

ANNUAL REPORT 2012-2013





# Introduction

The University of Toronto Surgical Skills Centre at Mt. Sinai Hospital is pleased to present its Annual Report for the 2012-2013 academic years. We had an extremely exciting year that saw us take on new challenges and roles, and saw a record number of residents, medical students, faculty and visitors come through our doors.

# Our Vision

Traditionally, surgical skills have been acquired in the operating room. The complexity of surgical procedures and the premium placed on surgical time have increased. We can no longer expect surgeons to acquire novel skills in the operating room.

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. Surgeons will achieve a higher level of expertise more rapidly in a laboratory setting, where they can employ educational principles of repeated practice with feedback. Educational research is conducted in skills acquisition and evaluation. This research will provide answers to fundamental educational issues and allow testing of innovations in surgery.

It is our goal that this facility continues to be an internationally recognized centre of excellence in surgical education.

# Mission

- To change the way fundamental surgical skills are taught and evaluated.
- To provide a platform for continuing education in surgical skills.
- To provide a laboratory for research in and development of surgical skills innovation.
- To promote and enhance the teaching of surgical skills through the Surgical Skills Centre.

# Accreditation

The Surgical Skills Centre became a Level 1 accredited institute with the American College of Surgeons in 2006. The Accredited Education Institute (AEI) Consortium is comprised of 60 Level I and 5 Level II ACS-accredited education institutes. The purpose of this consortium is to promote collaboration, access to resources between institutes and the ACS Division of Education. The SSC was among the first institutes granted Accreditation in 2006.

In the fall of 2012, the SSC underwent the re-accreditation process. Dr. Glenn Talboy from the University of Missouri conducted the Accreditation and the Centre has once again been accredited as a Level 1 institute.

# Fundamentals of Laparoscopic Surgery

The Surgical Skills Centre became an accredited testing site for the Fundamentals of Laparoscopic Surgery by the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) in 2008, with our Senior Manager Lisa Satterthwaite and SSC Technician Jason Faria both acting as official proctors for testing. Last year 30 FLS tests took place at our facility.

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# Staff

Dr. Oleg Safir, D.H. Gales Director Lisa Satterthwaite, Senior Manager Shunne Leung, Manager Dezan Rego, Surgical Technician Marina Romanova, Surgical Technician Jason Faria, Surgical Technician Dionne Banton, Administrative Assistant Serenity Thomas, Surgical Technician Finch Taylor, Simulation Technician

### Staff Changes

In August of 2013, Lisa Satterthwaite was promoted to Senior Manager of the Surgical Skills Centre, and Shunne Leung became the Manager. Congratulations!

# Staff Development

Staff continued with numerous training sessions this past year in order to ensure that they were up to date on safety guidelines and regulations.

The staff was recertified in CPR in December 2012, and was taught proper CPR procedures for infants, children and adults.

All staff members took part in training initiatives which are mandatory for all Mt. Sinai Hospital employees and which must be completed once a year. Through the eLearning program, staff passed online safety courses in Radiation Safety, Violence Prevention, WHMIS, Emergency Codes, Privacy and Safety Engineered Devices. The 4 technicians attended a Nitrogen training program. The Centre passed its annual Health and Safety Inspection and Fire Safety Regulations.

In order to build a stronger team, staff has been attending courses through the Angela and David Feldman Leadership Education Program and the Department of Organizational Development and Workforce Planning. Skills development is promoted by teaching core workplace competencies, while aiming to create a stronger team with superior communication skills.

Lisa Satterthwaite has completed the "Management Development Certificate Program" and Dionne Banton, Jason Faria, Dezan Rego and Marina Romanova have each completed the "Employee Development Certificate Program". Manager Shunne Leung, technician Serenity Thomas and Finch Taylor, simulation technician for SimSinai Centre have begun working towards their certificates.

This certification centre's around four mandatory core workshops, as well as four elective workshops based on the individuals goals, development interests and needs.

# Letter from Dr. Rutka

The world of surgical skills simulation and training continues to evolve at a phenomenal rate, and I am pleased that the University of Toronto Surgical Skills Centre (SSC) at Mt. Sinai Hospital continues to set the pace for the rest of Canada by virtue of new techniques adopted, numbers of students, residents, and faculty trained, and leadership in surgical curriculum development. This has been another banner year for the SSC, and I should like to begin by providing my most sincere thanks to SSC Manager, Lisa Satterthwaite, and her staff, and to SSC Director, Dr. Oleg Safir for all of his time and energy devoted to the Centre.

We have just learned that the American College of Surgeons' Accredited Education Institutes (ACS AEI) has fully accredited U of T's SSC once again as a Level 1 Institute. Preparation for this accreditation was daunting, yet Lisa and Oleg did so beautifully in terms of documents prepared, and provision of information on-site to the Review Team. With our current Level 1 status, we will not be reviewed again for another 3 years giving us an opportunity to continue to expand our mission and goals for the greater good of all learners.

When one considers the number of courses in the Core Curriculum of the SSC, it is most impressive to see the mix of dynamic training models from tissue dissection and wound closure, to laparoscopic skills training and assessment, to bone fixation and casting, to bowel anastomosis, both hand sewn and stapled. I am delighted to see the uptake on the pilot of the Competency-Based Curriculum (CBC) in Orthopaedics, and the implementation of the first ever Toronto Orthopaedic Boot Camp (TOBC). This year, virtually all PGY1's in all Divisions in the Department of Surgery will be taking part in an intense 2 week Surgical Prep Camp in which the fundamentals of the Core Curriculum will be learned, followed by specialty specific rotations and training.

It is also wonderful to consider all the other groups who have taken advantage of the training space at the SSC including the Departments of Medicine, Obstetrics and Gynecology, Otolaryngology, Ophthalmology, Anesthesiology, and Medical Imaging. In addition, the SSC continues to serve as an important training ground for medical students during their Pre-Clerkship "crash course" in surgery, and the newly designed and implemented Surgical Exploration And Discovery (SEAD) program in which Year 1 medical students undertake a 2 week course in surgical skills and workshops to provide additional exposure to them about a potential career in surgery.

Perhaps as important as all of these items is the research that has emanated from studies within the SSC that are now approaching levels of data quantification sufficient for submission to journals for considerations of publication.

Finally, I would be remiss if I did not mention and acknowledge the tremendous support we have received from our many corporate sponsors who have been most helpful in ensuring that the UofT SSC remains a leader in the world of surgical and procedural simulation strategies.

Sincerely,

James T Rutka, MD, PhD, FRCSC RS McLaughlin Professor and Chair, Department of Surgery University of Toronto

# Letter from Dr. James

In the past year, under the leadership of Dr. Oleg Safir and Lisa Satterthwaite, the Surgical Skills Centre continues to maintain its reputation as a place where exemplary and innovative, competency based medical education is taught and learned. I have had the pleasure of bringing visitors to the centre from around the world that marvel at the ingenious ways in which curriculum is developed and supported by the Centre. The Centre provides instruction for a growing number of undergraduate and postgraduate medical courses as more medical educators and course directors recognize the importance of skills based training in a simulated environment. There is an ever increasing appreciation by the non-surgical specialties that the traditional methods of in-training evaluation are insufficient to fully assess resident competencies. In order to achieve adequate training and certification of skills, key aspects of competency acquisition must be conducted in a simulated clinical environment. The Surgical Skills Centre has been the "Go To" place for knowledge and expertise in developing the tools to do so.

At Mount Sinai Hospital, as we plan to expand our interprofessional education, we will look to the SSC to support teaching and learning of teams of professionals across disciplines to improve crisis resource management, communication and collaboration in acute care and surgical settings.

I would like to congratulate Dr. Safir and the SSC team on another outstanding and productive year. As Mount Sinai moves towards Vision 2017 to be Canada's highest quality academic health science centre, providing the best medicine and best experience, the SSC has a major role to play in the Hospital's educational mission. The Centre's local, national and international impact on health professions education and educational research contributes to Mount Sinai Hospital's unique place among academic hospitals.

Jacqueline James, MD, MEd, FRCPC Vice President Education, Mount Sinai Hospital

# Letter from Dr. Safir

The University of Toronto Surgical Skills Centre (SSC) is home to many leading programs in medical education that strive to deliver superior simulation-based courses. Established over a decade ago, the SSC has become a flagship for medical training renowned for its expertise in teaching technical skills to medical students and residents. I am honored to serve as the D.H. Gales Director and have the opportunity to implement my vision for the Surgical Skills Centre as an internationally recognized education centre by supporting the finest training programs, both novel and well-established.

Numerous studies have demonstrated the value of technical skills training outside of the clinical setting. With patient safety in mind, today's educators increasingly rely on laboratory-based teaching to ensure that doctors acquire and maintain the skills needed for high-caliber clinical practice. Recently, the field of medical education has shifted toward competency-based training - a curriculum design that is based on demonstrating proficiency rather than a pre-determined amount of time spent in training. The Surgical Skills Centre is the home base for the Competency-Based Curriculum (CBC) training and assessment sessions that supplement clinical learning in Orthopaedic Surgery. The Toronto Orthopaedic Boot Camp (TOBC) is an intensive course that focuses on teaching basic surgical skills to first-year Orthopaedic residents at the onset of their clinical training. The design of this module and its consistent positive results have garnered such overwhelming support and interest from other surgical divisions that this year we have expanded the program into a new initiative – Surgical Prep Camp - inviting all specialities to participate in a course that aims to prepare every first-year trainee for residency. The core skills that pertain to all surgical specialities were carefully selected by the Surgical Foundations Committee, and all surgical divisions generously contributed to teaching during Prep Camp. The trainees were exposed to didactic teaching, skills demonstrations and ample practice opportunities at the SSC under close supervision by dedicated instructors. Phase II will follow this autumn with a focus on division-specific skills. An integral part of the Prep Camp program was inviting the surgical fellows and senior residents as facilitating instructors, along with the supervising faculty. This allowed us to keep low trainee-to-instructor ratios and encourage collaboration between various levels of training.

The Surgical Prep Camp program was met with an inspiring degree of enthusiasm by the participants, the instructors and Program Directors and it was endorsed by the Department of Surgery. In addition to all first-year University of Toronto surgical residents, the Surgical Prep Camp also accommodated trainees from the Northern Ontario School of Medicine and abroad. The success of the Surgical Prep Camp is the result of combined work of the Department of Surgery, the PGME Office, Program Directors and the incredible effort of the SSC team.

We are at an exciting time of change in the field of surgical education. Programs like the Surgical Prep Camp coming to life signify an emergence of important changes that are undeniably needed. This year has marked a widespread adoption of introductory laboratory-based training courses, and I am honoured to have the Surgical Skills Centre play a leading role in these initiatives. My vision is to continue developing innovative programs and to establish a strong collaboration between the surgical simulation centres across Toronto. It is a pleasure working with the SSC team and Toronto's surgical community, enhancing and improving the field of surgical education.

Oleg Safir, MD, MEd, FRCSC

Assistant Professor of Surgery, University of Toronto

D.H. Gales Director of the University of Toronto Surgical Skills Centre at Mount Sinai Hospital

# Core Curriculum

The 14th iteration of the Core Curriculum began in September 2012 with 50 first year surgical residents enrolled. PGY 1 residents from all Divisions of the Department of Surgery, as well as from the Department of Otolaryngology-Head and Neck Surgery and the Department of Oral and Maxillofacial Surgery, enjoyed formal teaching sessions every Tuesday morning from September 2012 to April 2013. The sessions are protected times for residents, and are facilitated by 6 faculty members.

The sessions focus on the development of basic skills with an emphasis on repetition of skills such as suturing and knot tying.

The curriculum was completed with a mandatory Objective Structured Assessment of Technical Skills Exam. The OSATS exam is an 8 station bell ringer and is graded by University of Toronto faculty using Checklists and Global Rating Scores. The OSATS exam is a Toronto created event, an invaluable tool in the ability to test surgical skill levels.

### Core Curriculum schedule

DATE	YEAR	WEEK	COURSE
September 4	2012	1	Principles of Asepsis and Instrument ID
September 11	2012	2	Instrument Handling and Knot Tying/Suturing
September 18	2012	3	Catheterization, Suprapubic and Urethral & Abdominal Wound Closure
September 25	2012	4	Tissue Handling Dissection and Wound Closure
October 2	2012	5	Tendon Injuries and Carpal Tunnel Release
October 16	2012	6	MOSATS and Practice Session
October 23	2012	7	Airway Management and Surgical Airway
October 30	2012	8	Chest Tube, Thoracentisis and Arterial Line
November 6	2012	9	Bone Fixation and Casting
November 13	2012	10	Line Insertions - IJ,Subclavian, Femoral, IV Insert & Cut Down
November 20	2012	11	Advanced Tissue Handling and Wound Closure ( Z plasty and Elliptical Incision)
November 27	2012	12	Bowel Anastomosis - Hand Sewn and Stapled
December 4	2012	13	Open Practice Session
January 8	2013	14	Microsurgery and Bone Harvesting
January 15	2013	15	Microsurgery and Skin Grafting
January 22	2013	16	Laparoscopic Skills I
January 29	2013	17	Laparoscopic Skills II / Arthroscopy-Gallbladder & Knot Tying
February 5	2013	18	Laparoscopic Skills III / Arthroscopy-Gallbladder & Knot Tying
February 12	2013	19	Laparoscopic Skills IV / Laparoscopic Competition!!!
February 26	2013	20	Vascular Control I -Arterial and IVC
March 5	2013	21	Vascular Control II - Arterial
March 12	2013	22	Electro surgery and Skin and Liver Biopsy Session
March 19	2013	23	MOSATS and Practice Sessions
April 2	2013	24	Self Directed Practice Session
April 9	2013	25	HSK Animal Annex Group A Vascular Control - Arterial and IVC
April 16	2013	26	HSK Animal Annex Group B Vascular Control - Arterial and IVC
April 23	2013	27	Exam Review Practice Session
April 30	2013	28	OSATS EXAM

## 24 hour Practice Room

The SSC is pleased to announce the opening of a 24 hour skills practice room. This room allows residents and fellows to practice surgical skills during opportune times, off service or between OR cases.

The key pad code access practice room allows the residents to practice 24hrs a day, 7 days a week without having to book an appointment with SSC staff.

The room is equipped with laparoscopic stacks, FLS tasks, suturing modalities and micro surgical equipment. Practice is self directed, enhanced by an educational video library.

### Laparoscopic Skills Challenge

The Laparoscopic Skills Competition has been held annually for 14 years, and is a highlight for the residents in the PGY 1 Core Curriculum. Following 3 weeks of intense laparoscopic training, residents are challenged on basic laparoscopic skills.

Residents pair up and compete in 3 skills challenges: peg transfer, knot tying and the cobra rope. The top two teams then face off and are deemed champions based on best total time.

We would like to congratulate this year's winning team "Done in 60 Seconds", Dr's Andras Fecso and James Jung, both from the Division of General Surgery.



The winning teammates, Dr. Andras Fecso and Dr. James Jung, pose with Lisa Satterthwaite and Dr. Oleg Safir

### **Teaching Award**

We are pleased to announce this year's outstanding faculty member to receive the University of Toronto Surgical Skills Centre at Mount Sinai Hospital Education Award for Outstanding Contributions to Surgical Skill Education.

Congratulations to Dr. Marcus Burnstein from the Division of General Surgery. He was presented with his award at the annual Gallie Day on May 10th 2013. This award is given to a faculty member who demonstrates superior leadership and teaching skills.

Dr. Burnstein is an Associate Professor of Surgery at the University of Toronto, and he works at St. Michael's Hospital. His clinical and academic focus is Colorectal Disease.

The Surgical Skills Centre has been giving out this teaching award yearly since 1998.



# Department of Surgery Prep Camp Phase I and II 2013

Recent developments within the medical education system are having a stifling effect on surgical training. Reduced work hours for surgical trainees coupled with an increased focus on patient safety inevitably results in fewer educational opportunities and decreased quality of learning experiences for new trainees. Today's surgical educators are actively searching for learning opportunities that extend beyond the operating room. Simulation-based programs allow practice at an individual pace in a risk-free environment and present an important supplement to traditional clinical teaching. One such program is the Surgical Prep Camp (SPC), a new simulation-based course that aims to prepare all incoming surgical trainees at the University of Toronto for their residency. The Surgical Prep Camp was developed by experts in surgical education and skill acquisition, and has evolved from the award-winning Toronto Orthopaedic Boot Camp program.

All 54 first-year surgical trainees participated in SPC, which took place at the onset of their residency. The program was delivered at the University of Toronto Surgical Skills Centre at Mount Sinai Hospital. The Surgical Prep Camp program focused on core skills that Program Directors agreed were essential for all surgical residents, and created a unique learning environment to accelerate the development of these skills. For two weeks, residents from all specialties practiced suturing, central line insertion, surgical airway and other fundamental skills. The program also included didactic sessions encompassing key concepts in surgery. These two weeks were followed by an additional training period (the length of which was determined by each surgical division) that focused on developing specialty-specific skills. Trainees' progress was closely monitored. Throughout the course, the residents and instructors were encouraged to complete interim skills assessments using electronic progress logs. Upon completion of the SPC program, trainees completed a skills examination. A retention examination will be conducted in 8 months' time to determine how well the skills persist. Additionally, extensive feedback was collected to help improve future iterations of SPC.

The ultimate goal of SPC is to enhance patient safety and produce more competent surgeons who are better prepared for clinical practice. This program provides new trainees with a sound foundation upon which they can build their technical and clinical skills. Beyond providing an advantage at the beginning of training, the program seeks to instill effective learning habits that allow residents to engage in meaningful deliberate practice. Focusing on technical skills at the beginning of residency aims to allow trainees to advance to more complex tasks earlier within residency, which provides a much richer educational experience than has previously been possible. This is achieved in a manner which does not produce significant additional demands on faculty since the teaching load is shared between staff surgeons, fellows, senior residents and members of the allied healthcare team. Both this program and its predecessor have generated much interest in the surgical education community. Early evidence suggests that simulation-based programs can have a profound positive impact on residency training across all specialties. We believe that more widespread adoption of such programs will follow, helping to ensure that our future surgeons are better prepared to face the challenges that lie ahead.



A PGY 1 Resident performs a tracheostomy during the PREP Camp Phase 1 OSATS Exam

#### **PREP Camp Schedule Phase 1**

- Gowning and Gloving, Prepping and Draping
- Scrubbing and Intro to the OR
- Knot Tying: Superficial and Deep
- · Basic Suturing and Wound Closure
- Instrument Handling
- Instrument Identification
- Limb and Abdominal Closures
- Advanced Suturing
- Surgical Airway
- Chest tube insertion
- · Line Insertions and Ultrasound
- Medical Imaging Rounds
- Integrated Procedural Performance Instrument
- Catheterization and Suprapubic
- Basic Scope Skills
- Practice Session
- Surgical Emergency Simulations
- Review and Testing Information
- OSATS Exam

#### PREP Camp Lecture Schedule Phase 1

- Introduction to PREP Camp
- Principals of Asepsis
- Anatomy of the Suture
- Safety With Sharps!
- · OR Checklist and Interprofessionalism
- The Role of Anaesthesia
- Nursing in the OR Environment
- Radiation Safety
- Infection Control
- Electrosurgery and Smoke Evacuation
- PREP Camp Evaluations
- OSATS Exam Instructions and Review
- Written Multiple Choice Questions on Lecture Series

#### PREP Camp Schedule Phase 2

- Bowel Anastomosis (Hand Sewn and Stapled) / Tendon Injury Repair
- Vascular Anastomosis / Chest Tube Insertion Review
- Casting and Splint Application / Use of Power Tools
- Skin Grafting / Microsurgery Techniques
- · Wound Management (VAC Dressing) / Ultra Sound Skills and Line Insertions
- Airway Olympics / Tracheostomy Review
- Open Practice Session
- Assorted Local Flaps / Advanced Wound Closures
- General Laparoscopic Scope Skills-FLS Principals
- Laparoscopic Gallbladder / Micro Surgery Practice Session
- Laparoscopic Skills Competition
- OSATS Retention Test

# Department of Surgery

### **Division of Anatomy**

The Division of Anatomy acts as a learning venue for hands on experience for many of our Divisional Curriculums.

#### Willed Body Program

There is a continuing need for well educated physicians, dentists, nurses and allied health professionals, all of whom need a thorough understanding of the structure of the human body. Once again the University of Toronto, Division of Anatomy has been able to provide the outstanding medical education and training necessary as a result of the generosity of our donors. As the largest willed body program in Canada, the University of Toronto received 193 donations last year and is projected to exceed this number in 2013. Yet we are still not able to keep up with the demand for bodies. In addition to being used for teaching medical and other health profession students, bodies are in high demand by research physicians for the development of new surgical procedures, such as for developing new arthroscopic surgeries, knee, ankle and shoulder joint research, plastic surgery procedures, surgical approaches and many other surgical and medical procedures. At the rate at which medical science is advancing, it is increasingly necessary for physicians and other biomedical scientists to conduct special anatomical studies and research. As such, we are faced with the fact that there is an immediate need to expand the capacity of the Division of Anatomy in order to be able to accept more donations. The generosity of the donors is not a limiting factor. In 2013 we will begin to look at ways to generate funds to expand our facilities to ensure that we can continue to excel in the education and training of students and researchers

Cindi Morshead B.Sc., Ph.D.

Professor, Division Chair, Division of Anatomy, University of Toronto.

### **Division of Cardiac Surgery**

- Aortic Cannulation
- Basics of Coronary Anastomoses
- The Aortic Valve
- The Mitral Valve
- Valve Replacement

### **Division of General Surgery**

General Surgery Anatomy Course for PGY 2's: Axilla and Groin Hernias, Head and Neck, Upper Abdomen, Colon and Pelvis

#### CAGS (the Canadian Association of General Surgeons)

The Canadian Association of General Surgeons is the only national organization representing the interests of General Surgeons in Canada. CAGS offers a wide range of educational opportunities, supports surgical research, and provides a forum for Canadian General Surgeons to discuss the issues that challenge General Surgeons today. The National Laparoscopic Skills Competition Finals was held on September 13th 2012 at the Canadian Surgical Forum in Calgary, Alberta.

Matt Strickland, a PGY 3University of Toronto General Surgery Resident, completed the competition in 2nd place. In the preliminary round Matt posted the fastest time of the day. Congratulations!

### Division of Neurosurgery

The staff and facilities of the SSC have been invaluable to the educational curriculum of the Division of Neurosurgery. We have held several important courses for our residents at the SSC, including our Neurosurgery Crash Course for PGY1 residents - which was the first of its kind in Canada for neurosurgery residents. Other courses have included: the cranio-orbital surgery course, the peripheral nerve surgery course, the PGY5 surgical anatomy course, and the PGY3 microsurgery preparatory course. Abhaya Kulkarni, MD, PhD, FRCSC

#### Program Director, Division of Neurosurgery

- Dissection Workshop for Upper Extremity
- Advanced Midas Rex Hands-On Workshop
- Microsurgery Cadaver Course
- Head and Neck Dissection
- Insertion EVD and Craniotomies
- Neurosurgical Anatomy
- The University of Toronto Annual Spine Course
- The PGY3 Intermediate Surgical Skills Session

### Division of Orthopaedic Surgery

- Ortho Education Days-Knee Arthroscopy
- Ortho Education Days-Osteotomies
- Ortho Education Days: Sports Medicine -Shoulder
- Sunnybrook Orthopaedic Cadaver Session
- Fundamentals of Spinal Surgery: An Introductory Course
- HSK Ortho Resident Session

#### Toronto Orthopaedic Boot Camp

In July of 2009, three 1st year orthopaedic residents became the first to be taught in the Competency Based Curriculum pilot project. The curriculum stepped away from the time-based system which is the more common approach to teaching, and instead the residents moved forward based on their level of competency.

It has been 5 years since the Competency Based Curriculum was implemented by the orthopaedic surgery residency program at the University of Toronto. What began as a pilot project is now a huge success, and has become a model for the future of medical schools across North America. The CBC is now being implemented for all 12 first year Orthopaedic Residents.

#### Toronto Orthopaedic Boot Camp: Skills Sessions- Module 1 of 21

- Casting and splint application / Thomas splint / Skin and skeletal traction / Limb prepping and draping
- AO princilples-small and large fragment
- Plating-small and large fragment / Power tool / Tension band wire
- External Fixation / Principles of IM nail
- ATLS (Advanced Trauma and Life Saving)
- Upper extremity dissection and plating for fractures / Joint aspiration / Practice session
- Lower extremity dissection and plating for fractures / Joint aspiration / Practice session
- Reduction maneuvers for fracture and dislocation / Principles of sedation / Power tools / Casting review
- Hemovac drain and dressings / Radiology case presentations
- Exit Exam

• Shoulder

• Humerus

• Elbow

Forearm

#### **TOBC Anatomy Sessions:**

- Soft Tissue Dissection • Wrist
  - Hand
  - Thigh
  - Knee
  - Hip

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- Tibia
- Fibula
- Ankle
- Foot
- Anatomy Review



Residents practice drilling on sawbones during TOBC

# Division of Plastic and Reconstructive Surgery

The Surgical Skills Centre continues to play a significant role in the skills curriculum for the Division of Plastic and Reconstructive Surgery. At the PGY1 level, our residents have the opportunity to learn core surgical competencies and receive exposure, at an early stage, to common surgical procedures. Our PGY2 boot camp, hosted at the Skills centre, allows junior residents to "ramp up" their skills prior to taking on the responsibilities and expectations of a senior surgical resident. Throughout the senior years of training, our residents participate in a comprehensive skills curriculum that allows them to gain experience in a controlled environment without the pressures of a live surgical setting.

#### Mitchell Brown, MD, MEd, FRCS (C)

Program Director, Division of Plastic and Reconstructive Surgery

#### Junior Residents

- Finger Amputation
- Tendon Repair
- AO: Bone Fixation
- Microsurgery

#### Senior Residents

- Rhinoplasty and Blepheroplasty
- Breast Dissection
- Microsurgery
- Rhytidectomy and Injectables

## Division of Plastic and Reconstructive Surgery – Special Report

The Surgical Skills Centre has been of enormous value in our planning for a Vascularized Composite Allotransplantation. The process involves the transplantation of a face or extremity to a recipient with appropriate vascular, neuromuscular, bony and skin coaptations. In December of 2012, we had a Face Procurement Session which involved the entire face, as well as the bony mid face structures and the mandible. It was impossible to visualize the complexity of the transplant without the cadaver model in the surgical skills setting. An expert from Boston led us through the procedure and it was certainly educational and enlightening as we prepare ourselves at the University of Toronto for these cases.

An upper extremity transplant is more likely to occur first, and in fact we have been preparing for one for some time. We have worked out the details of the anatomical placements and the procurement sessions at the Surgical Skills Centre have been invaluable to do this. Our planned transplant is at a complex level at the proximal forearm and working out the surgical procedure to preserve bone and maximize function was quite difficult. We did this through organized sessions at the Skills Centre with reconstructive surgeons and Orthopaedic surgeons working hand and hand and putting their ideas together. Through this process, we have worked out a detailed step by step plan for this upcoming procedure. It would not have been possible without the setting, cooperation, materials and personnel provided by the Surgical Skills Centre. We are deeply appreciative of their assistance and this program would not have moved forward as it has without their help. We actually did five preparatory run through surgeries. They all had donor cadaver components and some had recipient patient cadaver models. The staff at the Surgical Skills Centre were extremely easy to work with, very cooperative and provided us all of the equipment and space that we needed. Clearly a skills centre such as the one we have is an integral part of any transplant program. We are deeply appreciative of their assistance with our transplant program. Ronald M. Zuker, MD. FRCSC, FACS

Professor of Surgery, University of Toronto; Staff Surgeon, The Hospital for Sick Children

# Division of Urology

- Intro to Urology : Adult and Pediatric Catheterization, Suprapubic Tube Placement, Cystoscope Assembly and Proper Usage
- Microsurgery
- LASER safety and usage training
- Open Procedures Porcine Lab
- Laparoscopic Porcine Lab

### Senior Residents

- Microsurgery
- Ureteroscopy
- LASER Session

# Division of Vascular Surgery Introduction to Vascular Instrumentation

- Femoral Anastomosis
- IVC Injury Repair
- AAA Repair
- Tibial Bypass
- CEA Model
- Saphenofemoral Dissection
- Device Overview
- Measurement Practice
- Simulation Exercises
- Vessel and Anatomy Dissection
- Femoral Exposure
- Harvesting of Veins
- Above and Below Knee Popliteal Artery Exposure

#### Anatomy Sessions:

- Thoractomy and Sternotomy
- Subclavian
- Axillary and Carotid Artery Exposures
- Upper Extremity Vascular Exposures
- Lower Extremity Vascular Exposures



# Departmental

### Department of Anaesthesia

- Epidural Hands on Workshop
- Vascular Access
- Spinal Anaesthesia
- Sterile Technique
- Airway Workshop
- Airway-Simulation Workshop
- Surgical Airway Workshop
- 10th Annual Obstetric Anaesthesia Workshop

### Department of Family and Community Medicine

Mount Sinai and Toronto Western Family Medicine Residents OB Skills Day

## Department of Medical Imaging

Cook Canada Bone Biopsy Workshop

# Department of Obstetrics and Gynecology Core Curriculum

- Perineal Injury and Repair
- Knot tying, Suturing, Instrument Identification
- Wound Closure and Marsupialization
- Operative Delivery: Vacuum and Forceps
- Shoulder Dystocia
- B -Lynch Sutures
- IUD Insertion
- Laparoscopic Principals and Tubal Ligation
- Surgical Management of Ectopic Pregnancy
- Ovarian Cystectomy
- Hysteroscopic Endometrial Resection
- Bladder Repairs
- Bowel Repairs
- Review of Operative Deliveries
- OSATS Exam

## Department of Ophthalmology and Vision Sciences

- Strab Suturing I
- Strab Suturing II
- Plastics Flaps
- Lid Repair

# Otolaryngology - Head & Neck Surgery

- Toronto Rhinoplasty Course
- Temporal Bone Drilling Course
- Soft Tissue Dissection Workshop
- Plastic Surgery Injectables Session
- Sinoscopy Course
- Multiple temporal bone drilling sessions for junior and senior residents

### International Paediatric Temporal Bone Course

The inaugural International Paediatric Temporal Bone Course was held at the Surgical Skills Centre in Toronto 21-23 August 2013. We were pleased to welcome participants from 11 countries around the world, spanning five continents. Delegates were treated to a show case of modern otologic surgical technology, and honed their skills with a comprehensive range of implantable hearing aids and cochlear implant arrays, ossiculoplasty prostheses, KTP laser and even 3D endoscopy. Unique features of this course included the opportunity to alternate freely between endoscope and microscope-guided surgery and to utilize high fidelity models of paediatric temporal bones as well as more conventional cadaveric adult temporal bones. The course was completed by a highly enjoyable social evening kindly hosted by Blake and Lisa Papsin. Thanks to the distinguished local Drs Cushing, Papsin and Pothier and international faculty Drs Aschendorff, Cremers and O'Reilly, and the amazingly supportive Skills Centre staff for all of their enthusiasm and hard work in making the course such a success. We are looking forward to next year's course which precedes the Objective Measures in Auditory Implants Conference in Toronto mid October 2014 (details at www.orlped.org). Adrian James, MA, BM, BCh, FRCS, FRCS (Orl &Hns) Assistant Professor

### **Education Excellence, Congratulations!**

The Canadian Society of Otolaryngology-Head & Neck Surgery Award for Educational Excellence was awarded to Dr. Ian J. Witterick MD, MSc, FRCSC Professor and Chair Department of Otolaryngology-Head & Neck Surgery University of Toronto. Dr. Witterick also Chairs the Education Committee for the Faculty of Medicine at the University of Toronto. He has organized more than 40 courses and conferences both here at home and abroad.



# Faculty of Medicine

### Division of Cardiology

- Internal Jugular Skills Lab
- Pericardiocentisis

### **Division of Critical Care Medicine**

- Hands on Airway Course for Critical Care Medicine Fellows
- Bronchoscopy Course for Critical Care Residents

### **Division of Emergency Medicine**

- ABC's of Emergency Medicine
- EM Undergrad Boot Camp

### Division of General Internal Medicine

GIM (General Internal Medicine) Procedure Course

### **Division of Nephrology**

- Nephrology Fellows Ultrasound Guided Line Insertion
- Nephrology Line Insertion Simulation Training
- Kidney Transplant Biopsy Program

### Division of Respirology

• The Basics of Bronchoscopy: Introductory Course for First Year Respirology Residents in Ontario

# Faculty of Dentistry

### Department of Oral and Maxilliofacial Surgery

- Suturing
- Wiring of Teeth

# IBBME (Institute of Biomaterials and Biomedical Engineering)

The University of Toronto Biomedical Communications (BMC) graduate program trains students with a background in both science and visual art, methods in the visual communication of medicine. As part of the core curriculum, students take an introductory course on the illustration of surgical procedures. The student's introduction to surgery includes multiple live surgical observation sessions where they hone their understanding of surgical procedures, as well as their observation skills.

Over the past four years, the Surgical Skills Centre (SSC) has offered a space where BMC students come to have their first live surgical experience. Early in January, the students gather with members of the SSC staff in a classroom equipped with a large screen displaying a live feed from the operating room, as well as a two-way audio system that permits direct auditory communication with the operating room. Prior to the procedure, SSC staff provides students with a refresher on operative procedure. The procedure itself is narrated in real-time by the surgical staff and students are able to receive immediate responses to their enquiries as the procedure progresses. This initial experience is safe, well structured, and helps to foster student confidence, preparing them for the challenge of watching and collecting notes in the flesh.

Furthermore, the information students collect is invaluable data they refer to constantly while visually reconstructing the procedure in a series of descriptive illustrations that form a major component of their course work. Michael Corrin, BFA, BA, Hons BSc, MScBMC, CMI

Lecturer, Biomedical Communications Graduate Program; Department of Biology, University of Toronto at Mississauga

This year students from the Biomedical Communications Graduate Program attended a live surgery viewing on January 10th 2013. They watched a Total Hip Replacement by the Surgical Skills Centre's D.H. Gales Director Dr. Oleg Safir Department of Orthopaedic Surgery MSH. Sample illustrations done by students after the live surgery presentation





Illustrations by Man-San Ma, University of Toronto Biomedical Communications Student



Illustration by Jerusha Ellis, University of Toronto Biomedical Communications Student Subject: Lag screw fixation of middle phalanx spiral fracture

# **Undergraduate Medical Education**

All 288 third year medical students from the University of Toronto Medical academies, including the Mississauga Academy, attend the University of Toronto 4 day "Crash Course in Surgery" at the SSC with the goal of introducing them to the basics of surgery via both technical skills and didactic formats. During the "Crash Course" the medical students are taught suturing, knot tying, urinary catheterization, casting and chest tube insertion by faculty from the University of Toronto. Director of Undergraduate Medical Education - Dr. George Christakis, Division of Cardiac Surgery Pre-Clerkship Director - Dr. Ronald Kodama, Division of Urology Undergraduate Coordinator - Mr. Shibu Thomas

#### From the Director....

The Surgical Skills Centre and the core team of dedicated and enthusiastic staff that run it, have been, and continue to be, an integral part of the undergraduate medical education curriculum. In particular, the core week of teaching that is provided to the third-year medical students as part of their 8-week surgical rotation, is a very essential part of their learning process. This week-long course, that combines a blend of interactive teaching sessions and the ever-popular technical surgical skills sessions, provides approximately 50 clinical clerks a brief glimpse of the fascinating field of surgery, and gives them a level of confidence as they proceed to their clinical service over the following 7 weeks.

The introductory week, referred to as the 'Crash Course in Surgery,' also affords the students the opportunity to meet and interact with faculty in the Department of Surgery, several of whom they will see later on their clinical service. In total, more than 260 third-year medical students will be taught in this manner throughout an academic year.

Over the past year, besides the third-year students, a significant number of both first- and second-year students have successfully completed several surgical skills workshops and other surgery-related educational courses in the Surgical Skills Centre. Based on the interest generated among students, plans are to increase these types of courses.

I am pleased with the level of support and service that is provided at the Surgical Skills Centre and am confident that it will feature prominently in our goal to provide undergraduate surgical education that is second to none. George Christakis, MD, FRCS, MSc

Director, Undergraduate Education, Department of Surgery; Faculty of Medicine, University of Toronto

### S.E.A.D-The Surgical Exploration and Discovery Program

The Surgical Exploration and Discovery Program was launched in 2012 with the full support of the University of Toronto's Department of Surgery. It is a 2 week program for medical students who wish to gain a multi level exposure to the direct entry surgical specialties at UofT. It is the first program of it's kind in Canada, and caters to first year medical students. A unique combination of observerships across all surgical specialties, informal discussions on surgical lifestyle, career options and hands-on surgical skills development are offered in the program. The Surgical Skills Centre is pleased to have been a part of this program for the past 2 years. In the summer of 2013, 22 residents attended hands-on workshops and learned the skills associated with suturing and knot tying, vascular anastomosis, aortic valve replacement, tendon repair, Z plasty, micro surgery and bone platting.



In this photo, a medical student from the SEAD program inserts an aortic valve in to the heart model

#### MMMD-Mechanisms, Manifestations, Management of Disease

This is a new initiative of the Faculty of Medicine. It is a 36 week course and is offered to second year medical students. The course consists of lectures, weekly problem-based tutorials and small group seminars. The "terminal objectives" of the course are classified under the seven CanMEDS roles.

The Surgical Skills Centre supported the MMMD program by running multiple skills sessions. The medical students, which totaled 100, were taught knot tying and suturing, Fundamentals of Laparoscopic Skills, intubation, casting, laparoscopic cholystectomy and colonoscopy.

# Continuing Medical Education (CME) Events

CME courses adhere to a specific form of continuing education that allows those in the medical field to maintain competence and learn about developments and new areas in their chosen field. Faculty who are experts in their individual clinical areas develop, review and deliver the content for these programs.

- International Paediatric Temporal Bone Dissection Course
- The 3rd Toronto Endoscopic Ear Surgery Course
- Laryngology Core Lecture Series: Laryngeal Framework
- The University of Toronto Temporal Bone and Oto-Surgical Course
- Supplemental Emergency Medicine Experience
- ProWess(Procedure Workshop for Emergency Surgical Skills)
- The University of Toronto Update in Minimally Invasive Surgery
- Tenth Annual Toronto Perioperative Transesophageal Echocardiography Symposium
- The University of Toronto Endoscopic Skull Base Course
- 45th Lougheed Microsurgical Course
- 46th Lougheed Microsurgical Course
- A Practical Approach to Competency- Based Education in Your Residency Training Program: From Concept to Implementation
- ISKAKOS -International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine: International Meniscal Reconstruction Experts Forum
- SimOne Simulation Centre Wizardry: From Soup to Nuts of Running a Simulation Centre
- Division of General Surgery Laparoscopic Suturing Session
- Laparoscopic Skills Day-The Scarborough Hospital
- Toronto Ophthalmology Residency Introductory Course (TORIC)
- Emergency Medicine Surgical Skills Workshop
- MSH Emergency Medicine: Paracentesis session
- Airway Procedure Workshop for MSH Emergency Doctors
- UHN Emergency Medicine: Venous Access
- SIMuliscious: A Taste of Simulation
- Mount Sinai Hospital Bone Bank: Sterile Technique Training
- Structured Operative Obstetrics Instructors Course

# Industry Courses

COMPANY	COURSE
Allergan	Nurse FACE Symposium
	Dermatology Session
	Ozurdex Technical Symposium
American Medical Systems	Women's Health Advisory Board
	Canada Female Health
Avenir Medical	Cadaver Trial #3-PelvAssist
Covidien	OBGYN Oncology Course
	Complex Abdominal Wall Reconstruction Master class
	Gynaecological Oncology Lab
De Puy	Masters Shoulder Course: Disease Pathway
Integralife	Foot and Ankle
Linvatec	International Society of Arthroscopy, Knee Surgery
MED-EL	Bonebridge Temporal Bone Lab
Medtronic	8th Annual Canadian Contemporary Spinal Techniques-Advance Techniques for Cervial Reconstruction
PharmAchieve	IMG Pharmacy Training
Stryker	1st Global Neuro Technical Committee
	1st Global Maxillofacial Technical Committee
Wright Medical Technology	Foot and Ankle Fellows InBone TAR training
	Mini Foot and Ankle Session
Zimmer	Total Hip Demonstration
	Ankle Arthroscopy Training
	Cadaveric Practice Workshop-DeNovo NT
	Surgical Technique Using Persona Knee

# Outreach Programs Refugee Camp in the Heart of Campus Take our Kids to Work Day

- 2013 International Paediatric Emergency Medicine Elective (IPEME)
  Summer Mentorship Program in Health Sciences



Participants in the "Structured Operative Obstetrics Instructors Course" learn the art of surgical knot tying

# Co-Op Students and Volunteers

For as long as the Surgical Skills Centre has been in operation, the staff has had the pleasure to work with Volunteers and Co-Op students. Since 1998, over 100 Volunteers and Co-Op students have assisted the SSC staff, and were able to learn about surgery, and possibly pursue a future in the field.

This year we had the privilege of once again working with an extremely dedicated group of volunteers and co-op students. We were pleased to have Angie Richards, Gabi Aber, Nandhaa Pazhaniappan, Tiana Corovic, Jack Sheen and Cole Krensky join us as volunteers.

The SSC is also grateful to our co-op students for their hard work and determination. We were pleased to have Kainat Amir from Marc Garneau Collegiate Institute, Dean Vaksman from Westmount Collegiate Institute, and Lilly Yu and Andrew Tran, both from William Lyon Mackenzie Collegiate Institute.

### Past Co-Op Students and Volunteers - Where Are They Now?

**Daniel Axelrod** attended Queen's University where he majored in Life Sciences. He has now been accepted to Medical School at the University of Toronto.

Andrew Campbell is enrolled in the Paramedic Program at Durham College.

**Jennifer Chou** completed a Master of Science at the University of Toronto, and attended Medical School at Queen's University. She is almost finished her residency in General Surgery at Memorial University of Newfoundland.

**Wayne Chou** attended the University of Toronto where he obtained an Honours Bachelor degree in the Biochemistry Specialist program. He is currently completing his residency in Family Medicine in Syracuse, New York.

**Katie Dorman** attended medical school at McMaster Medical School. She has now started 1st year residency in Family Medicine at the University Of Toronto School Of Medicine.

Jana Enderes is completing medical school in Germany.

Natalie Molodecki is a second year medical student at the Mississauga Academy of Medicine.

**Jeremiah Groen** completed medical school at Ben-Gurion University in Beer Sheva, Israel. He has now started his 2nd year of residency in Family Medicine at the University of Toronto.

**April Joy Lisanin** completed her Bachelor of Science in Nursing at Ryerson University. April was accepted into the OR Peri Operative Post Graduate Nursing Course at George Brown College with a placement at UHN TGH OR.

Anna Hrynko has a Bachelor of Science from McMaster University in Biology and in Neuroscience, Psychology and Behavior

Eve Kieras just graduated with a Bachelors Degree in nursing from Ryerson University

Roy Meidan is currently a Doctor in Israel with a license to also practice medicine in Europe.

**Dana Newman** attended Ben-Gurion University in Beer Sheva, Israel. She did her residency in Family Medicine and low-risk Obstetrics. She is now a family physician in Toronto.

**Sophia Nunes** is almost finished her Bachelor of Science in Kinesiology and Physiology at Western University. **Angie Richards** graduated from Ithaca College in New York with a Bachelor of Science in Biology. She is currently studying for her MCATS.

**Catherine Sammut** graduated with a Bachelor of Science in Engineering Science from the University of Toronto. She is now working as a Consultant for CGI Canada in the Telecommunications industry.

Julia Leising is a first year Medical Student at the University of Toronto.

**Anna Romanova** received her Honours Bachelor of Science in Health Sciences from the University of Toronto and a Master's of Science in Global Health from McMaster University. She is currently in her final year of medical school at McMaster with ambitions to continue studies in Internal Medicine.

**Elissa Tepperman** completed Medical School in Ottawa, and is half way through her residency in Obstetrics and Gynecology at McMaster Medical School.

**Ben Zuniga** has completed his nursing degree from Ryerson University and is currently working in a community hospital.

**Massih Bidhendi** is currently in his 3rd year at the University of Toronto working towards degrees in Psychology and Economics. He is also studying for his MCAT's, and has a keen interest in Medical Education and Public Health Policy.



Co-Op student Kainat Amir practices her basic suturing technique on a porcine model

# Research

Research continues to be a valuable tool in the progress of surgical education. We are appreciative to be involved in such high caliber research and look forward to supporting further research in the coming years

#### Colorectal Objective Structured Assessment of Technical Skills (COSATS)

The COSATS was developed by the Surgical Skills Centre in conjunction with the American Society of Colon and Rectal Surgeons (ASCRS) and the American Board of Colon and Rectal Surgery (ABCRS). It is a performance based technical skills exam, with the hope and purpose of the COSATS becoming the new standard for colorectal board certification.

The project was led by Drs Helen MacRae and Sandra de Montbrun, with the model design and creation being heavily the responsibility of the skills centre staff.

The inaugural COSATS exam took place in June of 2011, with 20 residents from the United States taking part. They travelled to Toronto to take the exam, which was held at our Centre. The initial project demonstrated that this specific method of testing was reliable in discriminating between graduating colorectal residents and graduating general surgery residents.

In September 2012, a second ACRS funded study was held, and the Surgical Skills Centre played a vital role in its planning and implementation. This 2nd study compared the COSATS results of newly graduated colorectal surgeons to the results from their colorectal surgery examinations.

This study was significant as it was the first attempt of any surgical society to consider the direct assessment of technical skills at certification.

The September 2012 COSATS exam was held in Chicago at Northwestern University, with a total of 40 surgeons being examined over 2 days.

Prior to the exam, much preparation took place at the Skills Centre. All models were created and validated. Once all of the planning was worked out, a total of 7 case carts full of supplies and equipment were shipped to the lab at Northwestern. For the exam, almost the entire SSC team travelled to Chicago in order to facilitate the exam. The COSATS exam will occur again in Chicago in 2014 for 80 colorectal fellows.

#### Research projects facilitated by the Surgical Skills Centre

- For Your Ego or to Learn the Task? Quantitative vs. Qualitative Feedback. Julian Manzone, Eric Youten, Devdatta Desai, Luc Tremblay, Ryan Brydges (won for poster and presentation at the Society for Simulation in Healthcare Meeting-January 2013, Orlando, Florida)
- (FELT Study) Feedback in Laryngoscopy Teaching: Comparing Concurrent to Terminal Feedback in a Randomized Prospective Blinded Trial in Medical Students. Dr. Eric You-Ten.
- Using the Integrated Procedural Performance Instrument (IPPI) for Assessment of US guided CNC Insertion by Internal Medicine Residents: Combined Assessment of Communication. Dr. Rodrigo B Cavalcanti, Dr. Lvnfa Stroud.
- Teamwork Skills During an Acute Clinical Simulation Scenario. Dr. Zeev Friedman, Christian Arzola, Megan Havter.
- Accuracy of Suture Anchors Placement in Antero-Inferior Glenoid Using a Trans-Subscapularis Versus a Low Anterior Portal. Dr. Massimo Petrera, Dr. John Theodoropoulos, Dr. Darrell Ogilvie-Harris, Dr. Tim Dwyer, Dr. Christian Veillette.
- Determining the Best Graft Sealant Combination in an In-Vitro and In-Vivo Porcine Model. Dr. Marcela Fandino, Dr. Kristian Macdonald.
- Challenging Authority During a Life Threatening Crisis. Dr. Zeev Friedman.
- Ex-Vivo Laparoscopic Bariatric Surgical Training Curriculum. Dr. Teodor Grantcharov, Dr. Boris Zevin.
- Improving the Duality of Nephrology Resident Procedural Training. Dr. Rory McQuillan.
- Evaluating the Effectiveness of the BID Teaching Method Within an Orthopaedic Boot Camp. Dr. Daniel Hoppe, Dr. Oleg Safir, Dr. Adam Dubrowski.
- A Novel Model for Teaching Intracoporeal Knot Tying. Dr. Allan Okrainec, Dr. Tim Jackson.
- Sure Shot Study. Dr. Markku Nousiainen, Dr. Timothy Leroux.
- Distal Closed Reduction and Casting Study. Dr. Ian Mayne, Dr. Lucas Murnaghan.
- The Role of Social-Comparative Feedback in Highly Motivated Learners. James Lyons, Dr. Adam Dubrowski.

- Ultrasound Guided Central Line and Collaboration Skills. Dr. Rodrigo Cavalcanti, Dr. Lynfa Stroud, Dr. Luke Devine, Dr. Christie Lee.
- Intraoperative Use of a Sterile Laser Pointer as a Teaching Tool. Dr. John Theodoropoulos, Dr. Lucas Murnaghan, Dr. Tim Dwyer, Dr. Brant Sachleben.
- Bonebridge Temporal Bone. Dr. Vincent Lin.
- Comparison of 4 modes of Periprosthetic Distal Femur Fracture. Dr. Paul Kuzyk, Dr. David Backstein, Dr. Herman Dhotar, Dr. Tom Willett.
- GTx Head and Neck Surgery. Dr. Jonathan Irish, Michael Daly, Nidal Muhanna.
- GTx Temporal Bone Surgery. Dr. Jonathan Irish, Dr. Adrian James, Dr. Blake Papsin, Dr. Sharon Cushing, Dr.Vincent Lin, Michael Daly.
- Sarcoma GTx. Dr. Jay Wunder, Dr. Amir Sternheim, Michael Daly, Jimmy Qui, Dr. Peter Ferguson
- Does a Trans-Subcapularis Portal Facilitate Lower Anchor Placement in the Antero-Inferior Glenoid? A Cadaveric Study with CT Analysis. Dr. John Theodoropoulos, Dr. Tim Dwyer, Dr. Darrel Ogilvie-Harris.
- Dwyer, Dr. Darrel Ogilvie-Harris.
- Design and Validation of an Evidence-Based Laparoscopy Curriculum for Gynecology Residents. .Dr. Teodor Grantcharov, Dr. Eliane Shore, Dr. Guylaine Lefebvre.
- Intraoperative Use of a Sterile Laser Pointer as a Teaching Tool. Dr. Lucas Murnaghan, Dr. Tim Dwyer, Dr. John Theodoropolous
- Predicting Laparoscopic Surgical Skill. Dr. Teodor Grantcharov, Dr. Marisa Louridas.

# Academic Accomplishments

#### Recognitions:

2013 Award for Excellence in Innovation - Prize / Award. Association for Surgical Education (Toronto Orthopaedic Boot Camp).

# **Oleg Safir**

Presentations:

Abolghasemian M., Sternheim A., Shakib A., Safir O., Gross A., Backstein D., "Does operating on infected arthroplasty cases increase the risk of infection of subsequent joint replacement in the same operating room?", EFORT 2013, Turkey, Istanbul

Safir O., Kuzyk P., Kosashvilli Y., Ben Lulu O., Gross A., "Fresh-stored osteochondral allografts for the treatment of femoral head defects: Surgical technique and preliminary results" Abstract International Cartilage Repair Society Meeting 2013, Turkey, 2013-09-18

Sonnadara R., Mironova P., Safir O., McQueen S., Mui C., Nousiainen M., Ferguson P., Alman B., Kraemer W., Reznick R., "Toronto Orthopaedic Boot Camp: Perspectives on student-led learning (Poster presentation)", Association for Surgical Education Meeting 2013, United States, Florida, Orlando

Mironova P., Satterthwaite L., Glover Takahashi S., McQueen S.A., Levine R., Foong C., Sonnadara R., Safir O. Surgical Preparatory Camp: a Novel Simulation-based Training Program. Poster Presentation. 14th annual International Meeting on Simulation in Healthcare (IMSH). San Francisco, California. January, 2014.

Sonnadara R.R., Safir O., McQueen S., Mui C., Mironova, P., Nousiainen, M., Ferguson, P., Alman, B., Kraemer, W., Reznick, R. Examining the effects of a student-led learning paradigm in a simulation-based surgical skills course. Poster Presentation. 14th annual International Meeting on Simulation in Healthcare (IMSH). San Francisco, California. January, 2014.

Mironova P., Glover Takahashi S., Satterthwaite L., Foong C., Levine R., Safir O. Residents as Educators in a Surgical Skills Program. Podium Presentation. The Richard K. Reznick Wilson Centre Research Day. Toronto. October, 2013.

Safir O., Satterthwaite L., Mironova P., Foong C., Glover Takahashi S., Sonnadara R., Levine R. Surgical Preparation Camp. Poster Presentation. The Richard K. Reznick Wilson Centre Research Day. Toronto. October, 2013. Safir O., McQueen S., Mironova P., Abdelbary H., Leroux T., Garbedian S., Drexler M., Sonnadara R. Developing novel intraoperative evaluation instruments for arthroplasty skills. Poster Presentation. The Richard K. Reznick Wilson Centre Research Day. Toronto. October, 2013.

• Biomechanical Behavior of an All-Suture Anchor: Y -Knot Pretension? Dr. John Theodoropoulos, Dr. Tim

#### **Publications:**

Abolghasemian M., Sternheim A., Shakib A., Safir O., Backstein D., "Is arthroplasty immediately after an infected case a risk factor for infection?", (2013). Clinical orthopaedics and related research, 471(7)

Sonnadara R., Garbedian S., Safir O., Mui C., Mironova P., Nousiainen M., Ferguson P., Alman B., Kraemer W., Reznick R., "Toronto Orthopaedic Boot Camp III: Examining the efficacy of student-regulated learning during an intensive, laboratory-based surgical skills course.", (2013). Surgery, 154(1)

Sonnadara R., \*McQueen S., Safir O., Nousiainen M., Ferguson P., Alman B., Kraemer W., Reznick R., "Reflections on current methods for evaluating arthroplasty skills: A scoping review", The Bone and Joint Journal (Accepted)

Sonnadara R., Mui C., \*McQueen S., Mironova P., Nousiainen M., Safir O., Kraemer W., Ferguson P., Alman B., Reznick R., "Reflections on competencybased education and training for surgical residents", Journal of Surgical Education (In Press)

Drexler M., Backstein D., Safir O., Gross A., Chakravertty R., "Dislocation after the first and multiple revision total hip arthroplasty", (2013). Canadian Journal of Surgery (Accepted)

Kosashvili Y., Raz G., Backstein D., Lulu O., Gross A., Safir O., "Fresh-stored osteochondral allografts for the treatment of femoral head defects: surgical technique and preliminary results.", (2013). International orthopaedics, 37(6)

Abolghasemian M., Drexler M., Abdelbary H., Sayedi H., Backstein D., Kuzyk P., Safir O., Gross A., "Revision of the acetabular component in dysplastic hips previously reconstructed with a shelf autograft: study of the outcome with special assessment of bone-stock changes.", (2013). The bone & joint journal, 95-B(6)

Saidi K., Lulu O., Tsuji M., Safir O., Gross A., Backstein D., "Supracondylar periprosthetic fractures of the knee in the elderly patients: A comparison of treatment using allograft-implant composites, standard revision components, distal femoral replacement prosthesis.", (2013). The Journal of arthroplasty, N/A PubMed ID: 23680503

Hui Y, Safir O, Dubrowski A, Carnahan H, "What skills should simulation training in arthroscopy teach residents? A focus on resident input.", (2013). International journal of computer assisted radiology and surgery, N/A PubMed ID: 23535939

Tangsataporn S., Abolghasemian M., Kuzyk P., Backstein D., Safir O., Gross A., "Salvaged failed roof rings and antiprotrusion cages: surgical options and implant survival.", (2013). Hip international : the journal of clinical and experimental research on hip pathology and therapy, 23(2)

Kosashvili Y., Omoto D., Backstein D., Safir O., Lakstein D., Gross A., "Acetabular alignment and primary arc of motion for minus, skirtless, and skirted 28-, 32-, 36-, and 40-mm femoral heads.", (2013). The Journal of arthroplasty, 28(2)

Sternheim A., Abolghasemian M., Safir O., Backstein D., Gross A., Kuzyk P., "A long-term survivorship comparison between cemented and uncemented cups with shelf grafts in revision total hip arthroplasty after dysplasia.", (2013). The Journal of arthroplasty, 28(2)

Sharma O., Lochab J., Berkovich Y., Safir O., Gross A., "Severe metallosis leading to femoral head perforation.", (2013). Orthopedics, 36(2)

Abolghasemian M., Tangsataporn S., Sternheim A., Backstein D., Safir O., Gross A, "Combined trabecular metal acetabular shell and augment for acetabular revision with substantial bone loss: a mid-term review." (2013). The bone & joint journal, 95-B(2)

#### Lisa Satterthwaite

#### Education

Meta Leadership for Healthcare Professionals, Harvard School of Public Health

#### Committees

Mount Sinai Hospital Education Advisory Council, Member

Nurses in Surgical Education, Association for Surgical Education, American College of Surgeons, Chair

Administration and Management Committee, American College of Surgeons, Accredited Educational Institutes Consortium, Co Chair

Centennial College Perioperative Program Advisory Committee, Member

Peter A. Silverman Centre for International Health, Global Health Scholar, Mount Sinai Hospital, Member Centers of Excellence in Simulated Teaching and Learning, Health Faculties at the University of Toronto, Member Ad Hoc Committee for the Accreditation of American College of Surgeons Education Institutes, Member APDS American College of Surgeons Surgical Simulation Curriculum Project, Member Surgical Skills Centre Core Curriculum Committee, Vice Chair. University of Toronto, Surgical Skills Centre at Mount Sinai Hospital, Steering Committee, Member

#### Organizing Committees

Colorectal Objective Structured Assessment of Technical Skills Exam, Sept 22nd 2012, Chicago IL

#### Memberships in Professional Organizations

SAGES, Fundamentals of Laparoscopic Surgery, Test Centre Proctor Association of Surgical Education (ASE), Surgical Simulation Centre Committee, Member Global Health Scholar, Peter A. Silverman Centre for International Health, Member Association of Surgical Education (ASE), Member Association of Surgical Education (ASE) Nurses in Surgical Education Committee, Member College of Nurses of Ontario, Member

#### Jason Faria

#### Memberships in Professional Organizations

SAGES, Fundamentals of Laparoscopic Surgery, Test Centre Proctor

### **Research Rounds**

The Surgical Skills Centre began hosting Research Rounds in the spring of 2012. Invited speakers and researchers present their project findings, which is followed by a question and answer period. Below is a list of the projects that have been presented to date.

Date	Presenter	Торіс
March 13th, 2012	Laurent St-Martin	Assessing consistency of "slowing down" moments in surgical expertise
	Ranil Sonnadara	Orthopaedic Boot Camp III: Examining the efficacy of student- led learning during an intensive laboratory-based surgical skills course
April 3rd, 2012	Ryan Brydges	Broad systematic review of simulation
May 15th, 2012	David Bagli	Role of novel Internet mediated feedback instrument in a new age of simulation training: A randomized control study
	Ranil Sonnadara, Oleg Safir and Lisa Satterthwaite	Discussion regarding existing and possible research opportunities at the Surgical Skills Centre
June 19th, 2012	Heather Carnahan	Simulation based education for the ambulatory care setting
	Ranil Sonnadara, Oleg Safir and Lisa Satterthwaite	Discussion regarding communication between Surgical Skills Centre and Centre of Ambulatory Care Education
October 16th, 2012	Polina Mironova	Perspectives on student-led learning
	Zeev Friedman	Challenging authority in a life threatening situation
November 27th, 2012	Priyanka Patel	Pressures to measure up in surgical training
	Daniel Hoppe	Evaluating the briefing, intraoperative teaching, debriefing (BID) method for surgical skills teaching
February 19th, 2013	Nathan Zilbert	The development of the preoperative plan
	Jennifer Hoogenes	Exploring how surgeon teachers motivate learners in the operating room
April 16th, 2013	Tiffaney Kittmer	Uncovering the hidden curriculum: a qualitative analysis of professionalism in surgical clerkship
	Oleg Safir and Lisa Satterthwaite	Introducing Surgical Prep Camp
June 18th, 2013	Eric You-Ten	Role of technical skills in behaviours of crisis management
	Aaron Knox	The influence of gaming technology in teaching millennial medical trainees fundamental surgical skills

### ASE Award

Ranil Sonnadara PhD along with the Surgical Skills team were the recipients of the 2013 Association for Surgical Education Award for Excellence in Innovation, for the Toronto Orthopaedic Boot Camp project. This award is given annually to a group of individuals who have demonstrated exemplary performance in surgical education with the intent to recognize novel ideas and/or methods for improving teaching and learning.



# SIMSINAI CENTRE

Staff

Dr. Sev Perelman, Medical Director Lisa Satterthwaite, Senior Manager Finch Taylor, Simulation Technician Dionne Banton, Administrative Assistant

#### Letter from Dr.Perelman

SimSinai is committed to supporting all simulation-based education programs and events at Mount Sinai Hospital, as well as provide resources and expertise for the University of Toronto and affiliated programs. We work in closest collaboration with the Surgical Skills Centre and share administrative, educational resources and space on a regular basis. Lisa Satterthwaite and her team have been invaluable in making sure SimSinai initiatives and programs are running well. Finch Taylor, our Simulation Technician, has been developing an outstanding expertise in a continuous quest to make every simulation perfect.

We would like to acknowledge the support from MSH administration, office of VP education and Directors of Centers of Excellence at Mount Sinai for financial support which will secure more effective management of SimSinai.

As a hospital based simulation program, our foremost commitment is to improve patients' experiences at Mount Sinai. That includes training the staff and teams in delivering safer and more efficient care. As one of these elements, we continue to develop the Mount Sinai Mock Code initiative supporting the Advanced Resuscitation Committee under the leadership of Dr. Michael Christian and spearheaded by Dr. Luke Devine.

We continue to provide training to the senior medicine residents, helping them to become effective and efficient code leaders as well as on-going training of ICU house staff.

SimSinai hosted and participated in team-training exercises for the Emergency Department, NICU training, and a very successful ACLS program.

We have embarked on developing our own cadre of simulation champions. Many of our instructors have received the most prestigious teaching awards and nominations. Dr. Wansbrough was recognized this year by the Anna Jarvis Award for teaching excellence. I have successfully passed the examination set by the Society of Simulation in Healthcare and became one of the first three hundred Certified Simulation Educators in the world. This new level of knowledge and competency helps us to regularly conduct more effective workshops for new instructors and tutors. With the support of senior administration including our Vice President of Education, Dr. Jacqueline James, we were able to secure help from one of the leaders of simulation in health care, Professor Amitai Ziv. With his input, we organized four simulation workshops which were well received in our institution. Our hope is to inspire everyone at Mount Sinai Hospital to seek out opportunities to involve SimSinai in the local educational initiatives and to utilize the wonderful possibilities that medical simulation has to offer.

In parallel to the hospital based, patient-centered initiatives, we are involved in University of Toronto based programs. I was fortunate to lead the development of the new simulation –based airway management seminar for the undergraduate medical program which has been very well received by the trainees and tutors alike. SimSinai has developed and continues to provide the longitudinal simulation curriculum for the CCFP (Emergency Medicine) fellows at U of T, which is in its 5th year. As part of this program, we trained 12 academic Emergency physicians from the North York General, Credit Valley, Toronto East General and Scarborough General hospitals as well as from St. Michael's Hospital and the University Health Network in basic simulation educator skills. SimSinai has been instrumental in supporting the Department of Surgery "PREP Camp" for all incoming first year surgical residents introducing a simulation based ACLS refresher with elements of crisis resource management and introduction to procedural sedation.

At the provincial level, SimSinai provided expertise and resources for the Ontario's Ministry of Health and Long Term Care SEME (Supplemental Emergency Medicine Experience) program, led by Dr. Shirley Lee, with over 30 family MDs being trained for working in rural emergency departments.

At the national level, myself and Dr. Lee also consulted on the first Canadian on-line Geriatric Emergency learning module (http://geri-em.com/) developed by our own MSH physician, Dr. Don Melady, which has been accredited and supported by CCFP, RCFS(C) and AMA and endorsed by the Canadian Association of Emergency Physicians.



Everyone here is an well trained person, d who came here open and will Internationally, our staff presented and taught at several meeting of the International Society for Simulation in Healthcare (ISSH), Society in Europe Applied to Medicine (SESAM) and at the Asia-Pacific Meeting on Simulation in Healthcare (APMSH), and at the Convention of the Russian Society of Simulation Education in Medicine (ROSOMED).

Lastly, SimSinai is becoming a hub for research projects. Drs. Eric You-ten, Zeev Friedman, as well as Dr. Luke Devine generated publications and secured grants to advance simulation-based investigations using opportunities and support from SimSinai.

We hope that those activities and initiatives will grow with years to come.

Sev Perelman, MD, MSc, CCFP(EM), CHSE

Staff Emergency Physician, Schwartz/Reisman Emergency Centre, Mount Sinai Hospital, Toronto

Medical Director, SimSinai, Program for Simulation-based Education and Patient-Centered Initiatives at Mount Sinai Hospital

Medical Director ACLS, Ontario Heart and Stroke Foundation

Assistant Professor, Department of Family and Community Medicine, University of Toronto Certified Healthcare Simulation Educator

#### Letter from Dr.James

It has been an exciting year for the SimSinai Centre as we have seen substantial growth in programs which bring teams of health care professional learners together in an environment full of energy and enthusiasm for learning. The Centre has been integral in enabling the dissemination of simulation and debriefing as a way to improve the quality and safety of patients in the Mount Sinai Hospital. With the awarding of Mount Sinai Hospital Physician Campaign funds donated by the Department of Medicine Members and matched by Mount Sinai Hospital to the SimSinai group, we will now be able to support the running of mock codes throughout the hospital and to have every major clinical area experience a mock code blue in 2013-14. In August we had two exciting weeks of SIMuliscious, workshops led by Dr. Amitai Siv, Director of MSR Simulation Centre in Israel and Dr. Sev Perelman. These workshops were designed as a tasting menu of the various simulation modalities and as an introduction to training educators in the use of simulation as a modality for learning how real life challenging clinical scenarios can be used as teaching moments when transformed into simulations which can be acted out in a safe and collegial environment. I would like to congratulate Dr. Sev Perelman and all the staff of SimSinai Centre on a highly productive and impactful year. Jacqueline James MD MEd FRCPC

Vice President Education

vice President Education

#### **Congratulations!**

We would like to wish our Medical Director Dr. Sev Perelman, along with Anesthesiologist Dr. Eric You-Ten, the best of luck as they travel abroad to present abstracts at two different conferences. Dr. Perelman will be presenting at the ROSOMED in Moscow. It is an All Russian Public Organization "Russian Society for Simulation Education in Medicine" September 26-27. Dr. You-Ten will be heading to Shanghai, China to present at the APMSH – Asia Pacific Meeting on Simulation in Healthcare.

We also would like to congratulate Dr. Luke Devine who presented at the SESAM - 19th Annual Meeting of Society in Europe for Simulation Applied to Medicine, in Paris, France

#### What's Happening at SimSinai?

A sample of some recent simulations courses:

- Year 3 Undergraduate Emergency Medicine Clerkship Airway Session.
- Canadian College of Family Physicians (Emergency Medicine) (CCFP (EM)).
- Supplemental Emergency Medicine Experience (SEME).
- Dr. You-Ten Research.
- ICUniversity.
- Mount Sinai Hospital Emergency Department Nursing ER Skills Day.
- Dr. Zaka Khan Year 2 Physician Assistant Course Trauma.
- Post Graduate Year 1 General Internal Medicine Resuscitation Training.
- PREP Camp Mini ACLS.
- SIMuliscious, A Taste of Simulation Basic and Advanced Course.

# **Financial Summary**





## **REVENUES \$1,089,133**



# MATERIALS/SERVICES \$486,360



# NET EARNINGS -\$17,469

# Visitors

The Surgical Skills Centre is known globally as a leader in surgical and medical education, as well as curriculum development.

As the first lab of its kind in Canada, we are known to be at the forefront of educating the surgeons of tomorrow, and are known throughout North America and the world for our innovation and dedication to surgical education.

As a direct result of our success, the lab receives many requests every year to host tours and visitors from all over the world. This allows the Centre to develop surgical relationships with hospitals and other simulation centres on a global level, which is instrumental in the advancement of skills education.

	•	Dr. Luke McCormack	Liver Transplant Program Director: German Hospital of Buenos Aires	Buenos Aires, Argentina
	۲	Dr. Gregory Melkonian	Instructor in Orthopaedic Surgery, Harvard Medical School Staff Physician, Children's Hospital Boston	Boston, Massachusetts
		Dr. S.R. Mishra	Gynaecologist and Obstetrician, Chairman, Reproductive Health, School of Medicine MOI University	Eldoret, Kenya
	53918 	Col.Dr. Yasser Mandourah	Director of the Intensive Care Services at the Riyadh Military Hospital, President of the Saudi Critical Care Society	Riyadh, Saudi Arabia
		Dr. Fahad Al-Ghimlas	Director of the CME Center of Kuwait Institute for Medical Specialization	Al-Sharq, Kuwait
		Dr. Thomas Geeraerts	Department of Anaesthesia and Intensive Care University of Toulouse, Paul Sabbatier University	Toulouse, France
		Dr. Vincent Minville	Department of Anaesthesia and Intensive Care University of Toulouse, Paul Sabbatier University	Toulouse, France
	✡	Professor Meir Nyska	Head of Orthopaedic Department, Meir Hospital	Kfar Saba, Israel
		Ziva Besser	Head of Education, Rambam Health Care Campus	Haifa, Israel
		Dr. Yaron Berkovic	Arthroplasty and Trauma Surgeon, Orthopaedic Department, Rambam Health Care Campus	Haifa, Israel
	+	Liza Al Jarrah	The Royal College of Physicians and Surgeons of Canada	Toronto, Canada
		Paul Gamble	The Royal College of Physicians and Surgeons of Canada	Toronto, Canada
*	3	Li Hongwei	Vice Chairman of Guangzhou Development District, Administrative Committee, Chairman of Luogang District Government	Guangzhou, China
		Li Xuezhi	Member of the Standing Committee Luogang District, Secretary of the Party Working Committee of Xiagang Street	Guangzhou, China
		Liu Shi	Director of Health Bureau, Luogang District Government, Guangzhou Development District	Guangzhou, China
		Hong Qian	Deputy Director of Enterprise Construction Bureau (Investment Promotion Bureau) Guangzhou Development District	Guangzhou, China
		Dai Xinxiang	Section Chief of Construction and Municipal Gardens Bureau, Guangzhou Development District	Guangzhou, China
		Zhang Danni	Deputy Section Chief of Department of US and European Projects of Enterprise Constructin Bureau (Investment Promotion Bureau), Guangzhou Development District	Guangzhou, China
AK.	€ 🖁	Lee Shewchuk	Postgraduate Specialty Medicine Coordinator, Northern Ontario School of Medicine	Thunder Bay, Ontario
		Dr. Mikhail Dvorkin	General Surgeon, Omsk Regional Clinical Oncology Center	Omsk, Russia
*	€	Dr. Wendy Crebbin	Manager at the Royal Australia College of Surgeons	Melbourne, Australia
	i.	Dr. Mike Falk	Pediatric Emergency Medicine, Saint Luke's Roosevelt Hospital	New York, New York
	۲	Dr. Anil Agarwal	Professor and Head, Department of G.I Surgery and Liver Transplant, G.B Pant Hospital and Maulana Azad Medical College	New Delhi, India

# Supporters

The Surgical Skills Centre is very gracious and humbled by the tremendous support it receives from so many companies, small businesses and organizations. The generosity and support from these sponsors allows us to remain a leader in surgical education. We are able to provide unparallel teaching thanks to the resources provided by our sponsors. Whether it is financial support, donations of extra supplies or the lending of equipment, the Surgical Skills Centre is very appreciative.

Thank you to all of our supporters!





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