

THE **surgical** spotlight



ON ALUMNI, FACULTY, RESIDENTS & FRIENDS
OF THE DEPARTMENT OF SURGERY WINTER 2005-2006

David Latter Heads Task Force on Clinical Fellowship



(left to right) Pawan Kumar, Fuad Moussa, David Latter and Richard Reznick at the Hart House reception for fellows in August

“Many highly specialized skills simply cannot be acquired in the normal course of residency training. Fellowships provide the additional training required to produce highly specialized surgeons.”

David Latter

There are over two hundred clinical surgery fellows at the University of Toronto. The exact number is unknown because these fellowships have not been part of any formal structure until now. Richard Reznick recently appointed a task force to change this. Chaired by David Latter, the task force includes representatives from every surgical division and from every teaching hospital, a fellow, and a resident.

The Department’s first priority continues to be residency education. Educating fellows cannot occur at the expense of residents. When fellows and residents compete for operating time or particular cases, the impact

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Knowledge for the sake of knowledge: Does it have a role in surgical research?



Richard Reznick

A few weeks ago Ben Alman and I were talking about the future direction of research in our Department. Our discussion centered on the tension of doing research that was focused on direct clinical applicability, versus research that was addressing a fundamental biological question, wherein the clinical focus was not obvious. It can be argued that as surgeons, we have a natural propensity for “the clinical” and view our research potential particularly aligned with clinically relevant research. However, as we continue to invest more heavily in research in the form of our surgeon scientist programs, the recruitment of faculty with graduate degrees and the alignment of our faculty with research institutes, it begs the question as to the value of orienting some of our research to the understanding the mechanisms behind observed effects, i.e. basic research.

Ben of course, being highly reflective and knowledgeable, sent me an article that I would like to share with you. It addresses the question of this dichotomy, basic versus “applied” research in a marvelous way. It was written almost thirty years ago and published in *Science* April 9th, 1976.¹ The article, written by Julius Comroe from UCSF and Robert Dripps from the University of Pennsylvania, is the product of many years of research on this topic and was an attempt to bring science, rather than anecdote, to the political decision making process of how government should be directing research dollars.

Comroe and Dripps became interested in this topic a full decade before it was published. Lyndon Johnson had just made a very public statement that put the research community on notice, that funding directions might change. He was responding to a Department of Defense publication that investigated the origin of the development of 20 important military weapons. That study had concluded that the contributions of university research was minimal; that scientists contributed most effectively when their effort was mission-oriented; and that the lag between discovery and utility was shortest when the sponsor directed the research, not the scientist. In Johnson’s words, “A great deal of basic research has been done... but I think the time has come to

zero in on the targets by trying to get our knowledge fully applied... We must make sure that no lifesaving discovery is locked up in the laboratory.”

The authors embarked upon a multi-year scientific study to analyze the relative contributions of basic research compared to clinically applied research to landmark discoveries. They chose the field of cardiovascular and pulmonary disease, and directed their attention to *clinical advances* that had been directly responsible for diagnosing, preventing or curing cardiovascular or pulmonary diseases. They first, through elaborate consultation with over 80 specialists, identified the ten top clinical discoveries from the 40’s to the early 70’s. The top ten were: open heart surgery; vascular surgery; drug treatment of hypertension; medical treatment of coronary insufficiency; cardiac resuscitation; oral diuretics for heart failure and hypertension; the development of intensive care units; prevention of polio; antibiotics to treat rheumatic fever, tuberculosis and pneumonias and new diagnostic methods such as the ECG.

The authors then, through the help of 140 consultants, identified the essential bodies of knowledge required for these developments. So for example, the list for the discovery of open-heart surgery included knowledge enablers like ventilation of an open thorax, selective angiography, anticoagulants, intraoperative management of heart failure and a list of 21 others. In total, the authors identified 137 elements of knowledge that were essential to the discovery of the top 10 clinical advances.

To uncover the origins of this knowledge, potentially accumulated over centuries, the authors examined over 4000 articles and pared that list down to 529 essential or key articles earmarked for extensive study. The authors underscore the complexity of scientific discovery and argue that almost all of these “top ten” discoveries were the product of many individuals’ work on many dimensions of the topic, as opposed to the one person-one discovery myth. From these lists they created chronological tables of studies that enabled a particular clinical discovery, events that often dated back over centuries. For example, the discovery of the ECG was contributed to first in 1660 by the Dutch discovery of the “first electricity machine”.

The authors were rigid in their criteria for what constituted an original contributing article. It had to have a direct important effect on the direction of subsequent research, it had to report new data or a new hypothesis, it had to be demonstrably responsible for a step forward in the discovery of one of the ten clinical advances, and it had to include a description of the final step -- the clinical advance. The authors also took great pains, through multiple triangulations, to mitigate bias in the selection of the key articles.

Then, the final question: what kind of research

lead to these articles that underpinned these ten magnificent discoveries? To avoid uncertainty, the authors were rigid and dichotomous. They used only two terms: (1) clinically oriented research and (2) research that was not clinically oriented. They were broad in their definition of "clinically oriented". For example, a study was deemed clinically oriented, even if it was conducted on animals, tissues, cells or subcellular, if the author mentions, even briefly, an interest in the diagnosis, treatment or prevention of a clinical disorder.

The authors found that, depending on the clinical discovery, the range of proportion of articles that were not clinically oriented was 8-53 %. Cumulatively, 41% of all work judged to be essential or crucial for later clinical advances was not clinically oriented at the time of research; 41% of investigators, when they did their work expressed no interest in a clinical problem -- their goal was knowledge for the sake of knowledge.

Finally the authors further classified the 529 articles into six categories that were more granular with respect to basic versus non-basic research. They found that 36% percent of studies were basic and not clinically oriented; a further 25% were basic but clinically oriented; 21 % were not basic at all; 11% were clinically related developmental work, 4% were research related developmental work and 1.8% were review and synthesis.

This article, even though it is thirty years old, should provide us with evidence to support our continuing focus on biomedical science. Although it is becoming increasingly difficult for a surgeon to make seminal contributions to fundamental scientific discovery, this Department is blessed with many superb examples of success in this realm. Our University's mission is to be amongst the best publicly funded research-intensive institutions in the world.² It is vital that we continue to play an integral part in that mission. And of course, we already do. Our \$47,000,000 of funding accounts for approximately 10% of that of the entire medical complex, both campus based and research institutes. Our thirty-five residents involved in graduate education are second to none, likely in North America. Celebrating our research focus, and continuing to invest in fundamental as well as clinically oriented research, is an immutable platform for this Department, and a formula for continuing future success.

Richard K. Reznick

R.S. McLaughlin Professor and Chair

1. Comroe, JH, Dripps RD. Scientific basis for support of biomedical science. *Science* 1976;192:105-111.
2. http://www.provost.utoronto.ca/userfiles/page_attachments/library/6/2555_781601_steppingUp.pdf

ANNOUNCEMENT

"Congratulations and Brava!" to Cathy Whiteside who was selected to serve as the new Dean, Faculty of Medicine



I am pleased to announce that the Academic Board has approved the appointment of Professor Catharine Whiteside as Dean, Faculty of Medicine, effective January 1, 2006 and ending June 30, 2011.

Professor Vivek Goel
Vice-President and Provost

For a description of her outstanding accomplishments and background please review our profile on Professor Whiteside in our Fall issue of the Surgical Spotlight on our website at: www.surg.med.utoronto.ca.

M.M.



Uosife AlFahd, Emil Schemitsch, Andrew Crosby, Christopher Robertson, Christian Veillette and Daniel Garneau (left to right)

has been negative. But a properly constructed clinical fellowship, with the appropriate number of fellows on service, can enhance residency education. Call schedules are easier to sort out, and with better management it may be possible to move fellows to services with greater need.

The task force's first step has been to define a clinical fellowship as an opportunity to acquire more specialized expertise that would not normally be acquired during residency. This process varies among divisions; in some divisions it is appropriate for fellows to participate in the same rotations and roles as residents, but in others fellows are here for more specific training by one supervisor. In both cases fellows have educational needs. This role will be distinguished from that of a Clinical Associate who is here to fill service needs. Currently, fellows who find themselves filling service needs and not receiving the expected education have no recourse. The task force will enumerate goals and objectives for each position so that everyone understands what is supposed to happen. This will benefit both parties, since it will ensure fellowship positions are filled by the appropriate people.

The task force will also establish guidelines for work contracts. Currently, fellowship positions are private contracts between individual fellows and their supervisors. Some receive a salary from their country of origin, some bill assistants' fees, some bill surgeons' fees for emergency operations. It is possible that some are not receiving a salary at all. This will be a difficult issue to address if disallowing unpaid fellowships eliminates opportunities for surgeons from other parts of the world, for whom the education is well worth the hours

worked. The guidelines will also establish standards for disciplinary processes, such as probation, suspension and dismissal for fellows. These will be similar to those currently used for residents. The guidelines will not make it difficult to do what is right, but they will make it fair and include a process for appeal.

Currently, fellows receive a certificate of attendance when their terms are complete, with no indication or guarantee that they have met any standards. There will now be an evaluation process; someone in the Department will fill out a report and rate their skills. Fellows will also have the opportunity to evaluate their staff and their experience. This protects all involved and enhances the value of the credential.

A University of Toronto credential is prestigious, attracting fellows from all over the world. Cardiac surgery, for example, has fellows from Israel, Peru and Japan. Few other centres can offer the highly specialized training fellows receive here, e.g. in congenital heart surgery, orthopaedic and neurosurgery. When these surgeons return to their home countries, their impact on patient care and education is building the reputation of the University. Canada is becoming the destination of choice for advanced training in surgery and the University of Toronto is the premiere Canadian institution. This is particularly the case since 9/11. Many fellows from Middle Eastern and developing countries no longer have access to American schools. We reach out to the world with our fellowships, and Canadians benefit from the work fellows do here. Many divisions have adopted an entrepreneurial spirit for going out and finding fellows to help. David says, "We couldn't run our divisions without them."



David and Sharon Latter with children Michael, Sarah and Scott

David grew up in Montreal where he received his training. He was one of the last to train as a Cardio-Vascular-Thoracic surgeon, a specialty which no longer exists. After a transplantation fellowship at Stanford he returned to head the heart transplant program at the Royal Victoria Hospital, where he was already well known -- his older sister Jane had been head nurse in cardiac surgery for many years. He misses doing transplants, though he does not miss being up all night. David is married with two sons and one daughter, ages 17, 15 and 11, which makes for a very busy home life. His wife Sharon is a currently retired chemical engineer, now a homemaker, and both David and Sharon are avid golfers. David coaches his son's minor midget hockey team. They have a summer cottage in Quebec, and maintain close ties with extended family in both Toronto and Montreal.

M.M.

A Fellow's Perspective



Joseph Neimat

Joseph Neimat was recently appointed to represent fellows on the task force. He feels that the development of a more formal educational process with minimum standards is a very good idea for organizing the fellowship phase of our training programs. He is particularly enthusiastic about the fellow-

ship he currently holds working with Andres Lozano on movement disorders. His research involves studying awake patients who are undergoing implantation of electrodes for control of movement disorders, epilepsy and depression. Dr. Lozano is currently stimulating the CG25 zone of the rostral cingulate gyrus for depression. This is a unique, first-in-the-world innovation conducted at the Toronto Western Hospital, based on background fundamental research by neurologist Helen Mayburg. In Joseph's research program, patients are stimulated by visual images, which include some with emotional charge. Implanted electrodes in the sub-thalamic nucleus, the target for stimulation in Parkinson's disease, may record

electrical responses that are uniquely related to emotions.

Following implantation of electrodes, the patients are studied on the ward in the interval prior to installation of the battery unit for their stimulator. Most are Parkinson's patients who are happy and hopeful to be in the program. They tend to be motivated to help other patients and are willing research participants.

Joseph feels that the Canadian system is more favourable to the kind of fellowship he is doing because of the centralization of all Ontario patients with motor disorders to the unit at TWH. He's also very complimentary about the intellectual stimulation and collaboration of physiologists and neurologists in the program. Joseph grew up in Washington, was educated at Dartmouth College in New Hampshire, Duke Medical School and Massachusetts General Hospital for neurosurgery residency and neurobiology research training. He describes his current situation as ideal for pursuing his focused interest in functional neurosurgery and feels that the service at TWH is the best place in the world for preparing him to be a specialist who can lead a movement disorders unit. He will assume a position on the neurosurgical faculty at Vanderbilt University following his eighteen-month fellowship.

M.M.

A Resident's Perspective

Sam Bederman, the resident representative on the fellowship task force feels that standardization of fellowships will improve academic performance (clinical, teaching, research), and will be of benefit in dealing with issues like finances, insurance and disciplinary action. Formal acknowledgement from the Department would also help to develop a sense of community. However, maintaining some diversity in the fellowship program is necessary to accommodate different subspecialties and ensure their overall success.



Samuel Bederman

A formal evaluation process for fellowships will help to prevent cases like that of Jonathan Odum, whose inad-

equate training and evaluation in a Harvard hospital led to a post fellowship appointment to perform congenital heart surgery in Winnipeg. This led to a series of operative deaths that shocked the nation and disgraced the profession. This tragic case is a serious example of poor alignment of criteria, certification, objectives, evaluation and responsible reporting, and the kind of problem the task force needs to solve.

The goal of the task force is to find criteria to define a University of Toronto Department of Surgery fellowship. The diversity of fellowships will make standardization difficult. For example, in orthopaedic surgery, fellows have done all of their general training. They often benefit more from observing the decision-making process than from acquiring technical skills. One of the advantages of a fellowship is that a surgeon can have the opportunity to run decisions by more senior staff. In other specialties, where the focus is on improving technical skills, residents find themselves competing with fellows for cases, and this can lead to friction and disappointment.

Sam believes the objectives of the task force are good, but says that trying to fit everyone into the same category will be difficult and not practical – the process will work if it uses positive reinforcement to promote a fellowship community, standards for evaluation, and guidelines for work conditions, insurance, and remuneration.

Sam grew up in Toronto and did all his previous training here. He has two children ages 3 and 1. He will begin a PhD next year in clinical epidemiology with Jim Wright and go on to a spine fellowship. He feels the University of Toronto orthopaedic surgery residency, with its distinctive apprentice and mentor model of teaching is a “fantastic learning experience” that is enhanced by the presence of fellows.

M.M.



Donald Ingber: Mechanobiology and Diseases of Mechanotransduction



Mechanotransduction Scholars Donald Ingber and Robert Salter

The 2005 Lou Siminovitch Lecture was given at surgical grand rounds at the Hospital for Sick Children by Don Ingber, a physician and cell biologist researcher in the departments of Surgery and Pathology at

Harvard Medical School and Children's Hospital of Boston. Ingber has developed a conceptual framework of **tensegrity** that explains much of how living cells and tissues are constructed, as well as how mechanical forces influence tissue growth. Building on studies of capillary budding and angiogenesis from his doctoral studies in Judah Folkman's lab, Ingber has shown that mitotic and gene activation signals associated with budding and growth are activated by tension within the tissues and within cells.

Every cell contains actomyosin fibers that contract and pull dynamically on their adhesions to extracellular matrix and to other cells. Cells that pull against matrix and stretch proliferate, whereas cells that are preventing from spreading fully shut off growth and turn on differentiation, expressing specialized functions characteristic of their lineage. Cells with minimal attachment to surrounding tissues that fully retract and round, switch on apoptosis and undergo programmed cell death. This mechanotransduction from cell attachment points to extracellular matrix is a major determinant of cell and tissue growth. Within the cell the cytoskeleton is pulled and shaped by fibers and filaments that serve as the elastic components of tensegrity, just as the bony skeleton is held together and mechanically mobilized by elastic contractile muscles.

Practical applications of this theory include acceleration of wound healing by applying suction to a porous sponge within a wound to stretch the healing cells on the microscale without producing dehiscence on the macroscale. The direction of cell motility results from

contraction of the filaments within the cell that produce traction on fixed points where the cell anchors to the matrix within surrounding tissues. Pulling on cell matrix receptors, called integrins, has profound effects on the biochemistry below the cell surface, activating various signal transduction pathways and stretch-sensitive calcium channels that, in turn, control gene transcription. The specialized anchoring sites that connect integrins to the cytoskeleton, known as focal adhesions, function as nanoscale mechanical-chemical machines. While tension on extracellular matrix and integrins activates the growth cycle, compression inhibits it. A striking example of this is the compression of the fetal lung by herniated bowel in the thorax in Bochdalek hernias: inhibition of the stretch effect on lung buds results in hypoplasia of the lung. Growth factors work only if the cell is stretched and stopping the stretching force shuts down cell growth and activation the way bedrest shuts down bone metabolism and causes loss of muscle bulk and strength. Ingber and his colleagues have developed a complex system of nanotechnology for manipulating cells in ways that direct their development. They are not simply directed from the outside by growth factors, but can be called on by motion and changes in the mechanics of their environment to differentiate into particular lineages that are useful to the organism. Cells make these cell-fate decisions at the whole cell level, and not by activation of any single 'instructive' signaling pathway, as demonstrated in genemicroarray experiments.

Dr. Bob Salter's work in chronic passive motion at fracture sites through joints is a striking macro example of this redirection of differentiation as osteoblasts dedifferentiate into chondroblasts to restore the joint surface, if and only if the fracture is subjected to stretch forces through passive motion. A nearby picture illustrates these two surgeon scientists and students of the effect of stretch forces, each contributing to our understanding of growth and healing, one at the nano level and one at the macro level. Dr. Ingber's presentation stretched and stimulated everyone present at one of our most remarkable and memorable university rounds.

Note: Geneticist Lou Siminovitch brought our university Microbiology and Genetics department, then the Hospital for Sick Children Genetics Program, and subsequently the Mt. Sinai Hospital Lunenfeld Institute to world leadership.

M.M.

Surgical Skills Lab Expansion

The Surgical Skills Lab at Mt. Sinai Hospital is expanding to more than double the current four thousand square feet dedicated to training students, residents and practicing surgeons. One major area of program expansion in the past year has been into the undergraduate curriculum. Third year clinical clerks on surgery now spend an intensive week in an executive lecture course which occupies the first of their six weeks on the service. During that week they spend approximately eight hours in the lab developing their skills in knot tying, suturing, catheterization, and sterile technique. Approximately 150 second year students participated in knot-tying and suturing exercises during the past year.

The core curriculum for PGY1s in all of the surgical disciplines as well as ENT devotes two hours each Tuesday developing basic surgical skills. This curriculum covers such basics as catheterization, chest tube placement,





and airway management as well as more advanced skills including tissue handling, dissection skills, skin flaps, control of hemorrhage and laparoscopic/arthroscopic skills. The teaching program, conducted by a talented and committed team of faculty surgeons and nurses emphasizes the same tissue-handling and repair fundamentals that are common to all surgical specialties.

The residents are required to pass a rigorous knot-tying examination and an Objective Structured Assessment of Technical Skills involving 8 stations. Performance on the OSATS examination correlates with subsequent clinical assessments of performance in the operating room.¹ Obstetrics and Gynaecology residents have a similar program on Thursday mornings with more emphasis on laparoscopic techniques. Second year residents participate in specialty division-specific events using the Skills Lab and the animal surgery labs at HSC and TGH. For example, urologists do adrenalectomies and nephrectomies, ortho participates in MIS spine surgery, arthroscopy, pelvis and hip courses and ENT practices with sessions on sinoscopy, temporal bone and skull base approaches.

While developing their skills, the residents very much enjoy working with peers. The hierarchical structure of most surgical services gives them little opportunity to socialize with residents at their same level. Second year residents are very appreciative of the new emphasis on division-specific training which enables them to bring well-honed skills to the time-pressured clinical venue of their specialties.

The new expansion is needed because the demand for training in this type of environment is constantly increasing. The new facility will have a conference room

and a virtual operating room for team training and crisis management. Expanded research facilities will also be included. The Tyco Corporation, which manufactures, distributes and services medical devices worldwide, has been very generous in providing an operating budget, sutures and disposables for the centre. The Royal Bank supports the core curriculum through the Mt. Sinai Hospital Foundation. The Zimmer Corporation, manufacturer of orthopaedic products, is another generous sponsor. Industry courses provide an income stream to help sponsor other activities of the lab.

Continuing Medical Education for academic and community surgeons is carried out on most weekends, e.g. industry sponsored orthopaedic courses, laparoscopic colectomy courses sponsored by specialty societies, and University of Toronto sponsored CME events. Frozen cadavers provided by the University of Toronto anatomy department, a subdivision of the Department of Surgery, are excellent for procedures requiring a pneumoperitoneum. Continuing Medical Education programs provided through the Surgical Skills Centre include videoconferencing and live telesurgery of procedures, e.g. Lloyd Smith performing a hernia repair or Alan Gross a hip replacement. After watching the procedures live, the participants can then practice them immediately in the lab.

Four fulltime, highly skilled technical staff support the centre. Lisa Satterthwaite heads the team. She was a highly respected operating room nurse at TGH and still occasionally works there to keep in touch with new developments in the clinical world and to look at opportunities for training OR personnel in the skills lab. Dezan Rego and Marina Romanova, were operating room technicians at Mount Sinai Hospital and St. Michael's Hospital respectively. Shunne Leung, who formerly worked in the Central Processing Department at TGH, manages all technical and computer equipment. Adam Dubrowski is the research scientist for the centre. He is a PhD kinesiologist who trained at the University of Waterloo. He studies acquisition and transfer of skills, applying the principles of kinesiology used in athletics, rehabilitation and training to surgery. He emphasizes the importance of process training to generate motor programs in the mind and body for skill development and retention. He performs computer-based analysis of flow in surgery using magnetic markers on the hands. This



Helen MacRae and Brent Graham with children Ross and Lauren

can eventually be used for testing and comparison across time and institutions. He hopes to develop a computerized video tutor and testing program that would be available 24 hours/day, seven days a week in the lab for self-training without a human tutor. More recently, Adam has been working with the Canadian Space Agency on techniques of medical and surgical care at zero gravity in the parabolic flight exercises in Bordeaux, France.

Helen MacRae spends 25% of her time as Director of the Skills Centre. She enjoys being on the cutting edge of surgical education. Helen devotes the rest of her time to clinical practice, focused on laparoscopic colorectal surgery. Her research is in the field of surgical education, focused on skill acquisition and the development of surgical judgement. She and her husband, hand surgeon Brent Graham, have two children, Lauren, 9, and Ross, 7. Helen grew up in Edmonton where she received her medical and surgical training, and came to Toronto in 1994 for a colorectal fellowship. She completed a Masters in Education program at Southern Illinois University.

M.M.

1 Reznick R, Regehr G, MacRae H, et al. Testing technical skill via an innovative "Bench Station" examination. *The American Journal of Surgery*. March 1997;173:226-230.

ANNOUNCEMENT

WORKSHOPS - FALL 2005 AND WINTER 2006

The Centre for Faculty Development (CDF) is pleased to announce that the Fall 2005/ Winter 2006 workshop registration schedule is now posted online at the following URL address: <http://www.cfd.med.utoronto.ca/workshops.htm>.

These workshops are devoted to the enhancement of teaching skills and are offered throughout the academic year. Each workshop is free to faculty in the Faculty of Medicine. Registration is required.

If you are not a faculty member, but are active in the teaching of health professionals at the University of Toronto, please feel free to register for workshops. Your name will be placed on the waiting list. Within three weeks of the course date you will be notified if there is space available. If at that time you are still interested in attending, you will be fully registered for the session. A \$50 registration will apply to all non Faculty of Medicine participants.

Workshops meet the accreditation criteria of the College of Family Physicians of Canada and have been accredited for 3.5 MAINPRO-M1 credits per each workshop (unless otherwise noted). Workshops have also been approved as an Accredited Group Learning Activity under Section 1 of the Framework of CPD options for the Maintenance of Certification Program of the Royal College of Physicians and Surgeons of Canada - 3.5 hours per workshop (unless otherwise noted).

For questions/comments please contact: Dawn Carpenter at: carpenterd@smh.toronto.on.ca or by telephone at: 416-864-6060 Ext. 6546.

NEW STAFF

The Department of Surgery warmly welcomes Nicole Woods who has joined our Department.



Nicole Woods

Education Scientist / Director, Education Evaluation

Nikki Woods, as new Education Scientist at the Wilson Centre for Research in Education, is a cognitive psychologist with a research interest in using basic science knowledge to improve clinical decision-making. This is a fascinating field to explore in a department that trains surgeons to make critical, often life altering decisions for and about patients as a major part of their professional activity. Nikki's PhD thesis in experimental psychology at McMaster examined the role of basic science knowledge in learning clinical decision making. As the nearby examples illustrate, there are critical factors that precondition decision making, eg. too much vs. frugal, edited information. As Director, Education Evaluation, Nikki will focus on further developing the Department of Surgery evaluations of faculty, residents and undergraduate medical students.

Nikki grew up in the Rexdale neighbourhood of Toronto. She knew she wanted to be a psychologist "since the third grade, even though I misspelled it!" Her large supportive family came to Canada from Trinidad. She likes the unique teaching challenges of surgery -- the requirement for action, and for teaching how to do it, in addition to content. Her hobbies are music and African folk ensemble dancing. She runs a mentorship and tutoring program in Hamilton for immigrant minority elementary students, who are linked with university students to help them up the slopes of social knowledge and skill toward university education. "The first ones are entering university this year!"

M.M.

(Marine Paul Van Riper headed the "Red Team"-- the enemy -- in U.S. military war games in 2000. Using the intuition and frugal reasoning of a skilled warrior, he sank 16 of their ships before the US navy's Blue Team knew what hit them and their computers.)

"[I]f you are given too many choices, if you are forced to consider much more than your unconscious is comfortable with, you get paralyzed. Snap judgements can be made in a snap because they are frugal, and if we want to protect our snap judgements, we have to take steps to protect that frugality.

This is precisely what Van Riper understood with Red Team. He and his staff did their analysis. But they did it first, before the battle started. Once hostilities began, Van Riper was careful not to overload his team with irrelevant information. Meetings were brief. Communication between headquarters and the commanders in the field was limited. He wanted to create an environment where rapid cognition was possible. Blue Team, meanwhile, was gorging on information. They had a database, they boasted, with forty thousand separate entries in it. In front of them was the CROP -- a huge screen showing the field of combat in real time. Experts from every conceivable corner of the U.S. government were at their service. They were seamlessly connected to the commanders of the four military services in a state-of-the-art interface. They were the beneficiaries of a rigorous ongoing series of analyses about what their opponent's next moves might be.

But once the shooting started, all of that information became a burden."

Malcolm Gladwell, *Blink*, New York: Little Brown and Co., 2005, page 143.

"A patient's spouse and a first-year resident watch a master surgeon examine a belly for possible "acute abdomen." To these nonexperts it appears as if the surgeon can actually "see into the belly." The surgeon is not using an algorithm or making use of the results of prospective randomized studies. He or she is watching, feeling, and listening to a wide variety of subtle clues. Using the furrowing of the patient's brow, the narrowing of the eyelids, and the anxiety of the voice as hints, the surgeon must try to separate true peritoneal irritation from gastroenteritis, pneumonia, anxiety, and a myriad of other illness that may present as an acute abdomen."

Charles Abernathy and Robert Hamm, *Surgical Intuition*, Philadelphia: Hanley & Belfus, Inc., 1995, page 3.

Stephen Fremes Wins Lister Prize



Stephen Fremes

Stephen Fremes is a clinical academic surgeon who has conducted research in the operating room throughout his surgical career. His studies led to the Lister Prize, awarded by our department 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”. His studies follow the principles and methods of his research mentor, Division Chairman Richard Weisel. Richard’s motto “get it right in patients” emphasizes the importance of relevant physiological and mechanistic trials that are immediately applicable to the diseased human heart because they are conducted using diseased human hearts rather than animal models.

As a surgeon scientist working in Richard’s lab, Steve studied the use of blood versus crystalloid for cardioplegia in human patients using crisp end points such as enzyme release, coronary sinus oxygen and lactate levels, myocardial biopsies and nuclear ventriculography. The studies were conducted in stable male elective coronary bypass patients. A subsequent study in patients with unstable disease used less invasive techniques to look at factors influencing myocardial infarction. Following completion of his laboratory and clinical training, Steve completed a research fellowship and a clinical fellowship before joining the cardiac surgical staff at Toronto Western Hospital. He moved with Bernie Goldman to open the cardiac surgical unit at Sunnybrook in November 1989. He praised Bernie Goldman’s leadership in creating the environment that enabled Steve’s research-based clinical practice to be so productive.

While working at Sunnybrook in his initial years, Steve collaborated with David Naylor, who had just returned from a Rhodes scholarship studying epidemiology and clinical trials at Oxford. Naylor served as co-investigator and epidemiologist for the warm blood cardioplegia trial, which Steve

helped to coordinate. Naylor’s rigorous standards and clear thinking meshed perfectly with those that Steve had learned. Naylor emphasized the importance of conducting studies that were methodologically rigorous to the point of unassailability. “The trial should be as pertinent to clinical practice at its completion as it is at the outset, and formulated and written in a style that top journals would want to publish.” The Warm Heart Trial was the largest randomized clinical trial in cardiac surgery, accruing 1,750 patients at the time of its completion. It demonstrated significant reduction in enzyme-confirmed perioperative myocardial infarction and low-output syndrome. Subsequently, Steve has studied the reactivity of the radial artery and most recently has published his landmark study of the effectiveness of the radial artery as an arterial conduit for revascularization of the coronary circulation. The study, recently published in the NEJM, was a methodologically rigorous and persuasive demonstration using data from the Radial-Artery Patency Study Group to secure a robust and immediately applicable clinical advance in cardiac surgical practice. Steve has set up a national cardiac surgery research network. He values his experience on the Medical Research Council steering committee and as a grant reviewer – he gained valuable insight from reviewing applications across a wide range of subjects. His advice to grant-writers is: “Learn who your audience of reviewers will be. Don’t write for surgeons, write for scientists. Make the methods bullet-proof, rather than a minor component and make the trial as relevant at the completion as it is at the outset. Emphasize the general health advantages and importance of the conclusion to society.” Steve is currently working on quality assurance in a very practical way, studying intra-operative fluorescence angiography after coronary bypass with Nimesh Desai, and the minimization of preventable complications with Veena Guru.

Steve grew up in North York in a family of doctors and nurses. His wife Jill served as an intensive care unit nurse at Toronto General Hospital. His children Adam, Ben and Jaclyn are all in school. They still get help from their father with their homework, including Adam at McGill (by email). The family enjoys cottage and ski vacations and the friendship of fellow hockey parents. Steve is intensely proud of the University of Toronto’s cardiac surgical training program which is a reference standard of excellence for academic cardiac surgery throughout the world.

M.M.

Peter Dirks Wins George Armstrong-Peters Prize



Peter Dirks

Peter Dirks' research focuses on stem cells in brain tumours. His studies build on the original landmark description by James Till and Ernest McCullough of stem cells as the originating and renewing source of the bone marrow. John Dick subsequently showed that one in ten thousand leukemic cells is a stem cell, and these are the cells that drive the leukemia process. Treating the stem cells rather than the malignant cells that appear on the blood smear is now a major theme in leukemia research. A similar thrust is underway in breast cancer.

Peter's main research questions are focused on whether stem cells are the cells of origin in brain tumours and whether they are the determinants of growth, spread and resistance. His work on stem cells has put him at the leading edge of cancer research around the world. With Sheila Singh, his neurosurgical clinician-scientist co-author, he has described how stem cells renew and support cancer growth. This has opened up a field of research into methods of inhibiting the stem cells rather than the differentiated tumour cells more traditionally recognized by the pathologist and surgeon. Stem cells are present in all twelve of the different types of brain tumours that Peter and his colleagues have studied. They represent a much larger fraction of the cells in highly aggressive tumours like glioblastoma.

With Sheila Singh, Peter showed that brain tumours' stem cells carry the cell marker CD133; they can initiate a tumour when transplanted into mice, whereas cells that lack this marker cannot. The CD133 marker may become a target for brain tumour therapy.

Peter's interest in neurosurgery was stimulated during an elective as a medical student in Charles Tator's clinical service, where he met then chief resident James Rutka. During his residency he completed a PhD as Jim Rutka's first graduate student. His thesis was focused on genes that stop cell growth. During those studies he noticed

that following application of the genetic brakes on tumour cells, growth factors made them resemble normal differentiated brain cells. This led him to consider whether there were primitive cells in the brain tumour, or stem cells, that were capable of undergoing maturation into differentiated tumour cells that have lost the ability to grow. The seed was planted to explore the stem cell connection with brain tumours.

Peter finished his thesis after returning to the clinical service working weekends and evenings, a process he strongly advises against. He was on night call immediately after passing his PhD exam. When he joined the faculty at HSC he spent most of the first year studying, thinking through and planning his unique and independent program of research. He has high praise for the department of Surgery, his Neurosurgery Division and the HSC Research Institute for giving him the time and support to do this. He is especially enthusiastic about the Alternate Funding Plan as a mechanism to enhance an academic career. In addition to his neurosurgery residency at the University of Toronto, Peter spent 6 months studying paediatric neurosurgery in Paris. He was recently named as one of Canada's "Top 40 Under 40". He found this group of people a fascinating collection of dynamic young leaders who made him glad to be a Canadian. (One of them, Marc Kielburger is a 28 year-old Rhodes Scholar and Harvard Graduate who builds schools in developing countries.)

Peter grew up in Montreal and Vancouver in a family of physicians. His father John is our former Dean of Medicine. His mother is an internist and medical educator. He studied chemistry and medicine at Queen's University then came to the University of Toronto for neurosurgery residency. His wife Tara is a radiologist and they have three daughters ages 4, 6 and 8. He has always been active in all team sports, played rugby through his university days. He continues to run and cycle, though his main activity outside of science and medicine these days is his role as a father to three very active children.

The George Armstrong-Peters Prize is awarded to "young investigators who have shown outstanding productivity during their initial period as an independent investigator, evidenced by research publications in peer-reviewed journals, grants held, and students trained".

M.M.

Laparoscopic Colectomy for Cancer

Department of Surgery Clinical Epidemiology Rounds were given on Friday, November 4, 2005 at Sunnybrook by Professor H. Jaap Bonjer. Dr. Bonjer, who had been Chair of Endoscopic Surgery at Erasmus University in Rotterdam, The Netherlands, since 2000, moved to Halifax in 2004, where he is currently Director of Minimally Invasive Surgery and Surgical Leader of the Renal Transplantation Program at Capital Health, and Professor of Surgery at Dalhousie University. His presentation was entitled “New Technology in Surgery: From Litigation to Implementation”.

This lecture discussed the role of clinical epidemiologic research in contributing to new knowledge in surgery. Dr. Bonjer used the example of minimally invasive abdominal surgery to show how health research methods were able to provide information on the effectiveness of new surgical techniques. In tracing the history of laparoscopy from the time when it was a diagnostic modality practiced only by hepatologists and gynecologists, to the present in which minimally invasive surgery has become mainstream surgical treatment, Dr. Bonjer showed how various health research methods, from case reports to randomized controlled trials and meta-analyses, provided the information necessary to make decisions about the value of new surgical techniques.

A highlight of this presentation was Dr. Bonjer’s account of his role as Principal Investigator of the COLOR (COlon cancer Laparoscopic or Open Resection) trial, a European multi-centre randomized controlled trial that randomly assigned 1,248 patients with colon cancer to undergo either laparoscopic assisted or open surgery. The main outcome measure of the clinical trial was 3-year disease-free survival. The main findings of this study were published recently in *Lancet Oncology*, and showed that laparoscopic-assisted and open surgery were similar with respect to disease-free survival.

A lively discussion followed the presentation. Questions from the audience focused on the challenges of assessing innovative surgical technologies, and the role of “expert opinion” and “consensus” in guiding the use of health technologies.

David Urbach
Division of General Surgery

High Impact Publications

Members of our department recently reported on major advances in cancer in two high impact publications.

These studies identified novel mechanisms causing neoplasia, but more importantly, suggest novel therapeutic approaches to improve cancer outcome.

Carol Swallow (General Surgery Mt Sinai Hospital) and Michael Ko (General Surgery Resident and trainee in the Surgeon-Scientist Program) reported on the role of the polo-like kinase PLK4 in regeneration and carcinogenesis in *Nature Genetics* (37; 883-888, 2005). In this work, they studied mice lacking one copy of PLK4. They found that regenerating livers in the mice developed a high rate of chromosomal instability, and exhibited dysregulation of cell cycle control genes. These mice also developed lung and liver at a rate that was fifteen times as high as mice that were not deficient in PLK4. Furthermore, human hepatomas frequently have loss of the PLK4 locus, suggesting a role in human neoplasia.

This work identified a key control mechanism regulating cell cycle and chromosomal stability, which plays an important role in hepatic neoplasia. The data suggests a clue into understanding the genetic predisposition to hepatic cancer, and suggests a pathway that can be targeted for therapy or prevention of development of cancer.

Michael Taylor, Jim Rutka, and Abhijit Guha (Neurosurgery, Hospital for Sick Children and Mount Sinai Hospital), reported in *Cancer Cell* (8:323-335, 2005) that ependymomas are seeded by a population of cancer stem cells that share characteristics with radial glial cells. Importantly, this work found that ependymomas that are clinically heterogeneous share characteristics with the glial cells from the particular region of the central nervous system from which they arise. The data suggest that the characteristics of a particular tumour type can be explained based on the cell of origin from which they arise. It also lends additional support to the concept that cancer stem cells can be therapeutically targeted to improve outcome.



Benjamin Alman

Members of our department are undertaking the highest quality of research in multiple areas related to cancer. These publications are just a small sampling of the high impact work in this field from our faculty members. Such work is providing the basis for novel therapies that are already having a positive impact on the care of our patients.

If you have a high impact publication you would like to bring to our attention to highlight in our newsletter, please contact Val Cabral (val.cabral@sickkids.ca or 416-813-2178).

Benjamin Alman
Professor and Vice Chair, Research

Scientists in Surgery

Approximately 15% of our surgical faculty are individuals who are non-MDs and work as full-time scientists. These individuals are significant contributors to the research effort of our Department. This section will endeavour to profile excellence in research among the scientists in our Department.



Cari Whyne

Dr. Cari Whyne is an Assistant Professor in Surgery and a Scientist at Sunnybrook and Women's Research Institute. She was first appointed to our department in January, 2000 and re-established the Orthopaedics Biomechanics Laboratory at Sunnybrook & Women's College Health Sciences Centre. Dr. Whyne's area of expertise is Orthopaedic Bioengineering and she also

holds University appointments with the Institute of Biomaterials and Biomedical Engineering and the Institute of Medical Science.

Cari is a Toronto native; she completed her undergraduate BSc. (Hon.) in Mechanical Engineering at Queen's University, Ontario in 1991. She developed

an interest in international health and worked as a Project Engineer for CARE Canada in Zambia for two years on a large scale 'food for work' project revitalizing technical urban infrastructure. Cari subsequently returned to North America to further her formal education and received her PhD (1999) in Bioengineering at University of California, Berkeley / University of California, San Francisco Medical Center working under Dr. Jeffrey Lotz, an internationally renowned expert in spinal biomechanics and intervertebral disc mechanobiology. Cari gained an interest in evaluating stability of the metastatically involved spine and developed and experimentally validated finite element models of the metastatic spine for pathologic fracture patterns. In addition, Cari received a formal Certificate in International Health from the School of Public Health at the University of California, Berkeley in 1998.

Since her appointment to the Department in 2000, Cari has continued to develop her research in spinal metastatic biomechanics. She has been successful in securing competitive national and international peer-review grant funding in this translational research. She is working towards a better understanding of factors involved in spinal metastatic instability and the development of novel therapies in the surgical palliation of this patient population. Her research also extends to biomechanical stabilization of the pelvis and lower extremity. She is a representative on several institutional and University based research committees and is currently the Acting Research Director of the Musculoskeletal Research Program at Sunnybrook & Women's Research Institute.

Albert Yee
Division of Orthopaedic Surgery





Martin McKneally

Enabling Innovation

When a surgeon thinks of a new way to do an operation or manage a problem, how should the innovation be introduced? The traditionally accepted approach, is what I'll call "the McBurney pathway".

Based on reasonable clinical evidence and remarkable surgical intuition, McBurney decided to excise the inflamed appendix in 1894. He convinced the surgical community that this moderately invasive innovation was better than the accepted standard treatment (hot packs and turpentine enemas!) His learning curve probably included some trouble with perforating cecal cancers, ectopic pregnancies and other surprises, but appendectomy evolved, through error, trial and persistence, to its present status as a milestone, a crowning achievement and the reference standard of exemplary surgical care.

Anaesthesia, appendectomy, antibiotics, open heart surgery, transplantation, almost everything useful that we do, were all introduced through the McBurney pathway. There have been some silly and even harmful surgical innovations that gained wide acceptance by a progressive, enthusiastic public and press, like internal mammary ligation to divert blood to the myocardium, and gastric freezing to cure peptic ulcers.

When surgical innovations don't work out, or cause problems in the OR, the Surgeon-in-Chief is held responsible. The Surgeon-in-Chief is publicly accountable for the safety and efficiency of the operating room, a public resource. The SIC has to answer for the delays, expense and other problems that might arise when a major innovation such as minimally invasive surgery is introduced. Two years ago, stimulated by two Surgeons-in-Chief, Bryce Taylor and John Wedge, a group of us began working on a pathway we call "Enabling Innovation". The pathway includes an un convened task force of advisors the surgeon-in-chief can call for advice when a surgeon submits a request to introduce an innovation. The advisors are representatives of anaesthesia, nursing, engineering and risk management.

The surgeon-innovator submits a proposal, usually electronically, that includes the rationale, an estimate of the initial number of patients who will be treated, an approximation of the impact on hospital resources and the name of another well-informed surgeon or physician who endorses

the proposal. An example of the submission form is available on the surgery website.

An important component of the pathway is what we call the "Columbus clause", a brief sentence added to the standard surgical permission that informs the patient that she is one of the first to be treated by the innovative method. (Shouldn't Columbus have told his sailors that his innovative plan was to sail straight west, not just up or down the coast in constant sight of land?) The permission form is submitted to the Research Ethics Board by the SIC to ensure that its chair knows that the procedure has been introduced. If the REB chair feels that an innovation represents or requires a formal research proposal, the project is referred to the REB for review.

There has been remarkable acceptance of this pathway at the Hospital for Sick Children and the University Health Network. It is a slight but important modification of traditional surgical practice. Because of the magnitude of its violations of the physical integrity and dignitary rights of patients, surgery has long relied on collegial oversight by the operating room community in the course of ordinary care. Improving the quality and outcomes of care is part of the obligation of surgeons. Because innovation sometimes introduces unknown risks or increased use of resources, this modification of our practice seems appropriate. It has been well-accepted for over 20 recent innovations. The task force has not yet needed to be convened or consulted. Some of the innovations eventually move into the research domain for formal study, such as the randomized trial reported by Dr. Bonjer comparing laparoscopic colectomy versus open colectomy in the European randomized trial summarized nearby.

Innovation is not for every patient, just as exploration to find the new world is not for every sailor. The Enabling Innovation pathway gives transparency, accountability and a measure of protection to all concerned. Columbus did get the informed consent of his sailors despite collegial advice to offer rum, food and treasure without disclosing his innovative course. As a result, he probably selected a more adventurous, heroic crew that was appropriate for his mission. Patients who elect as yet unproven surgical treatments are also heroes. They help innovators push the boundaries of surgical care. They should be informed about their role, and respected for their contribution.

Martin McKneally
Editor

CORRESPONDENCE

Letters to the Editor are welcomed to keep the community informed of opinions, events and the activities of our surgeons, friends and alumni.

Two of our Clinical Associates, Talat Chughtai and Mehboob Elahi, flew to Pakistan to help earthquake victims.

Email from Talat Chughtai in Pakistan



Talat Chughtai (right)

Hi. In Islamabad with Canadian Medical Assistance Team. Deployed to Children's Hospital in Islamabad where all children from affected areas airlifted. It is a non-stop 24 hour operating nightmare. There are 6 OR's here running non-stop. It is all open with each other and the waiting area where kids awaiting surgery are crying constantly, so you hear all this throughout the cases. There are surgeons from Russia, England, France and Finland here, and me. As well as exhausted Pakistani surgeons. By second day, doing my own cases (skin grafts, "Burn Surgery", amputation/revisions, laparotomies and thoracotomies -- emergency non-earthquake cases being done in one room -- EUA's... anything needed to be done). There are 50-100 cases to do daily, and this is slowed down -- they said I should have come in the first week. So it is basically do a case and send the hysterical child back to hallway (flooded with patients and families) and bring in next...limiting factor is whether a surgeon is free or has enough energy to start next case. Day runs from 8 am to midnight sometimes. We are treated very well here. All hospital staff as well as locals/public in environs all very grateful. Some amazing dedicated local and foreign surgeons here, speaking French/Urdu and Punjabi all day with them. Great shortage of instruments and sutures, and personnel... using anything for everything. Overall it is worse than on TV, and I am not



even in the mountains. Entire families/villages wiped out... with sometimes a lone surviving child. Operated on 3-year-old boy today who lost mother, all siblings... and was found in rubble...8-year-old girl post-op asking me, thinking I am her Uncle, if I put her leg back together... 2-year-old girl crying for mother in waiting area (ie: 10 feet from OR table) with huge head/scalp injury with no one attending to her...had to scrub out to try and comfort her...then go back to operating... not enough people. Remember all names and faces despite the load of cases... just can't forget them... This will go on for a long time still. Will tell/show (pics) when I get back. Take care.

Talat

I enjoyed your suggestion that a trial comparing private health care insurance with publicly administered health care insurance will help settle the controversy. In order that the outcome provide some valid conclusions there must be stringent conditions in the comparison:

1. The professional workers should work exclusively in one system or the other until the end of the trial.
2. The private system should operate completely independently, receiving no public funds.
3. Patients also should remain in the system they choose at the outset.
4. Those carrying private insurance should be allowed a tax deduction for the premium they pay, so that they are not required to pay for a system they do not use.

The private system and its staff should not be able to "cherry pick", or "skim the cream", leaving the high cost, high intensity cases to the public system.

I urge you to pursue this mission. It will take a monumental effort, but it should give a definitive answer in this interminable debate.

*Edward (Ted) Mullens.
Owen Sound, ON*

I would like to comment on the “Medical Milestone” published in the Fall Surgical Spotlight. Dr. Heimbecker noted that the first open heart operation in Canada was Jan. 12, 1958 in Toronto. I would like to bring to your attention that there were other Canadian centres that preceded Dr. Heimbecker. At the Vancouver General Hospital, Dr. P.G. Ashmore and I performed our first open heart operation on Oct. 27, 1957 and by Jan. 12, 1958 had operated on over 20 cardiac patients. Moreover, Dr. John Callahan in Edmonton had preceded us by several months in 1957.

Sincerely,
Peter Allen, MD,
Oakville, ON

Editor's note: Priority claims are often problematic. In fairness, Dr. Heimbecker, (whose name we also misspelled) told us he meant to specify that the operation he described was the first use of “the pump” in an adult patient.

We apologize for the errors and thank Dr. Allen for his clarification.



“Years ago, there was only one Santa Claus. Now because of genetic engineering, there can be lots of them.”

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HONOURS/AWARDS/ ACCOMPLISHMENTS

Najma Ahmed (GenSurg, Principal Investigator, Co-Investigator: Pier Bryden) are recipients of the 2005 Dean’s Excellence Award for Innovation in Medical Education for project titled: “Professing Professionalism: Clinical Teaching Faculty Perceived Needs and Attitudes Towards Teaching Professionalism”.

Benjamin Alman (OrthSurg) is the 2005 recipient of the Clinical Research Society of Toronto Senior Investigator Award for his work on: “The Molecular Mechanisms Responsible for the Deregulation of Cellular Growth Control in Musculoskeletal Tumours”. This award recognizes an individual with the biomedical research community of the University of Toronto who has made original and significant contributions toward the integration of basic and clinical research.

Timothy Daniels (OrthSurg) won the Best Clinical Paper at the Third Triennial Federation of Foot and Ankle Societies in Naples, September 2005 for this work entitled: “Ankle Arthroplasty vs. Ankle Arthrodesis for End Stage Ankle Arthritis”.

Gail Darling (ThorSurg) has received the Award for Excellence in Undergraduate Teaching, 2004-2005.

Karen Davis (Res) was awarded renewal of her Tier II Canada Research Chair in Brain and Behaviour (\$100,000 annually for five years).

Peter Dirks (NeurSurg) is this year’s recipient of the Royal College of Physicians and Surgeons Medal in surgery for his research on: “Identification of Human Brain Tumour Initiating Cells”. The award, was presented September 23 during the college’s annual conference in Vancouver, provides national recognition for original work by clinical investigators who have completed their

training within the past 10 years. Candidates must be fellows of the college and the work must have been done mainly in Canada.

James Drake (NeurSurg) has been elected a Member of the American Academy of Neurological Surgery at their annual meeting in Half Moon Bay, California, September 21-24, 2005.

Adam Dubrowski (Res, Principal Investigator with Co-Investigators: Nathan Jowett, Vicki LeBlanc and Helen MacRae) are recipients of the of the 2005 Dean's Excellence Award for Innovation in Medical Education for their project titled: "Self-assessment of Technical Abilities by Medical Students and its Impact of Self-directed Training."

Michael Fehlings (NeurSurg) received a Proof of Principle Award from the Ontario Neurotrauma Foundation to study the "Preclinical Evaluation of Polyethylene Glycol (PEG) as a Neuroprotective Strategy for Acute Spinal Cord Injury".

Fred Gentili (NeurSurg) has been cross-appointed to the Department of Otolaryngology at the UofT.

Fred has also received a Presidential Citation from the American Head & Neck Society.

Allan Gross (OrthSurg) was invested into the Order of Ontario for 2004 at a ceremony held on September 20, 2005 for his career as an orthopaedic surgeon at Mount Sinai Hospital and as holder of the Bernard I Ghert Family Foundation Chair in Orthopaedics, established in 2000 to support his research program. The Order of Ontario is the province's highest and most prestigious honour.

Ab Guha (NeurSurg) was elected President, Society of Neuro-oncology.

Ab was present at the Foundation Stone ceremony of the Institute of Neurological Sciences, for a 175 bed non-profit neurology/neurosurgery hospital Ab's group is building in Kolkata, India.

Michael Johnston (ThorSurg) has been awarded the Robert J. Ginsberg Award for Excellence in Postgraduate Teaching, 2004-2005.

Peter Kim (GenSurg) has been selected to receive the 2006 MacKenzie-Scotiabank Fellowship in Surgery.

Hans Kreder (OrthSurg) is the first recipient of the \$2 Million Marvin Tile Chair in Orthopaedic Surgery. Dr. Kreder will become Head of the Division of Orthopaedic Surgery, Department of Surgery at Sunnybrook & Women's as a result of this announcement. The Marvin Tile Chair endowment will provide support for academic excellence including the recruitment and retention of the world's best clinicians, clinician researchers and scientists to foster advances in orthopaedic surgery.

Robert Maggisano (VasSurg) was honoured at this year's CIBPA Award ceremonies as this year's recipient of the Professional Excellence Award, October 29, 2005.

Eric Massicotte (NeurSurg, Principle Investigator, with Co-Investigators: Sarah Woodrow, Raja Rampersaud, David Backstein and Adam Dubrowski) are recipients of the of the 2005 Dean's Excellence Award for Innovation in Medical Education for project titled: "Use of Hand Motion and Drilling Force Characteristics in the Evaluation of Spinal Pedicle Screw Insertion".

Peter Neligan (PlasSurg) was elected Secretary General of the World Society of Reconstructive Microsurgery at its recent meeting in Buenos Aires, Argentina.

Richard Perrin (NeurSurg) has been elevated to the rank of Commandeur of the Confrerie des Chevaliers du Tastevin, the world's largest, and most prestigious Burgundy Wine Connoisseurs Association.

Patricia Stewart (Anatomy, Principal Investigator, with Co-Investigator Jodie Jenkinson) are recipients of the of the 2005 Dean's Excellence Award for Innovation in Medical Education for project titled: "Animating Cellular Processes: Education or Entertainment?"

Charles Tator (NeurSurg) was presented with the Injury Prevention and Safety Promotion Award of Recognition at the Canadian Injury Prevention and Safety Promotion Conference. This award was presented in recognition of his contribution to the field of injury prevention over more than 30 years and his dedication in reducing injuries to Canadians. Halifax, Nova Scotia, November 6-8, 2005.

Michael Taylor (NeurSurg) is the recipient of the Connaught Award, UofT.

Richard Perrin (NeurSurg) has been appointed as Secretary of the World Federation of Neurosurgical Societies 2005-2006.

Raja Rampersaud (OrthSurg) was presented the R.B. Salter Award for Excellence in Teaching by Faculty as voted by the orthopaedic residents on Kennedy Visiting Professor Day, November 3, 2005 at St. Michael's Hospital.

James Rutka (NeurSurg) was appointed to the position of Secretary-Treasurer of the World Academy of Neurological Surgery.

Jim has also been nominated for the position of Secretary, the American Association of Neurological Surgeons.

Mark Angeline (OrthSurg Resident) was presented with the 2005 Canadian Back Institute Award for best spine paper presented at Kennedy Visiting Professor Day, November 3, 2005 for paper titled: "An Assessment of Two Different Microsurgical Procedures".

Samuel Bederman (OrthSurg Resident) and Hamid Nourhosseini (OrthSurg Resident) were presented the 2005 Astrazeneca Resident Research Award as selected by Dr. Robert Turcotte for the two best senior resident presentations at Kennedy Visiting Professor Day, November 3, 2005 for projects titled: "How Does Health Care Delivery Impact Outcomes for Lumbar Spinal Surgery" and "The Biomechanics of Intact and Repaired Scapholunate Ligaments Undergoing Linear and Torsional Motion".

Nimesh Desai (CardSurg Resident, Supervisor: Stephen Fremes) won the Eugene Vayda Award for best PhD Research from the Department of Health, Policy Management and Evaluation for project: "Systematic Improvements in the Technical Results of Coronary Surgery using Prospective Clinical Trials".

Nimesh has also won Best Poster Award—International Society for Minimally Invasive Cardiothoracic Surgery in New York for poster titled: "A Randomized Comparison of Intraoperative Angiography and Transit-Time Flow Measurement to Detect Technical Errors in Coronary Bypass Grafts".

Veena Guru (GenSurg Resident, Supervisor: S. Fremes) received a Postgraduate Award: Joseph M. Family West Memorial Fund Distinction.

Bradley Jacobs (NeurSurg Resident) won the Joseph M. Family West Memorial Fund Award, from Postgraduate Medicine, UofT.

Brad has also won the Canadian Society for Clinical Investigation Resident Research Award

Diane Nam (OrthSurg Resident) was awarded the 2005 Hospital for Sick Children Award for best paediatric paper presented at Kennedy Visiting Professor Day, November 3, 2005 for project titled: "Pre-Clinical Assessment: Potential New Treatment for Simple Bone Cyst".

Jubin Payandeh (OrthSurg Resident) was awarded the R.I. Harris Postgraduate Award for best graduating orthopaedic resident as voted by the faculty on Kennedy Visiting Professor Day, November 3, 2005 at St. Michael's Hospital.

Robert Wang (OrthSurg Resident) was awarded the T.R. Sullivan Award for Excellence in Basic Science Research for best resident basic science paper presented at Orthopaedic Research Day held in May 2005 for project titled: "A New Reamer Design: Investigating the Effects of Fat Embolism Outcome Using a Porcine Model".

Sarah Woodrow (NeurSurg Resident) received a CSCI Award for a poster presentation at the RCPSC meeting in Vancouver, BC, September 22-24, 2005

Gordon Chu (NeurSurg Fellow, Supervisor: Michael Fehlings) was awarded the 2005-2006 Joseph M. Family West Memorial Fund from the Postgraduate Medicine Awards Committee of the Faculty of Medicine, UofT.

Gordon was also awarded the Synthes Award for Spinal Column and Spinal Cord Research for the best oral paper related to spinal cord injury research. The award was presented at the 2005 Congress of Neurological Surgeons meeting in Boston, MA, October 8-13, 2005

Karl Uy (ThorSurg Fellow, Supervisor: Shaf Keshavjee) has been awarded the F. Griffith Pearson Award for Best Resident/Fellow Teacher 2004-2005.

Ronald Tasker (Professor Emeritus, NeurSurg) was appointed an officer to the Order of Canada. Dr. Tasker is a world-renowned neurosurgeon whose work has significantly improved the quality of life for people living with Parkinson's disease and other forms of tremor, involuntary movement and chronic pain. He has also served with environmental organizations such as the Ontario Federation of Naturalists. The Order of Canada is awarded to Canadians who have made a recognizable difference to the country. The honour, which is the highest in Canada, was established in 1967 to recognize the achievements of extraordinary Canadians. Officers of the Order, the order's second highest distinction, have shown an outstanding level of talent and service to Canadians.

GRANTS / FELLOWSHIPS

Mark Bernstein (NeurSurg) received a CIHR Grant for his work titled: "Therapeutic Hopes and Ethical Concerns: Clinical Research in the Neurosciences".

Michael Fehlings (NeurSurg) received an AO Foundation Grant to conduct a multicenter trial on: "The Management and Outcomes of Cervical Spondylotic Myelopathy".

Ab Guha (NeurSurg) received a Grant from Schering-Plough Virtual National Tumour Bank.

Moji Hodaie (NeurSurg) received a grant from Medtronic Neurological for her work on "Evaluation of Effective Stimulation Parameters for Seizure Control in Rats with Thalamic Deep Brain Stimulation Using a Pilocarpine Seizure Model".

Abhaya Kulkarni (NeurSurg) received a CIHR Grant for a multicentre study titled: "Determinants of Health in Children with Hydrocephalus".

Michael Taylor (NeurSurg) has received a 2-year CIHR Grant for his project titled: "Functional Genomic Dissection for the Initiation and Progression of Medulloblastoma".

Michael also received a Fellowship from the Emily Dorfman Foundation for Children / American Brain Tumour Association.

Veena Guru (GenSurg Resident, Supervisor: S. Fremes) has been awarded a Physicians' Services Incorporated Foundation Grant (PSI) for her project titled: "The Role of Genetic Polymorphisms in Modulating the Efficacy of N-acetylcysteine in Preventing Post Cardiopulmonary Bypass Renal Dysfunction".

Todd Mainprize (NeurSurg Resident) was awarded the University of Toronto Fellowship. The award was provided through the Department of Laboratory Medicine and Pathobiology.

Sarah Woodrow (NeurSurg Resident) received a Medical Education Grant Award by the Royal College of Physicians and Surgeons for her work on: "Validation of Tensiometry as a Measure of Technical Skill Performance".

Rebecca Gladdy (Surgical Oncology Fellow, Supervisor: Carol Swallow) has been awarded a one year James Ewing Oncology Fellowship for Basic Research (\$30,000 US) from the Society of Surgical Oncology for her project titled: "Plk-4 and Chromosomal Instability".



ANNOUNCEMENT

TWO NEW BENEFITS FOR DEPARTMENT OF SURGERY FACULTY AND THEIR FAMILIES

Daycare

With the recognition that our families are a priority for all of us, the Department of Surgery has initiated a partnership with Kids and Company to provide daycare services for our children. The Department will subsidize approximately half the cost of the enrolment of one child in this program, to a maximum of \$7,000 per faculty member.

Kids and Company offers daycare services to employees of their corporate customers who include the University of Toronto and many law firms, hospitals and financial institutions. Services include full and part time daycare arrangements, as well as back-up care, on short notice, in the case of school cancellations and holidays, late meetings or other special arrangements which cannot be accommodated by a child's regular caregiver. Kids and Company has several convenient locations in the GTA. Kids and Company centres are staffed by trained teachers, teaching assistants and Early Childhood Education specialists. Children enjoy a daily schedule that includes free play time as well as structured educational activities focusing on art and music.

If you would like to avail yourself of this opportunity, please contact Nancy Condo at (416) 978-5148 so that she can review the details of this service and make the necessary arrangements.

Health Care Benefits

The Department of Surgery has come to an agreement with Sun Life Financial to provide health care benefits for new recruits who are not eligible through either university or hospital structures. (In the past, gaps have been filled by a salary recovery mechanism at the university; this will no longer be possible.) The Department will cover the cost of registration in the "standard plan" that amounts to approximately \$1,200 to \$1,500 per year in benefits. Individuals will have the opportunity to upgrade or extend the plan to cover family members at their own expense. The Department is not able to make this arrangement retrospectively for faculty who have made other arrangements, but any new recruit who has not yet done so should contact Nancy Condo (416-978-5148) for more information. When negotiating, faculty should let potential recruits know that it is the Department's policy to provide these individual benefits.



6th Annual U of T Division of Plastic Surgery Charity Golf Tournament & Auction

“Golf: a passion, an obsession, a romance, a nice acquaintanceship with trees, sand, and water.”

A multitude of thanks to the 2005 Committee (**Lorie Bell, Dr. Tom Bell, Dr. Mitch Brown, Dr. Chris Forrest, Dr. Peter Neligan and Dick Bradbeer**), for organizing the 6th Annual Division of Plastic Surgery Charity Golf Tournament and Auction.

A green jacket of thanks to all our sponsors:

- Mentor Medical - Gold Banquet
- Gray Communications - Luncheon
- Medicard - Reception
- Canderm Pharma - Bag Tags
- Inamed Aesthetics - Golf Carts
- Medicis Aesthetics - Registration Gift Bag
- Botox Cosmetic - Beverage Cart
- Dr. Peter Neligan - Dinner Wine
- Dr. Trevor Born - Golf Balls
- Dr. Wally Peters - Breakfast
- Nordic Selfcare - Registration Gifts
- Sky Blue Medical Professional (Nada Andic) & Guru Sportswear - Golf Shirts

The Division would also like to thank all of the golfers, donors of prizes and auction items, volunteers, Fred Walker (our Master of Ceremonies and auctioneer), Sandy Hawley, ClubLink and the staff of the King’s Riding Golf Club for making this such a successful day. This year we raised \$23,000 for the PREFER fund-now the Chair in Plastic Surgery-at the University of Toronto. See you next year!



“It was a terrific day. I was delighted to be there to represent the Department of Surgery. The Department is thankful, because the proceeds from the day’s event will go towards what I consider the most important fundraising activity: raising capital to endow a Chair. At the tournament we officially launched a campaign to raise \$3 million to name a Chair in perpetuity that will be held by the Chairperson of this great Division.” - Richard Reznick, Chair, Department of Surgery





“As Chair, I am so proud of this Division. The teaching contributions at St. Joseph’s are awesome. Our Surgeon-in-Chief at Toronto East General is a plastic surgeon. The hand unit at the Toronto Western Hospital is the pride of Canada. The

\$12 million ARTEC activity at Sunnybrook & Women’s is our Department’s single largest research grant. The normalization brought to children, who would otherwise lead altered lives, is a reflection of the magnificent work done at Sick Kids.

The wound healing program at St. Mike’s investigates issues which affect all surgical patients. The aesthetic experiences provided at 199 Avenue Road and the Rosedale Centre speak volumes about the academic spirit of its leaders. The science put forward by our PhD colleagues in this Division is cutting edge. The work done at PMH to reconstruct the defects of cancer surgery is mind-boggling.

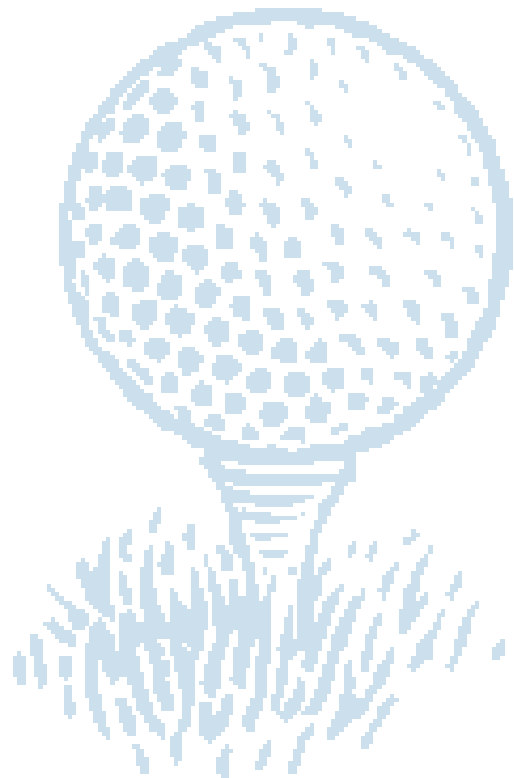
With the PREFER fund, we have kick-started this campaign with over 10% of the goal through events like the golf tournament, and from the generosity of the Division and our friends. Reaching \$3 million will be a lot of work, but I am committed to working toward seeing a Chair in Plastic Surgery established in our Department of Surgery.” - Peter Neligan, Chair, Division of Plastic Surgery



*Article & swing by Rebecca Davies
lefty golfer &
Senior Development Officer,
Department of Surgery*

The Chair in Plastic Surgery will be held by the Division’s Chairperson. Permanently endowed for \$3 million, it will generate an annual income of approximately \$130,000. The income will be used to:

- Support the recruitment and retention of outstanding faculty members
- Provide funding for PhD or post-doctoral fellowships
- Protect the time of busy clinicians so they can pursue research
- Support early-stage research
- Provide the Chair with time and resources to pursue her or his own research



The deadline for the Spring 2006 Surgery Newsletter is February 1, 2006. All members of the Department are invited to submit news items, articles, pictures, ideas or announcements. You may reach us at:

***voice mail: 416-978-8177, fax: 416-978-3928 or
e-mail: jean.defazio@utoronto.ca***

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

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