



UNIVERSITY OF ALBERTA
FACULTY OF MEDICINE & DENTISTRY
Department of Surgery



2012 Department of Surgery Annual Report



Table of Contents

Message from the Chair	2
Division of Cardiac Surgery	4
Division of General Surgery	7
Division of Neurosurgery	10
Division of Orthopaedic Surgery	12
Division of Otolaryngology - Head & Neck Surgery	17
Division of Pediatric Surgery	19
Division of Plastic Surgery	21
Division of Surgical Research	23
Division of Thoracic Surgery	25
Division of Urology	26
Education - Undergraduate, Postgraduate & Graduate Studies	28

Message from the Chair

When looking back, it's equally important to look forward. 2012 saw many accomplishments for the department as well as challenges. I continue to be proud and inspired by the outstanding work of our faculty and staff. At the same time, I appreciate the uncertainties we face and plan to meet our challenges with successful outcomes.

The year saw the completion of my first term as chair of the department, as well as my reappointment to another five year term. The process was one of reflection and forward thinking, as it included a presentation before a peer review committee. In describing what was accomplished during those five years, it was hard not to feel proud and grateful for all the support and good work within the department. It was also a humbling experience, as I acknowledged areas for improvement and took a hard look at changes necessary for our success.

Planning new goals and accomplishments is always an exciting endeavor and I was inspired by a PMI course the department hosted on strategic planning. Alongside fourteen other department members, we learned about appreciative inquiry, which focuses on a more positive approach to

strategic planning. Armed with this new knowledge, I understood how important it would be to our department to develop a strategic plan; not just for the remainder of my term, but well beyond into the future.

So while you read through these pages, you'll see the tremendous strength of our divisions, research, teaching and education; and know that the future will see a strategic plan in place, ensuring we continue to move forward to where we want to be.

We know there will be obstacles and tough issues to face. At our 2012 education retreat we addressed two significant ones in reviewing restricted duty hours for residents and looking at competency based medical education. We will also continue to adapt to reorganization at all levels and work through ongoing budget cuts.

In this report, you will see that despite our challenges, we persevere and maintain the great tradition of this department. Our candidates for promotion enjoy continued success. The undergraduate curriculum has kept our students scoring at the top of the national qualifying exam



Dr. Douglas Hedden

and Surgical Foundations remains strong. The graduate program is thriving and research carries on as a major strength.

As we move forward it's important to stay positive and celebrate our tremendous strength in all areas of this diverse department. We are as strong as our people and I appreciate the hard work and dedication of our members and support staff. Together we can forge ahead, keep this department great and acknowledge opportunities to make confident changes.

A handwritten signature in black ink, appearing to read 'Douglas Hedden'. The signature is fluid and cursive, with a large initial 'D' and 'H'.

Douglas M Hedden, MD FRCS
Walter Stirling Anderson Professor
and Chair, Department of Surgery,
Faculty of Medicine & Dentistry,
University of Alberta

Division of Cardiac Surgery

In 2012 the Division of Cardiac Surgery hosted the annual Alberta Cardiac Surgery Resident Retreat and featured Dr. Rakesh Suri from the Mayo Clinic as a distinguished guest. Dr. Suri is a North American expert on minimally invasive mitral valve repair. Dr. Jonathan White also gave a presentation on upcoming resident workload issues at the retreat.

The division was pleased to welcome Dr. Mohammad Al Aklabi as a new staff surgeon specializing in pediatric cardiac surgery. Dr. Al Aklabi did his residency in Edmonton followed by a year of fellowship in congenital cardiac surgery with us before undertaking a travelling fellowship visiting a number of top centres in North America as well as the UK. In addition to being a terrific addition to our clinical practice Mohammad has taken over the lead for organizing the educational teaching for congenital cardiac surgery for the residents and fellows.

2012 saw continued growth in referrals and surgery for both adults and children, constrained only by our physical resources. Construction of a new hybrid operating room was started along with an additional six adult CVICU beds. Both these projects should be completed

and open in 2013.

The division remains very active in research with our recent recruit, Dr. Jayan Nagendran, establishing a basic science laboratory. All members of the division participate in clinical studies supported by the divisions expert in Clinical Epidemiology, Dr. Colleen Norris, PhD. Currently there are eight active clinical trials with over 700 patient enrollments to date.

Awards

Dr. Modry received a Member Emeritus Distinction Award from the Alberta Medical Association on September 21, 2012.

Dr. John Mullen & Dr. Arvind Koshal received the Queen Elizabeth II Diamond Jubilee Medal.

Dr. Steven Meyer received Division Teacher of the Year award for resident teaching.

Dr. Wei Wang received the Shab Puri award for overall outstanding performance in the Training Program.

Dr. Jeevan Nagendran received 2nd prize for basic science at the 2012 Departmental Tom Williams Resident Research Day.



Divisional Director
Dr. David Ross



Program Director
Dr. Rod MacArthur

Grants

Dr. Jayan Nagendran
Alberta Transplant Institute
\$250, 000 (Clinical)

University Hospital Foundation
\$250, 000 (Clinical)

Pfizer Ex-Vivo lung program
\$100, 000 (Clinical)

MAHI/UHF grant (Co-PI)
\$300, 000/2 yr (Pre-Clinical)

CIHR-CNTRP (Co-PI)
\$500, 000/5 yr (Pre-Clinical)

J Nagendran salary support
\$150, 000 (Pre-Clinical)

MAHI start-up funds
\$100, 000 (Pre-Clinical)

UHF grant \$35, 000
(Pre-Clinical)

ECE grant \$10, 000
(Pre-Clinical)

Energy metabolism in the newborn heart. Lopaschuk GD, Rebeyka IM, Jaswal J, Jhangri G: Canadian Institutes of Health Research. (\$160,724/yr total group grant, 2012-2016).

In-human validation of a technique for measuring central aortic hemodynamics with peripheral arterial waveforms. Investigators: Dr. J. Hahn, Co-investigator: Dr. S. Wang: Heart and Stroke Foundation: Amount Awarded: \$107,000 Date: July 1, 2012 (2 years)

Surgical Interventions for Moderate Ischemic Mitral Regurgitation (MMR Trial)
Dr. J Mullen: Start Date: Feb 8, 2012;Funding Source: NHLBI, NINDS, and CIHR (\$14,513.00 earned to date)

Surgical Ablation Versus No Surgical Ablation for Patients with Persistent or Longstanding Persistent Atrial Fibrillation Undergoing Mitral Valve Surgery (A-Fib Trial); Dr. J Mullen,Start Date: January 24, 2012;Funding Source: NHLBI, NINDS, and CIHR (\$18,450.00 earned to date)

Publications

Iida R, Welsh RC, Meyer SR, Tyrrell BD, Taylor DA, Shanks M. Pre-dismissal surveillance echocardiography second day after TAVR. *JACC Cardiovasc Imaging*. 2012 Nov;5(11):1182-4.

Meyer SR, Suri RM, Wright RS, Dearani JA, Orszulak TA, Daly RC, Burkhart HM, Park SJ, Schaff HV. Does metabolic syndrome influence bioprosthetic mitral valve degeneration and reoperation rate? *J Card Surg*. 2012 Mar;27(2):146-51.

Song Z, Lehr EJ, Wang S. An alternative subcoronary implantation technique decreases the risk of complete heart block after stentless aortic valve replacement. *Journal of Cardiovascular Disease Research*, 2012;3(1):46-51

Roze des Ordons AL, Lee J, Bader E, Scheelar L, Achen B, Taam J, Macart

thur R, Townsend DR. Cesarean delivery in a parturient with an anterior mediastinal mass. *Can J Anaesth*. 2012 Nov 7.

Feindel CM, Ouzounian M, Latham TB, Hendry P, Langlois Y, Peniston C, Hassan A, Macarthur R, Scully H, Hirsch GM; Canadian Cardiac Surgery Workforce Committee. The Canadian Society of Cardiac Surgeons perspective on the cardiac surgery workforce in Canada. *Can J Cardiol*. 2012 Sep-Oct;28(5):602-6.

Nunes AJ, Buchholz H, Sinnadurai S, MacArthur RG. Long-term mechanical circulatory support of an adult patient with Down syndrome. *Ann Thorac Surg*. 2012 Apr;93(4):1305-7.

Garcia Guerra G, Robertson CM, Alton GY, Joffe AR, Dinu IA, Nicholas D, Ross DB, Rebeyka IM; Western Canadian Complex Pediatric Therapies Follow-up Group. Quality of life 4 years after complex heart surgery in infancy. *J Thorac Cardiovasc Surg*. 2012 Apr 14.

Pockett CR, Dicken B, Rebeyka IM, Ross DB, Ryerson LM. Heterotaxy syndrome: Is a prophylactic Ladd procedure necessary in asymptomatic patients? *Pediatr Cardiol*. 2012 May 29.

Mutsuga M, Quiñonez LG, Mackie AS, Norris CM, Marchak BE, Rutledge JM, Rebeyka IM, Ross DB. Fast track extubation after modified Fontan procedure. *J Thorac Cardiovasc Surg*. 2012 Jun 26.

Morgan CJ, Zappitelli M, Robertson CM, Alton GY, Sauve RS, Joffe AR, Ross DB, Rebeyka IM; Western Canadian Complex Pediatric Therapies Follow-Up Group. Risk factors for and outcomes of acute kidney injury in



neonates undergoing complex cardiac surgery. *J Pediatr*. 2012 Aug 7.

Takahashi K, Mackie AS, Thompson R, Al-Naami G, Inage A, Rebeyka IM, Ross DB, Khoo NS, Colen T, Smallhorn JF. Quantitative real-time three-dimensional echocardiography provides new insight into the mechanisms of mitral valve regurgitation post-repair of atrioventricular septal defect. *J Am Soc Echocardiogr*. 2012 Nov;25(11):1231-44.

Robertson CM, Alton GY, Bork KT, Joffe AR, Tawfik GC, Sauve RS, Moddemann DM, Ross DB, Rebeyka IM. Bilateral sensory permanent hearing loss after palliative hypoplastic left heart syndrome operation. *Ann Thorac Surg*. 2012 Apr;93(4):1248-53.

Bowman ME, Rebeyka IM, Ross DB, Quinonez LG, Forgie SE. Risk factors for surgical site infection after delayed sternal closure. *Am J Infect Control*. 2012 Oct 23.

Ugaki S, Khoo NS, Ross DB, Rebeyka IM, Adatia I. Tricuspid valve repair improves early right ventricular and tricuspid valve remodeling in patients with hypoplastic left heart syndrome. *J Thorac Cardiovasc Surg*. 2012 Nov 14.

Moustafa S, Patton DJ, Ross DB, Balon Y, Alvarez N. Unanticipated stenosis of the systemic arterial supply in scimitar syndrome. *Eur Heart J Cardiovasc Imaging*. 2012 Nov 25.

Yu X, Larsen B, Urschel S, Cheung PY, Ross DB, Rebeyka I, West L, Li J. The profile of inflammatory and metabolic response in children undergoing heart transplantation. *Clin Transplant*. 2012 Mar-Apr;26(2):E137-42.

Clarke JR, Zvaigzne CG, Disler D, Giuffre M, Rebeyka IM, Patton DJ. Giant left atrial appendage aneurysm in a neonate. *World Journal for Pediatric and Congenital Heart Surgery*. 2012;3(3):392-395

Yu X, Larsen B, Rutledge J, West L, Ross DB, Rebeyka IM, Buchholz H, Li, J. The profile of the systemic inflammatory response in children undergoing ventricular assist device support. *Cardiovasc Thorac Surg* 2012;15(3):426-431.

Dehghani P, Atallah J, Rebeyka I, Ross D, Quinonez L, Kantoch M, Heggie P, Taylor D, Alvarez N, Human D, Pausjenssen E, Tam JW, Vonder Muhll I. Management of adults with congenital heart disease using videoconferencing across Western Canada: A three-year experience. *Can J Cardiol* 2012; August 24 Epub ahead of print.

Hansen G, Conradi A, Lequier L, Garcia Guerra G, Quinonez L, Ross DB, Rebeyka IM, Buchholz H. Safety of Berlin Heart EXCOR pump changes in the pediatric intensive care unit. *Pediatr Crit Care Med* 2013;14 Epub ahead of print

Gill RS, Cheung PY, Yu X, Aklabi MA, Nagendran J, Quinonez LG, Li YQ, Miller J, Ross DB, Rebeyka IM, Li J. β (3)-Adrenoceptor Antagonist SR59230A Attenuates the Imbalance of Systemic and Myocardial Oxygen Transport Induced by Dopamine in Newborn Lambs. *Clin Med Insights Cardiol*. 2012;6:45-51. Epub 2012 Feb 16.

Oka T, Lam VH, Zhang L, Keung W, Cadete VJ, Samokhvalov V, Tanner BA, Beker DL, Ussher JR, Huqi A, Jaswal JS, Rebeyka IM, Lopaschuk GD. Cardiac hypertrophy in the newborn delays the maturation of fatty acid β -oxidation and compromises postischemic functional recovery. *Am J Physiol Heart Circ Physiol*. 2012 May 1;302(9):H1784-94.

Nagendran J, Sutendra G, Paterson I, Champion HC, Webster L, Chiu B, Haromy A, Rebeyka IM, Ross DB, Michelakis ED. Endothelin axis is upregulated in human and rat right ventricular hypertrophy. *Circ Res*. 2013 Jan 18;112(2):347-54. Epub 2012 Dec 10.

Schroeder MA, Lau AZ, Chen AP, Gu Y, Nagendran J, Barry J, Hu X, Dyck JR, Tyler DJ, Clarke K, Connelly KA, Wright GA, Cunningham CH. Hyperpolarized ^{13}C magnetic resonance reveals early- and late-onset changes to in vivo pyruvate metabolism in the failing heart. *Eur J Heart Fail*. 2013 Feb;15(2):130-40. Epub 2012 Dec 19.

Kienesberger PC, Puliniikunnil T, Nagendran J, Dyck JR. Myocardial triacylglycerol metabolism. *J Mol Cell Cardiol*. 2012 Jul 10.

Nagendran J, Waller TJ, Dyck JR. AMPK signalling and the control of substrate use in the heart. *Mol Cell Endocrinol*. 2012 Jun 28.

Jones LW, Antonelli J, Masko EM, Broadwater G, Lascola CD, Fels D, Dewhirst MW, Dyck JR, Nagendran J, Flores CT, Betof AS, Nelson ER, Pollak M, Dash RC, Young ME, Freedland SJ. Exercise modulation of the host-tumor interaction in an orthotopic model of murine prostate cancer. *J Appl Physiol*. 2012 Jul;113(2):263-72.

Kienesberger PC, Puliniikunnil T, Sung MM, Nagendran J, Haemmerle G, Kershaw EE, Young ME, Light PE, Oudit GY, Zechner R, Dyck JR. Myocardial ATGL overexpression decreases the reliance on fatty acid oxidation and protects against pressure overload-induced cardiac dysfunction. *Mol Cell Biol*. 2012 Feb;32(4):740-50.

Division of General Surgery

The Division of General Surgery at the University of Alberta remains committed to the common goal of providing excellent patient care while continuing and strengthening tradition of teaching and research. The division has continued to strive toward this common goal during the past year.

The continued development of acute care services at the Royal Alexandra Hospital and University of Alberta Hospital has been exciting for the division. The quality of patient care has increased, as have educational and research opportunities. Other sites are being looked at for development of acute care services, and this certainly is a progressive move forward.

Established programs within the division have continued to flourish, including transplantation, hepatobiliary and pancreatic surgery, colorectal surgery, trauma, surgical oncology, endocrine surgery, head and neck surgery, vascular surgery and breast surgery. The clinical programs are being examined from a zone wide level, and recruitment is being planned to help develop several of these programs throughout the zone.

Clinical care delivery is also provided by faculty members working in hospitals outside the

Edmonton zone, including surgeons in Grand Prairie and Lethbridge.

Education has always been a priority within the division, with its faculty members providing countless hours of teaching to both undergraduate and postgraduate students. There was a significant increase in the number of medical students rotating through General Surgery in their third year, and it is through the efforts of all faculty members that they were able to obtain an excellent experience. There has been a very promising rise in interest on the part of medical students in general surgery as a career. This is reflected in the number of students applying for general surgery through the CaRMS application process.

Postgraduate education has seen the development of a rural training stream, with the Queen Elizabeth II Hospital in Grand Prairie being the rural training site. This training model promises to increase the interest in rural General Surgery. The General Surgery program is looking forward to an external review in June of 2013. Several progressive changes have been made in the program, including great opportunities for resident and faculty development.

The strong culture and surgical research has the majority of



**Divisional Director
Dr. David Williams**



**Program Director
Dr. Dan Schiller**

faculty members taking part in research endeavors. The division continues its proud and strong tradition of basic and clinical science research. Members of the division hold millions of dollars in grants and have produced over 150 publications in 2012.

The division hosted many distinguished visitors in 2012 for its City Wide Rounds. These visitors included, Dr. Kenji Inaba from the University of Southern California, Dr. Arya Sharma from the University of Alberta, Dr. Harvey Hawes from the University of Texas, Dr. Chad Ball from the University of Calgary, Dr. Dean Mikami from Ohio State University and Dr. Charles Brunicardi from University of California, Los Angeles.

At the division's 2012 Resident Research Day, visiting professor and judge, Dr. Michael Yeh presented City Wide Rounds on Managing Difficult Thyroid Cancers. Dr. Yeh is the Associate Professor of Surgery and Medicine Chief, Section of Endocrine Surgery, at the University of California.

The Division of General Surgery is a diverse and vibrant division, with a faculty dedicated to excellence in patient care, education and research. 2012 has proven to be a successful year for the division, and we can expect to see many more accomplishments in the years to come.

Promotions

Dr. Eric Bédard was promoted from Assistant Professor to Associate Professor

Awards

William Shandro Award for Teaching Excellence in Clinical Surgery, Dr. Kal Ansari

Medical Students' Association 2011-2012
Discovery Learning Preceptor Excellence Award,
Dr. Bryan Dicken

Medical Students' Association 2011-2012
Gilbert Scholars Preceptor Excellence Award,
Dr. Sandy Widder



Top 10 Teacher Awards 2012

Dr. Erika Haase
Dr. Ghassan Hadi
Dr. Stewart Hamilton
Dr. Ramesh Juta
Dr. Shahzeer Karmali
Dr. Jacqueline Kennedy
Dr. David Olson
Dr. Dan Schiller
Dr. Jonathan White
Dr. David Williams

Top Specialty Surgery Awards 2012

Dr. Hadi Seikaly
Dr. Ken Stewart
Dr. Azim Valji

Teaching Excellence 2012

RE Fraser Award for Excellence in Teaching - Dr. Basem Al-Shareef

George R. Graham Postgraduate Memorial Bursary - Dr. David Al-Adra

Marshall C. Hunting Award in Vascular Surgery - Dr. Chieh (Jack) Chiu

Resident Awards

Stevens Norvell Prize Winners 2012

Dr. Usama Sarsam
1st Prize, 1st Year of Residency

Dr. Amir Yousef Taheri
1st Prize, 2nd Year of Residency

Dr. Andrey Vizhul
1st Prize, 3rd Year of Residency

Resident Research Day Awards 2012

Basic Science

1st Vanessa Davis - The Metabolic Signature of Pancreatic Cancer in Urine

2nd Richdeep Gill - Cyclosporine Treatment Improves Cardiac Function, Attenuates Myocardial Injury and Preserves Cardiac Mitochondrial Integrity during Resuscitation of Asphyxiated lab models

3rd David Al-Aldra - Chimerism Induction that Includes CD4 and CD8 and CD8T Cell Depletion Abrogates Split Tolerance in lab models

Clinical Science

1st Shaheed Merani - Discharge Care Requirements of Elderly Patients Admitted for Emergency Surgery

2nd Ahmed Almamar -The Impact of Sleeve Gastrectomy as Compared to Adjustable Gastric Band on Active and Total Ghrelin and other GI Hormones and their Influence on Satiety and Hunger

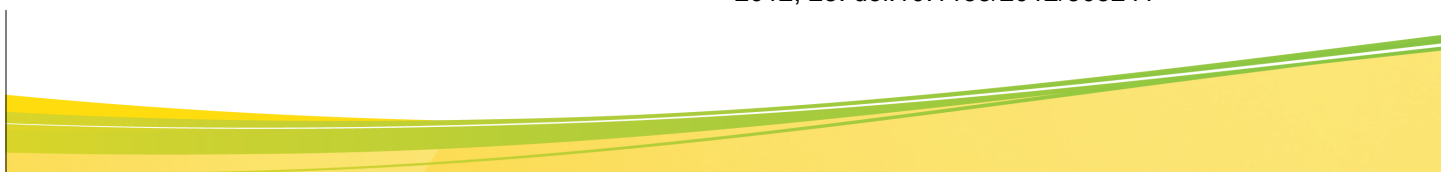
3rd Sayf Gazala - Do Post-operative Complications Affect Health Related Quality of Life After Video Assisted Thoracoscopic Lobectomy for Patients with Lung Cancer: A Cohort Study

Publications

Adams D, Wu T, Yasui Y, Aung S, Vohra S. Systematic reviews of TCM trials: how does inclusion of Chinese trials affect outcome? Journal of Evidence-Based Medicine. 2012 [published ahead of print] doi: 10.1111/j.1756-5391.2012.01173.x

Mandziuk K, Liu Y, Adams D, Vohra S. Acupuncture for Cerebral Palsy. Focus on Alternative and Complementary Therapies. 2012; 17(2): 85-90.

Scott O, Galcia-Connolly E, Adams D, Surette S, Vohra S, Yager J. The safety of cruciferous plants in humans: A systematic review. Journal of Biomedicine and Biotechnology Volume. 2012; 28. doi:10.1155/2012/503241



Division of Neurosurgery

The Division of Neurosurgery has 13 members. In 2012 there were two retirements / replacements. Dr. Kenn Petruk became Professor Emeritus and Dr. John McKean retired formally. Dr. Tejas Sankar joined the neurosurgical faculty as a new recruit. Dr. Sankar is a functional neurosurgeon with a specific interest in deep brain stimulation for movement disorders and psychiatric illness. Dr. Tim Darsaut also joined the faculty. Dr. Darsaut is a neurovascular surgeon with a specific interest in minimally invasive endovascular procedures.

All members of the division participate in Undergraduate Medical Education contributing both to Discovery Learning and Gilbert Scholar programs. There are eight residents enrolled in the Residency Program. The fellowship program continues to expand. There are three formal fellowship programs available. The spine fellowship program continues to recruit and train spine fellows. There is now a pediatric neurosurgical fellowship, as well as an epilepsy surgery fellowship.

After almost a decade of planning and construction, the intraoperative MRI was formally opened and the first patients were operated on in 2012. This

remains a highlight of our program and is one of the few programs in the country with an intraoperative MRI. In particular, the intraoperative MRI is a 3-tesla MRI, of which there are only two in the country.

Most members of the division are involved in either collaborative research or self-directed research. The division holds 35 grants (funded and non-funded), with a total grant revenue of \$1.75 million. The commitment to research is exemplified in the publication record of the division. There were 57 papers published of which 46 were peer-reviewed in 2012. There was one book chapter authored.

In addition, there were three separate awards presented to the division. Dr. Keith Aronyk received two awards. He received an Undergraduate Medical Education Award for Preceptor Excellence and he also received the Medical Staff Association Humanism Award. In addition, Dr. Jeff Pugh received an award for Pre-Clinical Mentorship from Undergraduate Medical Education. With the recruitment of Dr. Tejas Sankar and Dr. Tim Darsaut, the research portfolio of the Division has been bolstered. These individuals continue to contribute significantly to the academic



Divisional Director
Dr. B. Matt Wheatley



Program Director
Dr. Cian O'Kelly

productivity of the division.

Dr. Matt Wheatley was promoted to Associate Clinical Professor and became Divisional Director in 2012.

The division continues to support the academic mission within the Department of Surgery and will continue to support both collaborative and independent research projects.

Awards

Dr. Keith Aronyk, Medical Staff Association Humanism Award

Dr. Keith Aronyk, Undergraduate Medical Education Award for Preceptor Excellence

Dr. Jeff Pugh, Pre-Clinical Mentorship Award for Undergraduate Medical Education

Dr. Nathan Deis, RE Fraser Award for Excellence in Teaching

Dr. Cameron Elliott, Surgical Foundations Research Day Award

Publications

O'Kelly CJ, Spears J, Chow M, Wong J, Boulton M, Weill A, Willinsky RA, Kelly M, Marotta TR: Canadian Experience with the Pipeline Embolization Device for Repair of Unruptured Intracranial Aneurysms. *AJNR Am J Neuroradiol.* 2012

Sankar T, Moore NZ, Johnson J, Ashby LS, Scheck AC, Shapiro WR, Smith KA, Spetzler RF, Preul MC: Magnetic Resonance Imaging Volumetric Assessment of the Extent of Contrast Enhancement and Resection in Oligodendroglial Tumors. *J Neurosurg.* 2012;116(6):(1172-81)

Kushchayev S, Sankar T, Eggink LL, Kuschayeva YS, Wiener PC, Hooper JK, Eschbacher J, Liu R, Shi F-D, Abdelwahab MG, Scheck AC, Preul MC: Monocyte galactose/N-acetylgalactosamine-specific C-type lectin receptor stimulant immunotherapy of an experimental glioma. Part 1: simulatory effects on blood and monocytes and monocyte-derived cells of the brain. *Cancer Manag Res.* 2012

Raymond J, Darsaut TE, Bing F, Makoyeva A, Kotowski M, Gevry G, Salazkin I: Stent-Assisted Coiling of Bifurcation Aneurysms May Improve Endovascular Treatment: A Critical Evaluation in an Experimental Model. *AJNR Am J Neuroradiol*

Darsaut TE, Bing F, Salazkin I, Gevry G, Raymond J: Flow diverters failing to occlude experimental bifurcation or curved sidewall aneurysms: an in vivo study in canines. Citation: *J Neurosurg.* 2012;117(1):(37-44)



Division of Orthopaedic Surgery

In 2012, the Division of Orthopaedic Surgery had 44 active members. Dr. Marcia Clark (Foundations of Surgery Program Director, Arthroplasty) departed for Calgary and Dr. D'Arcy Durand (Knee) joined the group.

There was significant change in leadership as Dr. Don Weber took over as Zone Clinical Lead, Dr. Scharfenberger took over as Program Director and Dr. Masson took over as Divisional Director. Many thanks to Drs. Otto and Dick for all their hard work in helping the division and Orthopaedics in Edmonton excel and be where it is today.

There were 21 residents in the orthopaedic training program. All four of the chief residents passed their Royal College Exams in 2012. There were fellows in Arthroplasty, Sports Medicine, Spine and Pediatric Spine.

All faculty members were involved in the education of medical students at various levels of training including the Gilbert Scholar and Discovery Learning programs, the MSK block for pre-clinical students and the clinical rotations of the fourth year students. There were 60 local and national elective students.

The division had another very

successful Resident Retreat in January with lively debates on current controversies in Orthopaedics.

The 38th Annual Alberta Orthopaedic Resident Research Day was held in April. Dr. Tim Daniels from Toronto was our visiting adjudicator.

Dr. Stefan Parent from Montreal was the 2012 Brian Greenhill Visiting Lecturer in Paediatric Orthopaedics at the Annual Paediatrics Day in November and also presented at the Edmonton Scoliosis Research Half Day.

There were several other social events that helped build resident and staff camaraderie. These included The Annual Resident Golf Tournament and Farewell to the Chiefs Party, the welcome to the new residents' party at Dr. Balyk's and the Christmas Party at the Mayfair.

The Glen Sather Sports Medicine Clinic opened in the new Kaye Edmonton Clinic. The division is looking forward to collaboration with Sports Medicine and Rehabilitation Medicine in patient care and research in this exciting new facility.



Divisional Director
Dr. Edward Masson



Program Director
Dr. Angela Scharfenberger

Awards

Staff

Dr. John McIvor and Dr. Robert Stiegelmar were awarded the Orthopaedic Surgery Teacher of the Year Award for 2012 at the 9th Annual Division of Orthopaedic Surgery Retreat.

Dr. Lauren Beaupre was awarded the CIHR New Investigator Award (Patient Oriented Research) in June 2012.

Dr. Nadr M. Jomha was awarded the J. Edouard Samson Award for his body of research culminating in a paper entitled: *"Vitrification of intact human articular cartilage"*.

Dr. Adetola B. Adesida was awarded the American Orthopaedic Research Society ORS Collaborative Exchange Award

Dr. Adetola B. Adesida was awarded World Universities Network (WUN) Research Mobility Fund Award

Students

At the Alberta Orthopaedic Resident Research Day Ashlee Dobbe won the prize for Best Junior Resident Project

James McInnes won First Prize Basic Science Project

Dave Saliken won Second Prize Basic Science Project

At the Department of Surgery Awards Day Alex Rezansoff was awarded the Cooper Johnston Memorial Scholarship

Orfan Arafah was awarded the Dr. Hastings Mewburn Postgraduate Scholarship in

Orthopaedic Medicine

Sanja Bosnjak - Faculty of Medicine & Dentistry Interfaculty Graduate Studentship, awarded WCHRI Scholarship 2011 declined in order to keep Interfaculty studentship

Eric Chalmers - WCHRI, AITF, TD Interdisciplinary Award

Wei Chen - China Ph.D. Award

Roger Croutze - CIHR Masters Research Award, Walter H. Johns Graduate Fellowship and Queen Elizabeth II Graduate Scholarship Master's Award

Thi Kim Cuong Nguyen - M.Sc. Vietnam Award

Katherine Evans - NSERC Summer Award

Hossam Gharib - Alberta Innovates - Technology Futures

Fraaz Kamal - Auto21 Award

Brandon Kwong - Dean Research Award

Jon Leuke - Alberta Innovates - Technology Futures

Laura Rose - CIHR Doctoral Research Award

Elise Watkins - CIHR Banting and Best Graduate Award, U of A president award, WCHRI award
Chris Woloschuk - M.Sc. - Queen Elizabeth II Scholarship)

Nhat-Quang Vo - Vietnam Ph.D. Award

Publications & Presentations

Research continued to grow and expand as outlined in the 2012 Research Newsletter available online at www.uofaweb.ualberta.ca/orthopaedicsurgery



Spine Research

Chen W, Le LH, Lou E: Ultrasonic Imaging of Spinal Vertebrae, *Open Journal of Acoustics*, Doi:10.4236/oja.2012.23011, 2, 95-103, 2012.

Benfield D, Moussa WA, Lou E: A Packaging Solution Utilizing Adhesive-Filled TSVs and Flip-Chip Methods, *Journal of Micromechanics and Microengineering*, 22:6 065009 (9pp), doi:10.1088/0960-1317/22/6/065009, 2012.

Lou E, Hill DL, Raso JV, Donauer A, Moreau MJ, Mahood JK, Hedden DM: Smart Brace versus Standard Rigid Brace for the Treatment of Scoliosis: A pilot study. In *Research into Spinal Deformities 8 Series Studies in Health Technology and Informatics*. IOS Press Oxford, 176: pp. 338-341, 2012.

Lou E, Hill DL, Raso JV, Donauer A, Moreau MJ, Mahood JK, Hedden DM: Brace Wear Characteristics during the first 6 months for the treatment of scoliosis. In *Research into Spinal Deformities 8 Series Studies in Health Technology and Informatics*. IOS Press Oxford, 176: pp. 346-349, 2012.

Parent EC, Zhang PQ, Hill DL, Moreau MJ, Hedden DM, Lou E: Sensitivity-to-change of full torso surface topography measurements in adolescents with idiopathic Scoliosis and a main thoracic curve. In *Research into Spinal Deformities 8 Series Studies in Health Technology and Informatics*. IOS Press Oxford, 176: p. 484, 2012.

Chalmers E, Lou E, Hill D, Zhao V, Wong MS: Development of a Pressure Control System for Brace Treatment for Scoliosis, *Journal of IEEE Transaction Neural Systems and Rehabilitation Engineering*, 20(4): pp.557-563, 2012.



Chan A, Lou E, Hill D, Faulkner G: Development of A Sensor System to Measure Interface Corrective Force Distribution in a Brace for the Treatment of Scoliosis, *Journal of Medical and Engineering Physics*, 34(9), 1310-1316, 2012.

Lou E, Lam G, Hill D, Wong MS: Development of a Smart Garment to reduce Kyphosis during daily Living, *Journal of Medical & Biological Engineering & Computing*, 20(11), 1147-1154, 2012.

Norton JA, Roy FD & Mahood JK. Preservation of Motor Evoked Potentials under Anesthesia in Children with Spinal Muscular Atrophy Type II Undergoing Spinal Deformity Surgery. *Journal of Clinical Neurophysiology*. Accepted. In Press. July 2012.

S.L Koppenhaver, J.M. Fritz, J.J. Hebert, G.N. Kawchuk, E.C. Parent, N.W. Gill, J.D. Childs, D.S. Teyhen. Manipulation Special Issue. Association between history and physical examination factors and change in lumbar multifidus muscle thickness after spinal manipulation in patients with low back pain. *J Electromyogr Kinesiol*. 2012 Oct;22(5):724-31.

M.D. Kennedy, R. Fischer, K. Fairbanks, L. Lefaivre, L. Vickery, J. Molzan and E. Parent Can pre-season fitness measures predict time to injury in varsity athletes?: a retrospective case control study. *Sports Med Arthrosc Rehabil Ther Technol*. 2012 Jul 23;4(1):26.

Trauma Research

Beaupre LA, Jones CA, Johnson DWC, Wilson DM, Majumdar SR: Recovery of Function following a Hip Fracture in Geriatric Ambulatory Persons Living In Nursing Homes: REGAIN-I Prospective Cohort Study. *JAGS* (2012) 60:1268–1273.

Buddingh S, Liang J, Allen JK, Koziak A, Buckingham J, Beaupre LA: Rehabilitation for Long-term Care (LTC) Residents Following Hip Fracture: A Survey of Current Practices, Barriers and Facilitators to Care. *J Geriatr Phys Ther* [10 May 2012 Epub ahead of print DOI: 10.1519/JPT.0b013e3182569b4f].

Book Chapters

Beaupre LA, Jones CA. Composite Outcomes in Orthopaedics: Understanding the Concepts IN Bhandari, M., & Robionek, B. (Eds.). (2012). *Advanced concepts in surgical research*. Stuttgart, Germany: Blackwell Publishing.

Arthroplasty Research

Gooch K, Marshall D, Smith D, Faris P, Khong H, Wasylak T, Pearce T, Johnston B, Arnett G, Parker R, Hibbert J, Beaupre L, Zernicke R, Frank C: The Comparative Effectiveness of a New Evidence Based Clinical Pathway versus the Standard of Care for Primary Hip and Knee Joint Replacements. *Osteoarthritis Cartilage* (2012) 20 (10): 1086-94. (IF 4.37)

Beaupre LA, Secretan C, Johnston DWC, Lavoie GJG: A randomized controlled trial comparing patellar retention versus patellar resurfacing in primary total knee arthroplasty: 5-10 year follow-up. *BMC Res Notes* (2012) 5:273.

MacKenzie J, O'Connor G, Pettit P, Marshall DA, Faris PD, Dort L, Khong H, Werle J, Powell J, Beaupre L, Frank C, on behalf of the Alberta Hip Improvement Project (HIP) Advisory Committee and the Alberta Arthroplasty Research Group (AARG): Functional Outcomes over 2 years Comparing Hip Resurfacing and Total Hip Replacement. The Alberta HIP Study. *J Arthroplasty* (2012) 27(5): 750-757. e2 doi.org/10.1016/j.arth.2011.10.004 (IF 2.38)

Beaupre LA, Johnston DWC, Dieleman S, Tsui B: Pre-Emptive Multi-Modal Analgesia with or without Femoral Nerve Blockade following Primary Total Knee Arthroplasty: A Controlled Clinical Pilot Study. *TSW J* (2012) vol. 2012 Article ID 273821, 6 pages. doi:10.1100/2012/273821. (IF 1.54)

Jones CA, Pohar S. Health-related quality of life after total joint arthroplasties: A scoping review. *Clinics in Geriatric Medicine* 2012 28(3): 395-429

Jones CA, Cox V, Jhangri GS, Suarez-Almazor ME. Delineating the impact of obesity and its relationship on recovery after total joint arthroplasties *Osteoarthritis and Cartilage* 2012 20:511-518

Book Chapters

ME Pedersen, A Scharfenberger, G Goplen, NM Jomha. Ankle osteoarthritis and arthroplasty. In *Arthroplasty by In Tech*. Online open access publication. 2012.

Upper Extremity Research

Bouliane MJ, Chan H, Kemp KAR, Glasgow Jr, R, Lambert R, Beaupre L, Sheps DM: The Intra- and Inter-rater Reliability of Plain Radiographs for Hill-Sachs and Bony Glenoid Lesions: Evaluation of the Radiographic



Portion of the Instability Severity Index Score. *Br J Shoulder Elbow* Article first published online: 8 SEP 2012 | DOI: 10.1111/j.1758-5740.2012.00208.x

Kemp KA, Sheps D, Beaupre LA, Luciak-Corea C, Styles-Tripp F, Balyk R: An Evaluation of the Responsiveness and Discriminant Validity of Shoulder Questionnaires among Patients Receiving Surgical Correction of Shoulder Instability. *TSW J* (2012) Volume 2012, Article ID 410125, 7 pages; doi:10.1100/2012/410125

Chow RM, Begum F, Beaupre LA, Carey JP, Adeeb S, Bouliane MJ: Proximal Humeral Fracture Fixation: Locking Plate Construct +/- Intramedullary Fibular Allograft. *J Shoulder Elbow Surg* (2012) 21(7):894-901.

Ball B, Bergman JW: Scaphoid excision and 4-corner fusion using retrograde headless compression screws. *Tech Hand Up Extrem Surg*. 2012 Dec;16(4):204-9.

Sheps DM, Kemp KA, Hildebrand KA. Population-based incidence of proximal radius and ulna fractures among adults in a Canadian metropolitan area. *Curr Orthop Prac*, 2012 July/August; 23(4): 364-8.

Puloski S, Kemp K, Sheps D, Hildebrand K, Donaghy J. Closed reduction and early mobilization in fractures of the humeral capitellum. *J Traum*. 2012 January; 26(1): 62-5.

Paediatric Research

Kircher J, Ali S, Drendel A, Dulai S, Newton AS. Pediatric Musculoskeletal Pain Management in the ED: A Medical Record Review. (Abstract) *CJEM* (2012) 14 (1S): S32.

Kircher J, Ali S, Drendel A, Dulai S, Plint A, Newton AS. Acute Pediatric Musculoskeletal Pain Treatment: A North

American Survey of Practice Variation. (Abstract) CJEM (2012) 14(1S): S32.

Joint Regeneration Research

D Saliken, A Mulet-Sierra, NM Jomha, AB Adesida. Decreased hypertrophic differentiation accompanies enhanced matrix formation in co-cultures of outer meniscus cells with bone marrow mesenchymal stromal cells. *Arthritis Research & Therapy* 14(3), R153, 2012.

NM Jomha, JAW Elliott, GK Law, B Maghdoori, JF Forbes, A Abazari, AB Adesida, L Laouar, X Zhou, LE McGann. Vitrification of intact human articular cartilage. *Biomaterials* 33(26), 6061-6068, 2012.

A Adesida, A Mulet-Sierra, L Laouar, NM Jomha. Oxygen tension is a determinant of the matrix forming phenotype of cultured human meniscal fibrochondrocytes. *PLoS One* 7(6), e39339, 2012.

TY Yeung, KL Seeberger, T Kin, A Adesida, NM Jomha, AMJ Shapiro, GS Korbitt. Human mesenchymal stem cells protect human islets from pro-inflammatory cytokines. *PLoS One* 7(5), e38189, 2012.

AB Adesida, A Mulet-Sierra, NM Jomha. Hypoxia mediated isolation and expansion enhances the chondrogenic capacity of bone marrow mesenchymal stromal cells. *Stem Cell Research & Therapy* 3(2), 9, 2012.

N Matthies, A Mulet-Sierra, NM Jomha, and A Adesida. Matrix formation is enhanced in co-cultures of human meniscus cells with bone marrow stromal cells. *J. Tissue Engineering & Regenerative Medicine*, Mar 31, 2012 DOI 10.1002/term. 1489, 2012.

KA Al-mansoori, V Prasad, JF Forbes, GK Law, LE



McGann, JAW Elliott, NM Jomha. Cryoprotective agent toxicity in human articular chondrocytes. *Cryobiology* 64(3), 185-191, 2012.

NZ Mostafa, R Fitzsimmons, PW Major, A Adesida, N Jomha, H Jiang, H Uludag. Osteogenic differentiation of human MSC cultured with dexamethasone, vitamin D3, basic fibroblast growth factor and bone morphogenetic protein-2. *Connective Tissue Research* 53, 117-131, 2012.

Fossett E, Khan WS, Pastides P, Adesida AB: The effects of ageing on proliferation potential, differentiation potential and cell surface characterisation of human mesenchymal stem cells. *Curr Stem Cell Res Ther*, 7(4):282-286, 2012. Dhinsa BS, Adesida AB: Current clinical therapies for cartilage repair, their limitation and role of stem cells. *Curr Stem Cell Res Ther*, 7(2):143-148, 2012.

Acharya C, Adesida A, Zajac, P, Mumme M, Riesle J, Martin I, Barbero A. Enhanced chondrocyte proliferation and mesenchymal stromal cell chondrogenesis in coculture pellets mediate improved cartilage formation. *Journal of Cellular Physiology*, 227: 88-97, 2012.

Khan WS, Longo UG, Adesida A, Denaro V: Stem cell and tissue engineering applications in orthopaedics and musculoskeletal medicine. *Stem Cells Int*, 2012:403170, 2012.

Khan WS, Adesida AB, Tew SR, Longo UG, Hardingham TE: Fat pad-derived mesenchymal stem cells as a source for cell-based adipose tissue repair strategies. *Cell Prolif*, 45(2):111-120, 2012.

Zhi L, Chen C, Pang X, Uludag H, Jiang H. Synergistic effect of recombinant human bone morphogenetic protein-7 and osteogenic differentiation medium on human bone-marrow-derived mesenchymal stem cells in vitro. *Int Orthop*. 2011 Dec;35(12):1889-95

Chen C, Uludağ H, Wang Z, Jiang H. Noggin suppression decreases BMP-2-induced osteogenesis of human bone marrow-derived mesenchymal stem cells In Vitro. *J Cell Biochem*. 2012 Dec;113(12):3672-80.

Chen C, Uludağ H, Wang Z, Rezanooff A, Jiang H. Macrophages inhibit migration, metabolic activity and osteogenic differentiation of human mesenchymal stem cells in vitro. *Cells Tissues Organs*. 2012;195(6):473-83.

Wang Y, Mostafa NZ, Hsu CY, Rose L, Kucharki C, Yan J, Jiang H, Uludağ H. Modification of human BMSC with nanoparticles of polymeric biomaterials and plasmid DNA for BMP-2 secretion. *J Surg Res*. 2012 Dec 20. doi:p11: S0022-4804(12): 01939-7.

Division of Otolaryngology - Head & Neck Surgery

The Division of Otolaryngology Head and Neck surgery had an excellent and productive 2012 academic year.

The highlight of the divisional academic activities was the Resident Research Day on May 4, 2012. The invited speaker was the distinguished Dr. Peter Hilger, Professor, Division of Facial Plastic Surgery, University of Minnesota.

Dr. Khalid Ansari took over as Program Director from Dr. Erin Wright, who has brilliantly led our residency program. Two excellent residents decided to join our program this year and these were Dr. Bree Erickson and Dr. Timothy Cooper. Our three fellowship programs continued to attract excellent candidates. Dr. Keith Richardson and Dr. Hani Almarzouki, joined our advanced head and neck oncology and reconstruction fellowship, and Dr. Justin Khetani joined our rhinology and skull base fellowship.

The research activity continued to be strong with 97 publications for the year (29 original research journal articles, 50 conference proceedings, 10 abstracts, two posters, three internet publications, and three book chapters). The total divisional grants for the year were \$61,724.

The division hosted the following courses in this academic year: 1st Division of Otolaryngology-Head and Neck Surgery, University of Alberta, International Symposium – Advances and Updates in Porto Santo Stefano, Tuscany, Italy and the Family Practice CME yearly update of Otolaryngology in Edmonton.

The diversity and strength of the faculty continued to be increased with the recruitment of Dr. Raiyan Chowdhury General Otolaryngologist with ICU interest. Manuary 2012 fund raised over \$20,000 for the division.

Awards

Golden Scalpel Award
Khalid Ansari

William A. Shandro Award
Khalid Ansari

Department of Surgery Top 10
Teacher of the Year Award
Khalid Ansari

#7 seminar in the Department of
Surgery - David Côté

First Prize for Best Research
Project Head & Neck Surgery
“Tranexamic acid in Endoscopic
Sinus Surgery: a Randomized
Controlled Trial” - David Côté



Divisional Director
Dr. Hadi Seikaly



Program Director
Dr. Khalid Ansari

Lloyd F Detwiller Scholarship in Health Administration - Jeffrey Harris

Top Ten Teacher Award 2012 - Allan Ho

Golden Apple Award -in recognition for excellence in academic teaching - Daniel O'Connell

Outstanding Reviewer Award - the Journal of Otolaryngology- Head & Neck Surgery - Daniel O'Connell

Second Prize - Anaesthesia Resident Research Day - Trina Uwiera

Honorary Member, Canadian Dental Association - Johan Wolfaardt

Top Ten Teacher Award - Erin Wright

Publications

Dr. Khalid Ansari, The great auricular nerve: an anatomic and surgical study. Murphy R, Dziegielewski P, O'Connell D, Seikaly H, Ansari K, J Otolaryngol Head Neck Surg. 2012;41 Suppl 1():(S75-7)

Dr. David Côté, Outcomes of free flap reconstruction in the elderly. Vaz JA, Côté DW, Harris JR, Seikaly H, Head Neck. 2012

Dr. Jeffrey Harris, Neck metastases in oropharyngeal cancer: Necessity and extent of bilateral treatment. Dziegielewski PT, O'Connell DA, Szudek J, Barber B, Joshi A, Harris JR, Seikaly H Head Neck. 2012;

Dr. Daniel O'Connell, Primary total laryngectomy versus organ preservation for T3/T4a laryngeal cancer: a population-based analysis of survival. Dziegielewski PT, O'Connell DA, Klein M, Fung C, Singh P, Alex Mlynarek M, Fung D, Harris JR, Seikaly H J Otolaryngology Head Neck Surg. 2012;41 Suppl 1():(S56-64)

Dr. Martin Osswald Outcomes of Oral Implants Used in Fibular Grafts for Orofacial Reconstruction Osswald M, Stanford C, Huynh-Ba G, Ellingsen J, Oates T, Estafanous E. International Journal of Oral and Maxillofacial Implants. 2012;Volumen 27(Number 5):(1000-1002)

Dr. Hadi Seikaly Total glossectomy with laryngeal preservation and free flap reconstruction: Objective functional outcomes and systematic review of the literature. Dziegielewski PT, Ho ML, Rieger J, Singh P, Langille M, Harris JR, Seikaly H Laryngoscope. 2012;():()

Dr. Trina Uwiera Frequency of Use and Percieved Effectiveness of Three Simultion Models in Surgical Resident Education Uwiera TC Uwiera RRE Parsons J International Journal of Modern Education Forum. 2012;1(2):(50-57)

Dr. John Wolfaardt Morphological and Functional Changes of the Temporomandibular Joint and Stomatognathic System After Transmandibular Surgeries in Oral and Oropharyngeal Cancers: A systematic review. Al-Saleh M, Olivo SA, Seikaly H, Boulanger P, Theie N, Wolfaardt J, Manjor P. Journal of Otolaryngology Head and Neck Surgery. 2012

Dr. Erin Wright Olfactory and sinonasal outcomes in endoscopic transsphenoidal skull-base surgery. Sowerby LJ, Gross M, Broad R, Wright ED Int Forum Allergy Rhinol. 2012

Dr. Allan Ho Can uHear Me Now? Validation of an iPod-Based Hearing Loss Screening Test Jacek Szudek, Amberley Ostevik, Peter Dziegielewski, Jason Robinson-Anagor, Bill Hodggets, Nahal Gommaa, Allan HO Journal of Otolaryngology-Head & Neck Surgery. 2012;41(S1):(S78-S84)



Division of Pediatric Surgery

The Division of Pediatric Surgery includes pediatric cardiac surgery, general surgery, neurosurgery, orthopaedic surgery, otolaryngology, plastic surgery and urology. Pediatric ophthalmology, dentistry as well as oral and maxillofacial surgery are part of other departments of the University of Alberta but are included within the pediatric perioperative clinical services at the Stollery Children's Hospital.

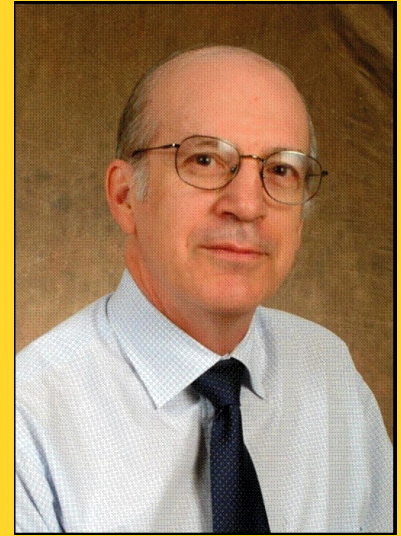
During 2012, many pediatric surgeons contributed to the Stollery Children's Hospital initiatives to increase the operating room, intensive care and clinic resources which will support excellence in the delivery in health care and enhancement of academic activity.

Members of the Division of Pediatric Surgery made major contributions to and received acknowledgements for their undergraduate and postgraduate teaching. Overall, divisional surgeons published 52 peer reviewed-papers. The academic achievements of the Pediatric Trauma and Spinal Research groups will be highlighted as examples of academic progress within the Division.

Dr. I. Bratu, Surgical Lead of the Pediatric Trauma program, and her colleagues showed that the frequency and severity of pediatric trauma in Northern Alberta is greater than in other parts of Canada. Consequently, Dr. Bratu is focusing her trauma research on the prevention and improved treatment of trauma in children in Alberta and across Canada.

Some of the current projects include studies of pediatric aboriginal versus non-aboriginal trauma mortality in Northern Alberta, all terrain vehicle injuries in Alberta, national pediatric trauma care quality indicators as well as the care of specific traumatic injuries of the spleen and thorax.

The research was funded, in part, by summer studentships and from a grant from Alberta Health Services and the Canadian Hospitals Injury Reporting and Prevention Program. Dr. Bratu and her colleagues made six presentations



Divisional Director
Dr. William Cole



on their trauma research at Canadian and international meetings.

The Spine Research Group (Drs. E. Lou, J. Raso, D. Hedden, D. Hill, J. Mahood, M. Moreau, J. Norton, E. Parent and K. Duke as well as S. Southon) had a productive year. Their research projects focus on non-ionizing radiation approaches to assess spinal deformity as well as non-surgical and surgical methods of treatment of scoliosis.



Efficacy of orthotic bracing for scoliosis is monitored by a device embedded in the brace which measure force and compliance.

Collaborative research programs are also being explored between The China Institute (University of Hong Kong, The Chinese University of Hong Kong, The Hong Kong Polytechnic University and Fudan University) and the University of Alberta.

The members of The China Institute have made outstanding contributions to spine research over many decades. In 2012, the Spine Research Group at the University of Alberta published 11 peer-reviewed papers and were guest speakers at 9 national and international meetings. Their research is supported by 22 external grants including grants from NSERC (four grants) and CIHR. Their research programs include eight PhD and six MSc graduate students as well as seven undergraduate students. Many of the graduate and undergraduate students are the recipients of prestigious awards, studentships and fellowships.

Division of Plastic Surgery

2012 was another busy year in the Division of Plastic Surgery. Basic science research continued in various facets of wound healing in Dr. Tredget's lab. Clinical research continued in peripheral nerve including brachial plexus and targeted myoelectric prosthetic rehabilitation. Other areas of interest include post bariatric body contouring, advanced digital technology, osseointegration and burns.

Another highlight was the completion of planning for an expansion of iRSM at the Misericordia Hospital.

We welcomed Dr. Paul Schembri to the division. Paul has a major interest in microsurgery following a fellowship at the University of Pittsburgh. We also announced Dr. Jon Toy as the new Residency Program Director. The division wishes to thank Dr. Jaret Olson for his 10 years of dedicated service as program director and helping us receive full accreditation from the Royal College.

Our distinguished visitor for the Department of Surgery Grand Rounds was Dr. Maria Sieminow from the Cleveland Clinic. She is

a pioneer in facial composite tissue allotransplantation.

Dr. Wilkes was invited as a visiting professor to Saudi Arabia, lecturing, performing surgery and functioning as an external examiner in their Plastic Surgery Fellowship examination.

Our residency training program continues to train one resident a year with a return for service agreement with the Government of Saskatchewan.

There are three residents currently in the CIP program and one in a PhD stream. Drs. Adil Ladak and Lisa Korus both successfully completed their Royal College Fellowship examination in 2012. Dr. Ladak is currently doing fellowship training in peripheral nerve surgery at the Mayo Clinic. Dr. Korus completed a hand fellowship in London, Ontario and is now doing a breast reconstruction fellowship at the University of Toronto. She is also working on her Master's Degree from John Hopkins University.

Awards

Olson J. Morhart M. - Best Hand Paper at the Canadian Society of



Divisional Director
Dr. Gordon Wilkes



Program Director
Dr. Jon Toy

Plastic Surgeons Annual Meeting 2012

Guilfoyle, Regan- Martin T. Spoor Award

Shankowsky, Heather RN - Claudette Brown Award for Excellence in Plastic Surgery Nursing and Rehabilitation

Elzinga, Kate - 3rd Place prize Annual Surgical Foundations Research Day

Stewart, Tara F.M. Prix Woolhouse Award for Best Clinical Study - Canadian Society of Plastic Surgeons Annual Meeting

Ball, Brandon- Resident of the Month, PAIRA Provincial Award

Olson, J - Top Three Teacher Award Department of Surgery Award

Wong J.- 2012 Alberta Heritage Graduate Student Academic Scholarship

Grants

Chan, M. Olson, J., Morhart, M. C-I (2012). Centre for Neural Interfaces and Rehabilitation Neurosciences, Canadian Foundation for Innovation, \$3,076,491

Chan, M. Olson, J., Morhart, M. C-I (2012-2016). Restoring upper limb movement sense to arm amputees: A move towards natural control of prosthetic limbs, NIH, \$1,254,885

Korbutt, G. Tredget, T. C-I (2019-). Cell and amp; Tissue innovation research center (CTIRC), Canadian Foundation for Innovation \$10,575,340

Tredget, T. P-I (2012). The role of bone marrow-derived monocytes in fibroproliferative disorders: Potential therapeutic effect of SDF-1, University Hospitals Foundation \$34,584

Tredget, T. P-I (2012-2013). The role of small leucine rich proteoglycans (SLRPs) in the activation of toll-like receptor 4 (TLR4) pathways and the functional consequences of SLRPs on deep and superficial dermal fibroblasts, Edmonton Civic Employees Union, Department of Surgery, University of Alberta, \$10,000.

Publications

Papers: 24

Book Chapters: 4

Invited Speakers: 9

Instructional Course Speakers at International Meetings: 2

Visiting Professor: 1



L to R: Heather Shankowsky, Dr. David Edwards and Claudette Brown

Division of Surgical Research

2012 was an exciting year in the Division of Surgical Research. In April, we hosted the Edmonton Civic Employees' Charitable Assistance Foundation Board of Trustees to a breakfast. At the breakfast, Dr. Jonathan White and Dr. Todd McMullen gave presentations on their research that had been funded by the foundation the previous year. The ECECAF Chair, Brenda Waluk presented Dr. Doug Hedden with a donation that would go on to fund \$109,096 of awards to 11 principal investigators in the 2012 competition.

The Tom Williams Surgical Research Day in May was another successful event. The day offered 24 oral presentations, 12 in each category of basic or clinical science and 16 poster presentations with eight in each category. Congratulations to the prize winners of the day:

Clinical Science

Vanessa Davis
1st prize oral presentation

Ahmed Almamar
2nd prize oral presentation

Caroline Xu & Sayf Gazala
tie for best poster

Basic Science

Adam Kinnaird
1st prize oral presentation

Jeevan Nagendran
2nd prize oral presentation

Peter Kwan
1st prize best poster

Telford Yeung
honorable mention for poster

A heartfelt thank you to the judges of the proceedings, Drs. Jonathan Norton, Jayan Nagendran, Gina Rayat, Rachel Khadaroo, Erin Wright, Bryan Dicken and the distinguished judge and Grand Rounds presenter, Dr. Patrick Guillane.

Congratulations to Dr. Gina Rayat on her appointment of Director of the Surgical-Medical Research Institute (SMRI) replacing Dr. Ray Rajotte after many years of dedicated service. This year, the SMRI moved from their location in the basement of the Dentistry/Pharmacy building to a brand new facility in the Heritage Medical Research Centre. A grand opening ceremony on October 1 celebrated this achievement followed by a dinner which was attended by many SMRI alumni and guests.

Work continues on the new Cell and Tissue Innovative Research Centre located on the 7th floor of the Li Ka Shing Building with the funding provided by a CFI award granted to Dr. Greg Korbitt. The state of the art, 10,000 sq ft facility is expected to be operational in 2014.



**Divisional Director
Dr. Edward Tredget**



Awards

Dr. Adetola Adesida received awards in 2012 from the Orthopaedic Research Society Collaborative Exchange Award and the World Universities Network Research Mobility Fund.

Dr. Colin Anderson's research was also recognized when he received the CST Research Excellence Award from the Canadian Society of Transplantation.

Congratulations to Dr. Adetola Adesida and Dr. Todd McMullen who were successful in the fall round of CIHR grant applications. Each of these investigators received notification they would receive 5 year funding in the amounts of \$696,183 and \$642,147 respectively.

Grants

The top research grants awarded to members of the division this year were:

\$804,467 - Dr. Greg Korbitt from CIHR for "Translational strategies for the clinical transplantations of neonatal porcine islets"

\$159,990 - Dr. Babita Agrawal from CIHR for "Novel cross-protective (universal) vaccine for influenza infections"

\$80,000 – Dr. Greg Korbitt from the Alberta Diabetes Institute for "Co-transplantation of human islets with mesenchymal stem cells"

\$50,000 – Dr. Gina Rayat from the Alberta Diabetes Institute for "Characterization of genetically modified new-born pig islets for use in clinical islet xenotransplantation"

\$40,000 – Dr. Gina Rayat from UofA / Zhejiang University for "Evaluation of the efficacy of anthocyanins derived from Chinese bayberry extract on the survival of neonatal porcine islet xenograft"

\$34,968 – Dr. Tom Churchill from UofA / UHF for "A practical solution for maintaining intestinal viability during clinical ischemia-reperfusion"

\$34,584 – Dr. Ted Tredget from UofA / UHF for "The role of bone marrow-derived monocytes in fibroproliferative disorders: Potential therapeutic effect of SDF-1"

\$30,875 – Dr. Adetola Adesida from UofA / UHF for "Hypoxia mediated co-expansion of chondrocytes and mesenchymal stem cells as a cell source for engineering articular cartilage"

\$15,000 – Dr. Colin Anderson from the Multiple Sclerosis Society of Canada for "The role of co-inhibitory receptors and danger signals in central nervous system autoimmunity"

Publications

Scientists in the Division of Surgical Research had 39 publications in 2012. In addition to these publications is one book chapter and various submissions which are currently in press.

Division of Thoracic Surgery

The Division of Thoracic Surgery continues to be a leader in clinical program transformation and undergraduate Medical Education for surgical specialties. The formation of the Alberta Thoracic Oncology Program has provided a provincial structure for continued clinical program improvement that will also lead to significant clinical research opportunities in outcomes and process improvement. We have added our fifth member with Dr. Bryce Laing joining the group in the fall of 2012. Bryce brings an interest in Lung Transplantation. His presence will bolster the group's ability to participate in all forms of the academic mission.

On the research front, Dr. Sayf Gazala (Gen Surg PGY-4) successfully completed his MSc in Public Health under the co-supervision of Dr. Eric Bédard. His project examined the quality of life in patients undergoing minimally invasive, thoracoscopic lung resections for lung cancer. Dr. Eric Bédard continues to co-supervise Dr. Rene Razzak (Gen Surg PGY-3) in his PhD studies with a goal of completion in 2013.

Our entire group actively participates in all elements of Undergraduate Medical Education including Discovery Learning, Gilbert's Scholars and providing didactic seminars and clinical experience for Undergraduate Medical Students. We have been the top subspecialty in annual Undergraduate Medical Education Report for Surgery for two years running.

Awards

Drs. Azim Valji, and Ken Stewart as top ten subspecialty teacher (2012)

Dr. Sayf Gazala (Gen Surg resident), Tom

Williams Research Day, Department of Surgery, University of Alberta, Best Clinical Paper Presentation, May 2012.

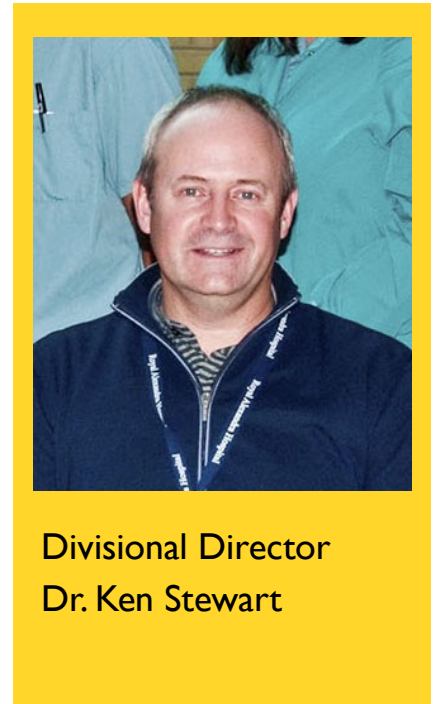
Dr. Sayf Gazala (Gen Surg resident), General Surgery Research Day, University of Alberta, Clinical Paper Award, April 2012.

Grants

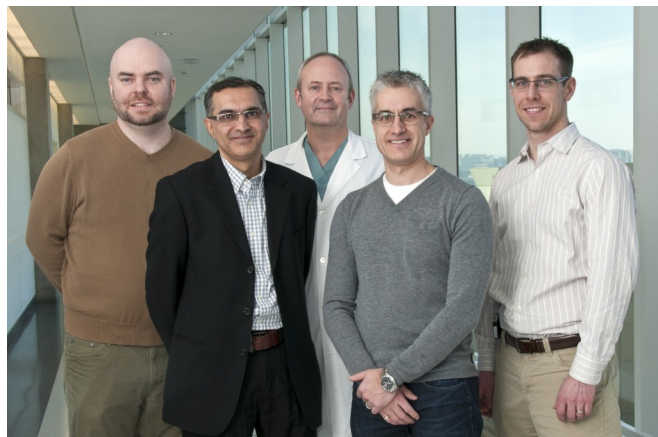
Dr. Sayf Gazala and Dr. Eric Bédard, "Quality of Life following VATS lobectomy for Lung Cancer", Johnson & Johnson Ethicon Canada, \$20 000 grant.

Publications

Published abstracts: 5
Published manuscripts: 3 (all peer reviewed)
International meetings: 2
National Meetings: 3



Divisional Director
Dr. Ken Stewart



L to R: Drs. B Laing, A Valji, K Stewart,
E Bédard & S Johnson

Division of Urology

June saw four distinguished visitors from the CUA/EAU Visiting Scholars Program who were touring Canada before their arrival at the Canadian Urological Association Annual Meeting in Banff. Prof. Rolf Ackermann from Germany, is a recognized international leader in urology and is actively involved in promoting the development of standards for the care of urological patients. He is also dedicated to improving the exposure of residents to research during their training years and encouraging social interactions of urologists with organizations that develop a solid basis to professional interactions and professional success. Dr. Roman Sosnowski, from Poland, is a current member in the Young Academic Urologist group of the EAU and is actively involved in this group. Dr. Erdem Canda, from Turkey, has a number of international collaborations and a strong academic interest in working towards increased collaborative multi-institutional research. Dr. Peter Nyiradi, from Hungary, is a recognized specialist andrologist with a strong interest in basic science research.

Additional academic visitors included:

March 16, 2012 Dr. Bolduc Pediatric Urologist, Assistant Professor of the Department of Surgery, Laval University
“Tissue Engineering in Urology”

October 26, 2012 Dr. Curtis Nickel, Professor of Urology, Queen’s University, CIHR Tier 1 Canada Research Chair in Urologic Pain and Inflammation, “Male Chronic Pelvic Pain Syndrome: Evidence Based Management 2012”

November 16, 2012 Dr. Hunter Wessells, Professor and Chair, Nelson Chair in Urology, University of Washington, School of Medicine, “Urological Complications of Pelvic Fracture”

November 30, 2012 Dr. Kirk Lo, Associate Professor, Division of Urology, Mount Sinai Hospital, University of Toronto, “Cancer Survivorship: Wanting Babies in the Future & Making it Happen

Surgical Innovations

First 14 cases of laparoscopic sacrocolpopexy with laparoscopic anterior and posterior repair performed in Edmonton (manuscript in process).

First 4 robotic assisted radical cystoprostatectomy with intracorporeal neobladder creation in Canada.



Divisional Director
Dr. Gerry Todd



Program Director
Dr. Keith Rourke

First Robotic assisted simple prostatectomy with vesico-urethral anastomosis. First zero ischemia, and segmental clamping robotic assisted partial Nephrectomy in Edmonton.

Appointments

2012 saw several key appointments with Dr. Eric Estey taking on the role of the Facility Site Chief at the Royal Alexandra Hospital and Dr. Blair St Martin receiving a cross appointment to Obstetrics and Gynecology for further development of the MIS program for treatment of pelvic organ prolapse.

Awards

PUA Winners:

Adam Kinnaid – CT Wolan Award
Conrad Maciejewski - 2nd Place Resident Paper
Joey Roy – Third Place Resident Paper
Dr Keith Rourke – Leo Spackman Award

Frank Squires Scholarship in Urology
Conrad Maciejewski
Adam Kinnaid

Tom Williams Research Day
Adam Kinnaid - 1st Place Basic Science Oral Presentation

Top Ten Teacher Award
Dr. Keith Rourke

Urology Resident Teaching Award
Dr. David Mador

Surgical Foundations Research Day
Adam Kinnaid – 1st Place

Division of Urology Resident Research Day
Conrad Maciejewski – 1st Place
Adam Kinnaid – 2nd Place

Alberta Higher Education Graduate Studies Award, Conrad Maciejewski

Grants

\$35,000 to Dr. Niels Jacobsen for Correlation of Bladder Cancer Tissue Microarray Analysis with Clinical Outcomes

\$5,000 to Dr. Darcie Kiddoo for An RCT of Hydrophilic vs Non-hydrophilic PVC Catheter use in Spina Bifida

\$9,566 to Dr. Peter Metcalfe for Use of Mesenchymal Stem Cells in the Prevention and Treatment of Bladder Fibrosis

\$26,139 to Dr. Peter Metcalfe for Use of Mesenchymal Stem Cells in the Prevention and Treatment of Bladder Fibrosis

\$13,791 to Dr. Peter Metcalfe for The Role of PDE-5 Inhibition in an Animal Model for Bladder Outlet Obstruction

\$150,000 to Dr. Ron Moore for Development of Novel Oncolytic Poxviruses

\$510,595 to Dr. Ron Moore for Real-time Functional Optical Resolution Photoacoustic Microscopy and Micro-Endoscopy for Cancer

\$ 200,000 to Dr. Ron Moore for PDT of Prostate Cancer

\$ 54,000 to Dr. Keith Rourke for Quality of life and outcomes assessment after urethral reconstruction

Publications

Book Chapters – 3
Abstracts – 31
Journals – 27
Med Ed Portal Sessions – 6



Education

Undergraduate Medical Education

Our undergraduate program remains one of the strongest and most innovative in the country, and our faculty continues to excel in undergraduate teaching. In December, we received word that the graduating class of 2012 ranked #1 nationally in the Part I LMCC Examination and was also #1 in the discipline of Surgery. This is third year in a row that our students have been #1 in Surgery in Canada.

Twenty-four of the graduating class of 2012 took up positions in surgical residency training, a rate of approximately 1 in 6.

Program evaluation and student achievement data continue to show sustained high performance by our faculty and students. We continue to offer high-quality surgical teaching at 6 hospital sites across Edmonton and in St Albert and Fort Saskatchewan.

Our undergraduate education team has continued to lead the way and innovate in the use of new teaching technologies. Our clerkships switched to the new curriculum system MedSIS in September 2012 (a year before implementation in other clerkships) and have learned much about the strengths and weaknesses of the new system. In 2013, we will trial the use of logging and assessment on mobile devices such as the iPhone.

Our series of 'Surgery 101' podcasts has continued to attract much attention worldwide. 2012 saw us exceed 100 episodes and 780,000 downloads in over 100 countries (about 1,000 downloads a day). This year, we launched a new Surgery 101 app for the iPhone and a new Surgery 101 website, and

partnered with the School of Business to explore the field of online marketing.

We have continued to embrace the use of technology in education, and our clerkships now have their own Twitter feeds (@Surgery546 and @Surgery556).

Our students have also contributed many of their own learning objects to our clerkship websites and to Surgery 101.

Our program of research in surgical education has also continued to grow, with multiple manuscripts submitted and presentations given at national and international meetings. We have published two papers on our findings on the use of team-based education and assessment (supported by the Edmonton Civic Employees Fund).

Our online education initiative has also continued to grow, and the surgery clerkship wiki websites now contain multiple learning resources, videos and reflective submissions written by our own students. The wikis are available at surgeryanesthesia.org and specialitysurgery.org (log in required).

Our work on wiki website technology was presented at CAGS 2012. All of the work our team submitted to the 2013 Canadian Conference on Medical Education was accepted for presentation; members of our team will be involved in a total of 9 oral presentations and four posters.



Senior Director,
Undergraduate
Surgical Education,
Dr. Jonathan White

Student Performance in 2011 2012

SURG 546 General Surgery, Anesthesiology & Pain Medicine

167 of 167 students of the class of 2013 in the mandatory rotation SURG 546 were issued passing grades in General Surgery at the end of the 3rd year of the MD Program in August 2012. Our data suggests that we were able to provide the same level of learning encounters as we have to previous cohorts of learners and maintain a preceptor to student ratio that was also similar to previous years, given the increase in number of students.

SURG 556 Speciality Surgery

153 of 153 students of the class of 2012 in the mandatory rotation SURG 556 were issued passing grades in Speciality Surgery at the end of the 4th year of the MD Program in May 2012. The graduating class of 2012 ranked #1 nationally in the Part I LMCC Examination and was also #1 in the discipline of Surgery, for the third year in a row.

Faculty Performance in 2011 2012

Our department provided a total of 1856 learning encounters for medical students in the academic year 2011-2012 (a 'learning encounter' is defined as an educational experience taking place between a student and a teacher).

165 of our 174 department members (94%) were engaged in formal education of our undergraduate students, which is a slight increase from the previous year (92%). Informal

teaching was also provided by the residents in our various divisions. Program evaluation data for this year has shown continued improvement across all of our undergraduate rotations.

The average number of learning encounters per teaching surgeon per year was 11.2. The median student rating of our preceptors was 4.60 out of 5. Forty-five members of our Department provided a total of 308 teaching hours in our mandatory clerkships with a median student rating of 4.30 out of 5 (these figures do not include sessions in the Gilbert Scholars program, the pre-clinical blocks and Discovery Learning).

Undergraduate education feedback reports were issued to all of our department members in December 2012. These included student ratings and comments on the educational performance of our members. For each preceptor, an Undergraduate Education Index was calculated to reflect the quality and quantity of their contribution to undergraduate education.

70 per cent of this Index was related to clinical teaching activity, 10 per cent to seminar-giving, 10 per cent to podcast creation and 10 per cent to OSCE participation. Scores ranged from 0 to 4.48 with a departmental median of 1.0, and preceptors were provided with ranking information within their division and across the year of the MD program in which they teach.

The Undergraduate Education Index was used to identify the Top 10 Teachers in both General Surgery and Speciality Surgery, and these educators were honoured with a prize and a special reception at the department's annual Surgical Awards Dinner, May, 2013.



Postgraduate Medical Education

2012 was a year of change and progress for Postgraduate Surgical Education in the University of Alberta. Following the successful completion of External Reviews in the previous year, many long-standing program directors felt the time was right to transition into other endeavors and three programs saw new staff step up to take on the challenge of leading a residency education program. It was determined that surgery would need to play a key role in discussions surrounding the Resident Duty Hour issue and Dr Erin Wright spearheaded Faculty-wide discussion pertaining to the Resident Duty Hours debate when he organized the first Resident Duty Hours Symposium on June 22, 2012. Discussion continues around assessment and competency based medical education (CBME) and our program directors continue to make strides in modifying their assessment practices and preparing for global changes.

2012 Events

CanMEDS

Dept-Wide Resident Seminars
The Residency Program group continues to provide quarterly resident education on CanMEDS Competencies. Notable topics in 2012 included: "Reporting Childhood Injuries" by Dr. Lionel Dibden, "The Politics of Advocacy in Health Care- Are We Naïve?" by The Honourable A. Anne McLellan, P.C., O.C and "Digital Professionalism - Email Etiquette & Facebook" by Drs. Chandra and Walton.

Surgical Foundations

The Surgical Foundations piloted a mentorship program; matching the new incoming PGY-1's to PGY-2 mentors. Dr. Erika Haase has recently accepted the role of Program Director for Surgical Foundations.

Duty Hours Symposium: June 22, 2012

Bringing together stakeholders from across Alberta, Dr Wright partnered with Sarah Thomas from PARA and Dr. Ramona Kearney (Postgraduate Dean) to organize the first Resident Duty Hours Symposium including speakers who represented the various perspectives of residents, faculty, PARA, academic administration and governing bodies.



Senior Director,
Surgical Postgraduate
Education,
Dr. Erin Wright

4th Annual CanMEDS OSCE: November 30, 2012

25 PGY-2 residents were assessed during the 2012 CanMEDS OSCE. The objective for this exam is to provide exposure to the non-medical expert CanMEDS competencies in a simulated environment. All of the scenarios designed by the OSCE sub-committee are relevant to a surgical practice.

ICRE and ICOSSET, Ottawa 2012

The theme of the International Conference on Residency Education hosted by the Royal College was "Milestones in Residency Education: Competencies, Controversies and Challenges". Once again, the Department of Surgery supported attendance of five surgical program directors along with Dr. Hedden, Chair and Diane Titley, Assistant Chair. As well, 6 administrative staff from the Office of Surgical Education attended the Administrator Track meetings and conference. The ICRE meetings provide



L to R: Drs. E Wright, M Clark & Ms. V Masson

valuable opportunity for the exchange of ideas within residency education. This year, Dr. Marcia Clark presented a poster on behalf of the Office of Surgical Education outlining the success of the PGY-2 CanMEDS OSCE. Dr. Cian O’Kelly from Neurosurgery presented a poster entitled “The multi-faceted utility of resident generated questions for in-training examination”. As well, otolaryngology resident Morgan Langille and Dr. Erin Wright had an oral presentation where they shared a successful modification to the Otolaryngology-HNS training program entitled “The ‘Every-Day’ vs. the ‘Half-Day’ – A Better Way.”

Several faculty members also attended the International Conference on Surgical Education and Training (ICOSSET) just prior to ICRE and research was presented by resident Jack Chiu, Dr Dan Schiller and Dr Marcia Clark on “Evaluation of Surgical Education Reflecting the CanMEDS Framework from the Residents’ Perspective at University of Alberta.” As well, general surgery resident, Rich Gill presented research on “Canadian General Surgery Residents’ Perspectives on Work-Hour Regulations”.

CaRMS 2012

During 2012 CaRMS approximately 200 candidates were interviewed for residency opportunities in the Department of Surgery. The Department of Surgery was extremely successful in the recent CaRMS match and the programs are quite pleased with the results.

Staffing Changes-2012

Dr. Kal Ansari moved into the Program Director role for Otolaryngology, taking over from Dr. Erin Wright who had transitioned to Senior Director for Surgical Postgraduate Medical Education.

Dr. Marcia Clark left the Surgical Foundations Program Director position in September 2012. Dr. Erin Wright has overseen the program in the interim until the appointment of Dr. Haase.

Dr. Angela Scharfenberger is the new Program Director for Orthopaedic Surgery as Dr. Ed Masson transitioned to the Divisional Director role.

Dr. Jonathan Toy has been appointed the new Program Director for Plastic Surgery, taking over from Dr. Jaret Olson after a long and successful tenure.

Division	Residents	Fellows
Cardiac Surgery	5	10
General Surgery	52	5
Neurosurgery	9	5
Orthopaedic Surgery	20	2
Otolaryngology - Head & Neck Surgery	12	4
Plastic Surgery	14	1
Urology	11	0
Clinical Investigator Program (CIP)	13	
Total residents	123	27

Graduate Program

We have been fortunate to maintain a steady enrolment in the Department of Surgery Graduate Program. Approximately half of our Master of Science students are residents funded through the Clinical Investigator Program (CIP). We also have a number of Doctor of Philosophy (PhD) students who are residents who receive CIP funding for two years of their program. Funding for the remainder of their program is dependent on grants and/or supervisor support.

Presentations

In 2012, our MSc students gave oral or poster presentations at eight national/international conferences and seven local/provincial conferences. Our PhD students presented at 7 national/international conferences and eight local/provincial conferences.

Awards

Our graduate students have been very successful in receiving awards at Faculty, University, Provincial and National levels. In 2012 our students were awarded \$162,415.

Award recipients in 2012 were Roger Croutze, Joseph LaBossiere, Jean-Sebastien Pelletier, Troy Perry, Esther Ekpe Adewuyi, Cara Ellis, Boris Gala Lopez, Rotem Lavy, Rene Razzak, Sonia Cader, Sarah Anderson, Richdeep Gill, David Al-Adra, and David Chapman.

Congratulations to all of our award winning students. We encourage all of our students in the application of future awards.

Publications

Our graduate students have successfully submitted articles for publication. In 2012 MSc students were first author on 11 publications and co-authored another six publications. Our PhD students were first author on five publications and one book chapter with co-authorship on another eight publications.

Graduate Students

Change of Category

Two of our residents changed from the Master of Science program to the Doctor of Philosophy program this year. Dr Rene Razzak made the change effective January 1, 2012 while Dr Pang Young changed effective September 1, 2012.

Students Successfully completed Candidacy Exam

Peter Kwan – May 22, 2012

Subodh Samrat – September 5, 2012

Students Successfully defended MSc Degree

Dr. Ahmed Almamar

“The Impact of Sleeve Gastrectomy as compared to



Director,
Graduate Education,
Dr. Tom Churchill

Adjustable Gastric Band on Active and Total Ghrelin and other GI Hormones and their influence on Satiety and Hunger” (June 5, 2012) [Supervisors: Drs. Daniel Birch and Arya Sharma]

Ms. Sarah Anderson
 “Characterization of human pancreatic Beta-cell progenitors as a means to alleviate the shortage of donor tissue for islet transplantation” (June 27, 2012) [Supervisor: Dr. Greg Korbitt]

Mr. Matthew Kokotilo
 “Optimizing impermeant support in an intraluminal preservation solution tailored to the small intestine” (August 13, 2012) [Supervisor: Dr. Tom Churchill]

Dr. Conrad Maciejewski
 “Novel oral and surgical management for partial bladder outlet obstruction” (July 18, 2012) [Supervisors: Drs. Peter Metcalfe and Edward Tredget]

Students Successfully defended PhD Degree

Dr. Richdeep Gill
 “The Role of Cyclosporine Treatment in Cardioprotection during Resuscitation of Asphyxiated lab models” (May 2, 2012) [Dr. David Bigam and Po-Yin Cheung]

Dr. David Al-Adra
 “Defining the Barrier of Split Tolerance in Allogeneic Mixed Chimerism” (June 13, 2012) [Dr. Colin Anderson]

Dr. Telford Yeung
 “Mesenchymal Stem Cells in Islet Transplantation” (October 17, 2012) [Supervisor: Dr Greg Korbitt]

Dr. Eric Loo
 “Activation of Natural Killer T Cells with Caulobacter Crescentus: Implications for Developing Tumour Immunity” (December 20, 2012) [Supervisor: Dr. Babita Agrawal]

Chart: Students Registered in Experimental Surgery

	Domestic Basic Science MSc	Int'l Basic Science MSc	Resident MSc	Total MSc	Domestic Basic Science PhD	Int'l Basic Science PhD	Resident PhD	Total PhD	Total Student Enrolment
Winter 2012	5	5	9	19	6	5	4	15	34
Fall 2012	5	6	6	17	6	7	4	16	33



Faculty Listing

Cardiac Surgery

Director: Dr. D Ross
Program Director: Dr. R MacArthur

Division Staff:

Dr. H Buchholz	Dr. W Chin
Dr. C Guenther	Dr. D Johnstone
Dr. A Koshal	Dr. S Meyer
Dr. D Modry	Dr. J Mullen
Dr. J Nagendran	Dr. C Norris
Dr. S Wang	Dr. L West

General Surgery

Director: Dr. D Williams
Program Director: Dr. D Schiller

Division Staff:

Dr. D Adams	Dr. K Alibhai
Dr. J Andruchow	Dr. J Bayne
Dr. R Beekman	Dr. D Berg
Dr. D Bigam	Dr. D Birch
Dr. R Brisebois	Dr. K Buttenschoen
Dr. A Cadili	Dr. D Callahan
Dr. M Chatenay	Dr. H Chyczij
Dr. C Ciona	Dr. H Cox
Dr. K Dabbs	Dr. D Davey
Dr. C de Gara	Dr. P Engels
Dr. M Evans	Dr. K Fathimani
Dr. O Farooq	Dr. E Haase
Dr. G Hadi	Dr. R Hallgren
Dr. S Hamilton	Dr. G Ibbotson
Dr. S Issa	Dr. C Jadick
Dr. D Jirsch	Dr. BW Johnson
Dr. R Khadaroo	Dr. S Karmali
Dr. J Kennedy	Dr. N Kneteman
Dr. G Lees	Dr. WJ Mackie
Dr. D Matheson	Dr. T McMullen
Dr. M Meier	Dr. P Miles
Dr. S Mortimer	Dr. S Norris
Dr. D Olson	Dr. A Plewes
Dr. A Procyshyn	Dr. M Ray
Dr. C Sample	Dr. J Shapiro
Dr. M Shaw	Dr. A Sobey
Dr. M Stephens	Dr. R St. Germaine
Dr. W Struck	Dr. D Sutherland
Dr. M Swenia	Dr. T Theman

Dr. A Trautman
Dr. P Wales
Dr. H Wang
Dr. J White
Dr. G Winkelaar

Dr. R Turnbull
Dr. A Walji
Dr. N Wasey
Dr. S Widder
Dr. W Yakimets

Neurosurgery

Director: Dr M Wheatley
Program Director: Dr C O'Kelly

Division Staff:

Dr. A Aronyk	Dr. R Broad
Dr. M Chow	Dr. M Findlay
Dr. R Fox	Dr. J McKean
Dr. V Mehta	Dr. A Nataraj
Dr. K Petruk	Dr. T Sankar
Dr. D Steinke	

Orthopaedic Surgery

Director: Dr. E Masson
Program Director: Dr. A Scharfenberger

Division Staff:

Dr. G Arnet	Dr. R Balyk
Dr. L Beaupre	Dr. J Bergman
Dr. M Bouliane	Dr. J Bury
Dr. J Cinats	Dr. W Cole
Dr. D Dick	Dr. D Durand
Dr. D Glasgow	Dr. R Glasgow
Dr. R Glasgow Jr	Dr. G Goplen
Dr. B Greenhill	Dr. D Hedden
Dr. J Hebert	Dr. R Henderson
Dr. D Hill	Dr. L Hunka
Dr. H Jiang	Dr. B Johnston
Dr. N Jomha	Dr. F Kortbeek
Dr. A Lalani	Dr. G Lavoie
Dr. M Lavoie	Dr. C LeBrun
Dr. P Leung	Dr. E Lou
Dr. J Mahood	Dr. J Mclvor
Dr. J McMillan	Dr. M Menon
Dr. M Moreau	Dr. W Moussa
Dr. D Naidu	Dr. G O'Connor
Dr. D Otto	Dr. C Panaro
Dr. E Parent	Dr. P Paul
Dr. J Raso	Dr. D Reid
Dr. G Russell	Dr. D Sheps

Otolaryngology - Head and Neck Surgery

Director: Dr. H Seikaly
Program Director: Dr. K Ansari

Division Staff:

Dr. M Allegretto	Dr. O Bykowski
Dr. C Carter	Dr. R Chowdhury
Dr. J Di Toppa	Dr. E Eksteen
Dr. H El-Hakim	Dr. J Harris
Dr. A Ho	Dr. J Keohane
Dr. J Kostiuik	Dr. W Kudryk
Dr. R Liu	Dr. O'Connell
Dr. M Osswald	Dr. T Uwiera
Dr. J Wolfaardt	Dr. E Wright

Pediatric Surgery

Director: Dr. W Cole

Division Staff:

Dr. I Bratu	Dr. B Dicken
Dr. S Dulai	Dr. E Eksteen
Dr. H El-Hakim	Dr. M Evans
Dr. D Hedden	Dr. D Kiddoo
Dr. J Mahood	Dr. J McIvor
Dr. P Metcalfe	Dr. M Moreau
Dr. J Norton	Dr. J Olson
Dr. J Pugh	Dr. I Rebeyka
Dr. K Sabri	Dr. T Uwiera

Plastic Surgery

Director: Dr. G Wilkes
Program Director: Dr. J Toy

Division Staff:

Dr. D Campbell	Dr. T Chong
Dr. D Edwards	Dr. M Giuffre
Dr. T Hayashi	Dr. A Jarman
Dr. G Lobay	Dr. G Louie
Dr. L McGann	Dr. B Mehling
Dr. M Morhart	Dr. G Moysa
Dr. S Nagata	Dr. J Olson
Dr. T Riegel	Dr. P Schembri
Dr. E Tredget	Dr. J Wang
Dr. J Wolfli	

Surgical Research

Director: Dr. T Tredget

Division Staff:

Dr. A Adesida	Dr. B Agrawal
Dr. C Anderson	Dr. T Churchill
Dr. G Korbutt	Dr. R Rajotte
Dr. G Rayat	Dr. B Zheng

Thoracic Surgery

Director: Dr. K Stewart

Division Staff:

Dr. E Bédard	Dr. S Johnson
Dr. B Laing	Dr. A Valji
Dr. T Winton	

Urology

Director: Dr. G Todd
Program Director: Dr. K Rourke

Division Staff:

Dr. D Bochinski	Dr. M Chetner
Dr. E Estey	Dr. H Evans
Dr. G Gray	Dr. M Hobart
Dr. N Jacobsen	Dr. D Kiddoo
Dr. D Mador	Dr. K Moore
Dr. R Moore	Dr. K Rourke
Dr. T Schuler	Dr. B St. Martin
Dr. T Wollin	

