further, they have also developed algorithms to address free flap failure, a major barrier to performing free flaps in community hospitals. Dr. Binhammer is heavily involved with upper extremity curriculum development with the AO Foundation (International). Dr. Shahrokhi (2018) and Dr. Jeff Fialkov (2019) were recognized as the best surgical teacher across all surgical departments and received the Dr. William Dixon Sunnybrook Surgical Teaching Award while Dr. Lipa received the University of Toronto Faculty of Medicine Award for Excellence in Post Graduate Education, Development and Innovation. Dr. Antonyshyn was the recipient of the Department of Surgery Undergraduate teaching award as well as the William K. Lindsay Faculty Research Mentor Award .

Humanitarian surgery has also been a major focus of certain members of the Division. Dr. Antonyshyn has led several missions to Eastern Ukraine to provide surgical care and to increase the capacity of surgeons to provide care for complex craniofacial injuries following the war in 2014. He has received over \$1 million from the federal government (Minister of Foreign Affairs) for this activity and has recently received \$4 million in philanthropic support to develop a robust exchange program with Ukrainian fellows. He received the Departmental Marvin Tile Award and the Ronald M. Zuker Award for Distinction in the Division of Plastic Surgery for these outreach activities as well as the Ochrymovych Helping Hands Humanitarian Award from Ukrainian Canadian Social Services. His work was featured on CTV's investigative documentary series, W-5. In 2018,

he received a Meritorious Service Medal from the Governor General for his humanitarian work.

Urology

The Division of Urology has 6 faculty members, 5 of whom are active surgeons and another who is a scientist with a leadership role in the Institute of Medical Sciences within the School of Graduate Studies at the University of Toronto. The Division is internationally recognized for its expertise in reconstructive urology with a focus on both the urethra (Dr. Kodama) and bladder (Dr. Herschorn) with referrals from across Canada. Dr. Klotz is world renowned for his research in active surveillance for prostate cancer.

Over 2014-19, Dr. Ron Kodama served as the Division Head. There is an active search underway for his successor. Dr. Dr. Raj Satkunasivam was recruited to the Department in 2016 but subsequently moved to Houston to take on the role of the Director of Advanced Laparoscopic and Robotic Surgery at the Houston Methodist Institute for Technology, Innovation, and Education.

The Division members have received numerous awards for their contributions to urologic care. Dr. Klotz was the recipient of a Term Chair in Prostate Cancer Research in recognition of his major contributions and innovations in the field and was awarded the Dean's Lifetime Achievement Award by the University of Toronto for his contributions in the area of prostate cancer. He also received the Canadian Cancer Society's O. Harold Warwick Prize for his significant advances in cancer control and was appointed as a member of the Order of Canada for his contributions to the treatment of prostate cancer, notably for leading the adoption of active surveillance as a standard aspect of patient care. He has received the Canadian Urologic Associations Lifetime Achievement Award and is the Chairman of the World Urologic Oncology Foundation, uCare (Societe International d'Urologie) to facilitate clinical research in the developing world, and the International Consultation on Urologic

Diseases for Oncology. He also received the Richard Williams Award by the American Urological Association, for the highest impact research in prostate cancer over the last decade.

Dr. Sender Herschorn leveraged his expertise to launch the University of Toronto Research Program in Functional Urology, a research initiative to better understand the epidemiology, gaps in care, and optimal care strategies among those with lower urinary tract disorders. This Program was funded by a donation of \$2 million from a patient and an unrestricted donation from Astellas Pharma Canada. He has also received a presidential citation from the American Urological Association for his contributions related to his research for the treatment of urinary incontinence and overactive bladder and received the International Continence Society Lifetime Achievement Award.

Dr. Robert Nam was re-appointed the Ajmera Family Chair in Urologic Oncology and continues to make significant contributions in prostate cancer research.

The Division members have been recognized for their teaching excellence. Dr. Herschorn received an Undergraduate Medical Excellence in Teaching Award from the Faculty of Medicine as well as the Division of Urology Faculty Postgraduate Teaching Award. Dr. Ron Kodama received the Michael Jewett Postgraduate Lecture award and served as the Royal College Urology Examination Committee Chair. Dr. Robert Nam received the Jewett Award and the Postgraduate Surgical Teaching Award from the University Division of Urology. He also received a Professional Association of Residents of Ontario Excellence in Clinical Teaching award.



General Surgery

The Division of General Surgery has 18 active staff members with 5 areas of focus: colorectal oncology, HPB oncology, breast cancer and melanoma, acute care surgery, and trauma.

Over 2014–2019, Dr. Natalie Coburn transitioned out of the Division Head role to focus on her research activity and Dr. Shady Ashamalla assumed the role of Division Head.

Since 2014, there have been several recruits into the Division including Dr. Julie Hallet (surgeon-investigator, hepatobiliary oncology, health services research), Dr. Luis Da Luz (surgeon-investigator, trauma, health services research, clinical trials), and Dr. Barbara Haas (surgeon-scientist, trauma, health services research). Dr. Barto Nascimento (trauma) has assumed a leadership position in Brazil and Dr. Junaid Bhatti, a scientist with a focus on injury prevention was recruited in 2014 and has since transitioned into a role in industry in 2019.

The Division has introduced several innovative clinical programs including a Young Adult Colorectal Cancer Clinic, a rapid diagnostic assessment program for early diagnosis of colorectal cancer, a hepatic artery infusion program, and a radioactive seed localization program for breast cancer. The Division introduced transanal minimally invasive surgery to Canada and has subsequently developed a proctoring program, allowing for the dissemination across the country. The trauma program has developed a partnership with the Canadian Forces, embedded military physicians into clinical rotations so that they might maintain preparedness for combat. The program has received recognition from the Canadian Special Operations Forces Command (CANSOFCOM) for this initiative.

There has been a particularly strong research focus in the Division, with several members named as chairholders of either endowed or term chairs, including Dr. Natalie Coburn (Hanna Chair in Surgical Oncology), Dr. Frances Wright (Temerty Chair in Breast Surgery) and Dr. Avery Nathens (De Souza Chair in Trauma Research). Dr. Julie



Hallet received a Career Development Award from the Society for Surgery of the Alimentary Tract and Dr. Paul Karanicolas was the recipient of the of the Department of Surgery's Rosco Reid Graham Scholarship and had also received a Ministry of Research and Innovation Early Researcher Award for his work on improving outcomes after liver resection. Division members have also been recognized for their leadership with Dr. Paul Karanicolas appointed as the Medical and Scientific Director for Clinical Trial Services at Sunnybrook Research Institute and Dr. Hallet was appointed to the editorial board of the *Annals of Surgical Oncology*. Dr. Nascimento was named the chair of the Canadian Research Outcomes Consortium Trauma Committee – a lead for the conduct of related pan-Canadian clinical trials.

The Division members have a strong reputation for local, regional and international leadership in their respective areas. Dr. Nathens was appointed as Medical Director of Trauma at Sunnybrook, taking over from Dr. Homer Tien, who was appointed Medical Director of Ornge, Ontario's air ambulance agency. Dr. Nathens was re-appointed as Surgeon-in-Chief and Dr. Calvin Law was re-appointed Chief of the Odette Cancer Program and Regional Vice President, Cancer Services, Cancer Care Ontario. Dr. Brenneman was appointed the Program Director of the Residency Program in General Surgery. Dr. Karanicolas was the recipient of the American College of Surgeons Traveling Fellowship to Germany and Dr. Calvin Law received the Rose award from the Sunnybrook Foundation for his efforts in securing philanthropic support. Dr. Frances Wright was appointed the Clinical Lead, Quality and Knowledge Transfer as well as the Skin Cancer Lead and Dr. Coburn was appointed the Clinical Lead Patient, Reported Outcomes and Symptom Management, all at Cancer Care Ontario. Dr. Lorraine Tremblay

was named president of the Trauma Association of Canada and Dr. Nathens assumed the position of Medical Director, Trauma Quality Programs at the American College of Surgeons.

Education is at a strength within the Division at all levels. Drs Tremblay, Brenneman and Haas have all received Undergraduate Medical Excellence in Teaching Awards from the Faculty of Medicine and Drs. Tien, Karanicolas, Wright, and Fenech have been the recipient of the Sunnybrook Department of Surgery Undergraduate Teaching Awards. Dr. Tremblay received the University Division of General Surgery's Robert Mustard Mentorship Award in recognition for her mentorship of post-graduate trainees while Dr. Haas won the Nicholas Colapinto Teaching Award for best resident seminar. The faculty members in the Division have had a strong record of excellence in continuing medical education, with Dr. Haas receiving the Marcus Burnstein Outstanding Presentation Award at the Annual Update in General Surgery; Dr. Coburn receiving the Innovative Curriculum Award from Sunnybrook for her international course on gastric cancer and Dr. Shady Ashamalla received the Ivan Silver Innovation Award for his educational initiatives related to transanal total mesorectal excision. Dr. Ashamalla also led the creation of the Mike Richards and Doug Gilmour foundation to support continuing surgical education in minimally invasive colorectal cancer surgery at Sunnybrook.

Dr. Nathens held the first Bleeding Control course in Canada. The course, part of the Stop the Bleed Campaign (US Department of Homeland Security), teaches the public how to respond and act to save a life when faced with a bleeding emergency. Through a teach the teacher initiative, the course has now spread across Canada. Dr. Wright received the best mentor award in General Surgery Oncology and Dr. Nathens the Bryce Taylor Mentorship Award from the Department in recognition for his mentorship for junior faculty in pursuing academic careers. Both Dr. Karanicolas and Dr. Frances Wright in her role as fellowship director, Surgical Oncology brought the University of Toronto through a successful accreditation process of a designated Hepatobiliary oncology fellowship through the Fellowship Council and the ACGME.

7. THE HOSPITAL FOR SICK CHILDREN



Photo: sickkids.ca



James Drake, Surgeon-in-Chief, The Hospital for Sick Children

The Hospital for Sick Children (SickKids) is Canada's largest pediatric academic health science center. SickKids is often compared with London's Great Ormond Street Hospital, Boston Children's Hospital, and the 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 members are world-renown scientists in their own right. Our teaching mission includes education and training for medical students,

residents, fellows, graduate students aspiring to careers in delivery of pediatric care. We attract Fellows from around the world and fully trained clinicians regularly attend SickKids-sponsored Continuing Medical Education (CME) events.

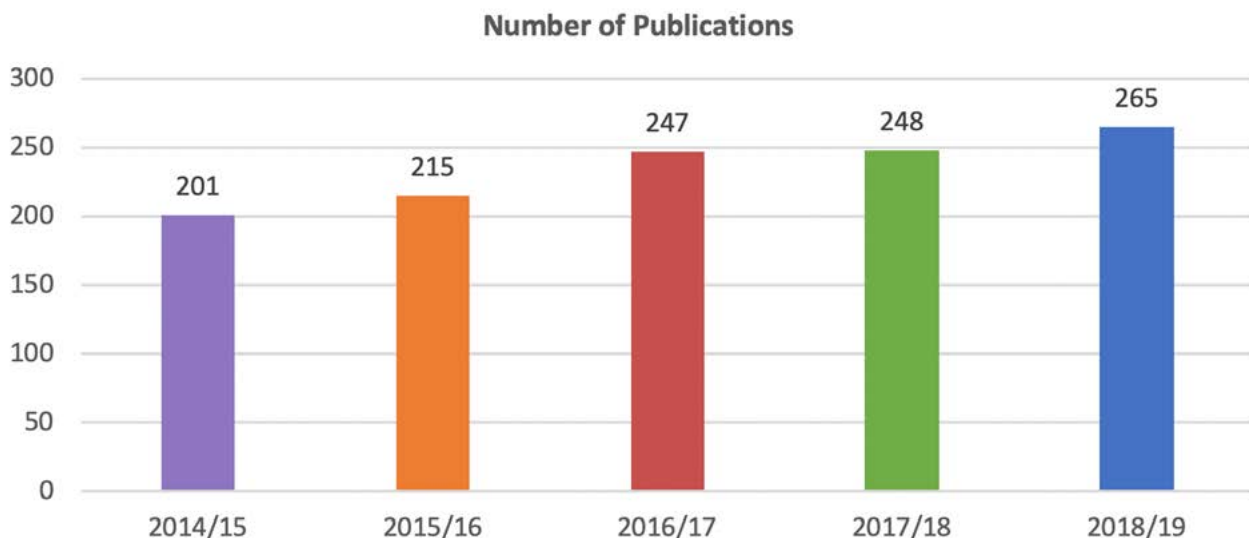
Having assumed this role effective June, 2018, I am pleased to confirm that continued progress has been made on the initiatives and strategic goals as follows:

1. We participate in leadership roles across Ontario and Canada in the mission to provide access to optimal care. We participate in the Canadian Association of Paediatric Health Centres-Canadian Paediatric Decision Support Network (CAPHC-CPDSN) in collaboration with Canadian Institute for Health Information (CIHI). I participate as an active member of the Pediatric Surgical Chiefs of Canada. I also serve the Ministry of Health as the Pediatric Surgical Lead in Ontario Wait 1 Access to Care Initiative.

2. The mix of surgical cases in the OR continues to increase in complexity and length. Operating Room availability is still a constraint. OR project resources were focused on Epic implementation and fine tuning this year, and will renew focus on operational efficiencies in the coming year to make the most of available OR time:
 - a) OR Activity:
 - Volumes: 12,167 cases for FY18/19, a decline of 2% year over previous years
 - OR Hours: 26,411, nearly identical to FY17/18
 - Average Case Length: 2.17 (8 year trend of increasing case length); driven primarily by an increase in complex Cardiovascular Surgery and Neurosurgery cases
 - Emergency Cases: 26% of all cases in FY18/19, identical to FY17/18 and up from 25% in FY16/17 and FY2015/16
 - b) Operational efficiency: OR start time, surgical services OR block utilization and turnover statistics.
3. In the area of clinical care refinement aligned to the process of care delivery continue. We adhere to all provincially mandated surgical safety checklist policies with ~99% compliance.
4. Operating Room (OR) renovations in Plastic Surgery and Neurosurgery were completed in 2018. Additional renovations in Cardiovascular Surgery and General Surgery are planned.
5. We continue to participate in the American College of Surgeons (ACS) National Surgical Quality Improvement Program (NSQIP) which is a data-driven, risk-adjusted, outcomes-based program to measure and improve the quality of surgical care with benefits of participation including:
 - identifying quality improvement targets
 - improving patient care and outcomes
 - decreasing institutional healthcare costs

Publication Detail

- The research productivity of our department has been increasing year over year. We published in the highest impact journals, including New England Journal of Medicine, Nature, Lancet Oncology, Journal of the American Medical Association (JAMA), Nature Materials, Nature Reviews (Clinical Oncology, Drug Discovery, Disease Primers), Lancet, Cell, and Cancer Cell. In the most recent year (June 2018-May 2019), our surgeons published 265 papers with a combined journal impact factor of 879.5, an average impact factor of 3.7 per publication.
- The department continues to succeed in securing grants in an increasingly competitive funding environment. Our average success rate in the previous 2 CIHR fall project



competitions was 29.4% (compared with 15.0% national rate). In fiscal year 2018/19 we held 236 research grants, including 28 from CIHR, with external grant funding worth a total of \$54.3M. Notable grants included:

- » Targeting Brain Tumour Stem Cell Epigenetic and Molecular Networks. SU2C Canada ‘Cancer Stem Cell Dream Team’. \$11,791,833 CAD
- » Cellular and Genetic Heterogeneity as a Therapeutic Hurdle and Opportunity for Ontarians. Ontario Institute for Cancer Research. \$4,788,278 CAD
- » National Capital Consortium for Pediatric Device Innovation. Food and Drugs Administration (FDA), FDA P50 Pediatric Device Consortium. \$3,500,000 USD
- » Necrotizing Enterocolitis Research Program: introducing innovative therapies to halt the disease progression and promote recovery. CIHR. \$3,637,274 CAD
- » Improving infant hydrocephalus outcomes in Uganda: Predicting developmental outcomes and identifying patients at risk for early treatment failure after ETV/CPC. National Institutes of Health. \$2,803,483 USD
- » Chromatin Proteins as Drug targets for Glioblastoma. The Brain Tumour Charity. \$1,481,356 GBP
- » Post-infectious hydrocephalus in African infants: Causes, prevention and treatment. National Institutes of Health. \$1,545,799 USD
- » Rapid Prototyping of Patient Specific Models, Dextrous Tools and Implants. Canadian Foundation of Innovation. \$1,800,000 CAD
- » Epigenetic reorganization and differentiation of glioblastoma. Canadian Epigenetics, Environment and Health Research Consortium. \$1,500,000 CAD

- » Functional Genomic Screen to Identify Drivers of Human GBM. Terry Fox New Frontiers Program Project Grant in Development of Stemless-based Prognostic Biomarkers and Therapeutic Targets. Terry Fox Research Institute. \$1,328,820 CAD
- » Advancing biology-based therapies for rhabdoid brain tumours. Canadian Cancer Society Research Institute, Brain Canada/ Health Canada Initiative. \$1,214,047 CAD
- » Stem cell related genesis and maintenance of glioblastoma. CIHR. \$1,051,875 CAD

Department of Surgery – Division Five Year Reviews

In terms of leadership, five year reviews were conducted for a number of our Departments.

1. Following a third 5 year review of Plastic Surgery, Chris Forrest was reappointed for a term up to 5 years.
2. Following a third 5 year review in Neurosurgery, I elected not to reapply for reappointment. A international search was conducted and Peter Dirks was appointed Division Head.
3. Following a first 5 year review in Urology, Marty Koyle elected not to reapply and an international search for a new Division head is currently underway
4. Two five year reviews for General and Thoracic Surgery, under Division Head Agostino Pierrro, and Othopedic Surgery, under interim Division Head Andrew Howard have recently concluded and Review Committees are reconvening to deterime next steps for both Divisions.

Following the Departure of Glen VanArsdell, Division Head, Cardiovacular Surgery an

international search was conducted and David Barron from Birmingham Children's Hospital, UK was recruited as Division Head effective July 1, 2019.

It is a privilege to present this brief summary of surgical activities on behalf of the Department of Surgery at SickKids.

2019/20 DIVISION HEADS

Dr. David Barron	Cardiovascular Surgery
Dr. Agostino Pierro	General and Thoracic Surgery
Dr. Peter Dirks	Neurosurgery
Dr. Andrew Howard (Interim)	Orthopaedic Surgery
Dr. Christopher Forrest	Plastic and Reconstructive Surgery
Dr. Martin Koyle	Urology

New Staff

2014-15

New recruits include Drs. Martin Gargan and Mark Camp (Orthopaedic Surgery), Frank Papanikilalou (part-time) and Joana Dos Santos (Urology), and Kristen Davidge (Plastic and Reconstructive Surgery). Welcome! A search is underway for a new member of the Division of General and Thoracic Surgery.

2015-16

New recruits include Dr. Augusto Zani (General and Thoracic Surgery) and Dr. Doug Cochrane (Neurosurgery).

2016-17

Dr. Christoph Haller joined the Division of Cardiovascular Surgery in 2017. He studied in the Tuebingen University Hospital in the department of Cardiovascular and Thoracic Surgery in Germany. His research interest in Transplantation and Ischemia. His research interests are Heart Transplantation, Ischemia, Milrinone, Pacemaker, Cardiac Output.

Dr. Justyna Wolinska has joined the Division of General and Thoracic Surgery effective November 6, 2017 through and including June 30, 2019 (2 year contract).

Dr. George Ibrahim joined the Division of Neurosurgery effective July 1, 2017. He has received a bachelor's degree in biochemistry at Queens University followed by his medical school curriculum in the University of Calgary.

2017-18

Dr. Justyna Wolinska joined General and Thoracic Surgery effective November 6, 2017 through June 30, 2019.

2018-19

Glen Van Arsdell will be leaving his role as Head of the Division of Cardiovascular Surgery to take on a new leadership role at the UCLA Mattel Children's Hospital effective September 5, 2018.

2019-20

Dr. David Barron will be joining SickKids in the capacity of Head, Cardiovascular Surgery effective July 1, 2019. David's outstanding academic productivity, publication record, his focus on quality metrics and outcomes, clinical and surgical skills, and his leadership qualities will continue to bring the Division of Cardiovascular Surgery at SickKids to even greater achievements.

Blayne Amir Sayed, MD PhD, is the newest member of the Toronto Transplant Program, joining the University of Toronto, Department of Surgery as an Assistant Professor. His primary appointment is in the Division of General Surgery at the Hospital for Sick Children in pediatric liver transplantation and hepatobiliary surgery, with an additional appointment in the University Health Network Multi-Organ Transplant Program and Division of General Surgery at Toronto General Hospital in adult liver transplantation. Dr. Sayed will be the Surgical Lead for Pediatric Liver Transplantation at SickKids, joining Drs. Mark Cattral and Anand Ghanekar on the pediatric liver transplant surgery team.



Reto M. Baertschiger MD PhD, is joining the Division of General and Thoracic Surgery with a special interest in Paediatric surgical oncology and liver tumors. He will be working as a general Paediatric surgeon with a main focus on the surgical care of children with solid tumors, in close collaboration with Dr A. Pierro and the oncology team.

Departures

2014-15

Dr. James G. Wright, Orthopaedic Surgery stepped down from the role of Surgeon-in-Chief, Chief of Perioperative Services, and VP of Medical Affairs and accepted the post of Senior Clinical Research Fellow in the Botnar Research Centre, University of Oxford and Honourary Consultant Paediatric Orthopaedic Surgeon, Oxford University Hospitals NHS Trust, UK.

2015-16

Dr. John Wedge continued his clinical practice this year and his ambassadorial role for SickKids International in looking at DDH outcomes with Drs. Kelley and Gargan. On June 24, 2016, Dr. Wedge was our Mercer Rang Lecturer and on the same day, the Division hosted Professor Andreas Roposch, a former fellow of Dr. Wedge's from Great Ormond Street, UK. Professor Roposch gave the inaugural Wedge Lecture in his honor. On June 30, 2016, Dr. John Wedge hung up his scalpel.

2016-17

No data to report.

2017-18

Dr Ted Gertsle, General and Thoracic Surgery left SickKids to assume the position of Chief of Pediatric Surgery at Memorial Sloan Kettering Cancer Center in New York City, USA in May, 2018.

Dr. Justyna Wolinska joined General and Thoracic Surgery effective November 6, 2017 through June 30, 2019.

Dr. Martin Gargan, Head of the Division of Orthopedic Surgery will be leaving the Hospital for Sick Children in March, 2017 to take on a new post as the Clinical Director of Surgery at the Bristol Royal Hospital for Children in the United Kingdom.

2018-19

Dr. Chris Caldarone's tendered his resignation as Surgeon-in-Chief and Chief of Perioperative Services, Cardiovascular surgeon to pursue an exciting opportunity at Texas Children's Hospital in Houston.

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8. UNIVERSITY HEALTH NETWORK



Photo: Courtesy of Department of Medicine



Shaf Keshavjee, Surgeon-in-Chief, University Health Network

Introduction

The Surgery and Critical Care Program at University Health Network encompasses 135 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 Sprott Surgery vision to be world leaders in surgery. The

five strategic priorities of the surgical program at UHN are: to attract and retain the best talent, to foster a culture of education, research and innovation, to advance technology and infrastructure, to capture a strong market share and to lead in health care policy development.

The Surgical Programs continue to make significant progress in innovation and in achieving clinical excellence and academic productivity. Surgery at UHN 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.

Education and Research

Education: Surgeons at UHN have been accomplished and highly productive 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 successful at extramural grant capture with exemplary research productivity. (Please see attached UHN Department of Surgery 5 year Trend Publication Report)

Department of Surgery Divisional 5 Year Summary Report:

Cardiac Surgery

- Vivek Rao MD (Division Head)
- Mitesh Badiwala MD
- Jennifer Chung MD
- Robert J. Cusimano MD
- Tirone David MD
- Chris Feindel MD
- Maral Ouzounian MD
- Anthony Ralph-Edwards MD
- Richard Weisel MD
- Terrence Yau MD

Recruitments/Promotions/Retirements:

- Dr Mitesh Badiwala was recruited as a Surgeon-Scientist, he has assumed the surgical leadership of the cardiac transplant program and his research interests involve the development of an ex-vivo cardiac perfusion system for cardiac transplant.
- Dr Jennifer Chung was recruited as Surgeon-Scientist and joined the multidisciplinary aortic surgery group.

Major Accomplishments/ Appointments/Awards:

- Dr Cusimano was formally appointed as the Program Director for the University Division's residency training program and received the inaugural Stacey and David Cynamon Professorship in surgical education and innovation.
- Dr Terrence Yau spearheaded the NIH sponsored LVAD-Stem Cell trial evaluating myocardial recovery in patients being supported by a mechanical circulatory support device.
- Dr Tirone David received honorary fellowship to the Royal College of Surgeons of Edinburgh.

General Surgery

- Alan Okrainec MD (Division Head)
- Mark Cattral MD
- Tulin Cil MD
- Sami Chadi MD
- Karen Devon MD
- Preeti Dhar MD
- Jaime Escallon MD
- Steven Gallinger MD
- Anand Ghanekar MD
- David Grant MD
- Paul Grieg MD
- Timothy Jackson MD
- Wey Leong MD
- David McCready MD
- Ian McGilvray MD
- Carol Anne Moulton MD
- Catherine O'Brien MD
- Todd Penner MD
- Jesse Pasternak MD
- Fayes Quershay MD
- Michael Reedijk MD
- Trevor Reichman MD
- Lorne Rotstein MD
- Gonzalo Sapisochin MD
- Markus Selzner MD
- Eran Shlomovitz MD

Recruitments/Promotions/Retirements:

- Dr Markus Selzner was promoted to Associate Professor.
- Dr Timothy Jackson was promoted to Associate Professor.

- Dr Anand Ghanekar was promoted to Associate Professor.
- Dr Jesse Pasternak was recruited as Surgeon-Scientist who has an interest in endocrine surgery.
- Dr Preeti Dhar was recruited who has an interest in acute care surgery and critical care.
- Drs. Paul Greig & David Grant both retired in 2019.

Major Accomplishments/ Appointments/Awards:

- Dr Mark Cattral received a Canada Foundation for Innovation (CFI) grant to establish a Centre for Islet Research and Therapeutics.
- Anand Ghanekar was awarded the Cancer Research Society Grant for his project: Phenotypic and Transcriptional Characterization of Tumor-Initiating Cells in Primary Human Hepatocellular Carcinoma.
- Dr Steven Gallinger was honoured with The Joseph and Wolf Lebovic Chair in HPB Surgery.
- Dr Timothy Jackson became the Provincial Lead for the Ontario Surgical Quality Collaborative.
- Dr Catherine O'Brien was awarded The Frank Mills Award for Excellence in Teaching by a Faculty Member & she is also received the Early Researcher Award (ERAs) from the Ontario Ministry of Economic Development and Innovation.
- Dr Mark Cattral received a CIHR grant to study Vascularized regenerative biomaterials for medical devices and cell therapy.
- Catherine O'Brien received a CIHR Foundations grant to for her project titled Colorectal cancer stem cell plasticity: A novel therapeutic target.
- Dr Gonzalo Sapisochin was awarded the Rising Star Award at the International Liver Transplant Society Annual Meeting.
- Dr Fayeze Quereshy was awarded the Robert Mustard Mentorship Award from the Division of General Surgery, University of Toronto, and also received the Frank Mills Award for Excellence in Teaching by a Faculty Member.
- Dr Alice Wei is the new President of the Ontario Association of General Surgeons.
- Timothy Jackson is the Secretary of the Ontario Association of General Surgeons.
- Dr Fayeze Quereshy was appointed as the Medical Director of the Toronto Western Operation Room.

- Dr David Urbach has been named Surgeon-in-Chief at Women's College Hospital.
- Dr Fayeze Quereshy received the Langer Surgeon Scientist Award.
- Dr Paul Greig received the Bryce Taylor Mentorship Award.
- Dr. Michael Reedijk receiving a CIHR grant for his work on the notch signalling cascade in breast cancer.
- The transplant team lead by Dr Markus Selzner performed the first kidney transplant using Ex-Vivo organ perfusion.
- Dr Ian McGilvray was awarded the Frank Mills Award for excellence in teaching.
- Dr Fayeze Quereshy was appointed to the role of Interim Vice President – Toronto General Hospital.
- Dr Timothy Jackson was appointed to the role of Operating Room Medical Director at Toronto Western Hospital.

Neurosurgery

- Shaf Keshavjee MD (Interim Division Head)
- Gelareh Zadeh MD (Deputy)
- Mark Bernstein MD
- Michael Fehlings MD
- Fred Gentili MD
- Mojgan Hodaie MD
- Suneil Kalia D
- Paul Kongkham MD
- Andrew Lozano MD
- Eric Massicotte MD
- Ivan Radovanovic MD
- Charles Tator MD
- Michael Tymianski MD
- Taufik Valiante MD

Recruitments/Promotions/Retirements:

- Dr. Vitor Pereira was recruited (JDMI) cross-appointed to the Division of Neurosurgery.
- Dr. Gelareh Zadeh was promoted to Associate Professor.
- Dr Mojgan Hodaie was promoted to Full Professor.

Major Accomplishments/ Appointments/Awards:

- Dr. Gelareh Zadeh was appointed as the Wilkins Chair in Brain Tumor Research and elected as the Secretary-Treasurer of the Society of Neuro-oncology. Dr.
- Zadeh received the Young Investigator Award, Tumor Section, AANS, and the Alan Hudson Teaching Award.
- Michael Tymianski was awarded a 4 year, \$5.74M USD grant from NINDS for the project: “developing the next generation PSD95 inhibitor”. Michael Tymianski and co-investigators were awarded a 3 year, \$6.6M CDN grant from Brain Canada for the project: the FRONTIER trial.
- Dr Fred Gentili became the inaugural recipient of the Crean Hotson Chair in Skull Base Surgery.
- Dr. Paul Kongkham was awarded a 2-year Innovations Grant from the Canadian Cancer Society Research Institute for his work studying DNA methylation and hydroxy-methylation in human gliomas.
- Dr Andres Lozano received the Order of Canada
- Dr. Taufik Valiante received two neuromodulation related epilepsy grants for closed loop control of seizures– one CIHR and the other CHRP (CIHR-NSERC partnered), and was promoted to a scientist position at the Krembil Research Institute.
- Dr. Michael Tymianski became the inaugural Harold & Esther Halpern Chair in Neurosurgical Stroke Research and received a grant from HSFC, Began enrollment in the Phase 3 FRONTIER stroke trial, and obtained regulatory approval to begin the global, multi-center ESCAPE-NA-1 trial.
- Dr. Charles Tator was elevated to Officer of the Order of Canada.
- Dr. Michael Tymianski was made a Member of the Order of Canada
- Dr. Gelareh Zadeh was appointed as Head of the Division of Surgical Oncology at UHN & Director of the Krembil Neuroscience Program at UHN.
- Dr Taufik Valiante received a \$6.5 million grant from the Canada Foundation for Innovation (CFI) for the “CenteR for Advancing Neurotechnological Innovation to Application (CRANIA)”.

- Dr. Andres Lozano was awarded an honorary doctorate degree from the University of Seville, Spain.
- Dr. Charles Tator was inducted into Canada's Sports Hall of Fame in the Builder category in 2017 for his exceptional work on sports concussions and spinal cord injury treatment and research.

University Division Chairs at UHN:

- Dr Andres Lozano Professor and Chair, Neurosurgery, Department of Surgery, University of Toronto.

Orthopedic Surgery

- Christian Veillette MD (Division Head)
- Jaskarndip Chahal MD
- Rod Davey MD
- Rajiv Gandhi MD
- Johnny Lau MD
- Timothy Leroux MD
- Stephen Lewis MD
- Nizar Mahomed MD
- Wayne Marshall MD
- Darrell Ogilvie-Harris MD
- Raj Rampersaud MD
- Khalid Syed MD
- Michael Zyweil MD

Recruitments/Promotions/Retirements:

- Dr Ogilvie-Harris was promoted to Full Professor

Major Accomplishments/ Appointments/Awards:

- Dr Rajiv Gandhi was selected to be the 2015 American British Canadian (ABC) travelling fellow. This is the most prestigious Orthopaedic travelling fellowship in the world for mid-career academic Orthopaedic surgeons.
- Inter professional Spine Assessment Centre (ISAEC) project successfully showed improvement in access and outcomes for the management of patients with low back pain while at the same time saving money under the leadership of Dr Raj Rampersaud. The MOHLTC has now decided to roll out the ISAEC model across the province as their strategy for the management of low back pain.

- Dr Steve Lewis was awarded the Wightman Berris Academy Award at the University of Toronto for Individual Teaching Performance. He also received the Whitecloud Award for Best Clinical Paper: International Meeting on Advanced Spinal Techniques (IMAST).
- Dr Rajiv Gandhi completed the 2015 American British Canadian (ABC) travelling fellowship. This is the most prestigious Orthopaedic travelling fellowship in the world for mid-career academic orthopaedic surgeons.
- Dr Raj Rampersaud was appointed Provincial Clinical Lead – Rapid Assessment Clinics (RAC) - Low Back Pain Pathway, HQO.
- Dr Rajiv Gandhi was appointed Medical Director Surgery, Altum Health.

Plastic Surgery

- Stefan Hofer MD (Division Head)
- Jamil Ahmad MD
- Dimitri Anastakis MD
- Heather Baltzer MD
- Peter Bray MD
- Brent Graham MD
- Siba Haykal MD
- Steven McCabe MD
- Herb Von Schroeder MD
- Toni Zhong MD

Recruitments/Promotions/Retirements:

- Dr. Toni Zhong was promoted as an Associate Professor.
- Dr Heather Baltzer was recruited as a Surgeon-Scientist.

Major Accomplishments/ Appointments/Awards:

- Dr Brent Graham of the TWH – Hand Program has been appointed as the Editor in Chief of *The Journal of Hand Surgery*.
- Dr Steve McCabe was appointed a Visiting Plastic Surgery Professor by the American Society for Surgery of the Hand.
- Dr Toni Zhong received Canadian Breast Cancer Foundation (CBCF) grant funding 2015 – 2018, was awarded with the CIHR New Investigator Award and the CIHR Foundation Scheme Program Grant 2015 – 2020 for the Development

of a National Quality Improvement Program in Post mastectomy Breast Reconstruction to Optimize the Patient-Centered Experience.

- Toni Zhong was awarded with the George Armstrong Peters Prize for 2016 – 2017, Department of Surgery, University of Toronto.
- A UHN team of Thoracic and Head & Neck Reconstructive Surgeons staged and created a new esophagus for a young acid attack survivor from Bangladesh. The UHN Helps Fund was established through an initiative at the Division of Plastic Surgery for patients from middle to low income developing countries to travel to UHN to receive life-altering complex microsurgical reconstruction that is technologically advanced.

Thoracic Surgery

- Tom Waddell MD (Division Head)
- Gail Darling MD
- Laura Donahoe MD
- Marcelo Cypel MD
- Marc de Perrot MD
- Shaf Keshavjee MD
- Andrew Pierre MD
- Kazuhiro Yasufuku MD
- Jonathan Yeung MD

Recruitments/Promotions/Retirements:

- Dr Laura Donahoe was recruited as Surgeon-Investigator with a special interest in pulmonary thromboendarterectomy and mesothelioma.
- Dr Jonathan Yeung was recruited as surgeon-scientist with a special interest in lung transplantation and esophageal surgery.

Major Accomplishments/ Appointments/Awards:

- Dr Marc De Perrot has led the development of the Surgical Pulmonary Hypertension over the last decade. He has built many aspects of this program, including recruitment of surgical fellows to train specifically for this procedure, development of an international reputation attracting observers from all over the world, a complementary research program in the lab with both basic and translational aspects, and important collaborations with pulmonary medicine and interventional radiology.

- Dr Kazuhiro Yasufuku won an Individual Teaching Award from the Wightman- Berris Academy.
- Dr Andrew Pierre won the Department of Surgery Tovee Award, also recognizing many years of commitment to teaching of surgery.
- Dr Cypel won the George Armstrong Peters Prize for his success as a surgeon-scientist in the early phase of his career and also was awarded a Roscoe Reid Graham Scholarship to help fund that research.
- Dr Gail Darling was appointed to a very important role within Cancer Care Ontario as the Clinical Liaison Lead for lung cancer, advising not only on surgery but all aspects of lung cancer care, including screening, radiation, and systemic treatments.
- Dr Shaf Keshavjee was recognized with honorary degrees from both Queen's and Ryerson Universities.
- Dr Shaf Keshavjee was appointed as an Officer of the Order of Canada.
- Dr Kazuhiro Yasufuku was awarded the Gustav Killian Centenary Medal at the 19th World Congress of Bronchology and Interventional Pulmonology Meeting in Florence and the University of Toronto Faculty of Medicine, Ivan Silver Innovation Award at The Faculty of Medicine's 14th Annual Education Achievement Celebration.
- Dr Shaf Keshavjee was awarded the Dr Joel Cooper Award from the Canadian Society of Transplantation and appointed as Treasurer for the American Association of Thoracic Surgery.
- Dr Marc De Perrot was appointed a member of the Mesothelioma Task Force for the International Association for the Study of Lung Cancer, recognizing his growing reputation in this field.
- Dr Kazuhiro Yasufuku received the Distinguished CHEST Educator Award – a national-level recognition of excellence in continuing medical education.
- Dr Shaf Keshavjee gave the John H Gibbon Jr lecture on the Future of Transplantation at the American College of Surgeons Annual Meeting.
- Dr Marcelo Cypel received a CIHR grant for his clinical trial “Lung Transplantation using Hepatitis C Positive Donors to Hepatitis C negative Recipients” and a CCSRI basic science operating grant to support his oncology research. He was awarded a renewal of his Canada Research Chair in Lung Transplantation
- Dr Marcelo Cypel continues his track record of innovation and translation of laboratory research, launching a ground-breaking clinical trial to remove or inactivate Hepatitis C virus prior to transplantation using Ex Vivo Lung Perfusion.
- Dr Kazuhiro Yasufuku has received an prestigious 5 year research award for 1M over 5 years from CIHR for a project with potential to radically transform the treatment of very early stage lung cancer, transbronchial nanotechnology-mediated Photodynamic Therapy.
- Dr Shaf Keshavjee has received the 2018 Lifetime Achievement Award, Canadian Society of Transplantation
- Dr Keshavjee was recently appointed as the Vice President of the American Association for Thoracic Surgery

University Division Chairs at UHN:

- **2011-19** Dr Tom Waddell Professor and Chair, Division of Thoracic Surgery, Department of Surgery, University of Toronto

Urology

- Antonio Finelli MD (Division Head)
- Dean Elterman MD
- Neil Fleshner MD
- Rob Hamilton MD
- Magdy Hassouna MD
- Michael Jewett MD
- Girish Kulkarni MD
- Jason Lee MD
- Sidney Radomski MD
- Nathan Perlis MD
- Alexandre Zlotta MD

Recruitments/Promotions/Retirements:

- Dr Dean Elterman was recruited as a Surgeon-Investigator. His interests include men's health, incontinence and reconstructive surgery. He was also appointed to Assistant Professor.
- Dr Tony Finelli became Division Chief at the UHN in November 2015.
- Dr Michael Robinette retired in 2018.

Major Accomplishments/ Appointments/Awards:

- Dr. Girish Kulkarni was awarded the Langer Prize at Gallie Day.
- Dr Tony Finelli was invited to participate in a “Crossfire Debate” at the American Urological Association; particular sessions that are attended by more than 1000 registrants.
- Dr Neil Fleshner continues as Chair of the Canadian Uro-Oncology Group and was re-appointed as the Love Chair at PMH.
- Dr Neil Fleshner continued his clinical and basic research in prostate cancer with many major peer-reviewed grants from CIHR, OICR, CPCRF, and Canadian Cancer Society Research institute, Prostate Cancer Canada Research Foundation, Prostate Cancer Research Foundation and NIH.
- The GU BioBank was founded in 2008 to facilitate the discovery and validation of novel biomarkers, aiming to achieve personalized medicine in Urology. Over 380,000 bio specimens have been stored to date from over 16,500 patients. Over the last year, we have received grant funds totalling over \$1.7 million for Biobank related research.
- The division of urology has performed the most robotic uro-oncologic surgeries in Ontario with now having completed more than 1400 procedures related to kidney, testis (RPLND), bladder and prostate cancer.

University Division Chairs at UHN:

- Dr Neil Fleshner Professor & Chair, Division of Urology, Department of Surgery, University of Toronto



Vascular Surgery

- Thomas Forbes MD (Division Head)
- John Byrne MD
- Wayne Johnston MD
- Kathryn Howe MD
- Thomas Lindsay MD
- George Oreopoulos MD
- Graham Roche-Nagle MD
- Barry Rubin MD
- Douglas Wooster MD

Recruitments/Promotions/Retirements:

- Dr John Byrne was recruited as a Surgeon-Scientist, who is working mechanisms of aortic aneurysm wall expansion.
- Dr Kathryn Howe was recruited as Surgeon-Scientist.

Major Accomplishments/ Appointments/Awards:

- Drs. Rubin and Lindsay have led the development and planning of a ‘One program two site model’ for the delivery of cardiac and vascular surgery care in Northwestern Ontario, as announced by Minister Hoskins in July 2015.
- This joint CV program will extend the Peter Munk Cardiac Centre’s reach to re-establish local vascular care and support the development of a local Cardiac surgical service. In the interim the UHN Peter Munk Cardiac Center will be the site for EVAR cases performed by TBHSC surgeon(s). A new joint program in open thoraco-abdominal aneurysm repair has been created in conjunction with the Cardiac Surgery Division at UHN.
- Dr. Douglas Wooster received the Colin Wolff Award for Long Term Contributions to Continuing Education from the University of Toronto Division of CEPD.
- The Division's members continue to have significant leadership positions Dr Forbes (University Chair, Associate Editor Journal of Vascular Surgery, President of CSVS, Chair CCN Vascular Working Group), Dr Lindsay (Royal College Speciality Chair), Dr Oreopoulos (became the Director of Postgraduate Surgery Education Director in addition to his responsibilities as Vascular Surgery Program Director), Dr Roche-

Nagle (Chair of the Radiation Safety Committee), Dr Rubin (Program Head, Peter Munk Cardiac Center, Chair of UHN MSH Academic Medical Organization).

- The Division has continued involvement in major clinical trials (BEST CLI), stem cell therapy for CLI, as well as intervention trials with industry.
- The Division continues to work in conjunction with its partners at St. Michael's and Sunnybrook to fund international fellows for advanced clinical training as well as the support of the University Divisional Citywide rounds and K Wayne Johnston lecturer at the annual research day.
- Dr Graham Roche-Nagle established the pan Canadian Quality Improvement regional group for those using the SVS Vascular Quality Initiative (VQI) platform.
- Dr Kathryn Howe received the University Vascular division's Post Graduate Teaching Award.

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 academically 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.

9. WOMEN'S COLLEGE HOSPITAL



Photo: Courtesy of Department of Medicine



David Urbach, Surgeon-in-Chief, Women's College Hospital

Division Heads:

Orthopedic Surgery: Dr. John Theodoropoulos

Plastic Surgery: Dr. John Semple

Core Staff Surgeons: Division of General Surgery

Dr. David Urbach

Dr. Karen Devon

Division of Orthopedics

Dr. John Theodoropoulos

Dr. Jas Chahal

Dr. Tim Dwyer

Dr. Lucas Murnaghan

Dr. Daniel Whelan

Division of Plastic Surgery

Dr. John Semple

Dr. Mitchell Brown

Division of Urology

Dr. Ethan Grober

Dr. Yonah Krakowsky

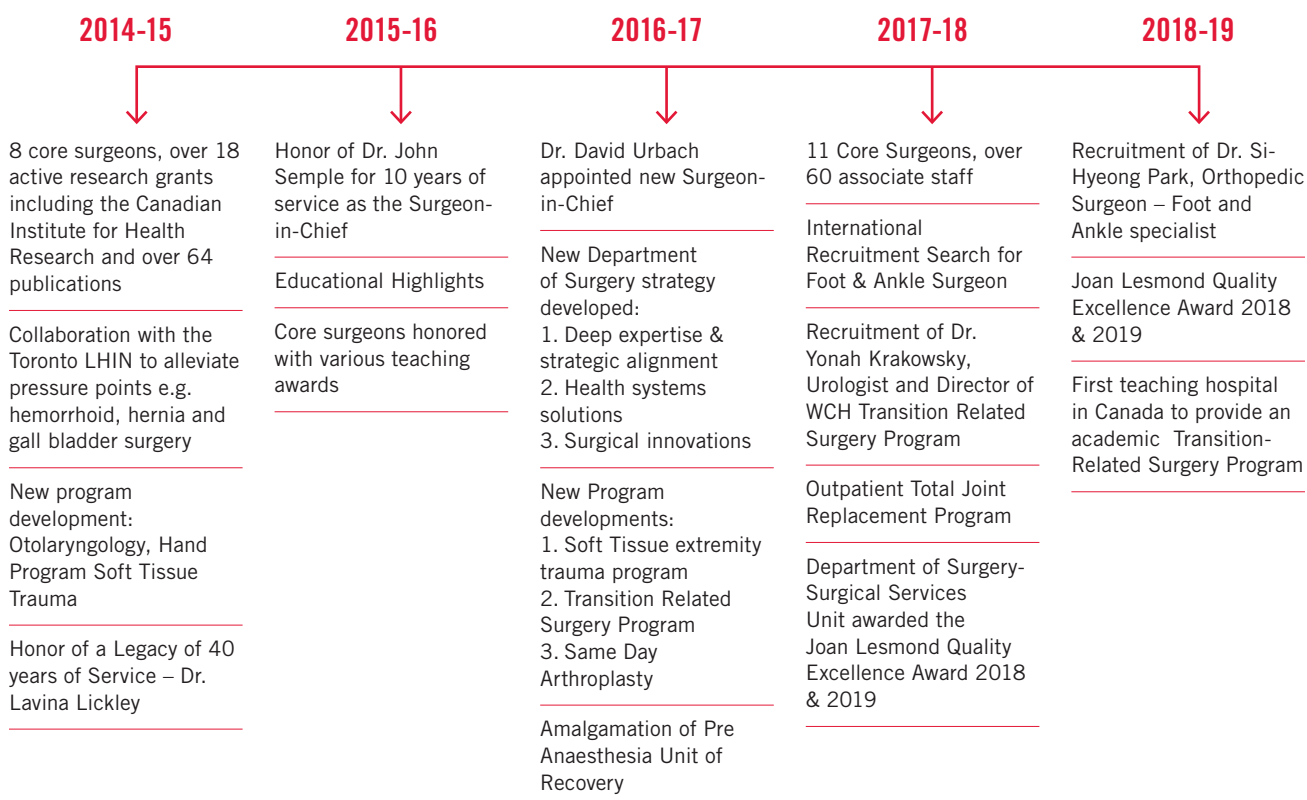
“Healthcare revolutionized for a healthier and more equitable world” is Women’s College Hospital’s strategic vision, and the driving force behind our surgical programs and our focus on Ambulatory Care. We are a recognized leader in women’s health, health equity, ambulatory innovation, and health system solutions. Women’s is the hospital

designed to keep patients out of hospital. We are fully affiliated with the University of Toronto as the designated hub for ambulatory surgery, training and research, in partnership with the Toronto Central LHIN and a member of the Council of Academic Hospitals of Ontario (CAHO).

Over the last 5 years, the Department of Surgery has adapted to respond to the needs of our community members, patients, and internal and external stakeholders. As a Department, we strive to remain in alignment with the hospital's vision through continuing innovation in our areas of

strategic focus, and working to ensure health system sustainability and accessibility for all who enter our doors. Our surgical department is currently home to 11 core surgeons and over 60 associate staff. Our core group is comprised of surgeons whose primary base is Women's College Hospital, and are all cross-appointed at other GTA hospitals. Their clinical interests include minimally invasive surgery, endocrine and thyroid surgery, medical education and ethics, sports medicine, pediatric orthopedics, breast surgical oncology and breast reconstruction, aesthetic surgery, urological dysfunction, sexual health, and transition related surgery.

Milestones



2014-2015

In 2014, The Department of Surgery was housed in Phase I as the upcoming development of our new facility was under construction, and by 2015, the hospital redevelopment plan was completed and our new state of the art facility was open to the public. Women's College Hospital stands firm in its new

L-shaped 420,000 square foot, 9-story infrastructure with a capacity to serve 340,000 patients per year. Surgical Services was redesigned with 10 state-of-the-art Operating Rooms in conjunction with various specialized clinics, education and research facilities fashioned to further enhance the patient

care experience. During this period, our 8 core surgeons held over 18 active research grants and over 64 publications. The rank of excellence was a continuous theme marked by the undergraduate students who rotated through our various divisions and the University of Toronto and the Sports Medicine Program (UTOSM) established a teaching curriculum and research program for residents and fellows. Within the Division of General Surgery, Dr. Karen Devon and Dr. Tulin Cil developed a new ambulatory general surgery rotation, with weekly guided reflective practice. Dr. Devon established the Endocrine Surgery Journal Club, Department of Surgery Book Club and the Ethics Quality of Care Rounds. Through the Allergan Breast Fellowship Program, the Division of Plastic Surgery continued to train and mentor fellows locally and from abroad. Through our partnership with the Toronto Central Local Health Integration Network (LHIN) we identified and reviewed key pressure points within the health system, and in the Fall the implementation of an Otolaryngology, Hand Program, and the Soft Tissue Trauma Program were established.

As we continued to expand, so did our recruitment process with the recruitment of Dr. Tim Dwyer, Orthopedic Sports Medicine and Arthroscopy surgeon. With a cross appointment at Mount Sinai Hospital, Dr. Dwyer's clinical practice included open and arthroscopic surgery of the knee, shoulder, hip and ankle. His research focus was based on the assessment of surgical competence and assessment of competence in the performance of technical procedures.



Womens College - Tim Dwyer and James Rutka

The department honored the legacy of Dr. Lavina Lickley for her 40 years of dedicated service. Her academic and clinical accomplishments were deeply rooted in the Women's College Hospital culture dating back to 1977, when she was one of the co-founders of the Henrietta Banting Breast Centre, which addresses breast health, breast-related diseases and breast reconstruction. Dr. Lickley was the Chief of Surgery from 1989 to 1998 and in 1991; she became the first woman surgeon in Canada to become a Full Professor at the University of Toronto.

2015-2016

Dr. John Semple completed his term as Chief of Surgery. During his 10-year tenure, Dr. Semple's dedication shaped the department through a period of transition and redevelopment that not only led to the recruitment of our key surgeons to date, but his leadership contributed to the advancements of our current surgical areas of focus. Dr. Semple's leadership roles extended beyond the walls of our department to include his Chair in Surgical Research of the Canadian Breast Cancer Foundation (Ontario chapter); Vice Chair, Board of Governors, Ontario College of Art and Design University; and as an internationally known clinician and scientist for his contributions to women's health.

Through the continued partnerships with neighboring hospitals and governing bodies, the Province of Ontario through its Post Construction Operating Funding (PCOP) helped to facilitate the establishment of new programs and tackle the system pressures of existing underserved areas.

Through their continued contributions of their clinical, educational and research endeavors our core surgeons were recognized for their many achievements:

Dr Ethan Grober:

- **Lois H Ross Resident Advocate Award, Nominee 2016**
Urology, Dept of Surgery,
Faculty of Medicine, PARO
Resident Well-being & Advocacy.

- **Wightman-Berris Academy Post Graduate Teaching Award 2015**

Urology, Dept of Surgery, Faculty of Medicine,
Wightman-Berris Academy
*Wightman-Berris Academy Post
Graduate Teaching Award.*

Dr. Mitchell Brown:

- Arnis Freiberg Faculty Teaching Excellence Award - Presented in recognition of outstanding contributions to plastic surgery resident education, 2016
- President's Medal - Canadian Society of Plastic Surgeons. In recognition of extraordinary contribution to the betterment of the specialty of Plastic Surgery, 2016
- Chairman's Medal - Division of Plastic and Reconstructive Surgery - University of Toronto. Recognizing contributions to the Division of Plastic and Reconstructive Surgery, 2016



Dr Lavina Lickley:

- Awarded Professor Emeritus, Depart of Surgery, University of Toronto

Dr John Semple:

- Dr. John Semple was awarded the "Mentorship Award" by the Women's College Hospital Research Institute, 2016
- University of Toronto - Gallie Day: Award in recognition of 10 years of service as the Chief of Surgery at Women's College Hospital, 2016
- Chairman's Medal - Division of Plastic and Reconstructive Surgery - University of Toronto. Recognizing contributions to the Division of Plastic and Reconstructive Surgery. 2016.

Dr Danny Whelan

- 2016 Jun - present Associate Professor, Orthopaedics, Surgery, University of Toronto, Toronto, Ontario, Canada
- 2016 Apr - 2016 May 2016 ESSKA - AOSSM DJO Travelling Fellowship, American Orthopaedic Society for Sports Medicine

2016-2017

Dr. David Urbach was appointed the new Surgeon-in-Chief and Medical Director of Perioperative Services, succeeding Dr. John Semple. As he stepped into his new role, our department continued to grow with 11 core surgeons and over 60 associate staff. To continue on the path of advancement, the Department held a Strategic Planning Retreat to outline a new strategy. The three major themes of development included:

1. Deep Expertise and Strategic Alignment,
2. Health System Solutions, and
3. Surgical Innovation.

In the Spring of 2016, Surgical Services amalgamated the Post Anesthesia Care Unit (PACU) and Phase 2 Recovery area into a single new Peri-Anesthesia Unit (PAU). This merger recognized the need to deliver post-operative care in a new and innovative approach. All surgeries at WCH are ambulatory, with over 97% of our patients discharged home the same day, and the remaining 3% staying in the Acute Ambulatory Care Unit (AACU) for less than 18 hours. The goal was to develop a model of care that supported the patients' entire journey throughout surgical services with the vision that patients would be at the centre of care. Nursing staff and support staff would be able to respond to the area of the greatest patient need and bottlenecks that occurred due to staff or space constraints, would be reduced and or eliminated in some cases. This remodel improved efficiency, reduced downtime and offered a rapid and flexible response to surges in patient care needs and volumes, with all nursing staff having the knowledge and judgement to care for patients in all the phases of care.

Recruitment remained a priority, and the search of a General Surgeon to develop a new centralized intake program for hernia and gall bladder surgery and an Urologist to develop a program in sexual medicine and transition-related surgery were underway.

The Soft Tissue Extremity Trauma Program was created to provide rapid access to the OR for repair of soft tissue injuries in the LHIN and the establishment of new programs in sexual medicine and health, transition related surgery (chest wall and genital surgery) and same day hip and knee arthroplasty surgery were in process.

Educational and promotional accomplishments were seen throughout our specialized services as follows:

Dr. Ethan Grober was appointed Director of Undergraduate Medical Education in the Division of Urology at the University of Toronto; Co-authored the Canadian Urological Association Guidelines on the Management of Peyronie’s Disease; Leading the implementation of “bottom” urological transgender surgery at Women’s College Hospital.

Dr. David Urbach was elected as a Fellow of the Canadian Academy of Health Sciences

Dr. Tim Dwyer received three grants (UHN Arthritis Program, ConMED Linvatec Grant, Women’s College Hospital Academic and Medical Services Innovation Fund), and published 10 peer reviewed papers.

Dr. Mitch Brown was an author on three publications including an invited CME paper on secondary breast augmentation, and a co-author on a paper published in JAMA. He completed his 10- year term as Program Director for the Division of Plastic and Reconstructive Surgery.



Dr. Karen Devon initiated a program in Surgical Ethics at WCH, with an inaugural speaker in Humanism in Surgery, and developed a course in Ethics and Professionalism for the Year 1 Foundations course.

2017-2018

Women’s College Hospital’s participation in the Accreditation Canada process during December 2017 with the collaborative efforts of all areas, afforded our organization with being accredited with Exemplary Standing, the highest rank from Accreditation Canada. This honorary status reinforced our commitment to patient-focused care and in that same year, our Surgical Services Team was awarded The Excellence in Collaborative Innovation Award for their joint efforts with the Acute Ambulatory Care Unit (AACU). Dr. Karen Devon led a multi-disciplinary team in developing an innovative model of care for outpatient thyroid surgery, creating a standardized ambulatory approach of care for WCH thyroidectomy patients that ensured safe, high-quality care. This initiative enabled a reduction in average length of stay and increased level of patient and staff satisfaction. In partnership with Gynecology, the nurses from surgical services and gynecology were recognized with the Excellence in Collaborative Leadership Award for leading a full professional education day for staff. Sessions included hands-on methods to engage staff and featured several guest speakers. Cancer Care Ontario presented Women’s College with a certificate for Meeting Target for Cancer Surgery Wait Times – Time from Referral to Consult (Wait 1).

We held an international search for an Orthopedic Foot and Ankle Surgeon to develop a new centralized intake program for foot and ankle procedures, with an aimed start date of August 2019. We welcomed Dr. Yonah Krakowsky, Urologist, who would develop a program in sexual medicine and surgery and serve as Medical Director for the new WCH Transition-Related Surgery program.

Our program expansion was in full swing. In May 2018, we launched a new completely Outpatient Total Joint Replacement Surgery Program – the first of its kind in Canada. With a major focus on pre-operative & post-operative management, state-of-the-art anesthesia and surgical techniques, virtual care applications, and cross-disciplinary collaboration, this program aims to reduce the dependence on in-patient beds

for common major surgical procedures, improve wait times, and keep patients out of hospital allowing recovery in the comfort of their homes.

In June 2018 an exciting new model of care was created for women with findings concerning for breast cancer. Through a collaboration of the Departments of Surgery, Pathology and Laboratory Medicine, Nursing and the Joint Department of Medical Imaging, we developed an Accelerated Diagnostic Pathway (ADP). This model strives to provide a seamless journey of care from diagnosis through to treatment with rapid diagnostic wait times (less than 48 hours), and more timely access to treatment and supportive care. The time from biopsy to diagnosis decreased by more than 50% with the introduction of the new ADP model.

The Transition-Related Surgery Program focuses on providing secure and prompt access to transition related surgeries. This program's evolution is a result of partnerships with Sherbourne Health Centre, Rainbow Health Ontario and the Centre for Addiction & Mental Health (CAMH) and the numerous health practitioners and community member's efforts. The focus at this time was on "top" masculinizing and feminizing chest surgery, with a plan to start performing "bottom" surgeries including vaginoplasty in the subsequent year.

Accomplishments by our core group included the following:

David Urbach served as President of the Canadian Association of General Surgeons in 2017-18, and was an author on 21 peer-reviewed publications.

Mitch Brown was promoted to Full Professor and was the recipient of the Tovee Award for Excellence in Post Graduate Education in the Department of Surgery, University of Toronto. He authored a chapter in *Plastic Surgery: 4th Edition V.5, Breast*. He presented 25 lectures at 7 medical conferences including a live surgical presentation at the Southeastern Society of Plastic Surgery and Reconstructive Surgeons in Atlanta, Georgia and was Visiting Professor at Dalhousie University in Halifax, Nova Scotia.



John Semple and Mitchell Brown

Jas Chalal was the recipient of the Bernard Langer Surgeon Scientist Award. This prestigious honour is awarded to an outstanding graduate of the Surgeon Scientist Program in the Department of Surgery who shows the greatest promise for a career in academic surgery.

Karen Devon was appointed to the Board of Directors, Cancer Care Ontario. She was a panelist on Bioethics for Health in a Digital Age, and Co-Director of a Surgical Ethics Course at the University of Toronto. She published 4 peer reviewed articles and presented at the Surgical Forum of the American College of Surgeons in San Diego.

Tim Dwyer published 4 peer reviewed journal articles and is a collaborator on a CHIR grant on the study of Development and feasibility testing of an intervention to manage knee OA risk factors after anterior cruciate ligament injury.

John Semple currently held multiple distinguished appointments including the Chair of the Surgical Breast Cancer Research, Canadian Cancer Society. He was appointed an Adjunct Professor at OCAD University, and also appointed to the Board of Directors for the Assessment of Surgical Site Infections Surveillance Technology (ASSIST). This is an International working group based out of Washington University, Seattle funded by the Centre for Disease Control. He was awarded the Senior Scholar in the Graduate Faculty at OCAD University in the programs: Design for



Health and Interdisciplinary Masters in Art, Media and Design. He attended 13 invited visits and holds 3 grants including a CIHR patient-orientated research (SPOR) collaboration grant.

Yonah Krakowsky published 3 peer-reviewed articles and holds 3 grants including the International Society for the Study of Women's Sexual Health. He is the undergraduate education coordinator for Urology and Assistant Program Director for the Urology Residency Program and in collaboration started the Transition Related Surgery Rounds at WCH, he organized the "Surgeon and Society" Event and spoke at the Toronto East General Hospital Grand Rounds.

2018-2019

This year has been an excellent example of how we have implemented our three strategic planning themes of development:

1. Deep expertise and strategic alignment
2. Health System Solutions
3. Surgical innovations.

Through an international search process, we welcome Dr. Si-Hyeong Park who will be joining the Department of Orthopedics with a cross appointment at Mount Sinai Hospital for his expertise in foot and ankle surgery.

Surgical Services was awarded the Joan Lesmond Quality Excellence Award for two health

care projects. The first was for Medication Reconciliation. This distinction recognizes teams for their achievement in quality excellence that supports the vision, mission and values of WCH. This initiative was to ensure unintended medication discrepancies do not occur. This program was an inter-disciplinary collaborative effort, with pharmacy technicians conducting Best Possible Medication Records, and pharmacists performing Medication Reconciliation at discharge. A second quality award went to the Ambulatory Total Joint Replacement Program. This multidisciplinary effort provided outpatient total joint replacement surgery program, which engaged patients and their families to ensure a safe and efficient discharge from hospital to home. The patients were followed post-operatively using a virtual care app and video conferencing with the use of a tablet to monitor progress for 3 days after surgery by nurses and surgeons. This collective mandate was to provide the same standard of care and safety that patients receive in an inpatient unit, but in the comfort of their own home.

Not only are we proud to be the first in Canada to establish the first academic Transition-Related Surgery Program, but this collaboration would not have been possible without the expertise and strategic alignment of clinical staff, community and governmental partnerships. Ontario has the highest trans population in Canada, and being able to offer this service has allowed those living in Ontario access to quality care without having to travel out of province or abroad. This has aided in reducing the need for out of province coverage and allows follow up care where patients live. In June of 2019, Women's College Hospital welcomed the world renowned Dr. Marci Bowers to help mentor our surgeons in performing transition-related genital surgery. A pelvic and gynecologic surgeon with more than 29 years experience, Dr. Bowers worked alongside our staff as part of an advanced international training and mentorship opportunity.

We continue to press forward with our initiatives using a multidisciplinary approach as we collectively work towards revolutionizing our commitment to healthcare equity through world class research, innovation and education.

A blurred background of an office setting, featuring a black office chair and a wooden desk. A large, semi-transparent blue diagonal shape cuts across the bottom right corner of the image. The number '20' is prominently displayed in the center, with a white-to-blue gradient.

20

CONCLUSION

2020 CONCLUSION



Mari and James Rutka, Casa Loma 2017

It has been an honour and a privilege to serve as the RS McLaughlin Chair of the Department of Surgery at the University these past 5 years. We have made great strides in our progress across all pillars of our strategic plan. While I am very proud of the fact that our research and philanthropic funding have doubled since I was appointed as Chair by Dean Catharine Whiteside in 2011, I take equal pride in knowing that we continue to publish in the highest impact journals in our specialties, we promote our faculty to higher ranks along a defined and consistent upward trajectory, we have recruited the best and brightest new faculty members with

an increasing percentage of women recruits, and we offer outstanding educational programs for medical students, residents, and fellows alike.

New areas of interest in the Department of Surgery these past 10 years have included an emphasis on quality and best practices, global surgery, and equity, diversity and inclusion.

It was my goal to work assiduously with my colleagues in the Department in all spheres to improve our ranking in surgery using external ranking systems and metrics. That is why I am

absolutely delighted that in the most recent *US News and World Report* of rankings of departments of surgery around the world, the University of Toronto Department of Surgery ranked in the fourth position world-wide in 2020. I acknowledge that it has taken decades of hard work and attention to the academic mission by my predecessors to reach this coveted position, but in the same breath I am optimistic that we will continue to rise in the world rankings given the historic tradition that rests at the University of Toronto.

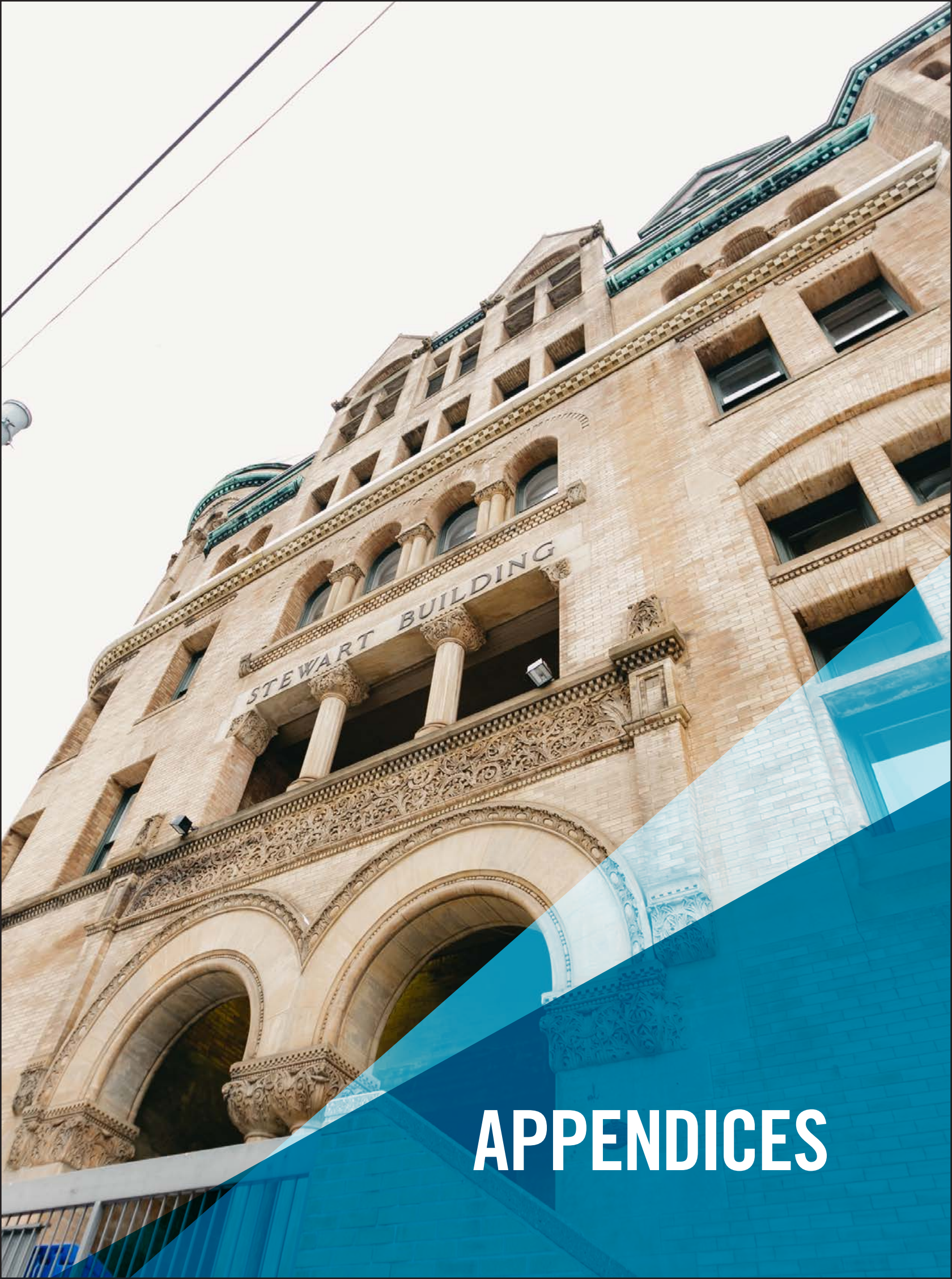
Special thanks are given to the two Deans of the Faculty of Medicine with whom I have worked closely these past 10 years, Dean Catharine Whiteside and Dean Trevor Young. They have both been stalwart supporters of and advocates for the Department of Surgery.

None of the above or nothing in this report would have been possible without the support of my very capable and effective Executive and Senior Advisory Committees, my Education Directors, the University Chairs of Surgery, the Program Directors, and the Hospital Surgeons-in-Chief and Division Heads.

Special thanks are given to Ori Rotstein, my Associate Chair, without whose sage advice and wise counsel these past many years, I would not have been able to accomplish what I did.

I was indeed fortunate to have outstanding assistance in the Department of Surgery offices in the Stewart Building led by business manager Nancy Condo, and administrative assistant to the Chair, Sylvia Perry. New hires in our offices who have been instrumental in our success include Stephanie Neilson (Communications and Web Coordination), Joanna Giddens (Strategic Plan Implementation Coordinator), and Stacey Krumholtz (Medical Illustration). Without them and the entire administrative office staff, we would not be in the enviable position that we are.

Finally, I should like to acknowledge and thank my wife, Mari, for her love, support, and understanding these past 10 years during my tenure as Chair of the Department of Surgery. Her good grace and willingness to be involved in many formal and social events over so many years have made my serving in the capacity as Chair both extremely rewarding and seamless.

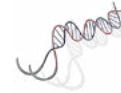


STEWART BUILDING

APPENDICES

APPENDIX A

Report of The Task Force for Financial Sustainability of the Surgical Scientist Training Program



Report of The Task Force for Financial Sustainability of the Surgical Scientist Training Program

The Department of Surgery
University of Toronto

January, 2019

INTRODUCTION

The Surgeon Scientist Training Program (SSTP) has been vital to establishing the Department of Surgery at the University of Toronto as one of the leading academic Surgery Departments in the world. The SSTP began in 1983 and has trained 410 residents with 300 MSc and 110 PhD students. The SSTP attracts the residents interested in research, produces high impact research, and serves as a training ground for academic surgeons worldwide. The number of surgical residents enrolled continues to rise as a measure of the success of the SSTP, but this has placed an unsustainable financial burden on the Department. Thus, the SSTP must be financially sustainable and thriving as an essential component of the Department.

BACKGROUND

Orthopaedics, Plastic and Reconstructive Surgery, Urology and Vascular Surgery residents enter the SSTP at their current PGY level of funding. Cardiac, General Surgery and Neurosurgery residents enter the SSTP at their next PGY level of funding. This level of funding is maintained throughout the duration of the SSTP. In two subspecialties (Cardiac Surgery and Neurosurgery), the first year of funding is provided by the MOHLTC. While the salary and benefits vary according to mixture of PGY levels, the average cost is \$68K/resident/year. Tuition of approximately \$8490/yr is the responsibility of the resident, supervisor and/or Division.

The revenue for the SSTP comes from many sources (**Figure 1**) including support from the Department of Surgery. Funding from many of these sources, however, is not confirmed until well into the academic year in which the residents have already been accepted. This poses a dilemma for the Department because the residents are already enrolled but all sources of revenue are not confirmed. While supervisors and external sources provide a portion of the funding, the remainder is provided by the Department of Surgery. The funding from the Department of Surgery does not increase with the number of residents. That is, the Departmental contribution is depleted once a certain number of residents are enrolled after which there are no more funds to offset the cost of residents in the SSTP.

CURRENT SITUATION

The number of residents entering the SSTP was on average of 10/yr until 2011, after which the average rose to 15/yr (**Figure 2**). For 17/18, 22 residents entered the SSTP. The gap between available funding and the cost of the Program for 17/18 was \$496,000. The deficit for 17/18 was resolved by a one-time contribution from the University

Divisions based on the recommendations of a task force led by Dr. Tom Forbes, Chair, Division of Vascular Surgery. Given 16 residents will enter in 18/19 and assuming the mix of PhD and MSc residents is 50% (currently 66% are PhD students), the deficit will rise to approximately \$750K for that year and beyond (**Appendix 1**).

TASK FORCE

In January 2018, Dr. Rutka struck a Task Force to provide recommendations to achieve mid- and long-term sustainable funding for the SSTP. The terms of reference for the Task Force are provided in **Appendix 2**.

The members of the Task Force are listed in the **Appendix 3**. The Task Force interviewed individuals listed in the **Appendix 4**.

The Task Force recommendations were governed by the following principles:

1. The SSTP must be financially viable on a year-by-year basis with a reserve for contingencies.
2. The quality of the SSTP must be preserved or enhanced.
3. The number of residents entering the SSTP should be maximized.
4. The SSTP must remain a Departmental program and any recommendations should not be divisive among Divisions.

Several options for a sustainable program were considered:

Reduce expenses:

1. Reduce number of enrollees.
2. Reduce salary of enrollees.
3. Alter mix of MSc and PhD students.

Increase revenues (directly possible):

1. Increase supervisor contributions (in amount and/or years).
2. Increase University Divisional contributions.
3. Increase support from University (Department or Faculty of Medicine) and/or hospitals.

Increase revenues (avenues to pursue):

1. Increase funding through Advancement.
2. Increase number of external awards received by SSTP trainees.
3. Increase number of Divisions that provide MOHLTC funding for first year.
- 4.

DELIBERATIONS/INTERVIEWS

A fulsome rendition of all discussions is beyond the scope of this document. What follows is a summary of the general impressions/discussion that were held.

- The SSTP has to a large extent accepted most applicants. Substantially reducing the number of enrollees in the SSTP raised several concerns. The SSTP is a major attraction of the Gallie program for potential residents and impeded access to the SSTP through a selection process might deter them from applying to the Gallie program. Also, several Divisions are relatively new to enrolling residents in the SSTP and any reduction might

interfere with that evolution. On the other hand, setting an upper limit of the number of residents entering the SSTP that had a minimal impact on acceptance would provide financial predictability.

- Entrance to the SSTP should be primarily based on merit of the candidate, the supervisor and the proposed research project. The issue of Divisional quotas raised concerns of diminishing the Departmental role in the SSTP and possibly causing divisiveness among Divisions.
- Residents prolong their training by joining the SSTP. Beyond being somewhat unfair to sharply reduce their income from their respective PGY-levels, it was also felt that substantially reducing their salaries would serve as a significant disincentive to joining the SSTP. In addition, the PGME and CIP at the current time do not allow reduction from PGY levels of remuneration.
- The shift towards more PhDs than MScs within the SSTP reflects expectations for successful Surgeon Scientists, and perhaps an ability to enter the job market upon graduation. However, any process that restricted trainees from choosing the ideal degree might impede their academic success.
- The Faculty of Medicine has a declining budget. Also, the Research Institutes at the Hospitals support research locally and are hesitant to create precedent by supporting one Department.
- Throughout the scientific community, it is the supervisors' responsibility through grants or external fellowship awards to support graduate student salaries. However, sharply increasing supervisor contribution beyond CIHR rates may increase the likelihood of supervisors shifting to hiring non-surgeon graduate students. CIHR funding rates provided below suggesting that \$35K is a reasonable lower limit. The other issue raised concerning supervisors' contribution was that Junior Faculty are less likely to have external grant support. It is recognized that these amounts do not reflect University MSc/PhD graduate student salaries which are paid at a lower rate.

CIHR Doctoral Research Award	Support students pursuing a Ph.D. degree in a health-related field in Canada or abroad.	\$30,000 stipend \$5,000 research allowance	Up to 3 years
CIHR Fellowship Award	Support candidates at the post-Ph.D. or post-health professional degree. Fund and recognize researchers early in their career.	\$40,000-\$50,000 stipend \$5,000 research allowance	Up to 5 years

- Both supervisors and residents in the SSTP need to apply for more external awards.
- How to address the issue that some Divisions do and other do not receive MOHLTC funding was controversial. Those Divisions that receive funding see that this reflects the reality of their training schemes. Those Divisions that do not receive the funding see this as 'unfair'. Thus, any solution should reflect both positions.
- Supervisors must be accountable for funding of residents' salaries. Also for residents who perform research supervised by faculty outside of their Division, the responsibility for the external supervisors' contribution must be made clear. This should be done in consultation with the Division leadership.
- While encouraged to seek philanthropic support for the SSTP, the Divisions benefit from the brand of the Department of Surgery and the prestige of the SSTP. Thus, ideally any philanthropic funds should benefit both the Division/Supervisor and the Department.

- Residents who enter the SSTP are not universally completing their degrees.

SUMMARY

No single solution will address funding stability of the SSTP. Given that everyone in the Department of Surgery benefits from the SSTP (residents, supervisors, University Divisions, and Surgeons in Chiefs), then all parties have a stake in ensuring the SSTP is financially valuable.

RECOMMENDATIONS

1. Continue limitation of Departmental support to 2 or 4 years for MSc or PhD students, respectively. The residents and supervisors should have a signed contract indicating their mutual responsibilities including timely completion of the graduate degree program, and documentation of financial support for the proposed years of study.
2. Potential candidates for SSTP should be identified as early as possible in their training to provide as much lead-in time as possible to apply for external funding.
3. SSTP trainees should apply to more than 3 external award agencies/yr. Opportunities for funding are made available through the Research Office in the Department of Surgery.
4. If an SSTP trainee receives funding in excess of her/his total PGY-level salary, then she/he should be permitted to keep a portion of this amount as part of the total remuneration (e.g. \$3-5K).
5. The transfer of SSTP residents from a MSc degree to a PhD degree should only be allowed if the residents' project is deemed meritorious by the Program Advisory Committee (PAC) and the Department of Surgery Research Committee, and if there is a guarantee from all parties (i.e. Resident, Supervisor, Division and Department) of sufficient funds to complete the higher degree.
6. Supervisors must provide documentation of sufficient funds to support SSTP residents throughout all years. Funding may be from a variety of sources (e.g. grants, endowed funds, philanthropy, AEFs etc), but must be confirmed in a signed contract and ratified by the Research Office in the Department of Surgery.
7. Financial obligations for SSTP residents who are supervised outside of their respective Division, or outside the Department of Surgery, should be confirmed and formalized in a signed contract.
8. Prospective SSTP residents with full funding whose applications are meritorious to the Division and Vice-Chair of Research should be accepted into the SSTP. The remainder of the training slots should be competitively chosen to reach a total number of less than 20 SSTP trainees/yr.
9. SSTP trainees in Divisions without MOHLTC funding for the first year of the program whose applications are acceptable should ensure that sufficient support exists from the Supervisor, Division and the Department of Surgery prior to entry.
10. Scientists in the Department of Surgery are encouraged to train SSTP residents. As they typically will not have access to clinical income pools and/or access to Divisional AEFs, they will potentially need special considerations as may be provided by the Department of Surgery, the Hospital Research Institute, or the University Division.
11. Philanthropic funds raised by the Divisions should be split in some manner so as to offset Departmental contributions and expenses. In order to make the accounting possible, salaries for the SSTPs should come from cost centers that clearly distinguish philanthropic from non-philanthropic funds. This distinction will be made by the Research Office in the Department of Surgery.
12. Any external fellowship awards to SSTP residents should offset both the Supervisor's and Departmental costs in a suggested 2:1 ratio, respectively.
13. The Department of Surgery's advancement efforts should aggressively pursue funding for the SSTP. There should be an urgent fundraising effort with a target of over \$1M to address the anticipated 2018/19 funding

gap. In support of those efforts, the Department of Surgery Research Committee should determine measures of success of the graduates of the SSTP such as number of SSTP graduates in academic practice, number with grant-supported research programs, number who are supervising graduate students, H-index of SSTP graduates at 1 and 5 years in practice, and examples of high impact publications and/or exemplary research activities.

14. The Royal College of Physicians and Surgeons, through the Specialty Sections, may be lobbied to approve one year of research in Urology, Vascular Surgery, General Surgery, Plastic and Reconstructive Surgery, and Orthopaedics across the country.
15. Once the SSTP is in a surplus position, the Supervisor's contribution and/or number of residents enrolled/year should be re-evaluated.
16. This Taskforce Report should be circulated to the entire Department to inform all faculty of the funding shortfall and to indicate the widespread approach to ensuring financial viability. In addition, this report may assist in any fund-raising efforts and to lay the groundwork for a possible, future faculty-wide contribution.

OTHER ISSUES

1. The Department may wish to consider aligning SSTP funding with Departmental strategic priorities. This may impact either which areas to support and/or level of support. Also, the mixture of MScs and PhDs could be influenced by funding levels. However, strategic priority setting (whether it be by scientific focus, Division, and/or type of degree i.e. MSc/PhD) would require an entirely different process and does run the risk of creating divisiveness within the Department.
2. The selection of SSTP enrollees and/or Departmental support may need to favor more junior faculty members who are less likely to have received sufficient grant support.

RISKS TO THE PLAN

1. Failure of supervisors to provide an ongoing contribution for the remuneration of their SSTP trainees; in this case, the funding shortfall should be the responsibility of the Divisional Chair.
2. Even if all recommendations are enacted, a deficit may remain; in this case, the amount of the Divisional/Supervisors' contributions may need to be raised and/or a Department-wide contribution may need to be applied.

Figure 1. Surgeon Scientist Training Program Funding 2009/10 – 2017/18



Figure 2. Surgeon Scientist Training Program Enrollment 2002-2018

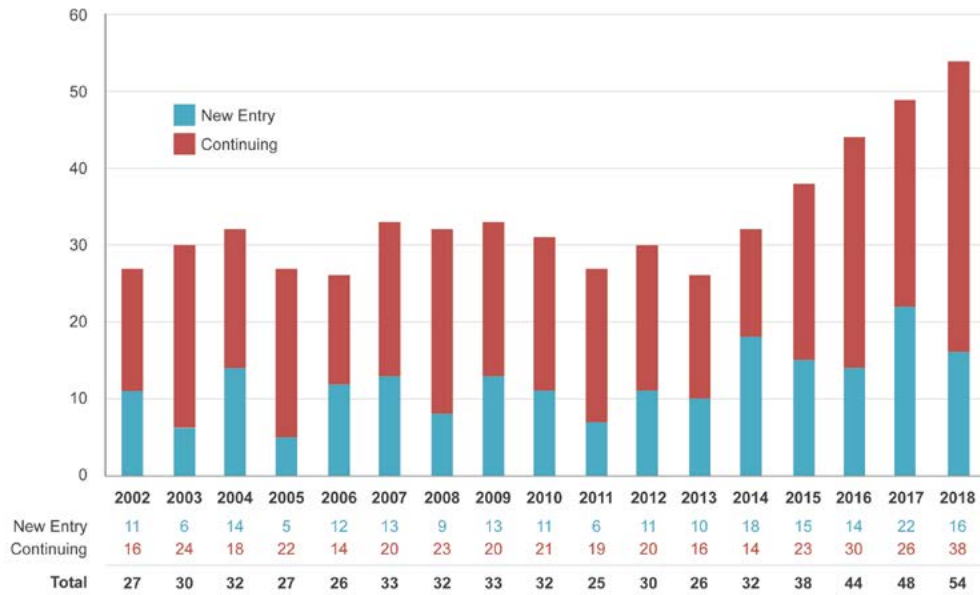
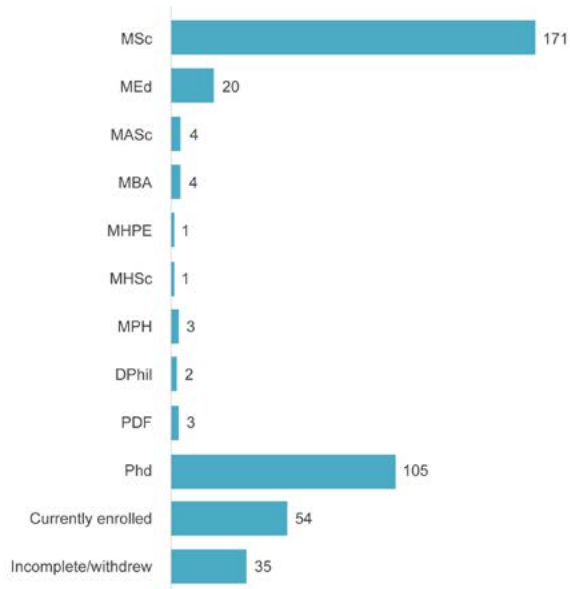


Figure 3. SSTP Graduate Survey 2018: Degrees received from 1983-2018



Appendix 1

FUNDING FOR THE SSTP

Clinician/Graduate Scholarship program: The PGME provides approximately 50% of the difference between external funding and the PGY salary including benefits and tuition for all years of the external award. Any remaining costs are provided by the Department. The Department mandates the application to this program and funding each year.

The Clinician Investigator Program is a competitive process providing one year of PGY salary and benefits. The supervisor, Division, and/or SSTP resident cover the cost of tuition.

Endowed Departmental Fellowship/Scholarship funds are available to SSTP by matching the terms of reference of the endowed fund with the SSTP discipline/research to help offset total Departmental costs.

The MOHLTC provides first year salary and benefits for residents in Cardiac Surgery, Neurosurgery, and General Surgery.

Postgraduate Medical Educational Awards are competitive awards with a value range of \$500 - \$15,000/yr. The Department makes up the difference in PGY salary and benefits for the SSTP residents. Tuition is the collective responsibility of the resident, supervisor and/or Division.

CALCULATION OF ADDITIONAL COSTS

For 2018/19, assume \$68K/yr for additional residents, with 20 enrollees (going from 48 to 60 enrollees), and an average of 3 years in the program (i.e. 50/50 mix of MSc/PhD). For every resident above/below this number that would raise/lower cost in a sliding scale by \$2-20K per year for 1-10 additional residents, respectively.

Based on 2017/18 mix, 7 of 18 residents were in non-MOHLTC funded first year. Thus additional cost of $7 \times \$6000 = \$42,000 + \$496,000 = \$538,000 - \$300,000$; based on Divisional contribution of 5K/resident/yr = \$658,000 additional costs for 2018/19.

Assuming remainder of supervisors equally bore cost, $60 - 11 = 49$ supervisors. $\$658,000/49 = \$13,428$ additional cost beyond supervisor \$30K/year.

This additional cost estimate may be low because the number of PhDs in the SSTP is rising. The additional cost estimate may be high because of external awards.

Appendix 2



Surgery
UNIVERSITY OF TORONTO

James T. Rutka, MD, PhD, FRCSC, FACS, FAAP, FAANS
R.S. McLaughlin Professor and Chair

March 23, 2018

Dr. James Wright
jameswrightoxford@gmail.com

Re: Task Force on the long-term financial sustainability of the Surgeon Scientist Training Program (SSTP)

Dear Jim,

The Department of Surgery takes great pride in the SSTP, which has trained hundreds of residents towards higher degrees, and academic careers in surgery and science. As a priority program, the SSTP is mission critical to the Department. In recent times, however, the long-term financial viability of the SSTP has been called into question. Severe deficits will be faced in the Departmental budget if a sustainable, balanced model of funding is not developed and followed.

The Department of Surgery would like to engage you to perform a review of the SSTP specifically for the purposes of recommending a model(s) for its long-term financial sustainability.

The review will consider current and projected expenditures, the number of SSTP residents, and all revenue sources. The report will specifically address funding for the academic year 2018-19 and beyond. The following are some terms of reference to provide the framework for your review of the SSTP.

Terms of Reference:

You will be retained to perform a review of the SSTP financials.

You will have an opportunity to form a task force committee, as needed, to perform the review.

You will be enabled to interview members of the Department of Surgery (faculty and residents) as required.

You will have access to the appropriate financial documents and funds that support the SSTP.

You will endeavor to complete a written report within 120 days upon completing all

Department of Surgery, Faculty of Medicine
149 College Street, 5th Floor, Toronto, Ontario, Canada M5T 1P5
Tel +1 416-978-2623 • Fax +1 416-978-3928 • james.rutka@utoronto.ca • www.surgeryutoronto.ca

interviews, and research.

You will present your report before the Research Committee, the Executive Committee, and the Senior Advisory Committee of the Department of Surgery.

Your report will be approved, following any modifications, by the Chair be circulated to the entire Department.

These terms of reference may be amended at any time during the SSTP review, subject to approval by you and me.

Jim, I thank you sincerely for all you will do to assist the Department of Surgery through your recommendations for the long-term financial stability of the SSTP.

With best wishes,

Sincerely,



James T. Rutka, OC, O Ont, MD, PhD, FRCSC, FRSC, FACS, FAANS
RS McLaughlin Professor and Chair
Department of Surgery, University of Toronto

JTR/ns

Appendix 3

SSTP TASK FORCE MEMBERS

James Wright (Chair)

Chris Ahuja

Steven Gallinger

Carol-Anne Moulton

Cari Whyne

Appendix 4

LIST OF INDIVIDUALS AND GROUPS INTERVIEWED

1. **Jim Rutka**, Chair Department of Surgery
2. **Nancy Condo**, Business Manager, Department of Surgery
3. **Val Cabral**, Research Program Manager, Department of Surgery
4. Department of Surgery Executive
5. **Michael Fehlings**, Vice Chair Research, Department of Surgery
6. Department of Surgery Research Committee
7. **Norman Rosenblum** (former Associate Dean, CIP, Faculty of Medicine, UofT)
8. **Andres Lozano**, Chair, Division of Neurosurgery
9. **Tom Forbes**, Chair, Division of Vascular Surgery
10. **David Grieco**, Senior Development Officer, Department of Surgery/Faculty of Medicine
11. **Glen Van Arsdell**, Chair, Division of Cardiac Surgery
12. **Neil Fleshner**, Chair, Division of Urology
13. **Chris Forrest**, Chair, Division of Plastic and Reconstructive Surgery
14. **Peter Ferguson**, Chair, Division of Orthopaedics
15. **Carol Swallow**, Chair, Division of General Surgery
16. **Tom Waddell**, Chair, Division of Thoracic Surgery

APPENDIX B

Department of Surgery Best Practices for Conducting Full Time Academic Faculty Searches

Search Committee Principles

Faculty searches are a crucial activity and provide a chance to attract the broadest talent pool in the identification of future colleagues. Each search also provides a strategic opportunity to reshape the faculty, offering the twin possibilities of enhancing strengths in fields for which we are already distinguished while striking out in new intellectual directions not currently well represented.

The primary focus of the search committee is on the broad and best long-term interests of the University and that every decision will be considered relative to this framework. Furthermore, all proceedings must adhere to the appropriate University of Toronto Faculty of Medicine policies. Committee members should keep firmly in view the University's Statement of Institutional Purpose, the University's academic plan as approved from time to time, and, as appropriate, Departmental and Divisional academic priorities and special needs.

Committee Composition

The composition of the Search Committee must be broad and include representation from all stakeholders including hospital, university, research institute or appropriate academic unit, administration and student body. Committee membership must be approved by the Chair of the University Department of Surgery and the Hospital Surgeon-in-Chief for the primary appointment of the position.

As per the Department of Surgery Search Committee Composition Guidelines, membership should include:

- 1) Hospital Division Head (Committee Chair, unless the search is for the Hospital Division Head in which case the Hospital Surgeon-in-Chief will serve in the role as Committee Chair)
- 2) Additional representative(s) from the hospital division (ideally from same specialty)
- 3) At least one non-physician working with the Hospital's Division (eg. Nursing)
- 4) University Division Chair (or representative)
- 5) Chair of the University Department of Surgery (or representative)
- 6) Hospital Surgeon-in-Chief (or representative)
- 7) Student representative (may include undergraduate, postgraduate, resident or fellow)
- 8) Representative of senior hospital management
- 9) Representative of the Research Institute where incumbent will receive appointment (for Surgeon-Investigator or Surgeon-Scientist)

In addition, the search committee MAY include:

- 1) Vice-Chair of Research (or representative) (for Surgeon-Investigator or Surgeon-Scientist appointments)
- 2) Vice-Chair of Education (or representative) (for appointments with major teaching appointments)
- 3) Representative from appropriate academic unit for other appointment descriptions (e.g. surgeon-global health, surgeon-ethicist, quality improvement & patient safety)
- 4) Representative from SGS Department in which incumbent may be cross-appointed

The Search Committee itself must reflect a broad diversity of backgrounds including race/ethnicity and gender.

Formulation of Search Plan

Meeting 1: The initial meeting of the Search Committee should be used to: (1) Establish committee ground rules (see below); (2) Review the job/position description as prepared by the Chair to present to the committee (see below); (3) Establish ranking criteria (see appendix 1 for example); (4) Solicit initial input from committee members regarding the potential list of candidates; (5) Establish a reasonable timeline for the subsequent meetings.

Meeting 2: Review of candidates, ranking of candidates, and development of a short list of the top candidates. Development of interview question list and assigning to committee members.

Meeting 3 (*and subsequent meetings as needed*): – Interviews with debriefing after each candidate. The final interview meeting should include discussion of all candidates, selection of successful candidate and rank-order list of candidates.

Committee Ground Rules

The Chair is responsible for effective functioning of committee meetings and for establishing the ground rules. The following criteria must be adhered to:

- 1) All discussions within the committee must be completely confidential. Further discussion outside committee meetings may only take place between committee members. Emails regarding confidential committee discussions should be discouraged. This confidentiality extends beyond the completion of the search and selection of the successful candidate. In the case of serious breach of confidentiality, the committee may be dissolved and a new committee appointed.
- 2) Committee members are expected to commit to attend every meeting in person or by teleconference. Input from each committee member is valued and is important to the functioning of the entire committee. Furthermore each committee member must remain committed to their obligations to participate actively in the process by providing input into job description/selection

criteria and reviewing candidate files. Members who are not actively participating or attending may be removed from the committee at the discretion of the Chair.

- 3) The Chair is the only voice of the committee to the University community. The Chair should provide updates to Committee Members and other stakeholders (eg. Hospital or University Departments) on the progress of the committee at periodic intervals to ensure established timelines are being met.
- 4) Committee members must declare whether they have a personal bias for or against the suitability of candidates. Although this may not preclude a committee member having input during meetings, it will help to ensure frank and open discussion throughout the committee's deliberations, and also help to prevent late disclosures that are prejudicial to a fair process since personal bias can create both unreasonably favourable and unfavourable views of a candidate.
- 5) All discussions must avoid discrimination on any basis as listed in the Ontario Human Rights Code. These include: Race, ancestry, place of origin, colour, ethnic origin, citizenship, creed, sex, sexual orientation, age, record of offences, marital status, family status, and same-sex partnership status. Furthermore, diversity of candidates should be encouraged and applications welcome from visible minority group members, women, Aboriginal persons, persons with disabilities, members of sexual minority groups, and others who may contribute to further diversification of ideas.
- 6) Members are expected to offer constructive comments on and assessments of individuals, taking care to provide objective evaluation and/or clarification of individuals' strengths and areas for further growth or exploration. A member's focus should be to identify the factual basis or evidence for a given opinion, and to provide that to the rest of the committee when presenting one's view.
- 7) In assessing candidates throughout the search process, committee members will be expected to focus consistently and continuously on

the skills, relevant experiences and other key attributes in the agreed position specification.

- 8) Thorough and rigorous reference-checking and due diligence should be planned and executed systematically at the appropriate time in the search process. In developing an approach appropriate to the search, the Committee may take into account such factors as the importance of consultation with key stakeholders, sources for information regarding past administrative, teaching and scholarly accomplishments, statements from short-listed candidates themselves and interviews with candidates. Committee members are asked to refrain from informal reference-checking, unless they are specifically assigned the task by the Chair of the Search Committee.
- 9) In instances where a committee member is identified as a candidate, the member should resign from the committee as soon as possible in order not to compromise the process. Declarations of candidacy by committee members after the process is well advanced should be discouraged, as these candidates will almost always raise concerns about fairness and due process. Exceptions may be made in those instances where a committee member was seen as a candidate early in the process but did not seek the position; the field is deemed unsatisfactory by the committee; and a determination is made that the Chair should approach the committee member to reconsider and enter the process.
- 10) The Chair or administrative designate must keep document summaries of all discussions at all committee meetings.
- 11) Ideally decisions of the committee should be made based on consensus. In select circumstances, Search Committee recommendations may be advisory to the Chair.

Job/Position Description

A broad position specification must be developed from wide consultation and identifies institutional or divisional/departmental needs for the next several years, as well as the relevant qualities successful candidates require in that context. It should be expressed in language that is as concrete and specific as possible so that it provides a clear point of reference against which to measure candidates. The job description should avoid characterizing any search as a “replacement” for a departed or retired faculty member as the search is an opportunity for growth and development. The committee should decide a priori what is “required” and what is “preferred” in terms of potential candidates qualifications.

Language used in the job description must be inclusive and open to all potential candidates. As part of the initial discussion regarding job description, a plan must be developed regarding widespread advertisement and should include local, national international e-mail dissemination, journals, posting on national and international organization websites and other web-based platforms.

The position description should specify, as is appropriate:

- academic rank
- academic job classification (surgeon-scientist, surgeon-investigator, surgeon-teacher, etc.)
- area of clinical expertise
- area of research expertise
- teaching commitment
- administrative commitment
- background/experience sought
- personal qualities sought

Generation of List of Candidates and Review of Candidate List

Generation of the candidate list should be an active not a passive process. Search Committees should think creatively and work proactively to recruit candidates; Simply placing ads will not produce the applicant pool desired. At the time of the inaugural committee meeting, the Chair should solicit initial input from committee members regarding potential

candidates. The Chair should then designate to various committee members the task of contacting nominators of potential candidates, reviewing editorial boards of journals to identify rising stars, reviewing conference proceedings, use of networks, and ensuring candidates considered come from diverse backgrounds. At the time of the second committee meeting, a final long list of candidates should be finalized. The list must be thorough and should contain representation from minority groups. The committee should then review the candidates' application in light of pre-established criteria which may include:

- Scholarly impact
- Research productivity
- Demonstrated teaching ability
- Commitment to collaboration with colleagues
- Alignment with Departmental or Divisional priorities
- Ability to make a positive contribution to the department's climate
- Ability to be a conscientious department citizen
- Confirmed interpersonal skills and attitudes
- Quality of reference letters

Weighting of the individual components must be mutually agreed upon by all committee members. See Appendix 1 for example of ranking criteria list. The applications should be reviewed by the committee members and a short list of between 3 – 5 candidates should be considered. The Chair must inform individuals who were unsuccessfully shortlisted.

Effective Interview Process

The committee must develop a list of questions to be asked and responsibility for each question. Questions might relate to: Research experience, teaching experience, teaching interests, publication record, current and future research interests, current funding and potential future funding, ideas for future publications or collaborations, personal traits suitable for the position, academic/career plans.

The interview must allow sufficient time for the candidates to make a presentation describing their academic plan and their suitability for the position as well as answering questions. Each

interview should be between 30 minutes to an hour with 10-15 minutes dedicated to the candidate presentation and the remaining time dedicated to questions. Each committee member should have the opportunity to ask his/her designated question. At the end the candidate should be afforded the opportunity to ask any questions of the committee. Finally the candidate should be given an idea as to the timeline of the decision process for final selection. Potential candidates must be updated regularly by the Chair as to the progress of the interviews, especially if there are changes to the schedule that may delay the final decision.

Selection of Candidate

After all interviews have been completed, the committee must review the candidates and to decide on the successful candidate and an alternative as needed. This decision must be made in light of the job description and search criteria. The Chair must make every effort to ensure that this consensus can be reached, but in general Search Committee recommendations are advisory to the Chair. If there is significant discrepancy in opinion amongst members of the committee then the committee may request the Chair to obtain additional information including references, or to invite candidates back for a second interview. If the committee decides that no candidates meet the criteria then the process will revert back to the process of identifying potential candidates from the longer list that was established, or beyond.

The Chair must inform the successful and unsuccessful candidates as soon as possible after the final decision of the committee.

Appendix B1 – Sample Ranking Criteria

CRITERION	EXCELLENT	GOOD	NEUTRAL	FAIR	POOR
Potential for (evidence of) research productivity					
Potential or demonstrated teaching ability					
Potential for (evidence of) scholarly impact					
Confirmed interpersonal skills and attitudes					
Commitment to or demonstrated collaboration					
Alignment with Departmental & Divisional priorities					
Quality of reference letters					

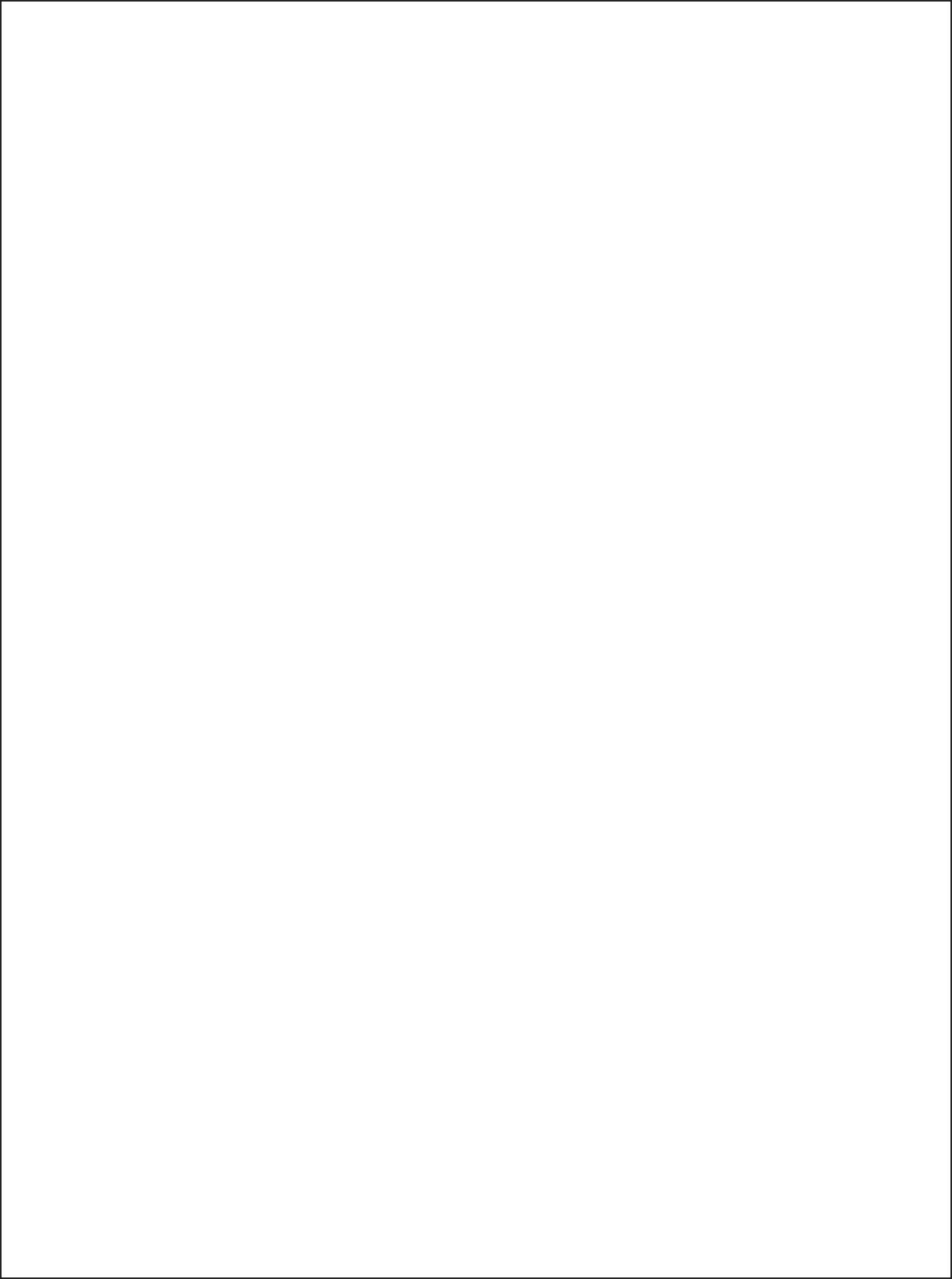
APPENDIX C

Award Winners in the Department of Surgery 2015-2019

FIRST NAME	LAST NAME	AWARD	CATEGORY	YEAR
Sandra	de Montbrun	David Fear Fellowship		2017
Timothy	Jackson	David Fear Fellowship		2015
Shady	Ashamalla	Ivan Silver Innovation 2017		2017
Karen	Devon	David Fear Fellowship		2017
Walid	Farhat	Ivan Silver Innovation 2017		2016
Kazuhiro	Yasufuku	Ivan Silver Innovation		2015
Cindi	Morshead	Excellence in Undergraduate Teaching in Life Sciences	Undergraduate Teaching	2016
Ann	Agur	Excellence in Undergraduate Teaching in Life Sciences	Linking Undergraduate Teaching to Research	2015
Fayez	Quereshy	Aikins Awards	Individual Teaching – Clerkship Foundations	2019
Graham	Roche- Nagle	Aikins Awards	Individual Teaching performance – small group	2017
Jory	Simpson	Aikins Awards	Dev't & Use of Educational Innovations	2019
Barbara (Dee)	Ballyk	Aikins Awards	Course/Prog Dev't & Coordination	2015
Peter	Ferguson	Excellence in Postgraduate Medical Education	Teaching Performance, Mentorship & Advocacy	2019
Joan	Lipa	Excellence in Postgraduate Medical Education	Development & Innovation	2019
Veronica	Wadey	Excellence in Postgraduate Medical Education	Development & Innovation	2019
Sandra	de Montbrun	Excellence in Postgraduate Medical Education	Development & Innovation	2018
Abhaya	Kulkarni	Excellence in Postgraduate Medical Education	Teaching Performance, Mentorship & Advocacy	2018
Najma	Ahmed	Excellence in Postgraduate Medical Education	Teaching Performance, Mentorship & Advocacy	2017
Teodor	Grantcharov	Excellence in Postgraduate Medical Education	Development & Innovation	2017
Dennis	Di Pasquale	Excellence in Community-Based Teaching	Excellence in Community-Based Teaching – Sustained Excellence	2018
Kyle	Wanzel	Excellence in Community-Based Teaching	Sustained Teaching	2018
Michael	Fehlings	Royal College -Regional Mentor of the Year Award		2016

FIRST NAME	LAST NAME	AWARD	CATEGORY	YEAR
Marc	Jeschke	Canadian Academy of Health Sciences- fellow		2018
Karen	Davis	Canadian Academy of Health Sciences- fellow		2018
David	Urbach	Canadian Academy of Health Sciences- fellow		2017
Richard	Weizel	Canadian Academy of Health Sciences- fellow		2016
Laurence	Klotz	Canadian Academy of Health Sciences- fellow		2015
George	Christakis	John Provan Award 2015		2015
Anna	Dare	Robert Sheppard Award for Health Equity and Social Justice		2018
Peter	Dirks	fellowship of the Royal Society of Canada		2017
Jory	Simpson	Tovee Awards	Undergraduate Teaching	2019
Fuad	Moussa	Tovee Awards	Undergraduate Teaching	2018
Jeremy	Hall	Tovee Awards	Undergraduate Teaching	2017
Dennis	Di Pasquale	Tovee Awards	Undergraduate Teaching	2016
Andrew	Pierre	Tovee Awards	Undergraduate Teaching	2015
Abhaya	Kulkarni	Tovee Awards	Postgraduate Teaching	2019
Mitchell	Brown	Tovee Awards	Postgraduate Teaching	2018
Robert	Stewart	Tovee Awards	Postgraduate Teaching	2017
Goeges	Azzie	Tovee Awards	Postgraduate Teaching	2016
Homer	Tien	Tovee Awards	Postgraduate Teaching	2015
Berger	Richardson	D. R. Wilson Award		2019
Ryan	Perlus	D. R. Wilson Award		2018
Matthew	Murphy	D. R. Wilson Award		2017
J.	Greenberg	D. R. Wilson Award		2016
K.	Isaac	D. R. Wilson Award		2016
Hanmu	Yan	D. R. Wilson Award		2015
Sandra	de Montbrun	George Armstrong-Peters Prize		2019
Catherine	O'Brien	George Armstrong-Peters Prize		2018
Victor	Yang	George Armstrong-Peters Prize		2017
Toni	Zhong	George Armstrong-Peters Prize		2016
Marcelo	Cypel	George Armstrong-Peters Prize		2015
Barbara (Dee)	Ballyk	Arbor Awards		2015
Martin	McKneally	Arbor Awards		2017
Bernard	Langer	Arbor Awards		2016
James	Rutka	Order of Canada		2015
Abdallah	Daar	Order of Canada		2018
K. Wayne	Johnston	Order of Canada		2018
Andres	Lozano	Order of Canada		2016
Charles	Tator	Order of Canada		2016
Michael	Tymianski	Order of Canada		2016
Bryce	Taylor	Order of Canada		2018
James	Waddell	Order of Canada		2018
Bernard	Langer	Canadian Medical Hall of Fame		2015
Najma	Ahmed	Royal College/Associated Medical Services Donald R. Wilson Award		2016

FIRST NAME	LAST NAME	AWARD	CATEGORY	YEAR
Peter	Ferguson	Royal College/Associated Medical Services Donald R. Wilson Award		2015
James	Drake	Charles Tator Surgeon Scientist Mentoring Award		2019
Carol	Swallow	Charles Tator Surgeon Scientist Mentoring Award		2018
Mohammad	Al-Omran	Charles Tator Surgeon Scientist Mentoring Award		2017
Teodor	Grantcharov	Charles Tator Surgeon Scientist Mentoring Award		2016
Stephen	Fremes	Charles Tator Surgeon Scientist Mentoring Award		2015
Mark	Wheatcroft	Surgical Skills Centre DH Gales Outstanding Educator Award		2019
Abhaya	Kulkarni	Surgical Skills Centre DH Gales Outstanding Educator Award		2018
Gideon	Cohen	Surgical Skills Centre DH Gales Outstanding Educator Award		2017
Sandra	de Montbrun	Surgical Skills Centre DH Gales Outstanding Educator Award		2016
Jeremy	Hall	Surgical Skills Centre DH Gales Outstanding Educator Award		2015
C	Wallis	Shafie S. Fazel Outstanding Resident Surgeon and Investigator Award		2019
Christopher	Witiw	Shafie S. Fazel Outstanding Resident Surgeon and Investigator Award		2018
A.	Mansouri	Shafie S. Fazel Outstanding Resident Surgeon and Investigator Award		2017
Nir	Lipsman	Shafie S. Fazel Outstanding Resident Surgeon and Investigator Award		2016
J.	Wilson	Shafie S. Fazel Outstanding Resident Surgeon and Investigator Award		2015
Avery	Nathens	Bryce Taylor Mentorship Award		2019
Nancy	Baxter	Bryce Taylor Mentorship Award		2018
Paul	Greig	Bryce Taylor Mentorship Award		2017
Robin	McLeod	Lavina Lickley Lifetime Achievement Award		2019





Surgery
UNIVERSITY OF TORONTO

Department of Surgery, Faculty of Medicine

149 College Street, 5th Floor

Toronto, Ontario, Canada M5T 1P5

T +1-416-9782623 | **F** +1-416-978-3928

james.rutka@utoronto.ca | www.surgery.utoronto.ca