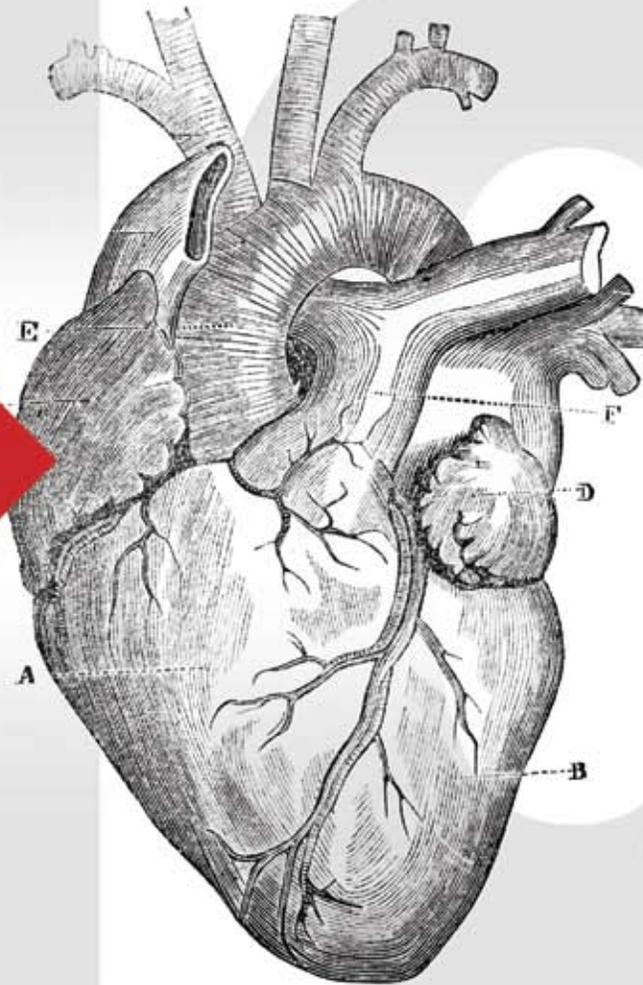


THE UNIVERSITY OF TORONTO
SURGICAL SKILLS CENTRE
AT MOUNT SINAI HOSPITAL



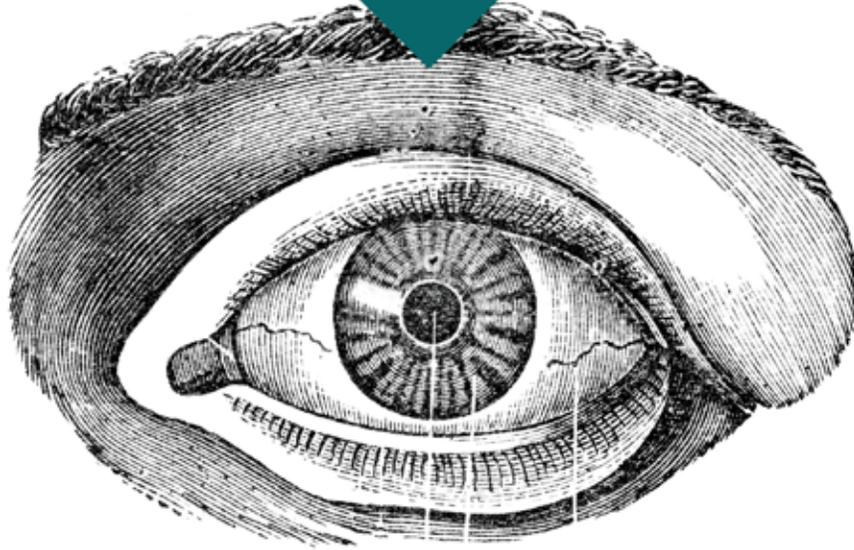
ANNUAL REPORT 2008 • **Xth** ANNIVERSARY





TENTH
ANNIVERSARY

VISION



LETTER FROM DR. MACRAE

Traditionally, surgical skills have been acquired in the operating room. But as 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 and feedback. Educational research conducted in skills acquisition and evaluation will also provide answers to fundamental educational issues and allow testing of surgical innovations.

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

MISSION

1. To change the way fundamental surgical skills are taught and evaluated.
2. To provide a platform for continuing education in surgical skills.
3. To provide a laboratory for research and development of surgical skills innovation.
4. To promote and enhance the teaching of surgical skills.

The University of Toronto Surgical Skills Centre at Mount Sinai Hospital has now been in operation for over a decade! It has been an honour to continue to serve as D.H. Gales Director of the Surgical Skills Centre. Reflecting on the last decade, the Centre has had a tremendous impact on how the surgical community at the University of Toronto thinks about training technical skills and the value of simulation.

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. Each year, more programs are added, helping learners to safely incorporate skills training into clinical practice. From the initial limited offerings, we are now hosting over 300 events per year and have thousands of individual visits. Curricula are offered in multiple departments within the University of Toronto and all Divisions of Surgery. A centerpiece of our training continues to be the RBC Core Curriculum, ensuring students and residents have the opportunity to safely and confidently acquire technical skills.

With the addition of the Virtual Operating Room last year, through a generous donation from the D.H. Gales Family, we are also emphasizing team training and communication skills for our trainees.

"A mind once stretched by a new idea never regains its original dimensions."

- ANONYMOUS

The success of the Centre can be attributed to the enthusiasm and support of Richard Reznick, Chair of the Department of Surgery and the fabulous staff at the SSC. Lisa Satterthwaite has been Manager for nine years now and she continues to set the bar for how to keep a Centre going! Our tremendous team, including Assistant Manager Shunne Leung and Surgical Technicians Dezan Rego, Marina Romanova, Serenity Thomas and Jason Faria, each add important skills to the Centre, helping to deliver high quality curricula.

I am tremendously proud of our accomplishments over the past decade and know that we will continue to build on our momentum into the future.

Helen MacRae, MD, FRCSC
D.H. Gales Director
Surgical Skills Centre

LETTER FROM DR. REZNICK



On September 23, 1998, the University of Toronto Surgical Skills Centre opened at Mount Sinai Hospital. Ten years later, we can unequivocally say that its establishment has been a resounding success. In the span of a decade, the Centre has managed to firmly establish itself not only as a premier, world-class facility for imparting students and trainees with simulation skills, but as a leader in simulation curriculum development and research.

Today, the Centre trains 8,000 students, residents, surgeons and other clinicians annually – a staggering increase from the 850 individuals trained in its opening year. Moreover, Continuing Medical Education events have expanded from two per year to 48. To accommodate this increased demand, the facility has expanded by 3,500 square feet and has grown from a lone staff member to six employees and more than 35 volunteer and co-op students. Our accomplishments are in large part due to the outstanding leadership, diligence and commitment of our Director, Dr. Helen MacRae and Manager, Lisa Satterthwaite, our incredibly hard working and dedicated staff and the unwavering commitment of Mount Sinai Hospital.

“Education is not the answer to the question. Education is the means to the answer to all questions.”

- WILLIAM ALLIN

The Centre has benefited greatly from numerous linkages and partnerships, including affiliations with Emergency Medicine, OR nursing, Internal Medicine, Ophthalmology, Family Medicine, Emergency Paediatrics, Anaesthesia, Cardiology, Medical Engineering, Respiriology, Paediatric Surgery, Dentistry, Oral Surgery and Medical Illustration. In addition, the Centre is proving to be an important part of the newly established Network of Excellence in Simulation for Clinical Teach-

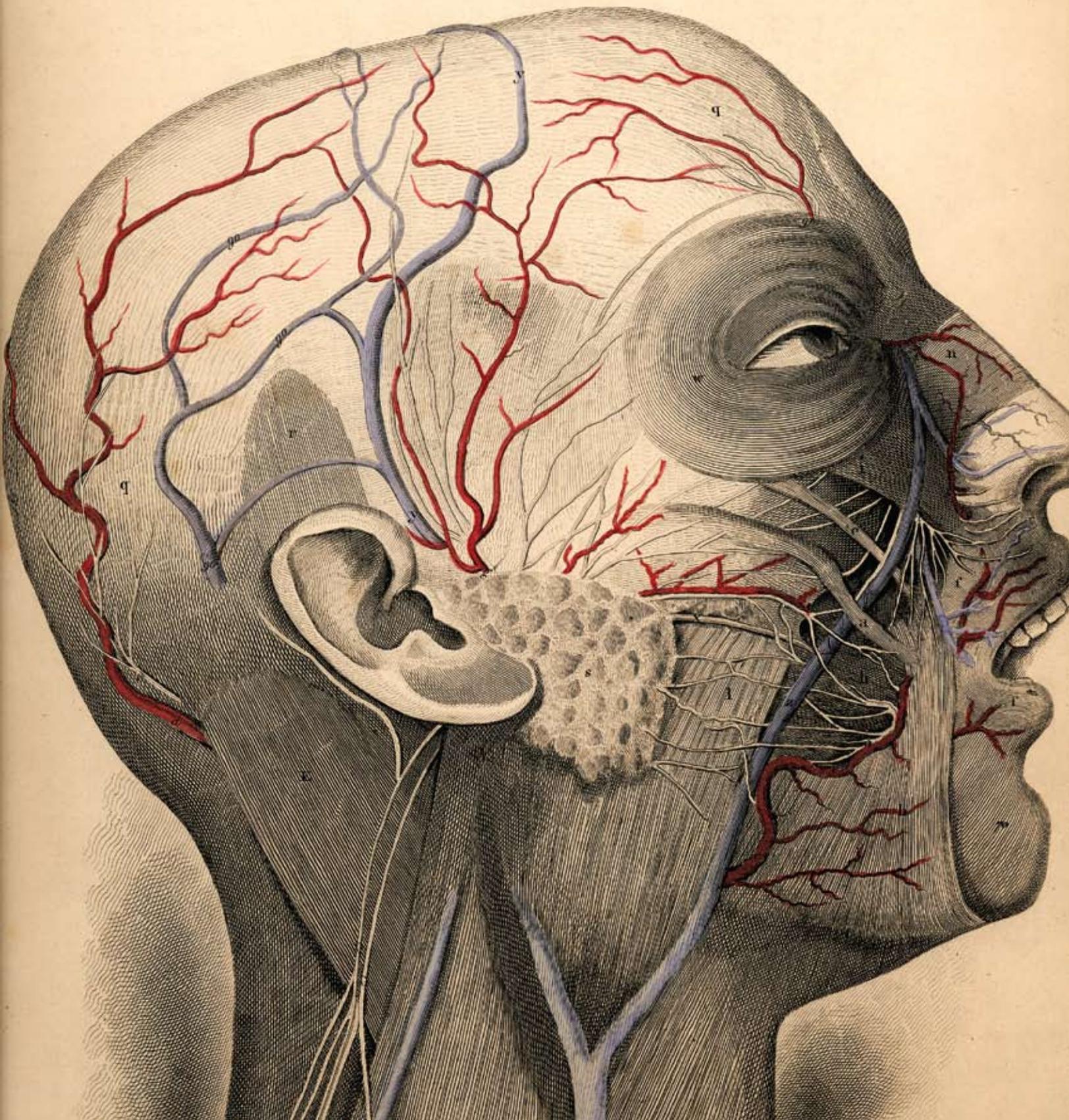
ing and Learning (NESCTL), links facilities, resources and services to promote inter-professional education and learning through simulation.

Significant contributions have also been made in advancing research in education, specifically in the areas of skills acquisition and retention. One of its most significant research endeavours this year, compared Dutch and Canadian residency training programs to determine the impact of length of work week on performance. The scholarly productivity of the Centre will undoubtedly increase in the future with the recent appointment of Research-Scientist Dr. Ranil Sonnadara, whose interests focus on motor control, sensory-motor integration, skills acquisition and skills evaluation.

A true testament to the excellence of the Surgical Skills Centre lies in the fact that our expertise and knowledge is spearheading similar programs around the world. The SSC team has truly developed a reputation as one of the leading consultative authorities worldwide on the establishment and operating of simulation skills labs. Since its inception, it has welcomed visitors from such far-reaching corners of the world as Pakistan, Denmark, India, China, Africa, Germany, Dubai, Israel, the UK and Tibet, to name just a few. An example of the Centre's leadership offsite was the integral role it took in the creation of a Surgical Skills Lab in Ethiopia in 2006. Additionally, the Centre is expanding access to simulation education by imparting skills through different modalities. We have helped to develop a national web core curriculum syllabus in conjunction with the American College of Surgeons.

We are extremely proud of all the accomplishments we have had to date. It is clear the hard work and innovation over the past decade has created a strong foundation from which to make further progress and experience additional successes. Moving forward, our Centre will continue to play an instrumental role in making simulation a fundamental component of the training of future health professionals.

Richard K. Reznick, MD, MEd, FRCSC, FACS
R.S. McLaughlin Professor and Chair
Department of Surgery, University of Toronto

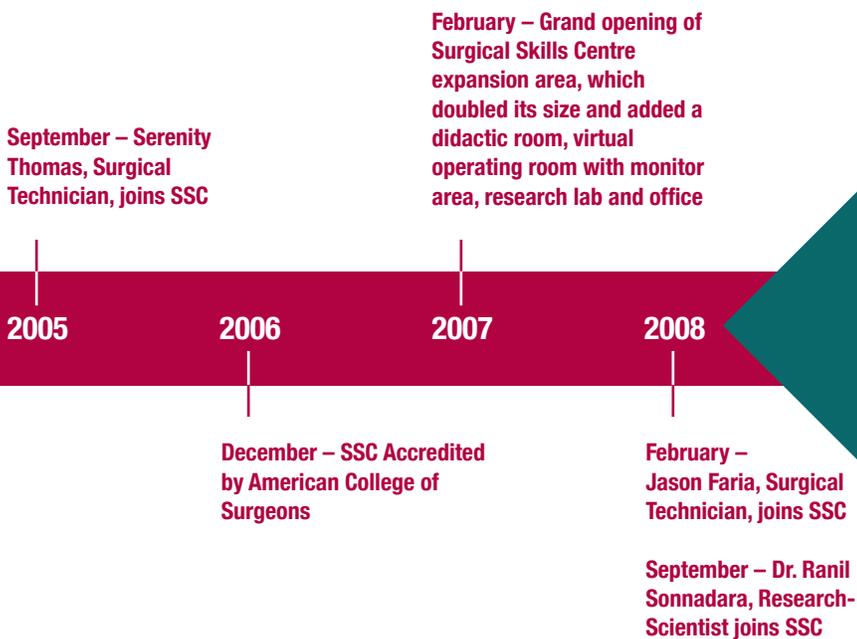




Over the past 10 years, the Surgical Skills Centre has experienced tremendous growth and success. Thousands of residents, surgeons and fellows from around the world have come through our doors to learn everything from basic surgical skills to complex surgeries using the latest technologies. Research conducted here has set new standards of assessment and evaluation, it has advanced understanding of how skills are acquired and developed and it has improved the way surgeons are trained around the world.

Everything we do has ultimately created better, more confident surgeons which in the end, means better care for patients.

Here are a just a few of our highlights and milestones:



THE PAST

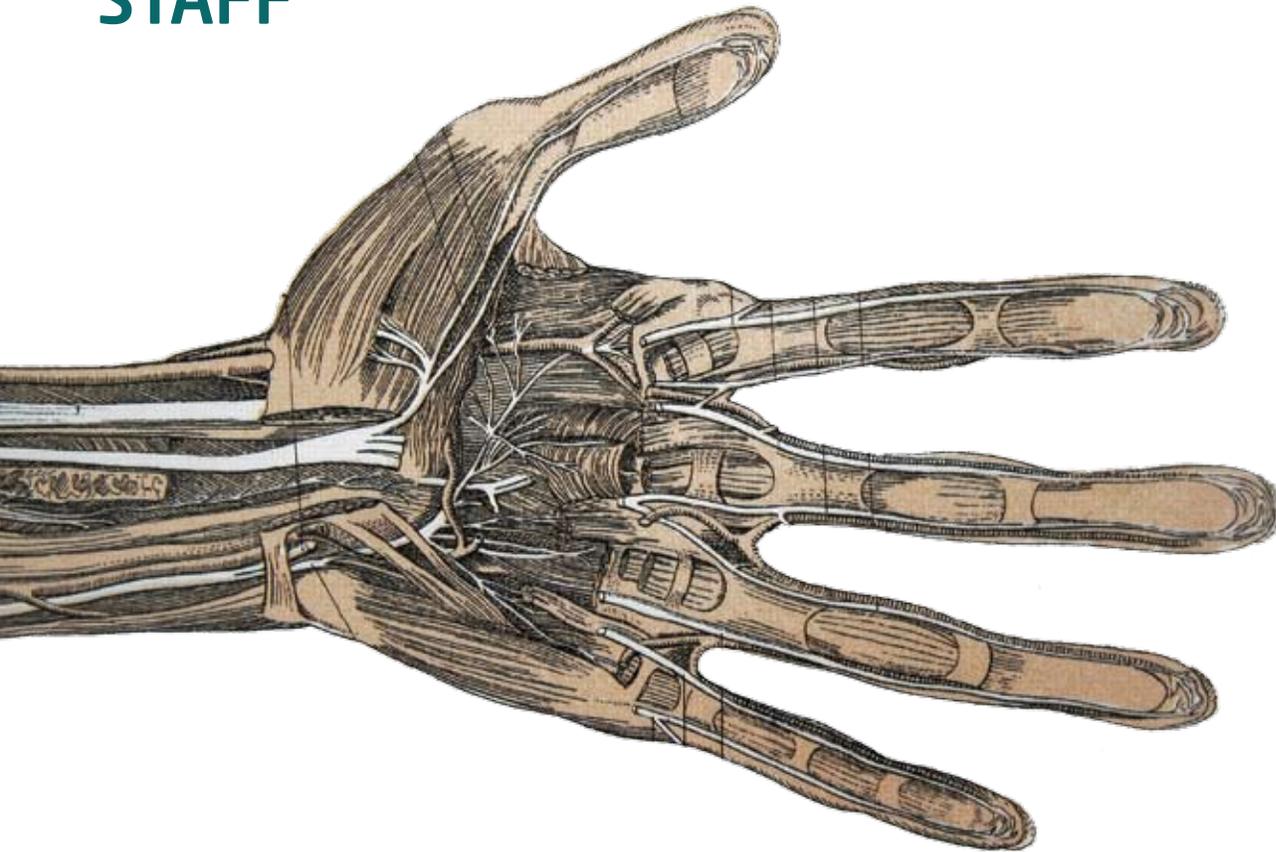
LOOKING FORWARD

As we move forward, the Surgical Skills Centre will no doubt continue to be on the leading edge of advancements of surgical skills education, research and practice.

While we continue to create new low-fidelity models for teaching purposes, we also value the advancing technologies which will revolutionize the field of medicine and medical education. Robotics and simulation will continue to shape the way surgical skills and medical education are taught and the SSC will harness this progress to help influence what and how we teach.

We look forward to these exciting new methods of instilling knowledge in the next generation of surgeons and healthcare professionals to further our quest in improving the quality of patient care.

STAFF



When the SSC first opened its doors in 1998, it was run by a single staff member. As the Centre grew and became more successful, its needs for more staff became clear.

We now have five full-time staff members working in the lab, along with one part-time employee. Extra support by way of co-op students and volunteers has also been instrumental to our ability to host weekend courses and additional programming.

Much of the Lab's growth and success can be directly attributed to its highly skilled and devoted staff members. With varying educational and employment backgrounds, their diversity adds valuable knowledge and unique insight and, as a whole, the team brings collaborative creativity and innovation.

The staff is always available as a resource support system anyone who comes into the lab. Each day, they work to provide a valuable and realistic teaching setting for both learners and educators.



Dr. Helen MacRae / D.H. Gales Director

Dr. MacRae is a General and Colorectal Surgeon at Mount Sinai Hospital, with a special interest in laparoscopic colorectal surgery. She completed medical school and a general surgery residency in Edmonton, Alberta, and fellowship training in colorectal surgery at the University of Toronto. Dr. MacRae has a master's degree in Medical Education from Springfield, Illinois. Her research interests are in evaluation of clinical competence, acquisition of technical skills and surgical judgment.



Lisa Satterthwaite / Manager

Ms. Satterthwaite holds an RPN diploma from Scarborough General Hospital and an Honours diploma in Operating Room Techniques from Humber College. As Manager of the SSC for nine years, she has played an active role in the development and delivery of OSATS and PAME examinations, implementation of PGY-1 core curriculum, research programs, divisional specific, undergrad Year 3 program and continuing medical education sessions. Consulting on the development and growth of upcoming Surgical Skills Centres around the world is one of the highlights of the job!



Shunne Leung / Assistant Manager

Since joining the Centre in 2001, Mr. Leung continues to serve as the primary resource for all aspects involving the use of computing and technologies in our facility. Mr. Leung also serves as support to our Manager's office in day-to-day operations. With a background in medical science, technology and business, Mr. Leung offers a unique and diverse knowledge and skills that contributes to the successful implementation of medical curricula. Mr. Leung holds a B.Sc. degree in Pharmacology and a certificate in Business from the University of Toronto. His previous work experience in healthcare facilities – where his focus was medical products and surgical instrumentation – helps deliver an efficient and effective medical and surgical learning experience.



Marina Romanova / Surgical Technician

Ms. Romanova joined the SSC team in 2002. She holds an M.D. diploma from Riga Medical Institute, Latvia, and a PhD in Medical Science from the University of Russia. She attained a certificate in Large and Small Animal Care from the University of Toronto. Before joining the team, she worked as a Cardiology Research Technician at St. Michael's Hospital. Ms. Romanova finds problem solving and working with individuals with a wide range of education and experience, satisfying and rewarding.



Jason Faria / Surgical Technician

Mr. Faria joined our team full-time in February 2008 following an intensive co-op placement from Central Commerce Collegiate Institute. His keen interest and team spirit is a wonderful asset to the Centre. He assists with course duties, AV setup and lab inventory. This inaugural year has been an enormous learning curve in developing working skills related to surgical education and research. The next years will further enhance his abilities in these fields.



Dezan Rego / Surgical Technician

In 2008, Ms. Rego celebrated her 30th anniversary as a staff member at Mount Sinai Hospital. Beginning her career in Nutrition Services, she then became Senior Operating Room Instrument Technician and team leader training most new staff, before joining the SSC. Ms. Rego holds a diploma in Sterile Supply Processing from Centennial College. In 2001 and 2006, Ms. Rego was the proud recipient of the Karen McGibbon Award of Excellence from Mount Sinai Hospital. For Ms. Rego, highlights of the job include working one-on-one with medical students and surgical residents as well as offering guidance to the enthusiastic group of co-op students and volunteers.



Serenity Thomas / Surgical Technician

Ms. Thomas began working in the lab part-time in 2005. She has a Bachelor of Arts in Bioethics from the University of Toronto. She assists with all course duties, lab setup and the annual report. Ms. Thomas appreciates that there is no limit of knowledge in medicine, and therefore no limit to what she is able to learn while working in the Centre.

EDUCATION

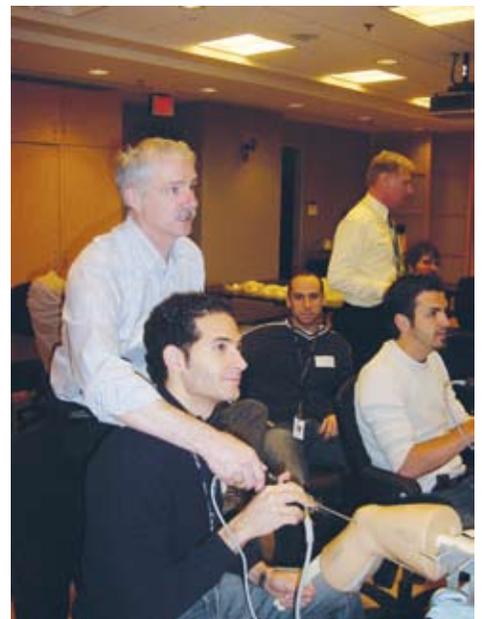
“Live as if you were
to die tomorrow.
Learn as if you were
to live forever.”

- **GANDHI**

Core Curriculum

Fifty-one first-year surgical residents from all divisions attended the 28-week Core Curriculum sessions in 2007-08. These weekly sessions concentrated on skills required for all disciplines. With a faculty to student ratio of one to six, residents were offered the opportunity to have independent teaching and feedback, ask questions and receive help and guidance.

The Core Curriculum Committee is made up of surgeons, educators and residents from all surgical divisions, and they are constantly reviewing the curriculum to ensure its continued success.



John J. Murnaghan, MD, MSc, MA (Educ. Admin) FRCS

2007-08 PGY-1 Core Curriculum Schedule

| COURSE | DATE |
|---|-------------------|
| Principles of Asepsis and Instrument ID | September 11 2007 |
| Instrument Handling and Knot Tying/Suturing | September 18 2007 |
| Line Insertions – Internal Jugular, Subclavian, Femoral, IV Insert and Cut Down | September 25 2007 |
| Catheterization, Suprapubic and Urethral and Abdominal Wound Closure | October 9 2007 |
| Tissue Handling Dissection and Wound Closure | October 16 2007 |
| Tendon Injuries and Carpal Tunnel Release | October 23 2007 |
| Mini Objective Structured Assessment of Technical Skills (MOSATS) | October 30 2007 |
| Chest Tube, Thoracentesis and Arterial Line | November 6 2007 |
| Airway Management and Surgical Airway | November 13 2007 |
| Advanced Tissue Handling and Wound Closure | November 20 2007 |
| Bowel Anastomosis - Hand Sewn and Stapled | November 27 2007 |
| Bone Fixation and Casting | December 4 2007 |
| Microsurgery and Bone Harvesting | January 15 2008 |
| Microsurgery and Skin Grafting | January 22 2008 |
| MOSATS | January 29 2008 |
| Laparoscopic Skills I | February 5 2008 |
| Laparoscopic Skills II: Arthroscopy - Gallbladder and Knot Tying | February 12 2008 |
| Laparoscopic Skills III: Arthroscopy - Gallbladder and Knot Tying | February 19 2008 |
| Laparoscopic Skills IV | February 26 2008 |
| Laparoscopic Skills V | March 4 2008 |
| Skin Liver and Breast Biopsy and Electrosurgery | March 18 2008 |
| POS Practice Exam | March 25 2008 |
| Vascular Control - Arterial and IVC | April 1 2008 |
| HSK Animal Annex Group A | April 8 2008 |
| HSK Animal Annex Group B | April 15 2008 |
| Practice Session 1 | April 22 2008 |
| Practice Session 2 | April 29 2008 |
| OSATS EXAM | May 6 2008 |

On the big competition day, the Skills Lab is transformed, decorated in a racecar theme with energizing music playing in the background. The friendly competition gives residents the opportunity to show off their fine-tuned skills while having a little fun at the same time.

The winners of the 2007-08 Laparoscopic Skills Challenge were General Surgery Residents Bharat Sharma and Kengo Asai.

FLS Accredited

In 2008, the Surgical Skills Centre became an accredited testing site for the Fundamentals of Laparoscopic Surgery, or FLS.

FLS testing provides surgical residents, surgeons and fellows a consistent and scientifically accepted method of learning laparoscopic skills. These comprehensive training modules greatly contribute to understanding and utilization of the fundamental knowledge and technical skills required for laparoscopic surgery. In addition, it also tests cognitive and technical skills, as well as surgical decision-making, all of which contribute to improved patient care.

Moving forward, FLS training will be incorporated directly into Core Curriculum sessions for PGY-1 residents.



OSATS

The Objective Structured Assessment of Technical Skills – or OSATS – was developed by the Surgical Skills Centre to create a standardized method to assess and test surgical residents.

OSATS allow procedural skills in medicine to be tested outside of the clinical setting, in a formal and structured manner.

Laparoscopic Skills Challenge

First hosted in 2001 by Covidien (formerly known as Tyco Healthcare), the Laparoscopic Skills Challenge has been held with the Department of Surgery annually and continues to be a major success and learning opportunity.

For four consecutive weeks during Core Curriculum, the PGY-1 residents go through intensive laparoscopic skills training. They are taught and guided by fellows and staff

surgeons who are experts at laparoscopic surgery and they learn everything from basic tasks such as dropping a bean through the hole of a flowerpot to more complex laparoscopic techniques.

Many residents come in to the lab daily to perfect their skills and at the end of this extensive training period, the residents work in pairs to face off in a Skills Challenge.

Divisional Curricula

The Department of Surgery, which is comprised of nine divisions, including the Divisions of Vascular Surgery and Anatomy, is the primary focal point for education in the Surgical Skills Centre.

For residents in PGY-1 through to PGY-5, courses developed are specific to each divisional curriculum.

Some of the courses offered this year, included:

| | |
|--|--|
| Division of Cardiac Surgery | Division of Urology |
| Animal Annex Lab | Laparoscopic Animal Lab Seniors |
| Myectomy/Patch Techniques | Seniors Open Animal Lab |
| Mitral and Tricuspid Valves | Microsurgery Seniors |
| Open Minimally Invasive MAZE/ Left Atrial Exposure | Microsurgery Juniors |
| Division of Plastic Surgery | Junior Ureteroscopy |
| Breast Reconstruction | Junior Lap Box Trainers |
| Microsurgery Session | Junior Animal Annex I |
| Rhinoplasty and Blepharoplasty | Junior Animal Annex II |
| Injectables | Juniors TURP |
| Facelifts | Paediatric Microsurgery Urology Lab |
| Division of Neurosurgery | Division of Orthopaedic Surgery |
| Lougheed Course | Ortho Down Days - Pelvic External Fixation and Paediatric Spine |
| Cranial Endoscopy | Ortho Down Days - Foot and Ankle and Knee Arthroscopy |
| U of T Spinal Course with Dr. Eric Massicotte | Ortho Jr. Summer School: Casting and Bone Plating |
| Division of General Surgery | Division of Thoracic Surgery |
| Head and Neck Workshop | VATS Lobectomy Animal Annex |
| Percutaneous Tracheostomy Workshop | |
| Laparoscopic Nissen Profundoplication | |
| Junior Residents Summer School - 4 weeks basic skills | |
| Anatomical course on Head, Neck and Breast | |

ONE OF OUR MANY STARS!

The SSC has been a highlight during my cardiac surgical residency. I've been able to practice many different procedures, from laparoscopy using a simulator to mitral valve repair in cadaver models, in a rich, educational environment.

This learning experience has been invaluable in my training. Over the past few years, I've also enjoyed teaching medical students basic surgical skills at the SSC and inspire them to consider a career in surgery. It was also a joy to help out with several research projects on surgical education at the Centre.

My highlight for the past two years was being a Scholarship in Surgery recipient to graduate with an MBA from Harvard Business School. I've had many opportunities there to get a broad experience of the healthcare industry, one which involved starting a non-profit enterprise, Diagnostics For All (DFA), that creates a paper-based "lab on a chip." With only a drop of fluid and results available in a minute, this stamp-sized device will revolutionize how laboratory diagnostics are performed in the developing world. Patients suffering from diseases such as TB, HIV and malaria can instantly be better monitored. And all it costs to make is a penny! The concept was presented respectively to the Harvard and MIT business plan competitions in 2008 and our team was the first ever to win both, with a prize value of \$145,000. On June 20, 2008, we were invited to the ring the Opening Bell at the New York Stock Exchange.

Gilbert Tang, MSc, MD, MBA



DFA team ringing the Opening Bell at the NYSE. Dr. Tang is on the far right. (photo credit: NYSE)



Departmental Programs

In addition to the Department of Surgery PGY-1 core curriculum and divisional specific programs, our department affiliates play an important role in training, education and research. Synergy between these groups greatly enhances the learning experience for our residents and continues to build our educational platform.

Department of Obstetrics and Gynaecology

The Department of Obstetrics and Gynaecology continues to utilize the SSC for its core curriculum in both Obstetrics and Gynaecology. Currently 22 junior residents participate in skills teaching for a total of 60 hours over the academic year, including both pre and post OSATS exams. New models have recently been developed and purchased to enhance the arsenal of teaching tools currently available. A revision of the junior course is being created for the senior curriculum as well. In addition, fellows heavily use the lab for personal training in advanced laparoscopic suturing skills.

Heather Shapiro, MD, FRCSC
Director, Postgraduate Medical Education
Department of Obstetrics and Gynaecology,
University of Toronto

Obstetrics and Gynaecology Curriculum 2007-08

- Introduction to the Curriculum
- Objective Structured Assessment of Technical Skills (OSATS) for PGY-1
- Instruments, Knot Tying
- Tissue Handling, Suturing, Wound Closure
- Operative Vaginal Delivery
- Breech, ECV, Shoulder Dystocia
- Perineal Repairs
- Biopsies, Word Catheters, Marsupialization, IUD, Pessaries
- IV, ABG, Central Venous Lines, Chest tubes, Paracentesis
- Bladder – Foley and SP Catheters, Cystoscopy, Cystotomy repair
- Bowel – Enterotomy repair, Stapling, Hand-sewn Anastomosis

- Vascular Injury
- Surgical Emergencies (Porcine Lab)
- Electrosurgery, LEEP
- Hysteroscopy
- Laser
- Laparoscopy I: Basics, Introduction
- Laparoscopy II: Ectopics and Tubal Ligation
- Laparoscopy III: Cystectomy
- Laparoscopy IV: Suturing
- Laparoscopy V: Knot Tying
- Operative Vaginal Delivery II
- OSATS – All Residents



The SOGC MoreOB Program - Managing Obstetrical Risk Efficiently

The MoreOB program by the Society of Obstetricians and Gynaecologists of Canada is a three-module comprehensive patient safety, professional development and performance improvement program. Designed for caregivers and administrators in hospital obstetric units, the program integrates evidence-based professional practice standards and guidelines with current and evolving patient safety concepts, principles and tools.

By learning and working together in their own practice environment, the healthcare team is able to use the shared knowledge, skills attitudes and behaviors that contribute to safe, effective, patient-centered care in an efficient, collaborative and healthy practice environment.

For this learning experience we conducted our Module III workshops in the Surgical Skills Lab at Mount Sinai Hospital. The lab provided us with a virtual OR scene where the teams managed adverse events with the newest Noelle simulators, allowing our team to confidently master many of these extreme situations.

Cynthia Davies, Administrative Assistant to Dr. G. Seaward

Department of Otolaryngology - Head and Neck Surgery

The Surgical Skills Centre is a wonderful resource for Postgraduate Education and Continuing Education in the Department of Otolaryngology – Head and Neck Surgery at the University of Toronto. From the practical skills sessions for our PGY-1 residents to complex skull base and temporal bone courses for practicing specialists, this facility is a world-class resource for surgical education.

Our PGY-1 residents are privileged to participate in the hands-on skills teaching sessions which are very helpful in giving them a foundation in practical core surgical techniques. All residents and fellows benefit from numerous hands-on sessions throughout the academic year including temporal bone drilling, endoscopic sinus surgery, rhinoplasty techniques, facial soft tissue dissection, facial plating and neck dissection, to name just a few. In addition, several of our residents, fellows and faculty have collaborated with the SSC in simulation research related to temporal bone drilling, endoscopic sinus surgery, skull base surgery and image-guided surgery.

Over the last 10 years, we have seen a dramatic increase in the number of hands-on skills courses run by our faculty for practicing community and academic specialists in otolaryngology head and neck surgery. The participants in these courses have commented on the amazing facilities, state-of-the-art equipment and the user-friendly environment.

The SSC is uniformly viewed as a key educational resource for Continuing Education, particularly with dissemination of new techniques in our specialty, such as endoscopic skull base surgery, advanced sinus surgery and laryngeal framework surgery.

The feature that really sets this facility apart from all others, is the people who run it. There is unbelievable support, vision, and a “can do” mantra that permeates through



“Microsurgical training using turkey thigh model”

the SSC. It is a real privilege to be able to use this facility; I can't imagine running our Postgraduate Education and Continuing Education programs without it.

Dr. Ian Witterick, MD, FRCSC
Program Director, Department of Otolaryngology - Head and Neck Surgery

New Innovations in Sinus Surgery Simulation

Over the last year and a half, I have been working closely with the Surgical Skills Centre and Drs. Adam Dubrowski and Ian Witterick in the development of a novel simulator for Endoscopic Sinus Surgery (ESS). ESS involves fine dissection in a small space that is abstracted onto a monitor. This makes it key for trainees to

have a general grasp of the endoscope and basic instruments we use.

Through focus groups, we were able to breakdown the various parts of ESS into key learning points. I then translated these into a comprehensive low fidelity multi-module simulator. We were able to validate the simulator and presented it at the American Rhinologic Society/Combined Otolaryngology Spring Meeting this past summer.

It was so well received that we were honoured with the American Rhinologic Society's Clinical Science Award. The Surgical Skills Centre has been an instrumental resource offering expertise in model design and lateral thinking. As a researcher, I have gained insight into analytical thinking. As a resident, I have

achieved insight into surgical approaches. As a teacher, I have obtained a fresh perspective on how people learn. The Surgical Skills Centre is truly a valuable resource, not only for resident training, but also for providing fertile ground for innovations in simulation.

Randy Leung, MD
Resident Physician, PGY-4
Department of Otolaryngology-Head and Neck Surgery
University of Toronto

Some of the courses offered this year, include:

| Department of Obstetrics and Gynaecology | |
|--|--------------------------------------|
| Department of Obstetrics and Gynaecology | Date |
| Fundamentals of Gynaecologic Endoscopy | October 2007 |
| Advanced Pelvic Anatomy | October 2007 |
| Advancement in Laparoscopic Skills | March 2008 |
| Department of Otolaryngology | |
| Endoscopic Surgery of the Pituitary Fossa and Cranial Base | November 2007 |
| Dr. Neil Futran's Plating Course | December 2007 |
| Sinoscopy | May 2008 |
| Temp Bone Drilling | January 2008 |
| Soft Tissue Flap Course | April 2008 |
| Rhinoplasty | September 2008 |
| Department of Internal Medicine | |
| Surgical Airway Program | June 2008 |
| Core Resident Integrated Scholarly Program (CRISP) | October – November 2007, August 2008 |
| Department of Emergency Medicine | |
| Dr. Shirley Lee Emergency Med Workshop | April 2008 |
| International Paediatric Emergency Elective | August 2008 |
| Faculty of Dentistry | |
| Dental Implant placement | June 2008 |
| Department of Respiriology | |
| Skills Enhancing Workshop | May 2008 |
| Department of Ophthalmology | |
| Strabismus Wetlab | December 2007 |
| Anatomical Findings | February 2008 |
| Strabismus Repair Divisional | March 2008 |
| Ophthalmology Jr. Resident Program | May 2008 |

Emergency Medicine

Postgraduate

For the past seven years, we have conducted the Annual Emergency Medicine Residents Surgical Skill Procedure Workshop, to improve the clinical skills of Emergency residents.

The workshop consists of six procedures in a small group format where learners are able to observe and practice on simulation and wet-lab models with EM Staff faculty teachers.

The following procedures have been taught through this workshop:

- Chest tubes
- Percutaneous thoracostomy
- Central lines

- Extensor tendon repair
- Lumbar puncture
- Intraosseous insertion
- Percutaneous cricothyrotomy
- Fiberoptic bronchoscopy
- ENT emergencies – epistaxis, FB removal
- Paracentesis
- Head and Neck regional nerve blocks

Faculty Development

- 1) The ProWESS Course (PROcedure Workshop for Emergency Surgical Skills)

A one day workshop for practicing Emergency physicians, this course enhances their EM technical skills outside of the clinical setting. Through interactive hands-on experiences,

participants improved their ability to effectively diagnose and treat common and potentially life-threatening EM conditions.

The following procedures were taught in the workshop:

- Application of splints and casts
- Central lines
- Intraosseous insertions
- Lumbar puncture
- Needle and chest tube thoracostomy
- ENT procedures (FB removal and epistaxis)
- Percutaneous cricothyrotomy
- Extensor tendon repair

- 2) Mount Sinai Hospital EM Faculty Development Workshops – Lumbar puncture, US guided procedures (1-2 hrs workshops)

The Surgical Skills Centre has been very helpful and instrumental in providing us with an invaluable resource for Emergency medicine learners develop their hands-on procedural skills. As a result of the educational courses that we have been able to provide, learners feel more confident and skilled in acute care situations.

Dr. Shirley Lee, MD, MHSc



Internal Medicine

This year, the CRISP program – Core Resident Integrated Scholarly Program – continued to allow residents in all three postgraduate core training years the opportunity to come together for a shared educational experience.

The focus of content in these experiences is on the non-Medical Expert CanMEDS roles, as they relate both to day-to-day professional function in the context of the training program, and also as preparation for future independent practice as an Internist.



The goal of CRISP, through all these experiences, is to deliver a consistent level of support for trainees' development towards independent practice in Internal Medicine. It is meant to complement other experiences which occur at an individual and hospital level, either before, alongside, or after the CRISP session, so that trainees are enabled to develop their competencies through a variety of exposures.

Ken Locke, MD, MSc, FRCPC
Director, Core Resident Integrated Scholarly Program (CRISP), Department of Medicine, University of Toronto



Undergraduate Education

Each year, the Surgical Skills Centre hosts all University of Toronto medical students at the start of their third year surgical clerkship. Each student takes part in the "Crash Course in Surgery," which consists of an integrated week of seminars and technical skills sessions. The course is run at the start of each rotation, which occurs every six weeks throughout the academic year.

During the Crash Course, students benefit from the direction and supervision of our expert surgical faculty as they learn technical skills such as suturing, knot tying, casting and catheter insertion using bench-top models. Over the past four years this course has proven to be highly effective in the preparation of our students for their upcoming surgical experience in the

operating room, emergency department and on the wards.

In the coming years, the University of Toronto, Faculty of Medicine will continue to expand class size significantly. This will naturally put pressure on our program in terms of the need for faculty, space and financial resources. Despite these challenges, the University of Toronto, Department of Surgery and the Surgical Skills Centre are well positioned to continue to be leaders in undergraduate education and a model for other university programs. The effectiveness of the Surgical Skills Centre and its staff is a resource that is greatly appreciated by both faculty and students.

Congratulations on a remarkable first decade.

Dr. David Backstein Assistant Professor, Hip and Knee Reconstructive Surgery, Mount Sinai Hospital Director, Undergraduate Education, Department of Surgery, University of Toronto

Co-op and Volunteers

More than 50 volunteers and co-op students have learned and worked alongside the staff at the Surgical Skills Centre and the experience has been equally rewarding for both.

When a new volunteer or co-op student arrives at the SSC, they are put through a training course on health and safety issues at the lab. Slowly, they are introduced to surgical education by learning about simple surgical procedures, surgical instruments and how to set-up for courses. In the beginning, they are given small jobs, but throughout their time at the lab, they gradually move up to more complex duties.

For many, the greatest experience is observing the residents and surgeons and learning more about the medical profession. During their time at the SSC, the volunteers and co-op students are given a tremendous opportunity to learn.

The volunteers and co-op students have contributed 21,421 hours to the Surgical Skills Centre.

Over the last 10 years, the Volunteer Department at Mount Sinai Hospital has been privileged to send more than 50 outstanding students to assist in the Surgical Skills Centre.



These exceptional volunteers have hailed from both co-operative education programs and universities. We are pleased to report now, that 30 per cent of these volunteers are attending medical schools, while the majority of the remainder are involved in allied health professions.

In 2002, Wayne Chou spent an entire semester at the Centre as a high school co-operative education student. He said, "it was a life-changing experience, that gave him the opportunity to become totally immersed in the environment and to see the ins-and-outs of the medical profession.

"It gave me the chance to do the same things that the surgeons did while they were training in the centre," he said. "It was this experience that made me want to go into medicine and pursue a life as a surgeon."

The Surgical Skills Centre staff welcomes, encourages and challenges our volunteers to strive for excellence and to enjoy an unparalleled educational experience.

Lesli Herman, Volunteer Resource Coordinator, Mount Sinai Hospital



INDUSTRY



Scientific Writing Course Offered

For many surgeons and surgical residents, scientific writing represents a challenging, time-consuming and arduous undertaking. Despite such difficulties, the cultivation of science writing skills remains eminently worthwhile, especially given the current flourishing academic culture of “publish or perish.” Surprisingly, however, scientific writing is rarely taught during medical school or surgical residency.

Based on this existing deficiency in scientific writing of many surgeons and surgical residents, a Scientific Writing Course was organized by Drs. Zane Cohen and Ulrich Guller and held at the Surgical Skills Centre in January 2008.

The primary objective of this course, led by Professor Abe Fingerhut, Co-editor of the World Journal of Surgery and editor of A Surgeon’s Guide to Writing and Publishing, was to teach surgeons and surgical residents with an interest in research and an academic career, how to write a high-quality scientific manuscript as well as to provide some basic statistical knowledge.

Continuing Medical Education Events

Allergan Inc.

Technical FACE Symposium

Technical FACE Symposium II

Technical FACE Symposium III

Bard Medical

Inter Vaginal Sling

Pelvic Floor Repairs

Coloplast Canada

Female Pelvic Course

Covidien

Gynae Oncology

Laparoscopic Colectomy

Kyphon Inc.

Kyphoplasty I

Kyphoplasty II

Medtronic ©

Canadian Contemporary

Spinal Techniques Course

Endoscopic Sinus Surgery

Ontario College of Physicians

Emergency Medicine Primer

Salvin & Diddle

Dental Implant Placement

Smith & Nephew

Knee Arthroscopy I

Knee Arthroscopy II

Stryker ©

AIOD Stryker Course

Stryker Knee Arthroscopy

Stryker Uniglide Knee

Neuro Endoscopy

Facial Reconstruction

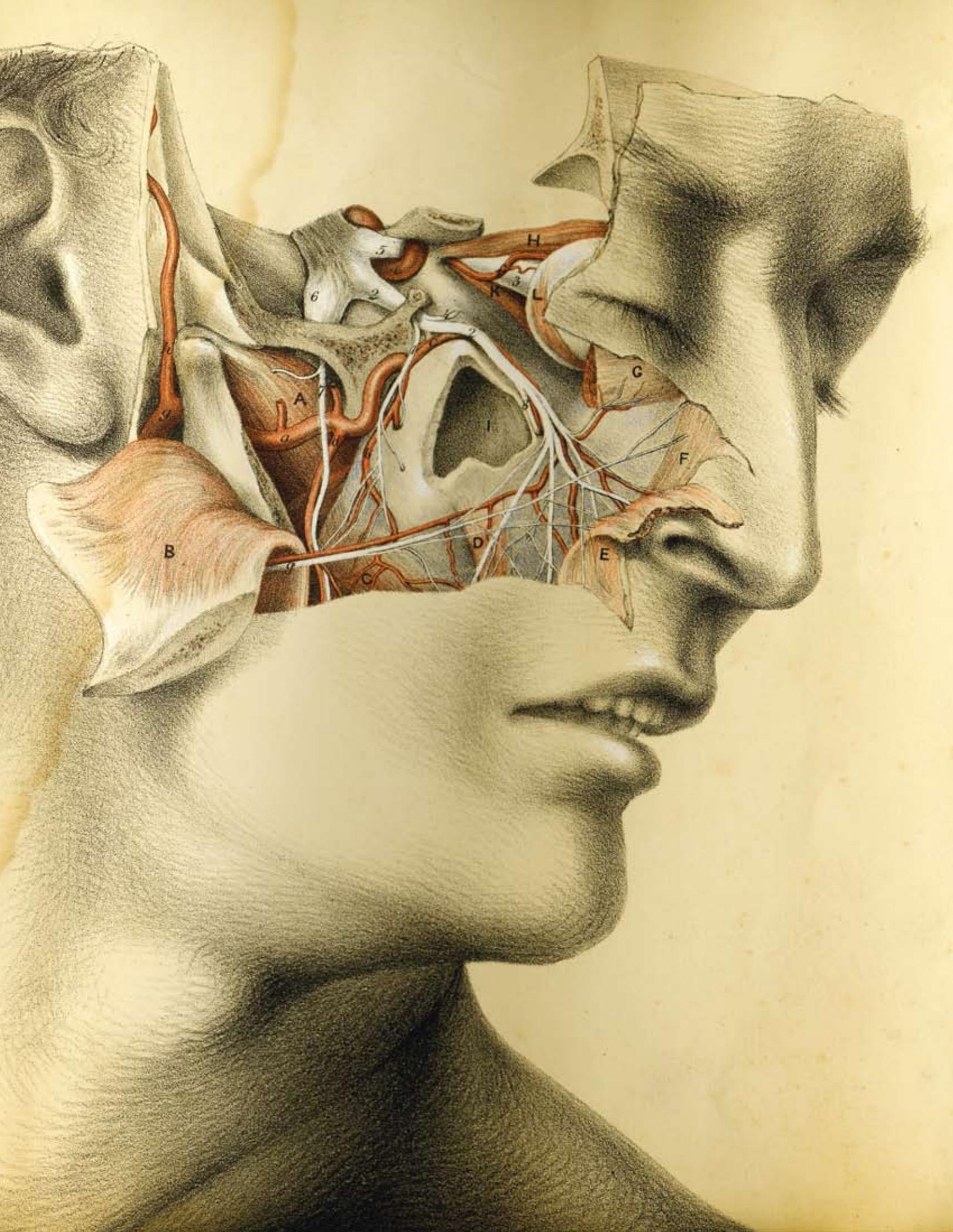
Educational Filming Session

Zimmer ©

MIS Anterolateral Hip

Trabecular Metal Reverse

Upper Extremity Repair



RESEARCH

Continuing Medical Education is a key component of the Surgical Skills Centre's educational roster. We are pleased to be able to provide services for a wide group of industry partners and affiliates to help enhance training and education for a broad range of products and techniques.

In September 2008, the Surgical Skills Centre welcomed Dr. Ranil Sonnadara as a full-time Research Scientist. Dr. Sonnadara holds a PhD in Experimental Psychology from McMaster University and joins the Surgical Skills Centre following a postdoctoral fellowship with Dr. Digby Elliott. His primary research focus is issues of sensory-motor integration, skill acquisition, expert performance and skill evaluation.

Advancing the field of surgical education through research has always been a core mission of the Surgical Skills Centre. To date, the lab has been involved with more than 100 research projects, secured more than \$2 million in external funding targeted specifically towards research and has had a profound effect on how new surgeons are trained around the world.

Much of our research over the last 10 years has studied ways to optimize how technical skills are taught to new surgeons. Research projects performed in the Surgical Skills Centre were among the first to show that new skills can first be taught in the lab – where mistakes can be corrected and techniques perfected – before being performed in the operating room, dramatically reducing the risk to patients.

Refining the way that surgeons' technical competence is assessed has been another key area of study in the lab. As a result of the work done by our scientists and clinicians, many changes in the way new doctors are trained and assessed for clinical practice have been implemented across North America.

Research at the Surgical Skills Centre remains an essential component of our daily activities, and we are proud to continue to transform the field of surgical education through our research activities, keeping the University of Toronto at the forefront of the medical and surgical education fields.

CANADA-HOLLAND RESEARCH INITIATIVE

A groundbreaking transatlantic comparison of practice-ready physicians was undertaken in May and June 2008 as a collaborative project between the Department of Surgery at the University of Toronto and the University Medical Center in Utrecht, Netherlands.



This study involved a competency comparison of Dutch and Canadian surgeons at the start of their professional career. While the training objectives between the two programs were similar, there were significant differences between the surgical training curricula due to work hour restrictions in the European Union.



The study compared the competence of 21 practice-ready candidate surgeons from each site. Comprehensive evaluations of each resident, including three outcome instruments assessing multiple aspects of surgical competency, were used. Two of the outcome measures were developed at the University of Toronto.



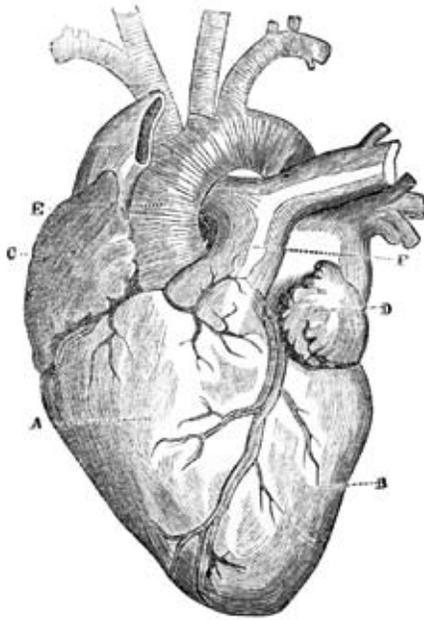
The examinations required that teams of examiners from Utrecht travel to Toronto, and vice versa. And, in addition, to offer training on performance-based measures, the team from the Surgical Skills Centre, including Manager Lisa Satterthwaite and Surgical Technicians Dezan Rego and Marina Romanova, went on a road-trip to Holland. The team offered their expertise and provided logistical support and assistance setting up the examinations.

The results of the study demonstrated some differences between practice-ready surgeons from the two countries on some measures, and none on others. Systematic differences between examiners were also noted.



The study is currently being formatted for submission to major journals.

Publications, Presentations and Workshops



Surgical Skills Centre Publications

Derbew, Miliard; Dubrowski, Adam; Howard, Andrew; Reznick, Richard; Satterthwaite, Lisa: Bench model teaching of technical skills for healthcare providers in Ethiopia: A means of addressing the health human resources gap. *Journal American Medical Association* (submitted). June 2007.

Satterthwaite, Lisa: Developing criteria for proficiency-based training of surgical technical skills using simulation: Changes in performances as a function of training year. *Journal of the American College of Surgeons*. Ms. No. 2007-840R1.

Dorman, Katie; Dubrowski, Adam; Howard, Andrew; Reznick, Richard; Satterthwaite, Lisa; Woodrow, Sarah: Addressing the severe shortage of healthcare providers in Ethiopia: Bench model teaching of technical skills. Submitted *Med Ed*. September 2008.

Dubrowski, Adam; Larmer, James; MacRae, Helen; Moulton, Carol-Anne; Park, Jason: A comparison of single - and multiple-stage approaches to teaching laparoscopic suturing. *American Journal of Surgery* 2007: 193(2): pp 269-73.

Dubrowski, Adam; Jowett, Nathan; LeBlanc, Vicki, MacRae, Helen, Xeroulis, George: Surgical Skill acquisition with self-directed practice using computer-based video training. *American Journal of Surgery* 2007: 193(2): pp 237-242.

Surgical Skills Centre Invited Presentations

MacRae, Helen; Satterthwaite, Lisa: How to assess technical skills and how to develop and implement an Objective Structured Assessment of Technical Skills (OSATS) Exam. Second International Clinical Skills Conference. Prato, Tuscany, Italy. July 2007.

MacRae, Helen: Teaching (and learning) operative skills in the 21st century. *Canadian Surgery Forum*. Toronto, Ontario. September 2007.

Brydges, R.; Brümmer, V.; Classen, R.; Dubrowski, A.; Kurahashi, A.; Satterthwaite, L.: Proficiency-based training: parameters educators should consider. *American College of Surgeons 93rd Annual Clinical Congress*. New Orleans, LA. October 2007.

MacRae, Helen: Use of simulation for education and assessment. *ISQua*. Boston, MA. October 2007.

“Some give up their designs when they have almost reached the goal; while others, on the contrary, obtain a victory by exerting, at the last moment, more vigorous efforts than ever before.”

- HERODOTUS

MacRae, Helen: Simulation based education in resident training. *93rd Annual Clinical Congress, American College of Surgeons*. New Orleans, LA. October 2007.

Brydges, R.; Brümmer, V.; Classen, R.; Dubrowski, A.; Kurahashi, A.; Satterthwaite, L.: Proficiency-based surgical skills training: searching for evidence-based proficiency criteria. *Washington, D.C.* November 2007.

MacRae, Helen: Towards sharing curriculum content: A standardized curriculum template. *CUSEC*. Montreal, Quebec. November 2007.

MacRae, Helen: Surgical skills training: What is evidence? *Research Day, University of Ottawa*. Ottawa, ON. April 2008.

MacRae, Helen: Quality in Colonoscopy. Update in General Surgery. Toronto, ON. April 2008.

Satterthwaite, Lisa: Preparing for your international travel. *Global Health Foundation Course, Second International Skills Conference*. Peter A. Silverman Centre for International Health, Mount Sinai Hospital. Toronto, ON. April 2008.

MacRae, Helen: How will we train the next generation of colorectal surgeons? *ASCRS 2008 Annual Meeting*. Boston, MA. June 2008.

Surgical Skills Workshops

Cussimano, R.J.; MacRae, H.; Satterthwaite, L.: How to assess technical skills and how to develop and implement an Objective Structured Assessment of Technical Skills (OSATS) exam. *Second International Skills Conference*. Prato, Italy. July 2007.

Satterthwaite, Lisa: *Association of Clinical Anatomists, Postgraduate Course*. 25th Annual AACA Meeting. Toronto, ON. July 2008.

VISITORS

Each year, individuals from around the world come to visit and learn at the Surgical Skills Centre. Some of our visitors this year, included:



Dr. John Lengyel *United Kingdom* – An interest in laparoscopic colorectal surgery and medical education



Amir R. Gissin *Israel* – Israeli Consul General



Luis F. Poli de Figueiredo *Brazil* – Chairman of Surgical Techniques and Experimental Surgery, University of Sao Paulo



Dr. Kelly Dympna *USA* – Transplant Surgeon at the Cleveland Clinic



Dr. William Schwab *USA* – Professor of Surgery at the University of Pennsylvania School of Medicine, Chief in Division of Traumatology and Surgical Critical Care



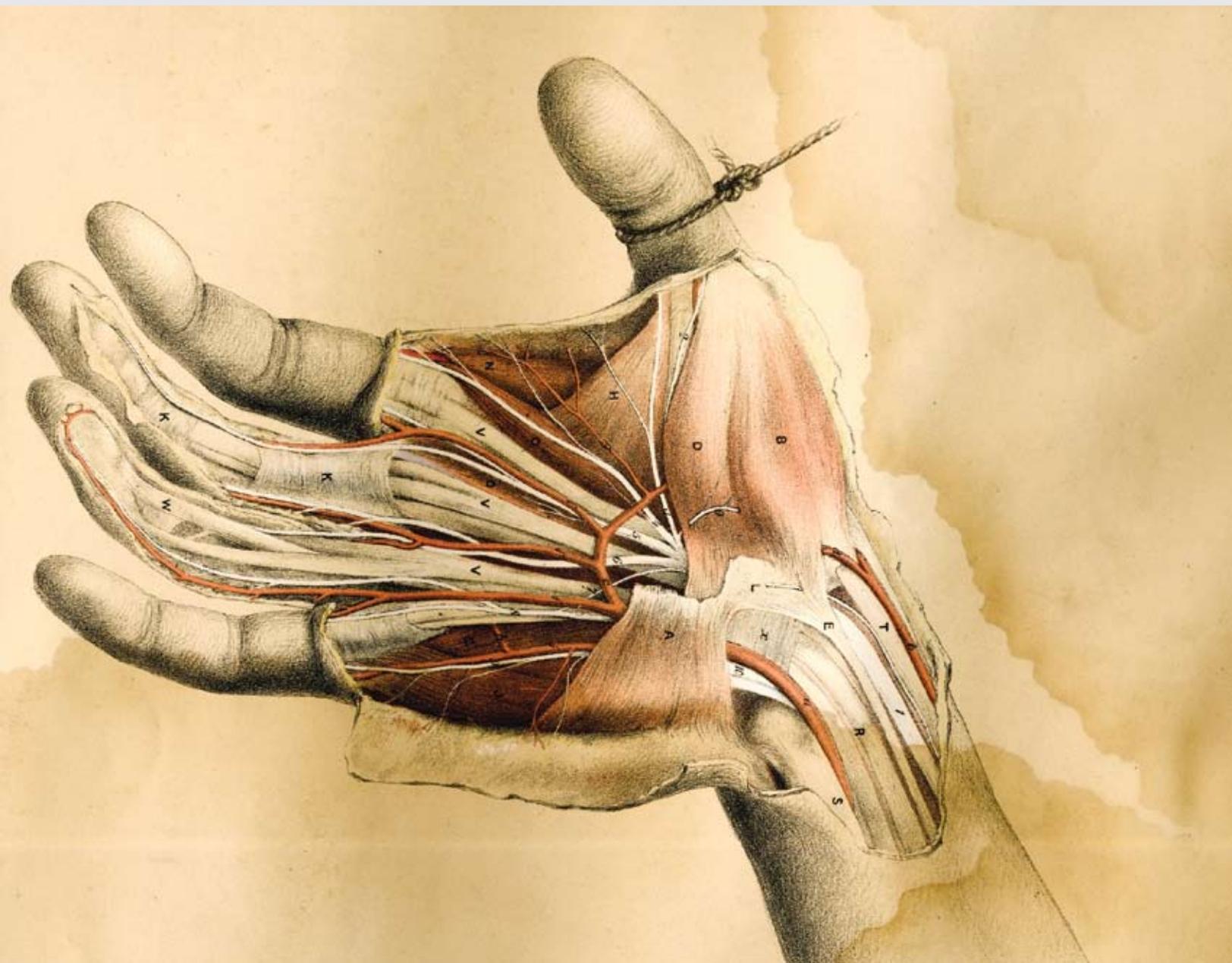
Dr. Rukhsana W. Zuberi *Pakistan* – Associate Dean, Education, Faculty of Health Sciences, Aga Khan University in Karachi



Prof. Petrie Roodbol *Netherlands* – Director of Education of the Groningen University Hospital.



Dr. Negm *Egypt* – Secretary General of the General Organization for Teaching, Hospital & Institutes (GOTH)

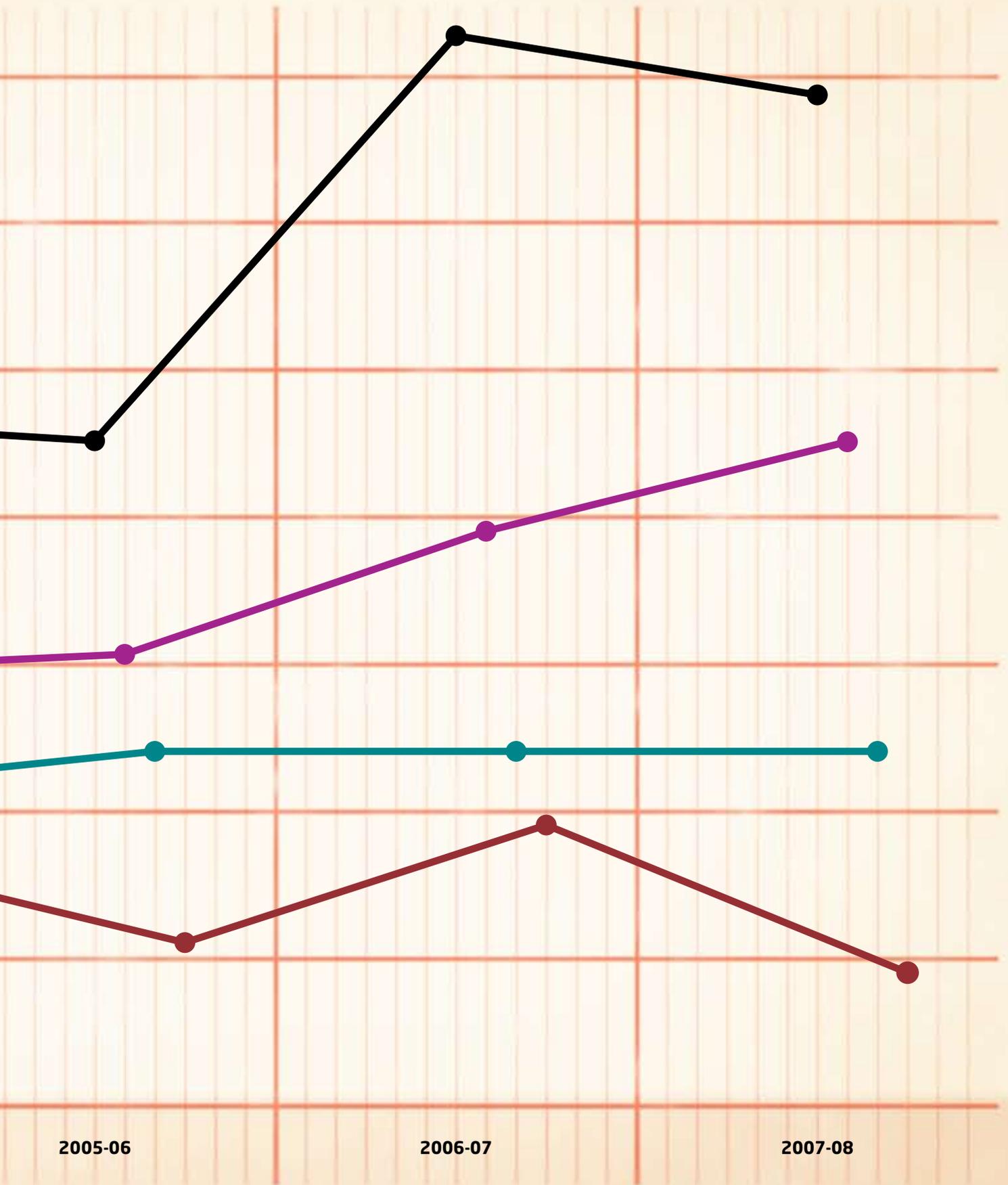


5 YEAR FINANCIAL SUMMARY



DOLLARS

FISCAL YEAR



The vision and support of many individuals and companies have helped the Surgical Skills Centre become the world-renowned facility it is today. It is their support, not only financial, but resources, equipment and knowledge, that has played a role in our success.

We have enjoyed many wonderful and rewarding relationships and partnerships and look forward to continuing these in the future. Thank you for your support.

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Cook Medical

Covidien

Edwards Life Sciences

The D.H. Gales
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Stortz

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Toronto General Hospital
Operating Room

Toronto Western Hospital

Vantage Medial

Women's College Hospital

Zeiss

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