UNIVERSITY OF TORONTO

The Surgical Spotlight

ON ALUMNI, FACULTY, RESIDENTS & FRIENDS OF THE DEPARTMENT OF SURGERY

SUMMER 2009

SCIENCE WITHOUT BORDERS

Subodh Verma with daughter Meena and son Raj celebrate summer

Cardiac surgeon and Canada Research Chair in Atherosclerosis Subodh Verma is bringing scholars and technicians from the King Saud University in Riyadh to his laboratory at St. Michael's Hospital starting this summer. They are mastering advanced cell culture, genomic and translational atherosclerosis techniques. This is part of an ambitious and dynamic new program of collaborative research – to take leading edge concepts and methods to Riyadh in the way that Saudi clinicians have brought advanced therapeutic techniques back from Toronto for many years. The project is part of the Li Ka Shing Knowledge Institute's contribution to international health care education and research. Collaborators in this initiative are St. Michael's Hospital's internationally renowned respirologist Art Slutsky and epidemiologist Muhammad Mamdani – who will focus on epidemiological studies and clinical trials. The prevalence of diabetes in the Saudi population is 50%, making this a fertile field for initial exploration.

Many excellent surgeons have returned to Riyadh after training in Toronto. This important new development will create the infrastructure for basic and clinical science to thrive in Saudi Arabia rather than come as an import from the western world. This philosophy parallels that of the McLaughlin-Rotman program where Abdallah Daar and Peter Singer are cultivating biotechnology methods and expertise in the developing world. (The vaccines and cure for malaria should come from Africa where the disease is endemic, but the methods and infrastructure must first be set up there.) As Subodh reminds us: "There are no borders in science."

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As the Canada Research Chair in atherosclerosis, Subodh oversees a group of 15 researchers currently funded by a CFI grant, two CIHR grants and four Heart & Stroke Foundation grants. Subodh also directs the Traineeship in Atherosclerosis that provides mentorship and resources to promote the transition of clinician-scientists and basic scientists into independent investigators.

Subodh is actively studying endothelial activation in sepsis, the role of the endothelium as a mediator of atherosclerosis and DNA repair mechanisms in heart failure. Enthusiasm for Subodh's findings has consummated in a strong collaborative partnership with the Nobel Laureate Dr. Lou Ignarro who will be coming to Toronto on October 13th, 2009 to speak on the topic of "Nitric Oxide as the Molecule of Life" as part of the annual Landmark Lecture series.

The scientific themes that Subodh and his colleagues are developing are also crossing conventional conceptual boundaries. They are studying the BRCA-1 gene, a genome-wide gatekeeper of DNA repair. Though widely recognized for its importance in breast, ovarian and pancreatic cancer, the gene has an important role to play in inflammation and other biological processes. BRCA-1 mutation carriers have an increased incidence of non-cancer deaths and cells die a noneoplastic death in the presence of the BRCA -1 mutation. Inasmuch as BRCA -1 mutation carriers develop worse heart failure than non-carriers when treated with doxorubicin, a role for BRCA-1 in heart failure and atherosclerosis opens a new research window and forms the basis of a US Provisional Patent recently filed by Subodh and Mohammad Al-Omran, a Saudi vascular surgeon trained in Toronto. With Steven Narod, Canada Research Chair in breast cancer, Subodh is exploring the hypothesis that the gene provides a pharmacogenomic clue in heart failure and a potential cardiovascular therapeutic target.

Outside of his clinical and academic life, Subodh dotes on the simple pleasures of spending quality time with his children Raj and Meena who have recently caught the fishing bug.

M.M.

Surgery requests exemption from new PAIRO guidelines…or Malcolm Gladwell versus the European Union

A TENSION IN OUR MIDST

Richard Reznick

There is a tension in our midst. This tension is by no means new and indeed has been brewing for decades. It revolves around the issue of attempting to strike a balance between the need for intense exposure and repetitive practice in the development of expertise versus the strong push towards a more balanced lifestyle for our surgical trainees. In *Outliers,*[1] his best-selling book about men and women who do things exceptionally well, Malcolm Gladwell argues that outliers are the product of an intense amount of work in a focused area. He also argues that when they become outliers it is not just because of their own efforts. It's because of the contributions of lots of different people and lots of different circumstances— and that means that we, as a society, have more control about who succeeds—and how many of us succeed—than we think.

Contrast this notion with the inexorable move towards a shortened work week for our surgical trainees. In Europe, this has culminated in a dictate that trainees spend no more than 48 hours in the work place. To put this in perspective, when I trained in surgery, call was one-in-two or one-in-three and the average surgical workweek was often 100 hours per week. At present, the work week in the United States is "legislated" at 80 hours, and in Canada, we are roughly at 72 hours per week.

THE NEW *PAIRO* GUIDELINES

In the most recent PAIRO-CAHO negotiations the recommended time for departure from the hospital after a night on call for a 24-hour period, is 2 hours after the cessation of the call period. This is in contrast to the current

status quo of departure from the hospital by noon after a night on call. The contract provides an opportunity for a service to apply for an exemption from the new regulations. After consultation with our residents and with our senior leadership, the Department of Surgery is seeking such an exemption for all of its services in our teaching hospitals across our eleven residency programs. We are doing so on educational grounds. We are scheduled to meet with PAIRO and a facilitator early in September.

WHY ARE WE SO CONCERNED?

To be sure, we are mindful that the "old way" of 100 hours or more work per week is inappropriate. It does not promote a healthy work-life balance. One could argue that this degree of over-work has resulted in too much marital disharmony, substance abuse and depression. To be sure, the past could be characterized as the misuse of residents as low-cost service providers.

Many would argue that the pendulum has swung too far, as I opined in a Spotlight column five years ago, "Europe has gone crazy". Perhaps the most telling data come from a recent survey done by Richard Bell and colleagues at the American Board of Surgery.[2] The Board surveyed program directors in the U.S. and asked them to categorize a list of operations with respect to the expected competency of graduating general surgical specialists. The categories were "must know", "be good to know", and "need not know". It was only in 18 of the 121 "must know" procedures that graduating residents had done more than an average of ten cases. For 83 of 121 the average case load was less than 5, and for 31 of 121 procedures, the average experience was less than one. Indeed, for 63 of these 121 "must know" operations the modal value – the most frequently reported number – was zero.

What makes these data more concerning is that for years we have believed that we need to teach surgical principles and that novice surgeons will rely on these principles when faced with unfamiliar situations. That implies that we believe in the phenomenon of psychological transfer – defined as the process of using knowledge or skills acquired in one context in a new or varied context. This has long been the topic of spirited debate in the psychology research community. One of the leading scholars on transfer, Douglas Detterman, has proffered that educators must assume that transfer is as rare as volcanic eruptions and should operate as though it is virtually unachievable as an instructional goal.[3] In reality, many have argued that expertise is a matter of "being there" over and over again. And "there" is the very narrow arena in which one has had ample deliberate and focused practice.

THE ANSWER TO OUR TENSION

It is clear to me that we are on a pathway towards collision. Training is already too long and if we head towards a European work week of 48 hours, we will undoubtedly train surgeons with less skill and knowledge than their teachers. I strongly believe that what is needed is a new way of thinking about surgical training coupled with new training models. On July 1, 2009 we inaugurated a new stream in Orthopaedic Surgery, under the guidance of Ben Alman, Bill Kraemer and Peter Ferguson. This new stream has three residents who will learn orthopaedic surgery in a modular competency-based fashion. This proof of principle experiment will offer very different training from the conventional curriculum. The Royal College has agreed that residents in this new stream will be able to sit their fellowship examinations when the faculty believe they are competent, which may be in the traditional five years of training, but may be less. The Ministry of Health and Long Term Care, interested in supporting innovation and new approaches to health human resource issues, have granted us $1.7 million dollars to roll out this program over the next four years.

To be sure, we can no longer tinker at the edges of surgical curricula. The imperative of patient safety, the reality of the cost of the surgical minute, the need to abandon the 100+ hour work week of the past are all in conflict with the mission of producing highly capable surgeons. In conflict, unless we challenge our current methods and develop and implement new models of training.

Richard K. Reznick
R.S. McLaughlin Professor and Chair

1. Gladwell M. *Outliers.* New York, NY: Little, Brown and Company,. 2008. http://www.gladwell.com/outliers/index.html
2. Bell RH et al. Operative Experience of Residents in US General Surgery Programs. *Annals of Surgery*: 249:719-724: 2009
3. Detterman DK, Sternberg R. *Transfer on Trial: Intelligence, Cognition and Instruction* New York, NY: Ablex Publishing, 1993.

For more on Malcolm Gladwell's essay on "10,000 hours to expertise", see page 17. Ed.

Norman Bethune in Clear Focus

Adrienne Clarkson

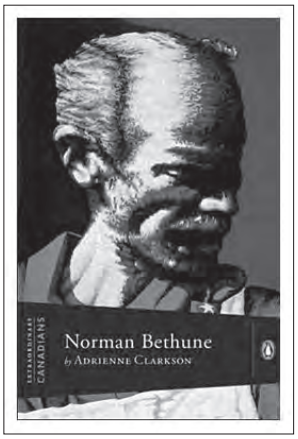
A highlight of this year's meeting of the Bethune Roundtable was a presentation by former Governor General the Right Honourable Adrienne Clarkson, launching her new biography of Norman Bethune. In his opening remarks, University of Toronto President David Naylor thanked Adrienne Clarkson for bringing Norman Bethune into clearer focus for Canadians by telling his story in a dynamic, accessible way. He called the book a gem that: "I couldn't put down, but read in two sittings – exceptional for a university president who usually has the attention span of a 5-year-old." He praised the book for its compelling, economical and poetic language, as he welcomed Adrienne Clarkson as "one who needs no introduction".

Adrienne Clarkson began by acknowledging Lee Errett, recipient of the Bethune Prize, and Terry Donnelly for the work they have done in China, performed in the spirit of Norman Bethune. Historically, Western perceptions of Bethune have been coloured by his political affiliation, but it is Clarkson's contention that he was primarily a practical man whose politics were always driven by his desire to help people as a doctor.

Bethune's commitment to helping people was evident early in his life when he interrupted his medical studies to volunteer in remote logging camps, teaching literacy to immigrant workers, one-third of whom arrived in Canada with tuberculosis. During WWI he served as a stretcher-bearer and suffered a shrapnel wound. After the war he opened a practice in the slums of Detroit, where he contracted TB himself. Close to death, he convinced a colleague to perform an artificial pneumothorax, experimental at that time. It saved his life. Bethune was always uncomfortable accepting payment from patients; he believed doctors should be paid by governments, and this aggravated conflicts with some of his colleagues, though he was uniformly liked and praised by his students and patients.

Clarkson described Bethune as having been "lit up by the opportunities to intersect with history, first in Spain and then in China". He went to Spain when civil war broke out because most Spanish doctors supported Franco and the fascists, leaving Republican fighters and supporters underserviced. He developed a transfusions truck, which he brought from London to Madrid. Despite less-than-optimal sanitary and screening conditions, he carried out transfusions on the battlefield because it was "better to live with syphilis than to die." This work proved a valuable propaganda tool for the Republicans who galvanized their supporters to give blood.

In the early 20th century China was a primary focus for Toronto churches which regularly sent missionaries. As the son of a clergyman, Bethune heard a great deal about their experiences and China came to inhabit a special place in his imagination. So when Japan invaded China in 1937, he was determined to go. He was the only physician in the northwest region of the country, serving 15 million people, both soldiers and civilians, often performing 125 operations a week. He died in 1939 of septicemia, cut by a bone fragment while performing surgery on the battlefield.



Norman Bethune

Bethune was a member of the Communist party for the last three years of his life – a practical affiliation, Clarkson believes, that arose out of his strong opposition to fascism. For this, he has often been dismissed by Canadian historians, but the Chinese always understood his basic generosity. Their affectionate nickname for him translates as "Big Table", meaning he was capable of welcoming everyone to eat at his table.

The Penguin Extraordinary Canadians series is designed to be concise and readable. Clarkson described it as a "winning format, without tiresome footnotes", that proved to be a great exercise in discipline for herself as a writer.

Julie Roorda
Assistant Editor

Gallie-Bateman & McMurrich Research Day 2009

Oscar Traynor

The Department of Surgery staff, residents and students highlighted their impressive level of research productivity in all areas of surgical specialties, clinical epidemiology and education at this year's Gallie Day. The theme for this year's Gallie Day was surgical education. The day included a symposium entitled "*'Competent Cutting': From Concept to Implementation of Competency-Based Education and Training (CBET)*". Symposium Chair was J. Ted Gerstle (Program Director, Division of Paediatric and Thoracic Surgery, Hospital for Sick Children/University of Toronto). Participants included Richard Reznick (Chair, Department of Surgery), Jason Frank (Associate Director, Specialty Standards, Policy & Development, Office of Education, RCPSC), and William Kraemer (Program Director, Division of Orthopaedic Surgery, University of Toronto). They gave persuasive talks on the new potential role of competency-based training in surgery, the perspective of the RCPSC, and development and implementation of a competency-based curriculum in orthopaedic surgery.

The Gordon Murray Lecturer, Oscar Traynor, Director of Education at the Royal College of Ireland Department of Surgical Training gave a captivating lecture entitled, *"Surgeons are born, not made. Right"*.

There were 10 platform presentations and 50 poster presentations from trainees who were members of the Surgeon Scientist Program or non-residents training in research with our departmental faculty members. The Gallie-Bateman Awards (for Surgeon Scientist Program participants), the McMurrich Awards and the Wyeth Awards (for any trainee working with a member of the faculty of surgery) were judged for both platform presentations and poster presentations. The wide range of the topics and types of trainees highlighted the diverse high quality research being conducted in our department. There was a much larger than usual attendance – for much of the day there was a standing room only crowd.

Paul Kongkham and Ben Alman

Adrian W. Laxton and Ben Alman

The Gallie-Bateman Award for best work by a trainee in the Surgeon Scientist Program went to **Paul Kongkham** – "A combined epigenetic and genetic genome-wide screen identifies *SPINT2* as a novel tumour suppressor gene in medulloblastoma" (Supervisor: James T. Rutka), 2nd prize to **Adrian W. Laxton** – "Single neurons in the human subgenual cingulated differentiate emotion categories" (Supervisor: Andres M. Lozano), and 3rd prize to **Kristen Davidge** – "Function and health status following soft tissue reconstruction for limb preservation in extremity soft tissue sarcoma" (Supervisors: Jay S. Wunder and Aileen Davis).

Kristen Davidge and Ben Alman

Carla Rosario, Ben Alman & Alvin C. Lin

There was a tie for first place for the McMurrich Award, given for the best fundamental science work by any level trainee working with a member of our department. This went to **Carla Rosario –** "The tumour suppressor Plk4 regulates cell motility and cytokinesis via RhoA-dependent remodeling of the actin cytoskeleton" (Supervisor: Carol Swallow), and **Alvin C. Lin –** "Modulating hedgehog signaling can attenuate the severity of osteoarthritis" (Supervisor: Benjamin A. Alman). Second place was awarded to **Louisa Ho –** "Genetic events involved in the progression of enchondroma to chondrosarcoma" (Supervisors: Jay S. Wunder & Benjamin A. Alman). There was a two way tie for third place: **Phedias Diamandis –** "Heterogeneous and equilibrating lineage primed states coordinate asynchronous gene activation in neural stem cells pools" (Supervisor: Peter B. Dirks); and **András Masszi –** "Interplay between myocardin-related transcription factor and SMAD3: A critical checkpoint during epithelial-myofibroblast transition" (Supervisor: András Kapus).

Louisa Ho and Ben Alman

Phedias Diamandis & Ben Alman

The Wyeth Awards for best clinical epidemiology or education-based research poster was awarded to **Jaskarndip Chahal** – "Generalization ligamentous laxity as a predisposing factor for primary anterior shoulder dislocation" (Supervisor: Daniel B. Whelan); and **Syndie Singer –** "Ankle arthroplasty and ankle arthrodesis – A prospective gain analysis" (Supervisor: Timothy Daniels).

Faculty research awards went to **Sevan Hopyan** (**Bernard Langer Surgeon Scientist Award**, awarded to an outstanding graduate of the Surgeon Scientist Program in the Department, who shows the greatest promise for a career in academic surgery), **Robert Nam** (**George-Armstrong Peters Prize**, awarded to a young investigator who has shown outstanding productivity during his initial period as an independent investigator as evidenced by research publications in peer reviewed journals, grants held, and students trained), **Glenn Regehr** (**Charles Tator Surgeon Scientist Mentoring Award**, to recognize an individual supervising participants in the SSP who emulate Professor Tator's qualities, namely excellence in research, commitment to SSP mentoring and dedication to promotion of Surgeon-

Jaskarndip Chahal and Ben Alman

Sevan Hopyan with Bernard Langer

Robert Nam and Robin Richards

Jim Rutka, Abhijit Guha and Richard Reznick

Calvin Law and Ron Levine

Mike Wiley and David Latter

Scientists) and **Abhijit Guha** (**Lister Prize**, awarded to an investigator who has shown outstanding and continuing productivity of international stature as evidenced by research publications, grants held, students trained and other evidence of stature of the work produced).

Calvin Law won the **Tovee Prize** for excellence in postgraduate teaching and **Yaron Shargall** the same for undergraduate education. **Melise Keays** received the **D.R. Wilson Award** for teaching by a surgical resident, **Paul Binhammer** won the **Surgical Skills Centre Distinguished Educator Award** and **Marcelo Cypel** received the inaugural **Zane Cohen Clinical Fellowship Achievement Award**. Zane Cohen was honoured for

Helen MacRae & Paul Binhammer

Marcelo Cypel and Zane Cohen

Melise Keays and D.R. Wilson

Bryce Taylor, Zane Cohen & Bernard Langer

his contribution as Chair of the Division of General Surgery, and Michael Wiley as Chair of the Division of Anatomy for the last ten years.

Thanks to all the judges for the poster competition as well as the oral presentations. Thanks to the Session hosts, Cindi Morshead and Ian McGilvray. Thanks again this year to Andrea McCart, David Urbach and Val Cabral for their dedicated organization of the Day.

Val Cabral
Research Program Coordinato,
Department of Surgery Research Office

Yaron Shargall and David Backstein

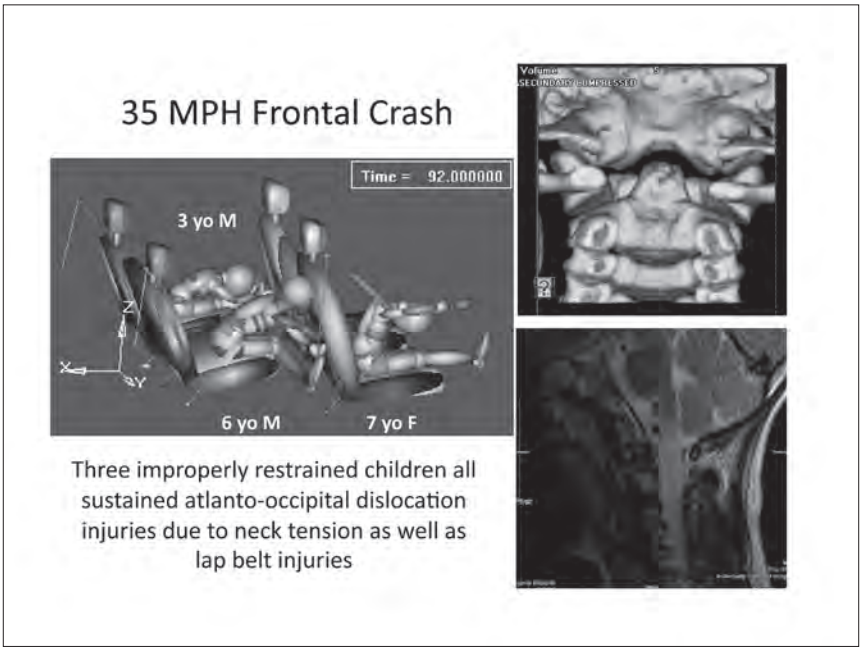
Sylvia Perry, Richard Reznick, Val Cabral

Re-engineering Vehicular Trauma Research Using Finite Element Analysis

Stewart Wang

Ann Arbor trauma surgeon and molecular immunologist Stewart Wang is following the roads specified in the "roadmap of research" of the US National Institutes of Health. The roadmap specifies "new techniques, multi-disciplinary teams, and translational research to re-engineer the clinical research enterprise". After demonstrating by a poll that 95% of us drove our cars to University Rounds, Stewart took us through the alarming statistics of vehicular trauma. 1.2 million people are killed and 50 million are seriously injured each year on the roads of the world.

In his arresting illustrative case, an SUV carrying a mother and three children T-boned a sedan driven by a young man who crossed the median and died at the scene. The right side of his vehicle impacted the front of the SUV. The mother sustained minor injuries. All three children had non-fatal atlanto-occipital dissociations demonstrable on CT scans. There were two lap belt injuries to the pelvis and intestine of the children who had slipped out of their annoying shoulder straps, and one skull fracture secondary to the lack of a booster chair in a six-year-old.



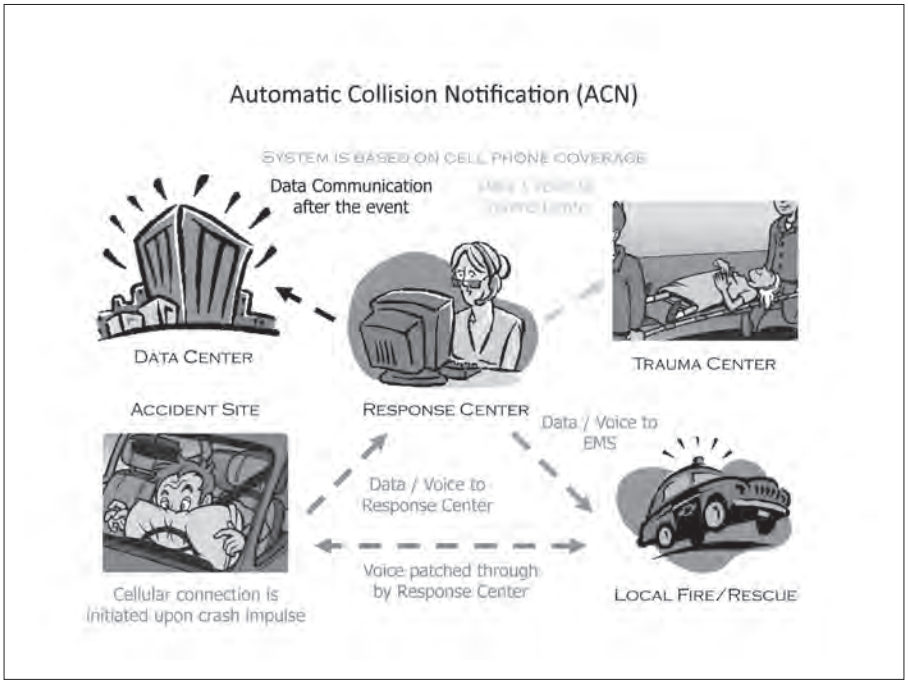
Three improperly restrained children all sustained atlanto-occipital dislocation injuries due to neck tension as well as lap belt injuries

Stewart described the crash injury research network that is conducting highly effective translational research in collaboration with engineers from the auto industry and scientists in the trauma program. Among their findings:

- People with a BMI greater than 28 have less severe abdominal injuries, but more severe lower extremity injuries
- Blunt trauma is much more challenging diagnostically than penetrating trauma
- Trauma centres, often comprising 100 trained personnel, have substantially better outcomes than other hospitals
- The incidence of thoracic injuries increases with age. Bone mineralization and rib cross-sectional shape changes unfavourably with age so that the fragile elderly are much more vulnerable to rib fractures and their pulmonary complications.
- Automatic Collision Notification (ACN) systems triggered by deployed airbags have been developed to call response centres and emergency fire and rescue teams to begin the time-critical management of trauma care. The system utilizes a GPS locator to give precise information on the whereabouts of the accident (not "somewhere north of exit 29"). ACN can preload information on drivers, (eg. on coumadin, insulin, etc.) to alert emergency medical technicians and the trauma centre, upgrading the information component that is critical to improved outcomes.

Illustrating the greater challenge that blunt injury presents compared to penetrating trauma, Stewart projected

his list of potential injuries for frontal impact. The list is quite different for side and back impact. When angle of impact is known from the ACN at the time of the accident, the diagnostic evaluation of victims is streamlined.



Using finite element analysis, Stewart and his colleagues can vary the "Crash Test Dummy" morphology in computer analyses to improve the design of automobiles and safety devices. These manipulations of the "morphome" allow conversion of the data on vulnerability into useful devices. The translation time is much shorter when the analyses at trauma conference are conducted in the presence of automobile engineers who return to their plants to develop solutions.

Stewart spent his sabbatical at the Japanese Automobile Research Institute studying the difference between crash test dummies and cadavers. The familiar crash test dummies that we see in automobile advertisements were designed in the 1960s based on three dozen cadavers. The model is matched to the 50th percentile of age and weight of these cadavers. Clearly at least three of the accident victims in our illustrative case did not conform to these dimensions. The children were age 3, 6 and 7. Stewart's research on the finite element model allows scientists to tune the model electronically to fit those who are younger, older, heavier, etc. Actual crash test dummy tests cost approximately one million dollars each to instrument, demolish and analyze. His analysis can be more granular, including variation in body composition which is influenced by co-morbidities like diabetes. These morphomes can help, not just vehicular trauma, but in reducing risk in elective surgery and chemotherapy. "Biofidelic human body finite element models are the key to this new branch of science."

In the discussion period Marv Tile brought out the value of Stewart's technique for analyzing soft tissue injuries. Another surgeon brought out the safety advantages of London taxis, particularly their rear-facing seats. Stewart commented that the same positioning is used by NASA for its space personnel, and Swedes keep children facing backwards until age 4. He is impressed by how much more rapidly crash science is now moving from the bench to the bedside. Instead of the usual 10-15 years remembered from his molecular immunology days, information moves very quickly via the engineers, so he and his colleagues are "accelerating the translation of medical discovery to improve health" in accord with the NIH road map. He complimented Ori Rotstein and Avery Nathens: "Though I have been a visiting professor in many institutions, I have never experienced so well-conducted a visiting professorship."


Ori Rotstein


Avery Nathens

M.M.

Contributions from Formula One Racing

Hugh Scully

Cardiac surgeon Hugh Scully suggested linking Stewart Wang's research more tightly to the highly successful work improving the safety of Formula One auto racing. "In the early years of Formula One, many drivers and some spectators were killed. One in seven drivers died in the 1960s. The introduction of seatbelts, then helmets, improved fuel cells and barriers resulted in a decade by decade reduction in injury. Foot and ankle injuries were reduced by moving them behind the front axle and strengthening the nose cone. The Head and Neck Injury Project of our group in Indianapolis led to the HANS system now mandatory in championship racing. The head is now relatively fixed to the body so that the moments of force to flex, extend or twist the neck are no longer as severe a danger despite the weight of the helmet. The cockpit has been strengthened and head-surround padding has been added to protect from penetration. Rapid intervention vehicles with well-trained paramedics and doctors are immediately dispatched. Every physician and paramedic at Formula One events is fully trained in Advanced Life Support. Accident analysis has been improved to the level of investigation of airline accidents. The improvements in brakes, fuel cells, tire technology, and the protective surrounding of drivers have resulted in a reduction of the death rate to one per 368 severe accidents, despite increases in speed. The Formula One research program has brought advances in protection through cooperation with NASA, the US Airforce, the airlines and autosports industry. Many of the benefits of these advances have become part of the protection of drivers and passengers in conventional automobiles." Translation of lessons learned in both the autoracing and the conventional automobile industry will be accelerated by the cross-fertilization of these highly productive trauma research programs.

M.M.

Aesthetics and Innovation in Paediatric Surgery

Adrian Bianchi

The Royal Manchester Children's Hospital's Adrian Bianchi was chosen by the graduating fellows in paediatric surgery as this year's Simpson-Ein lecturer because of his many innovations and his emphasis on aesthetics. He used Michelangelo's maxim that "the marble not yet carved contains the form" to capture the concept that children speak implicitly to surgeons, telling them what the goal of surgery should be. We should imitate the plasticity of the developing brain to imagine the future roles of the child. Bianchi intuitively hears the neonate with esophageal atresia saying, "I want to be able to eat and swallow like the other children." The dilated hypertrophied proximal pouch and the atretic distal remnant can be brought together. This traditional way of restoring continuity results in a wineglass-shaped esophagus, too narrow to allow normal swallowing. To fulfill the child's wish, Bianchi creates a rotation flap from the upper pouch, enlarging the distal segment.

Hearing the wish of a beautiful newborn girl to someday be a model can inspire a surgeon to switch from a traditional thoracotomy to an axillary crease incision to approach intrathoracic problems. A circumumbilical incision similarly leaves no visible unsightly scar after treatment of a range of intestinal problems from atresia to pyloric stenosis. Gastroschisis can be treated by slow, patient reduction in a single step, without intubation or general anaesthesia, followed by closure using the umbilical cord "as the bottle cap" with an excellent cosmetic outcome. Mr. Bianchi took us through a series of procedures for intestinal atresia, including his longitudinal intestinal lengthening and tailoring procedure (LILT) splitting the dilated segment on its dual blood supply, tailoring it to a smaller diameter, and anastomosing the newly formed and lengthened segments. Subsequent reversal of a segment to slow transit, dilation of segments

to enlarge them by raising the intraluminal pressure and treatment with clonidine to decrease intestinal secretion will reward a patient surgeon's persistence with a satisfactory functional outcome.

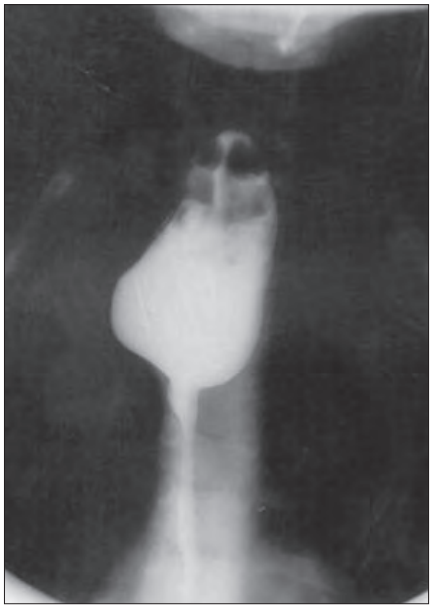
The Bianchi aesthetic approach includes scrotal incisions for hernias or undescended testes instead of laparoscopy or traditional repairs. Mr. Bianchi favours cross-training on multiple services during residency to develop a variety of skills and a transdisciplinary rather than a multi-disciplinary approach to patients. He defines surgery as an art form that affects the lives of others and his Simpson-Ein Lecture ably fulfilled this definition.

Paediatric surgery fellow Cassandra Kelleher asked "How can I innovate like this, especially if I am practicing in the United States?" Mr. Bianchi emphasized that the innovative procedure should be reasonable, well-planned and endorsed by colleagues, performed with supportive staff of nurses and anaesthesia, and parents must be convinced of the rationale. In brief, his solution to innovation is informed consent and collegial endorsement. Nevertheless, he warned, "Innovators must lift their heads above the parapets of conventional practice. By doing so they make themselves vulnerable targets for professional criticism and public opprobrium."

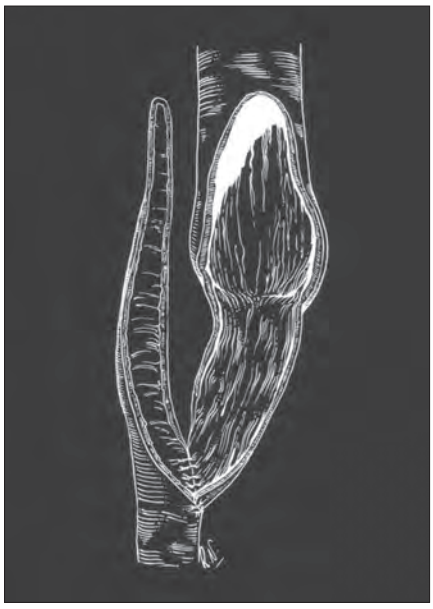
The Hospital for Sick Children has been a leader in innovation. Jack Langer praised the contributions of James Simpson in, among other things, introducing non-operative management of splenic injury, and Sigmund Ein for his many contributions to patient-centred care and the understanding of the natural history and treatment of paediatric surgical diseases. The Hospital for Sick Children's policy[1] on innovation contains the elements prescribed by our visiting lecturer and incorporated into the practice of our paediatric surgeons in all disciplines over many years. Siggy Ein spoke for his family, and the Simpson family in attendance: "As a student and colleague of Jimmy Simpson, I know that he would be proud of the lecture we heard today."

M.M.

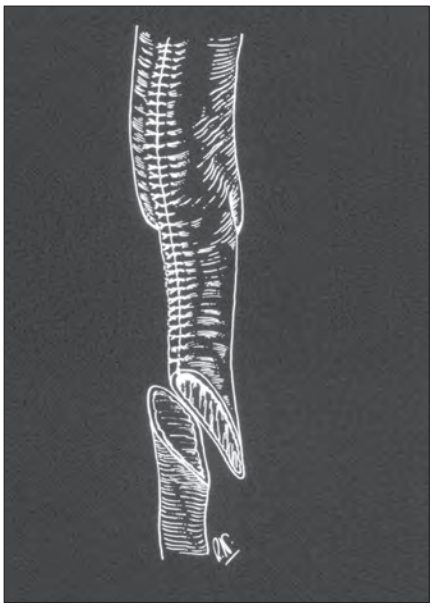
1. Zlotnik Shaul R, McDonald M, Langer JC. Facilitating Innovation in the Clinical Setting: A Pathway for Operationalizing Accountability *Healthcare Quarterly*, 2009;12(3):60-65.



Liquid contrast: funnel anastomosis



Flap transposed and inset



Flap tubed to enlarge distal segment

Andy Smith, University Chair of General Surgery

Andy Smith (front row, 3rd from right, with the 2009 graduating general surgery residents

Surgical oncologist and translational researcher Andy Smith has been appointed Chair of the University Division of General Surgery. Andy has been Head of the Division of General Surgery at Sunnybrook Hospital for the past eight years where he has made major contributions in translational research related to colorectal cancer. (http://www.surgicalspotlight.ca/Shared/PDF/Winter07.pdf) He is excited about the opportunities and responsibilities of the research enterprise, the educational mandate and the clinical opportunities in the division. *"The surgeon-scientists and career surgeons in general surgery are making major contributions across the broad spectrum of general surgical knowledge. Peter Kim's groundbreaking work in surgical technology development, Frances Wright's investigations into implementing Tumour Boards across Ontario, MIS general surgeons' collaborative work in implementing a program in obesity surgery and the basic science work of Steven Gallinger, Carol Swallow, Rebecca Gladdy and Andrea McCart are only a few examples of the outstanding projects currently under way."* (Please see www.surgicalspotlight.ca for links to earlier articles on these individuals.) "*Our continued success will require that we meet the challenges to support the research and training enterprise, and embrace opportunities to improve the lives of our patients through creation and translation of new knowledge."*

Andy is addressing the educational mandate with a strong team of program directors including Najma Ahmed in general surgery, Carol Swallow in surgical oncology, Ted Gerstle in paediatric general surgery, Paul Sullivan and Allan Okrainec in minimally invasive surgery, Marcus Burnstein in colorectal surgery, Fred Brenneman and Avery Nathens in trauma surgery, and Paul Grieg and Carol-anne Moulton in hepatobiliary surgery. Training in specialized aspects of general surgery will continue to be a central, thriving aspect of general surgical training. At the same time, the division is keen to engage the numerous talented teachers at the distributed hospitals to ensure that we have "generalist" general surgical training that is second to none. "*Some authorities have lamented the demise of the generalist but the rich pool of talented surgeons in our division allows us to be confident in our ability to train surgeons for diverse careers.*" (http://www.surgicalspotlight.ca/Article.aspx?ver=Spring_2009&f=ReaderLetters) Andy has recently returned from a James IV travelling fellowship in the UK and Scandinavia where the competency-based model of residency education is being developed. The orthopaedic division has pioneered the implementation of such an approach at U of T. Similarly, innovation in the approach to residency training in general surgery will be explored in the years to come in our department.

Medical student education will emphasize nurturing appropriate students for careers in surgery and will be strengthened by mentorship from the varied surgeons in the division. Students who have a chance to shadow surgeons early in their careers are often profoundly influenced. As a first year medical student, Anand Govindarajan spent a "day with the doctor" with Andy eight years ago. Captivated by the opportunities for productive clinical and research opportunities, Anand finished the general surgery residency program, including two years in the surgeon scientist program where he authored high-impact papers on multi-visceral resection of colorectal cancer in the *Journal of the National Cancer Institute*. He recently graduated from the Gallie Program and is now training at Memorial Sloan-Kettering as a surgical oncology fellow. Anand was mentored in the lab by Calvin Law.

General surgery fellowships are in demand. Most of the 2009 graduating general surgery class went on to fellowship training. U of T fellowship programs are strengthening under the leadership of Vice Chair David Latter. Continuing medical education has been a very strong activity of the general surgery division. The award-winning Update in General Surgery is the largest such program in Canada. The Update in Surgical Oncology is similarly well-regarded. These will be continued and strengthened with innovative approaches aimed at responding to the needs of practicing surgeons. In addition, there is a vast array of other educational offerings in the division that bring honour to the "U of T General Surgery brand".

The clinical mission of the diverse general surgery faculty at the core and distributed hospitals is central to the division's mission. Recent advances include the establishment of a minimally invasive and multi-disciplinary obesity surgery program, (http://www.surgicalspotlight.ca/Article.aspx?ver=Spring_2009&f=ChairColumn) expansion of the paediatric general surgery program to include North York General Hospital, and plans for a collaborative, multi-institutional surgical oncology program for peritoneal based malignancy. Development of programs that cross traditional institutional boundaries represent a real opportunity for U of T general surgery.

Andy's management of the general surgery division will be enhanced by Linda Last, General Manager of General Surgery, who is helping to integrate the Sunnybrook office with the downtown University of Toronto surgery office. Important mentors in Andy's training include Zane Cohen, Sherif Hanna, Robin McLeod, Hartley Stern, Paul Walker and many others. Andy's leadership style is best exemplified by his work in championing the importance of quantitative node dissection in colorectal cancer. He enlisted the loyalty of surgeons in hospitals all across Ontario by travelling to their hospitals, scrubbing in, and gaining a better understanding of local issues and perspectives.

"*My role as Chair is to collaboratively develop the vision for the division and to help catalyze change. I am surrounded with excellent, capable colleagues and it is important that they are allowed to fully realize their aspirations as U of T surgeons.*"

M.M.

A Lifetime of Achievement in Vascular Surgery

Wayne Johnston

K. Wayne Johnston received the Lifetime Achievement Award of the Society for Vascular Surgery in Denver, Colorado in June. The SVS is an international organization that "seeks to advance excellence and innovation in vascular health through education, advocacy, research and public awareness". The award is the highest honour that the Society and specialty bestows. Selection recognizes an individual's outstanding and sustained contributions both to the profession and to the Society for Vascular Surgery. Wayne is the tenth recipient of this award and the first Canadian. Previous recipients include Michael DeBakey, Robert Rutherford and Jesse Thompson.

Wayne's contributions to vascular surgery education are outstanding internationally and locally. He served as editor for the *Journal of Vascular Surgery* for six years, raising its impact factor by 40%. He served as co-editor of the seventh edition of the iconic *Rutherford Textbook of Vascular Surgery*. With his colleagues, Wayne founded one of the first vascular training programs in Canada. The program has produced 37 trainees; 24 hold university positions. With his engineering colleague and co-investigator Richard Cobbold, Professor Emeritus, Biomaterials and Biomedical Engineering, he has co-supervised 43 masters or doctoral level graduate biomedical engineers.

Wayne's clinical and basic research contributions include the reference standard Toronto series of 997 consecutive peripheral arterial balloon angioplasties. This was the first critical evaluation of this innovation; it gained the respect that has established angioplasty as a standard

component of vascular surgery. The vascular lab at the Toronto General Hospital was one of the first established in North America. With Richard Cobbold, Wayne maintained national level MRC and CIHR funding for 31 years, establishing the effectiveness and standards of ultrasound evaluation of vascular disease and developing an understanding of the basic ultrasound and hemodynamic principles involved. The Canadian aneurysm study was a nine-month blitzing snapshot of 834 consecutive patients treated by open repair of abdominal aneurysm by 72 surgeons across Canada. This study defined the results and safety of the procedure and predictors of results.

A meticulous and gifted surgeon, Wayne is described by nurse practitioner Sue DeVries, his colleague for 19 years: *"Dr. Johnston was always available, very respected by the nurses, and fun to work with. He speaks to patients at their level of understanding, finds and mobilizes the resources they need, and never leaves any loose ends. An awesome teacher and an expert in everything he does."*

During his 25-year commitment to the Society for Vascular Surgery, Wayne rose from membership chairman to Recorder to President. As 62nd president of the society, he did strategic planning and prioritization of the society's programs. Wayne was very involved in the logistics and political solutions to merging the Society for Vascular Surgery, an exclusive and academic body, with the larger International Society for Cardiovascular Surgery, a more inclusive cohort of practicing vascular surgeons. The thoughtful solution was to incorporate the criteria for the original SVS into a new category called Distinguished Fellows. This helped to maintain the academic eclat that is important for university advancement. The merger was very helpful for increasing the influence of vascular surgery in negotiation with governments and making the change in the nature of the specialty as vascular surgeons learned how to incorporate minimally invasive endovascular techniques into their practice.

In accepting the honour, Wayne thanked his wife Jean, a practicing clinical neurologist at St. Michaels Hospital, his vascular colleagues in the Toronto General division, his mentors Ronald Baird, Bernard Langer and Bruce Tovee, and the outstanding cadre of volunteers in the SVS. Wayne has been impressed how enthusiastic and diligent the members of the Society have been in accepting organizational responsibility. There are currently 250 surgeons involved in the volunteer activities of the society. Writing groups are currently working on more than 20 policy and practice guidelines that are being produced under Wayne's supervision. On the day I interviewed him, he was actively engaged in this important work.

As he looks back on his surgical career, the two most satisfying aspects are *"resident education and our basic research contributions."* In accepting the award, Wayne closed with thanks and praise for volunteers. *"What is the reward for volunteer service? The payback has been expressed in an epitaph which reads: 'what I spent is gone, what I kept is lost, what I gave working for others will be mine forever'. I salute you, the volunteers, who are making a difference. Thank you for this humbling honour."*

M.M.

PRAISE FOR WAYNE JOHNSTON, IN A LETTER FROM ONE OF HIS COLLEAGUES:

"Wolfgang Amadeus Mozart wrote the opera *Don Giovanni* in one sitting, and it was played the following day without any rehearsal. Innate talents do exist, and your achievements in Vascular Surgery obviously are another demonstration of them.

The demands of our profession often exhaust us as we strive to create opportunities from challenges. The satisfaction that we draw from within ourselves, for a job well done, is enough to prepare us for the next goal. However, professional recognition and respect are equally important. I am pleased to hear that the Society for Vascular Surgery has honoured your achievements with its prestigious Society's Lifetime Achievement Award. It really could not be bestowed on a more deserving recipient. Vascular surgeons in Canada and in the States must appreciate your unrelenting efforts to help with the progress of our discipline."

Claudio Cina, Vascular Surgery, St. Michael's Hospital, Professor of Surgery, University of Toronto

NEW STAFF

Giuseppe Papia with his wife Natalie and children Salvatore, Alessandra and Gianfranco.

It is my pleasure to welcome and introduce **Dr. Giuseppe Papia** who joined the Division of Vascular Surgery beginning on April 1st 2009. Giuseppe is appointed at Sunnybrook Health Sciences Centre to the combined Division of Vascular and Cardiovascular Surgery.

Giuseppe began his undergraduate training at the University of Toronto during which time he was a faculty scholar. Subsequently he pursued undergraduate medical education at the University of Ottawa and completed his General Surgery training at U of T. During this training he spent two years as a Surgeon Scientist in the Clinical Investigator program in the lab of Ori Rotstein, studying molecular mechanisms of lung injury following resuscitation from hemorrhagic shock. He completed his Masters of Science from the Institute of Medical Science before returning to complete his General Surgical fellowship. Giuseppe then completed two further Royal College fellowships in Critical Care Medicine and Vascular Surgery. Thus he brings unique training and skills to his clinical care. Giuseppe sought further advanced training in both endovascular AAA repair and endovascular interventions for arterial occlusive disease. He completed a three month fellowship in Endovascular intervention at the Cleveland Clinic before returning to Sunnybrook Health Science Centre to begin his academic career.

Giuseppe's academic interests focus on patient safety and quality improvement. He is enrolled in the Patient Safety Officer Executive Development Program at the Institute for Healthcare Improvement. The IHI is a world leader in the area of healthcare improvement. This program is a comprehensive curriculum that trains clinicians how to run a successful hospital patient safety program. Giuseppe is cross-appointed to the Department of Critical Care Medicine where he will attend as an intensivist in all of Sunnybrook's Critical Care Units. He will serve as the physician lead for the Cardiovascular Intensive Care Unit in addition to providing clinical care for all aspects of vascular practice.

Giuseppe and his wife Natalie have a busy home life with three children, Salvatore (6), Gianfranco (4), and Alessandra (4). Natalie is the President of Zilli Home interiors, in Vaughan. The Division of Vascular Surgery is pleased to welcome Dr. Papia and his family to the Department of Surgery at the University of Toronto.

Thomas Lindsay
Professor and Chair, Division of Vascular Surgery

Markus Selzner

The Division of General Surgery and the Solid Organ Transplant Programme are pleased to announce the appointment of **Dr. Markus Selzner** to our Faculty at the University Health Network, and as Assistant Professor, Department of Surgery, at the University of Toronto.

Markus joins us as an Abdominal Transplant Surgeon Scientist with a laboratory research commitment, focusing on organ preservation and rehabilitation and the mechanisms of ischemia-reperfusion injury to the liver. He is already well known as a strong clinician and productive scientist. Markus obtained his education in medicine and training in General Surgery in Germany. He conducted post-graduate research at Duke University and Zurich University under the mentorship of Professor Pierre-Alain Clavien. He completed a Fellowship in Abdominal Organ Transplantation at the University of Toronto in 2007 and has worked as a Clinical Associate in Transplantation at UHN for the past two years. We anticipate and look forward to Markus's great contributions to our Divisions.

We warmly welcome Markus, his spouse, Dr. Nazia Selzner, and their children, Armin and Celia, to our General Surgery and Transplant families at UHN and U of T.

Lorne E. Rotstein
Professor and Peter A. Crossgrove Chair in General Surgery

David R. Grant
Professor and Surgical Director, Multi-Organ Transplant Programme, UHN

It is my pleasure to welcome and introduce **Dr. Leonard Tse** who joined the Division of Vascular Surgery at Toronto General Hospital/University Health Network beginning October 1st 2008.

Leonard Tse

Leonard began his undergraduate training at the University of British Columbia and transferred to the University of Toronto where he completed his undergraduate medical education. Following his General Surgery training at U of T, he completed his Vascular Surgery training at McGill University. Leonard began his clinical practice at the University of Calgary in 2004. Shortly after starting he became the Vascular Surgery Program Director, which was a significant challenge as the Royal College was in the process of withdrawing certification of the training program. Leonard was able to retain this certification with a determined effort.

Leonard's research interests were in the development of in vivo fenestrated grafts that could be used off-the-shelf to repair complex throacoabdominal and peri renal aortic aneurysms. Additional skills and engineering knowledge were required to achieve this goal. Leonard was recruited to the Division of Vascular Surgery at UHN with an initial two year Masters of Applied Science degree program in the Institute of Biomaterials and Biomechanical Engineering under the supervision of Cristina Amon. He has already succeeded in attracting a University of Toronto Fellowship from the Institute of Biomedical Engineering, a Barbara and Frank Milligan Graduate Fellowship and a NSERC CGS-M Award. With one year of his Master's degree already behind him, his own research project is underway.

His thesis project is titled "Computational fluid dynamics of advanced and unconventional stent graft configurations in endovascular aneurysm repair." He has also focused his engineering education on the other major aspects that pertain to stent-grafts. For the stents, he has focused on solid mechanics and metal fatigue. For the grafts, he has enrolled as a distance graduate student at the North Carolina State University College for studies in the damage tolerance, tearing and crack propagation properties of fabrics. For the biomaterial interaction component, he has focused on the local biologic response to implanted materials. After his M.A.Sc. program, he plans to continue collaborating with the engineering community on the U of T campus. He hopes to leverage his unique position as a vascular surgeon with formal graduate engineering education to translate novel medical device designs and engineering to clinical application.

Leonard and his wife Mira have a busy home life with three young children, Kaitlyn (4), Megan (2) and Abigail (3 months). The Division of Vascular Surgery is pleased to welcome Dr. Tse and his family to the Department of Surgery at the University of Toronto.

Thomas Lindsay
Professor and Chair, Division of Vascular Surgery

"I can't sleep. I think I'll get up and solve all my problems."

10,000 Hours or Ten Years to Expert Performance in Surgery

Martin McKneally

In the Chairman's column, Richard Reznick contrasts the extensive time requirement for development of expertise recounted by Malcolm Gladwell in his best-selling book *Outliers* with the current restrictions on the hours of training prescribed for surgical residents in Europe and North America. In his provocative and articulate style, Gladwell explicates the remarkable research of K. Anders Ericsson, A.C. Lehmann and their colleagues at the Max Planck Institute for Human Development in Berlin. [1] These authors studied musicians at the elite Berlin School of Music, as well as typists, professional athletes, chess champions and other experts. 10,000 hours of deliberate practice was critical for taking musicians to a level of expertise that enabled them to play in a professional orchestra on the concert stage, or for athletes to compete at a professional level.

Deliberate practice was defined as skillful deconstruction, critical analysis, and reflective repetitive practice with expert feedback from coaches or from disciplined self-study.

Professionals engage in *"deliberate practice, perfecting components of performance analytically with multiple repetitions and improvements"*. Tiger Woods works on perfecting defined components of his golf swing. Michael Phelps tests and develops minor changes in his strokes or kicks to improve his performance in the pool. Simply hitting balls or swimming laps is not deliberate practice. Coaching and feedback are an important component; they should be consistent and based on expert technical knowledge.

The analogy to surgical training is tempting to draw. The development of fast twitch fibres and recruiting of muscle memory to choreograph digital and instrumental movements fits well. All analogies limp, and the limp occurs at the point where the similarity breaks down. Surgeons in training don't get much deliberate practice, though they get a lot of surgical work. Ericsson: "*Let us briefly illustrate the differences between work and deliberate practice. During a 3-hr baseball game, a batter may get 5-15 pitches [perhaps one or two relevant to a particular weakness], whereas during optimal practice of the same duration, a batter working with a dedicated pitcher has several hundred batting opportunities, where his weakness can be systematically explored."* The potential contribution of the simulation lab springs to mind.

In a thoughtful recent editorial in the *Canadian Medical Association Journal*, British Columbia neurosurgeon David A. Omahen dissects the analogy further. [2] He calculates that the 10,000 hour mark is attained in neurosurgery residency in about 6.9 years. He draws attention to the apparent coincidence that most neurosurgery residencies are six years long, with many residents electing to take one extra year of fellowship training. He questions how much of the 10,000 hour experience qualifies as deliberate practice. *"The time spent by a resident watching an operation from the sidelines, or admitting the fifth 'weak and dizzy' patient at 4am probably doesn't fall into the category of deliberate practice!"* Omahen also underlines Ericsson's finding that high level violinists took naps during the day and got a statistically significant greater amount of sleep than those who wound up as violin teachers rather than concert performers. He closes on an optimistic note – that effective teachers, perhaps those with ten years or 10,000 hours of deliberate practice at teaching, can have a powerful and lifelong impact on learners *"by placing information in a meaningful context, creating situations that facilitate deliberate practice and providing immediate valid feedback"*.

In defense of the value of residents' work, we can reflect on Gladwell's interesting observation that prodigies with great technical skill in music often do not develop into mature concert musicians unless they develop the social and other less technical components of mature performance. This may be used as part of the justification for the diverse tasks residents perform outside the operating room. Many of these experiences teach surgeons needed social skills and help them develop mature judgement as their decisions are reviewed by senior colleagues, experienced nurses and thoughtful patients.

We are fortunate to have analytic educational scholars in our department like Glenn Regehr, Richard Reznick and their colleagues who continue and extend the analytic work of Ericsson. Studying timing, errors, and instrument movement in the laboratory, they have demonstrated that improvements developed during deliberate practice significantly transfer into effective surgical treatment of living patients. [3, 4]

Martin McKneally

1. Ericsson KA, Lehmann AC. Expert and exceptional performance: evidence of maximal adaptation to task constraints. *Annu Rev Psychol* 1996;47:273-305.
2. Omahen DA. The 10,000-hour rule and residency training. *CMAJ* June 9, 2009;180(12):1272.
3. Mylopolous R, Regehr G. Cognitive metaphors of expertise and knowledge: prospects and limitations for medical education. *Med Educ* 2007;41:1159-65.
4. Park J, MacRae H, Musselman LJ, Rossos P, Hamstra SJ, Wolam S, Reznick RK. Randomised controlled trial of virtual reality simulator training: transfer to live patients. *Am J Surg* 2007;194(2):205-11.

FAMILY AND ALUMNI NEWS

Ray Heimbecker

Raymond Heimbecker has been elected one of the University of Saskatchewan's 100 Alumni of Influence. A Canadian cardiovascular surgeon, Dr. Heimbecker created medical history when he performed the world's first complete heart valve transplant in 1962 and Canada's first modern heart transplant in 1981. After receiving his Bachelor of Arts degree from the U of S, he went on to earn his Doctor of Medicine from the University of Toronto in 1947 where he joined the University's Department of Surgery in 1955. A consultant, professor, and pre eminent surgeon, he was made an Officer of the Order of Canada in 1997 for being at the forefront of his specialty.

Anika

Mary-Anne Aarts and her family Mateusz, Xavier and Theo are happy to announce the birth of baby girl Anika. She was born at 12:30 in the afternoon, July 25th, healthy and a hefty 7 lbs despite arriving a month early. We are thankful to our friends and family who helped us get off Christian Island, to the police who did not stop us enroute on the 400 south, and for all the excellent care we received at Mount Sinai hospital.

Carol-anne Moulton and Daryl Cropley are delighted to announce the birth of their new baby boy Chase Edward on July 27th. We welcome Chase and wish him a great, happy and adventure-filled life. "Every child begins the world again." – Henry David Thoreau

Chase Edward

HONOURS / AWARDS / ACCOMPLISHMENTS

Najma Ahmed (GenSurg) received the Canadian Association of General Surgeons' research award for her study "Crisis in the General Surgery Work Force: Identifying Barriers to Career Satisfaction and Opportunities to Manage Attrition among Residents and Practicing General Surgeons".

Paul Binhammer (PlasSurg) received the Distinguished Education Award for his outstanding contribution to Surgical Skills Education.

Gail Darling (ThorSurg) won a Wightman-Berris Academy undergraduate teaching award.

Michael Fehlings (NeurSurg) has been appointed to the Editorial Board of the *American Journal of Neuroprotection and Neuroregeneration.*

Christian Finley (ThorSurg) won the Best Clinical Research Paper Award presented at the 5th Annual Pearson Day held on June 5, 2009.

Kathryn Howe (NeurSurg) received the Sopman Humanitarian award.

Eric Massicotte (NeurSurg) won a Wightman-Berris Academy postgraduate teaching award.

Andrew Pierre (ThorSurg) won 2 awards: 1) The Robert J. Ginsberg award for Excellence in Postgraduate Teaching 2008-09, and 2) the Gail E. Darling Award for Excellence in Undergraduate Teaching 2008-09.

Najib Safieddine (ThorSurg) won the F. Griffith Pearson Award for Best Resident/Fellow Teacher 2008-09.

Emil Schemitsch (OrthSurg) was chosen the Canadian Orthopaedic Association's second president-elect. This is the most important national leadership position in Orthopaedics, as the second president elect he will become the COA president in three year's time.

Julian Spears (NeurSurg) is this year's recipient of the Donald J. Currie Undergraduate Teaching Award which recognizes someone who spends time with students, stimulates their curiosity in the field and serves as a role model.

Jim Rutka (NeurSurg) was awarded one of six grants from the Brain Tumour Foundation of Canada for a Research project examining the possibility of nanoparticle delivery across the blood:brain barrier.

Helena Taylor (PlasSurg) is one of four recipients of the 2009 Student Humanitarian Award given by the Sickkids Foundation for outstanding service and work in areas beyond what is expected during her fellowship at the Hospital for Sick Children.

Shobhan Vachhrajani (NeurSurg) has been appointed the 2009-2010 National Neurosurgery Resident Representative to the CNSF and CNSS.

Karen Wong (PlasSurg) won the Woodhouse Award for best clinical paper at the Canadian Society of Plastic Surgery meeting in Kelowna, BC.

Jonathan Yeung (ThorSurg) won the Best Basic Science Research Paper Award at the 5th Annual Pearson Day held on June 5, 2009.

GRANTS / FELLOWSHIPS

David Cadotte (NeurSurg) was awarded a 2009-10 CNS/Synthes Spine Fellowship.

David was also awarded a two-year fellowship from the Ontario Neurotrauma Foundation for his project entitled "Functional magnetic resonance imaging evaluation of the injured human spinal cord: An assessment of recovery and functional plasticity".

Tatiana Cypel (PlasSurg) received the 2009 ASCFS Komedyplast Research Grant for her study entitled "In vitro assessment of osteoblast behaviour in infants with craniosynostosis".

Amr ElMaraghy (OrthSurg) was awarded an unrestricted research grant of $26,000 from NuCap Medical Inc. for his study evaluating the efficacy of proprioceptive taping versus NSAIDs in the management of shoulder pain and dysfunction.

Michael Fehlings (NeurSurg) was awarded two years of funding from the Ministry of Health and Long-Term Care to support his Phase III Innovation Fund proposal entitled "The University of Toronto Spine Collaborative (UT-SpineLINK)".

Michael Fehlings (NeurSurg), **Eric Massicotte** (NeurSurg) **Y.R. Rampersaud** (OrthSurg) and **Stephen Lewis** (OrthSurg) of the Toronto Western Hospital / University of Toronto received a 2-year AOSpine North America Fellowship Program Award.

Howard Ginsberg (NeurSurg) received an Ontario Research Commercialization Program grant from the Ministry of Research and Innovation for development of a novel spinal fusion device.

Giuseppe Papia (VascSurg) received a $20,000 Patient Safety Scholarship through the Centre for Health Services Sciences (CHSS) at Sunnybrook.

The deadline for the Fall 2009 Surgery Newsletter is October 30, 2009. All members of the Department are invited to submit news items, articles, pictures, ideas or announcements. You may reach us by:

voice mail: **416-946-8084, fax: 416-978-1911 or**
e-mail: **julie.roorda@utoronto.ca**.

Please provide your name and telephone number so that we may contact you if we have any questions.

The Department of Surgery
Banting Institute
100 College Street
Room 311
Toronto, Ontario, Canada
M5G 1L5

Editor: Martin McKneally
Phone: 416-946-8084
Pager: 416-790-8372
Fax: 416-978-1911
E-Mail: martin.mckneally@utoronto.ca

Assistant Editor: Julie Roorda
Phone: 416-946-8084
Fax: 416-978-1911
E-Mail: julie.roorda@utoronto.ca

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