



UNIVERSITY OF ALBERTA  
FACULTY OF MEDICINE & DENTISTRY  
Department of Surgery



*Improving Lives Together*



2013  
Department of Surgery  
Annual Report



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## Message from the Chair

Strategic planning was the major focus for our department in 2013. Through many meetings filled with thoughtful and positive discussion we felt it was important to review our mission and vision statements. I'm pleased to say that 2013 saw the emergence of our new mission statement, 'improving lives together'. Armed with this new idea we were able to forge ahead with our department strategic plan.

The process of developing such a plan is a lengthy one. It takes many minds and a full commitment to the goal. After substantial collection and interpretation of data we were able to compile the information and put a detailed strategy map in place. This map will allow us to form working groups to address each strategy and objective as well as measure set targets. With faculty and staff participation we will see department members build, collaborate and lead the department into the next 3 to 5 years.

2013 saw a continued commitment to academics when members attended the Royal College ICRE meeting in Calgary. A lot of great information came out of the two day conference which focused on educational outcomes,

inspiring residents and improving care. Plenary speakers addressed important elements of residency training, including competency-based education. We also took a look at the resident duty hours report and recommendations from the National Steering Committee. This topic will continue to be under debate but a flexible approach to RDH regulation seems to be the most widely accepted.

Within the department, we had another successful educational retreat held in November at the Lister Centre. Guest speakers Alister Browne from UBC and Vic Adamowicz from the U of A delivered interesting talks regarding distributive justice, as well as economic factors and public preference in resources. It was wonderful to see our many residents in attendance and engaged in discussion on these topics.

On May 10th we celebrated the 25th Anniversary of Tom William's Surgical Research Day. Alumnus Dr. Garth Warnock joined us as our distinguished visitor and guest judge. That evening, at the Surgical Awards Dinner, we celebrated the end of the academic year and honoured our members, scholarship



**Dr. Douglas Hedden**

recipients, and graduating graduate students and chief residents.

I continue to be proud of the accomplishments of our faculty, staff and learners and look forward to continued collaboration in all areas of the department. I anticipate many new ideas and initiatives to come out of the strategic plan working groups and thank members for their work and dedication to the department.

A handwritten signature in black ink, appearing to read 'Douglas Hedden'. The signature is fluid and cursive, written over a white background.

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

# Cardiac Surgery

Divisional Director: Dr. David Ross  
Program Director: Dr. Rod MacArthur

2013 was another year of significant change for the Division of Cardiac Surgery. Dr. Arvind Koshal retired after 22 years in Edmonton – 19 as Head of the Division – during which time he was one of the major drivers for the creation of the Mazankowski Alberta Heart Institute. A number of events were held to commemorate Dr. Koshal's career culminating in the creation of the Dr. Arvind Koshal Cardiac Surgery Advancement fund which will help the division, and the MAHI, fulfill its mandate to provide the very best in patient care through innovation in clinical care, research and education.

Dr. Darren Freed joined the division bringing both excellence in surgical care along with his research program focused on optimizing marginal cardiac donors. Darren's research fits well with Dr. Jayan Nagendran's work with ex-vivo lung perfusion and offers real hope to those waiting thoracic surgery transplantation – a strength of the division.

After 8 years as Residency Program Director, Dr. Rod MacArthur handed over this critical role to Dr. Shaohua Wang. The division thanks Rod for his tremendous work in this role and welcomes Shaohua to this important position.

Ongoing population growth in Alberta has led to long, and growing, wait lists for cardiac surgery as well as many other procedures. Calgary and Edmonton were successful at getting additional resources to increase surgical volumes in 2014.

Construction has been completed on a new hybrid operating room, and 6 more CVICU beds were finished. After many years of overcrowded and substandard Pediatric ICU facilities the government announced \$57 million to develop a new pediatric cardiac ICU on the 6<sup>th</sup> floor of the MAHI as well as a complete redevelopment of the general systems PICU and NICU.

## Awards & Achievements

Darren Freed: Mentor-Mentee Award, The Transplantation Society Section of Cardiac Surgery Resident Teaching Award (Manitoba)

Ivan Rebeyka: Queen's Diamond Jubilee Medal Program Chair - AATS/STS Congenital Surgery Symposium

Steven Meyer: Teacher of the Year Award (three years consecutively)

Jeevan Nagendran (senior resident): American Association of Thoracic Surgeons - C. Walton Lillehei Award Winner - International

Jeevan Nagendran: Canadian Diabetes Association – Doctoral Research Studentship -National Canadian Society of Transplantation – Cardiac trainee award - oral presentation - 1st place - National

Jeevan Nagendran: George R. Graham Memorial Award in Surgery – Department of Surgery, University of Alberta  
Jeevan Nagendran—Cardiac Science Research Day - Basic Science presentation -1st place (Local)

Jeevan Nagendran: Tom Williams Surgical Research Day – Basic Science oral presentation – 1st place (Local)

Jeevan Nagendran: Shab Puri Resident Award in Cardiac Surgery

## Grants

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)

2013-2018: Canadian Institutes of Health Research: \$13,850,000. Canadian National Transplant Research Program: Increasing Donation and Improving Outcomes. PIs: West, Caulfield, Hebert, Humar, Knoll, Levings, Mital, Roy, Shultz and Shapiro. Co-applicant along with 94 others. (Darren Freed)

2013-2016: University of Alberta Hospital Foundation: \$450,000. Recruitment/start-up funds (Darren Freed)

2013: University of Manitoba, Department of Surgery: \$15,000. Determining optimal reperfusion of hearts from donors after cardiocirculatory death. (Darren Freed)

2013-2016: Alberta Innovates Health Solutions, Collaborative Research and Innovation Opportunities Program Grant. \$750,000. The Human Explanted Heart Program (HELP) at the Mazankowki Alberta Heart Institute: A Translational Bridge for Cardiovascular Medicine. Co-applicant with Gavin Oudit and 14 others. (Darren Freed)

2012-2014 Central Aortic Pressure Study: in-human validation of a technique for measuring central aortic hemodynamics with peripheral arterial waveforms. PIs: Drs. Barry Finegan, M.S.McMurtry, M.K.Stickland, J.O.Hahn Co-Is: Drs. S.Wang, R.MacArthur,

J.Nagendran, A.Koshal, N.Ghorpade (\$107,000)

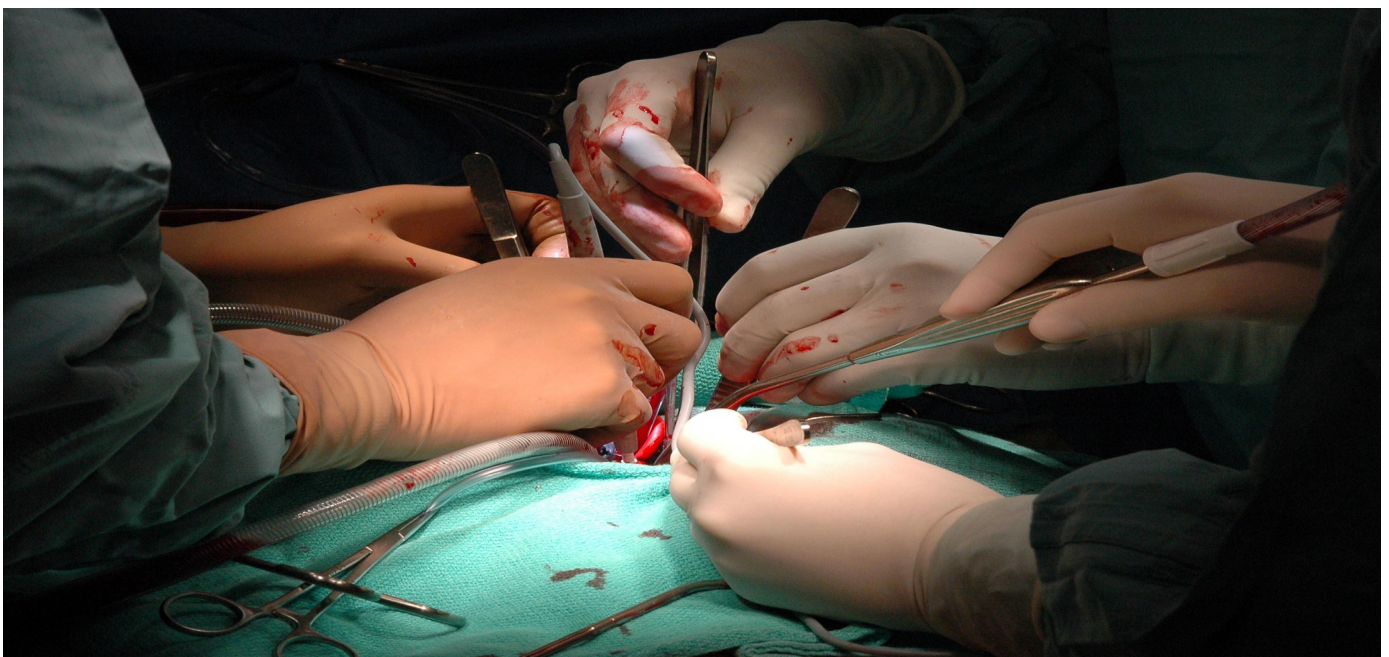
2013-2016 : Canada Africa Heart Project, CIDA grant for development of the Cardiac Sciences Program at the AGA KHAN University Hospital, Nairobi, Kenya. Roderick MacArthur \$500,000

## Publications

Publications: 48

Clinical trials: 4

Book chapters: 1



# General Surgery

Divisional Director: Dr. David Williams

Program Director: Dr. Kamran Fathimani

The Division of General Surgery at the University of Alberta continues to work hard, guided by its vision – “Working together toward the common goal of providing excellent patient care while continuing and strengthening a tradition of teaching and research”.

The Division of General Surgery is the largest division in the Department of Surgery with close to 100 faculty members. Each member is committed to the common goal of excellence in clinical care delivery, education and research.

Due to this commitment, tremendous innovation has taken place within the division. The development of acute care services at the University of Alberta and Royal Alexandra Hospitals has contributed greatly to the management of the acutely ill and injured patient, ensuring care is given in a timely fashion.

The Centre for the Advancement of Minimally Invasive Surgery (CAMIS) has brought minimally invasive surgery to a new level. Under the careful watch of Dr. Dan Birch, the centre has developed a world-class curriculum used for the training of surgeons from several surgical specialties. CAMIS has established a mentoring program, advancing surgeons’ skills at a local, provincial, and national level.

With the recruitment of Dr. Haili Wang and Dr. Anna Borowiec, a formal collaborative clinic has been established with members from the Division of Gastroenterology to service the Inflammatory Bowel Disease population.

Established programs within the division have continued to flourish such as hepatobiliary and pancreatic surgery, transplantation, trauma,

surgical oncology, endocrine surgery, gastrointestinal surgery, head and neck surgery, vascular surgery, and breast surgery.

The division is wide spread, operating within the Edmonton Zone at the University of Alberta Hospital, the Royal Alexandra Hospital, Misericordia Community Hospital, Grey Nuns Community Hospital, Sturgeon Community Hospital and the Ft. Saskatchewan Community Hospital. Faculty members are also present in Grande Prairie, Lethbridge, Ft. McMurray and Lloydminster.

## Education

Education is always a priority within the division and its members provide countless hours of teaching to both undergraduate and post-graduate students.

Dr. Kamran Fathimani is new program director for residency training in General Surgery. The past program director is Dr. Dan Schiller whose work was greatly appreciated. A dedicated rural training stream has been developed within the residency training program and is running well, with the first resident currently training in Grande Prairie.

A resident retreat is held annually. Dr. Arnold Coran from the University of Michigan was the guest speaker for the 2013 retreat held in Jasper. Dr. Coran’s discussion focused on Pediatric Surgery.

## Research

A strong culture in surgical research has all faculty members a part of this important task. The

division continues its proud and strong tradition of both basic and clinical science research. Members of the division hold 25 million dollars of support in 60 grants.

Areas of basic research interest include translational research on inflammatory mediators, genetic mutational analysis as related to lymphangiogenesis in endocrine malignancies, islet cell transplantation, hepatitis C, tissue cryopreservation, and intestinal ischemia. Clinical research is also strong in the division, with several grants received looking at surgery in the elderly.

### **Promotion & Recruitment 2013 - 2014**

With the growth of the division, many promotions and recruitments took place.

Appointed Clinical Lecturer:

Dr. Athena Bennett  
Dr. Anna Borowiec  
Dr. Iftikhar Ahmad  
Dr. Adrian Indar

Appointed Associate Professor with Tenure:

Dr. Ioana Bratu  
Dr. Dan Schiller

Appointed Clinical Professor:

Dr. Harold Chyczij

Appointed Clinical Assistant Professor:

Dr. David Olson

### **Resident Research Day 2013**

At the division's 2013 Resident Research Day, visiting professor and judge, Dr. Rebecka Myers presented City Wide Rounds on *Conjoined Twins: A Tour de Force in Teamwork*.

Dr. Meyers is a Professor of Surgery at the University of Utah School Of Medicine, Primary Children's Medical Center, Salt Lake City, Utah.

### **Resident Research Day Awards 2013**

Basic Science:

1st - David Al-Adra  
Host APCs, not Vascular Endothelium, Control Indirect Rejection by CD8 T cells

2nd - Troy Perry  
Ileocolic Resection Recruits CD11cCD103 Dendritic Cells to the Gut and Prevents the Release of Pro-Inflammatory Cytokines in a Surgical Mouse Model

3rd - Pang Young  
Oncostatin M Primes Macrophage-Epithelial Cell Interactions to Lipopolysaccharide

Clinical Science:

1st - Abdullah Saleh  
Creating an Inter-Organizational Electronic Health Record in Kibera – Challenges and Solutions

2nd - Shaheed Merani  
Research Productivity and General Surgical Residency – Impact of Graduate Degree Training

3rd - David (Yi Man) Ko  
Appendiceal Neuroendocrine Tumors - Edmonton Experience

### **Awards & Achievements**

#### **Faculty awards**

William Shandro Award for Teaching Excellence in Clinical Surgery: Dr. Kamran Fathimani

David Cook Award: Dr. Jonathan White

Medical Students' Association 2012 - 2013 Year 2 Award, Discovery Learning Preceptor of the Year: Dr. Eric Bédard

Medical Students' Association 2012-2013 Year 4 Award, Discovery Learning Preceptor of the Year:  
Dr. Jason Bayne

### **New Roles**

Dr. Erika Haase, Program Director, Surgical Foundations

Dr. Heather Cox, appointed New Clerkship Director

Dr. Mary Stephens accepted the position of Site Lead, University of Alberta hospital

Dr. Damian Paton-Gay accepted the position of Facility Section Head, Trauma at the Royal Alexandra Hospital

Dr. Kamran Fathimani accepted the position of Program Director

### **Top 10 Teacher Awards 2013**

Dr. Michael Chatenay  
Dr. Kelly Dabbs  
Dr. Kamran Fathimani  
Dr. Erika Haase  
Dr. Ghassan Hadi  
Dr. Shahzeer Karmali  
Dr. David Olson  
Dr. Cliff Sample  
Dr. James Stewart  
Dr. Walter Yakimets

Top Specially Surgery Awards 2013:

Dr. Eric Bédard  
Dr. Ken Stewart

### **Resident Awards**

Dr. Amir Yousef Taheri  
1<sup>st</sup> Prize, 3<sup>rd</sup> Year of Residency

RE Fraser Award for Excellence in Teaching 2013: Dr. Michael McCall

Marshall C. Hunting Award in Vascular Surgery 2013: Dr. Dana Mihalicz

Suturing Competition: Dr. Yi Man (David) Ko

Ultimate SAGES Resident Education Award: Dr. Jack Chiu – 1<sup>st</sup> place

Ultimate SAGES: Dr. Andrey Vizhul – 2<sup>nd</sup> place

CAGS Teaching Excellence 2013: Dr. Simon Turner

### **Grants**

99 Grants totaling **\$30,886,235.51**

### **Publications, Reviews & Book Chapters**

Conference proceedings (2)  
Original research journal article (130)  
Book chapter (9)  
Other (4)  
Poster (2)  
Abstract (32)  
Review journal article (5)  
Editorial (1)  
Commentary (1)  
PODcast (20)





# Neurosurgery

Divisional Director: Dr. B Matt Wheatley  
Program Director: Dr. Cian O'Kelly

The Division of Neurosurgery has 13 members; three full time pediatric Neurosurgeons and 10 adult Neurosurgeons. All pediatric neurosurgery is located at the University of Alberta Hospital. The adult neurosurgery division is split between the Royal Alexandra Hospital (three surgeons) and the University of Alberta Hospital (seven neurosurgeons).

## 3T intraoperative MRI

After almost a decade of planning and construction, the intraoperative MRI (iMRI) is now fully operational and allows for not only anatomic imaging but also functional MRI (fMRI) and diffusion weighted imaging and tractography (DTI). The iMRI remains a highlight of the program and Edmonton remains one of the few neurosurgical centers in the country with a 3T intraoperative MRI.

## Education

All members of the division participate in Undergraduate Medical Education contributing both to Discovery Learning and Gilbert Scholar

programs. There are seven 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.

## Research

Most members of the division are involved in either collaborative research or self-directed research. The division is involved in over 40 separate research projects and protocols with total grant revenue of \$1.15 million. The commitment to research is exemplified in the publication record of the division. There were 61 papers published of which 32 were peer-reviewed. There were 2 book chapter authored.

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



# Orthopaedic Surgery

Divisional Director: Dr. Edward Masson  
Program Director: Dr. Angela Scharfenberger

In 2013, the Division of Orthopaedic Surgery had 42 active members. Dr. Tom Greidanus retired after many years of active clinical practice. There were two new additions to the division: Dr. Jeff Toreson (oncology and trauma) and Dr. Eric Huang (adult and paediatric spine surgery).

There were 21 residents in the orthopaedic training program. All four of the chief residents passed their Royal College Exams in 2013. There were fellows in Trauma, Sports Medicine, Spine and Pediatrics.

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 & national elective students.

The division had another very successful Resident Retreat to Jasper in January with lively debates on Current Controversies in Orthopaedics. Dr. Richard McLeod from Kamloops was our guest speaker.

The Annual Alberta Orthopaedic Resident Research Day was held in April. This was the first time in 39 years that the University of Calgary declined to have a combined research day. Dr. Kishore Mulpuri from the University of British Columbia was the visiting adjudicator. Many excellent resident projects were presented.

The division was honoured to host the CFBS Traveling Fellows as they made their tour across Canada in June. Dr. Stephane Cherix from Lausanne, Switzerland and Dr. Benjamin

Blondel from Marseille, France along with local faculty, presented several talks on areas of their research interests.

Dr. Reggie Hamdy from Montreal was the 2012 Brian Greenhill Visiting Lecturer in Pediatric Orthopaedics at the Annual Peds Day in November.

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 Hawrelak Park and the Christmas Party at the Mayfair Golf and Country Club.

On the Research front, the division has continued to be very productive with over 100 publications and presentations. Many of the publications were in high impact specialty and subspecialty journals and the presentation were at the local, national and international level. The division is excited about the new clinical research space that has been set aside in the Clinical Sciences building. The Clinical Orthopaedic Research (CORe) group has been formed as a collaboration between orthopaedic surgery and physical therapy. It is hoped that this new space will bring together the various partners interested in clinical musculoskeletal research.

## Awards & Honours

### Staff

Dr. John McIvor and Dr. Beth Pedersen were awarded the Orthopaedic Surgery Teacher of the Year Award for 2013.

Dr. Lauren Beaupre (Steering Committee - Bone and Joint Canada) received the

Institute for Musculoskeletal Health and Arthritis Knowledge Translation Prize in 2013.

Dr. Nadr M Jomha: International Cartilage Repair Society Fellow .

## Students

Dr. Khaled Al-Manssori: University of Alberta Resident Research Day, ROTA Resident Outstanding Teacher Award.

Dr. Khaled Al-Abassi: University of Alberta Resident Research Day, Best Basic Science Paper.

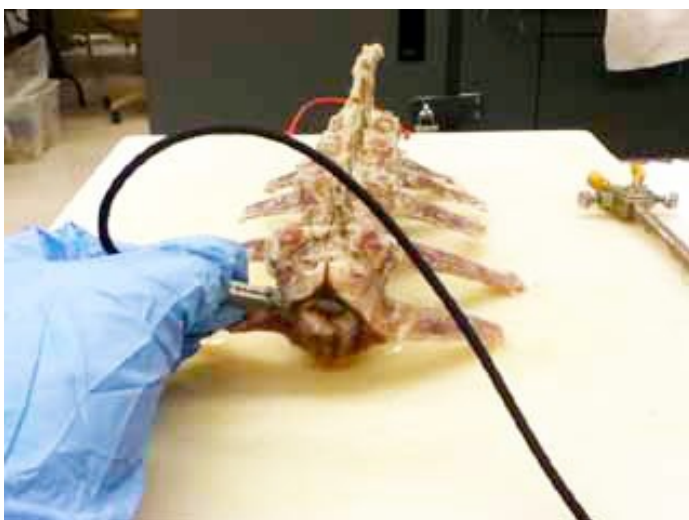
Dr. Colleen Weeks: University of Alberta Resident Research Day, Best Clinical Research Paper.

Dr. Armin Badre: University of Alberta Resident Research Day, Best Literature Review.

Dr. Ben Herman was awarded the Cooper Johnston Memorial Scholarship.

Dr. Khaled Almansoori was awarded the Dr. Hastings Mewburn Postgraduate Scholarship in Orthopaedic Medicine.

Roger Croutze: University of Alberta Department of Surgery Research Day, Basic Science Poster Presentation 2nd place.



Elise Watkins: CIHR Banting and Best Graduate Award, U of A president award, WCHRI award.

Chris Woloschuk: Queen Elizabeth II Scholarship.

Alan Richter: PT department research award 2013.

Eric Chalmers: WCHRI, AITF, TD Interdisciplinary Award.

## Key Research Publications

Research continued to grow and expand as outlined in the 2013 Research Newsletter available online at [www.uofaweb.ualberta.ca/orthopaedicsurgery](http://www.uofaweb.ualberta.ca/orthopaedicsurgery)

### Spine Research

Chen W, Lou E, Zhang P, Le L.H: Reliability of assessing the coronal curvature of scoliosis by using the center of lamina method on ultrasound images, Journal of Children's Orthopaedic, 7:521-529, 2013.

Nguyen KC, Le LH, Tran T, Lou E: Excitation of Ultrasonic Lamb Waves Using a Phased Array System with two Array Probes: Phantom and In vitro Bone Studies, Ultrasonics Special Issue, 2013 Doi: 10.1016/j.ultras.2013.08.004, 2013.

Evans K, Lou E, Faulkner G: Optimization of a Low Cost Force Sensor for Spinal Orthosis Applications, IEEE Transactions on Instrumentation & Measurement, 62(12):pp.3243-3250, 2013.

Li HJ, Le LH, Sacchi M, Lou E: Ultrasound Imaging of Long Bone Fractures and Healing with Split-Step Fourier Imaging Method, Ultrasound in Medicine and Biology, 39(8): pp.1482-1490, 2013.

Chan A, Lou E, Hill D: Review of Current Technologies and Methods Supplementing Brace Treatment in Adolescent Idiopathic Scoliosis, Journal of Children's Orthopaedic, 7 (4):309-316, 2013.

Wong AY, Parent EC, Kawchuk GN [Reliability of 2 ultrasonic imaging analysis methods in quantifying lumbar multifidus thickness](#). J Orthop Sports Phys Ther. 2013 Apr;43(4):251-62.. Epub 2012 Dec 7.

Wong AY , Kawchuk G , Parent E , Prasad N, "Within- and between-day reliability of spinal stiffness measurements obtained using a computer controlled mechanical indenter

in individuals with and without low back pain.", *Manual therapy*, 18(5):395-402, 18(5) (2013)

Schofield JS , Parent EC , Lewicke J , Carey JP , El-Rich M , Adeeb S, "Characterizing asymmetry across the whole sit to stand movement in healthy participants.", *Journal of biomechanics* [Epub Ahead of Print] (2013).

Schofield J , Parent E , Lewicke J , Carey JP , El-Rich M , Adeeb S, "Leg Dominance May Not be a Predictor of Asymmetry in Peak Joint Moments and Ground Reaction Forces During Sit to Stand Movements.", *Journal of applied biomechanics* [Epub ahead of print] (2013).

Wong AY , Parent EC , Funabashi M , Stanton TR , Kawchuk GN, "Do various baseline characteristics of transversus abdominis and lumbar multifidus predict clinical outcomes in nonspecific low back pain? A systematic review.", *Pain* [Epub ahead of print](2013).

Wong AY, Parent EC, Funabashi M, Kawchuk GN. [Do Changes in Transversus Abdominis and Lumbar Multifidus During Conservative Treatment Explain Changes in Clinical Outcomes Related to Nonspecific Low Back Pain? A Systematic Review.](#) *J Pain*. 2013. Nov 1. pii: S1526-5900(13)01317-5. [Epub ahead of print].

Komeili A, Westover LM, Parent EC, Moreau M, El-Rich M, Adeeb S. [Surface topography asymmetry maps cate-](#)

[gorizing external deformity in scoliosis.](#) *Spine J*. 2013 Oct 17. pii: S1529-9430(13)01572-6. [Epub ahead of print].

## Trauma Research

Chow R, Beaupre LA, Rudnisky CJ, Otto D, Clark M: Occupational risk in orthopaedic surgery. Is the use of fluoroscopy hazardous to your vision? *Am J Orthop* (2013) 42(11):505-10.

Wilson DM, Robertson S, Jones CA, Majumdar SR, Johnston DWC, Beaupre LA: Barriers and facilitators to an outreach rehabilitation program delivered in nursing homes after hip fracture surgical repair. *Adv Aging Res PP*. 37-42, Pub. Date: February 28, 2013. DOI: 10.4236/aar.2013.21005.

Rashiq S, Vandermeer B, Abou-Setta AM, Beaupre LA, Jones CA, Dryden DM: Efficacy of supplemental peripheral nerve blockade for hip fracture surgery: Multiple treatment comparison *Can J Anesthes* Article first published online: Jan 2013 | DOI 10.1007/s12630-012-9880-8.

Menon M, Jomha NM. Regional Anaesthesia in the Patient at Risk for Acute Compartment Syndrome: Con (Acute Compartment Syndrome: Caution Ahead) *ASRA News – American Society of Regional Anaesthesia and Pain Medicine*. May 2013, pp 4 – 7.



Guitton TG, Ring D, Menon M. etc.\* Diagnosis of Union of Distal Tibia Fractures; Accuracy and Interobserver Reliability. *Injury*, 44(8): 1073-5, 2013. \* = As part of the Science of Variation Group (SOVG).

## Knee Research

Swami VG, Mabee M, Hui C, Jaremko JL. Three-dimensional intercondylar notch volumes in a skeletally immature pediatric population: a magnetic resonance imaging-based anatomic comparison of knees with torn and intact anterior cruciate ligaments. *Arthroscopy*. 2013 Dec; 29(12): 1954-62.

Swami V, Cheng-Baron J, Hui C, Thomson R, Jaremko J. Reliability of estimation of pediatric ACL attachment locations from 3D knee reconstruction based on routine clinical MRI. *American Journal of Sports Medicine*. 2013 June; 41(6): 1319-1329.

## Arthroplasty Research

Powell PJ on behalf of the Canadian Arthroplasty Society: The Canadian Arthroplasty Society's Experience with Hip Resurfacing Arthroplasty: An Analysis of 2773 Hips. *Bone Joint J* (2013) 95-B:1040-1044.

Beaupre LA, Manolescu A, Johnston DWC: Five-Year Outcome of Ceramic on Ceramic Bearing versus Ceramic on Crossfire® Highly Cross-Linked Polyethylene Bearing in Primary Total Hip Arthroplasty: A Randomized Trial of 92 Subjects 60 Years of Age or Younger. *J Arthroplasty*. (2013) 28:485-489.

Alhaideb A, Muir SW, Huckell J, Alsaleh KA, Johnson MA, Johnston DWC, Beaupre LA: [Inter-observer reliability of the radiographic assessment of cement fixation in total hip arthroplasty](#). *Eur J Orthop Surg Traum* Article first published online: 18Oct2012 | DOI 10.1007/s00590-012-1108-7.

## Upper Extremity Research

Weeks C, Begum F, Adeeb S, Beaupre LA, Carey J, Bouliane M: Restoration of Medial Column Enhances Fracture Fixation Stability in Proximal Humeral Fractures: A Cadaveric Study. *J Shoulder Elbow Surg* (2013) 22 (11):1552-1557 | DOI doi.org/10.1016/j.jse.2013.02.003 (IF 2.32).

Bouliane M, Beaupre L, Ashworth N, Lambert R, Silveira A, Sheps D: Suprascapular Nerve Injury During Arthroscopic Superior Labral Repair: A Prospective Evaluation. *Knee Surg Sports Traumatol Arthrosc* Article first published online: Jan 2013 | DOI 10.1007/s00167-013-2415-1 (IF 2.67).

Zhao H, Herman B, Adeeb S, Sheps D, El-Rich M: Investigation of the geometries of the coronoid process and the fibular allograft as a potential surgical replacement. *Clin Biomech* (2013) 28:626-634.

Paul R, Chan R: Nonsurgical Treatment of Elbow Stiffness *J Hand Surg Am* (2013) 38(10):2002-4.

Furey MJ, Sheps DM, White NJ, Hildebrand KA. A retrospective cohort study of displaced segmental radial head fractures: is 2 mm of articular displacement an indication for surgery? *Journal of Shoulder and Elbow Surgery*. 2013 May; 22(5): 636-41.

Bouliane MJ, Chan H, Kemp K, Glasgow R, Lambert R, Beaupre LA, 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. *Shoulder & Elbow*. 2013 January; 5(1): 33-8.

## Joint Regeneration Research Publications

Croutze R, NM Jomha, H Uludag and AB Adesida. Matrix forming characteristics of inner and outer human meniscus cells on 3D collagen scaffolds under normal and low oxygen tensions. *BMC Musculoskeletal Disorders* 14, no. 353, 2013.

Matthies N, 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* 7(12), 965-973, 2013.

Chowdhury A, LW Bezuidenhout, A Sierra-Mulet, NM Jomha, AB Adesida. Effect of interleukin-1 beta treatment on co-cultures of human meniscus cells and bone marrow mesenchymal stromal cells. *BMC Musculoskeletal Disorders*. 2013, 14:216 doi:10.1186/1471-2474-14-216. Published July 22, 2013.

Abazari A, NM Jomha, JAW Elliott, LE McGann. Cryopreservation of articular cartilage. *Cryobiology*, 66(3): 201-209, 2013.

Yu H, K Al-Abbasi, JAW Elliott, LE McGann, NM Jomha. Clinical efflux of cryoprotective agents from vitrified human articular cartilage. *Cryobiology* 66, 121-125, 2013.

Sanghani A, M Chimutengwende-Gordon, A Adesida, W Khan. Applications of stem cell therapy for physeal injuries. *Curr Stem Cell Res Ther* 2013, 8(6):451-455.

Haddad B, AH Pakravan, S Konan, A Adesida, W Khan. A systematic review of tissue engineered meniscus: cell-based preclinical models. *Curr Stem Cell Res Ther* 2013, 8(3):222-231.

Haddad B, S Konan, A Adesida, WS Khan. A systematic review of tissue engineered meniscus and replacement strategies: preclinical models. *Curr Stem Cell Res Ther* 2013, 8(3):232-242.

# Otolaryngology

## H & N Surgery

Divisional Director: Dr. Hadi Seikaly  
Program Director: Dr. Khalid Ansari

The Division of Otolaryngology head and neck surgery had an excellent and productive 2013 academic year. The highlight of the divisional academic activities was the divisional Resident Research Day on May 3, 2013. The invited speaker was the distinguished Dr. Ron Mitchell, Professor of Otolaryngology and Pediatrics and Chief of Pediatric Otolaryngology, UT Southwestern Medical Center, Children's Medical Center Dallas.

### Education

Two excellent residents decided to join our program this year and these were Dr. Graeme Muholland and Dr. Andre Isaac. Fellowship programs continued to attract excellent candidates. Hani Almarzouki, accepted the advanced head and neck oncology and reconstruction fellowship position and Dr. Marie Bussieres accepted the rhinology and skull base fellowship position.

### Awards & Achievements

Dr. Khalid Ansari, Department of Surgery Top 10 Teacher of the Year Award.

Dr. David Côté:

- Golden Apple Award For Best Academic Teacher of the Year.
- Outstanding Reviewer award.
- 2nd place - Best Research Poster, Clinical.
- 2nd place - Best Research Project, Clinical. Canadian Society of Otolaryngology-Head & Neck Surgery Poliquin Resident Research Competition. Association Between Allergic Rhinitis and Asthma in Northern Alberta: A Population-based Study \*\*Principal Investigator on Resident Project. First Place. Best Resident Research Project.

Dr. Allan Ho:

- Gilbert Scholar's Preceptor of the Year Award.
- Grey Nuns Excellence in Teaching Award 2012-2013.

Dr. Suresh Nayar, Clinical Excellence Award.

Dr. Dan O'Connell, Top Reviewer - Journal of Otolaryngology - Head & Neck Surgery.

Dr. Vince Biron, Tom Williams Research Day - 2nd Prize, Clinical Research - Surgical versus Ultrasound Guided Drainage of Deep Neck Space Abscesses.

Dr. Hadi Seikaly:

- Alberta Society of Otolaryngology Head and Neck Surgery Annual meeting - Best Scientific Project 2013. V. Biron - Molecular Prognostication of Survival in Oropharyngeal Squamous Cell Carcinoma.





### 2013 Resident Research Day

- 1st place, 4th Annual Surgical Foundations Research Day.

- NOMINATED Covenant Health Mission Awards 2013.

- Champion of Care Award.

Dr. Johan Wolfaardt, Award of Excellence, Alberta Dental Association and College.

Dr. Erin Wright , Top 10 Teacher - Specialty Surgery Department of Surgery

### Publications, Reviews & Book Chapters

The research activity continued to be strong with 113 publications for the year.

Original research journal articles (40)

Conference proceedings (22)

Abstracts (27)

Posters (13)

Internet publications (3)

Book chapters (2)

Review Journal Articles (6)

### Grants

The total divisional grants for the year were **\$815,857.00.**

Manauary 2013 fund raised over **\$20,000.00** for the Division of Otolaryngology H&N Surgery.

# Pediatric Surgery

Divisional Director: Dr. William Cole

The Division of Pediatric Surgery within the University of Alberta, Department of Surgery, includes Sub-Divisions of pediatric general surgery, pediatric neurosurgery, pediatric orthopaedic surgery, pediatric otolaryngology, pediatric plastic surgery and pediatric urology.

The members of these Sub-Divisions work with other pediatric specialty groups – cardiac surgery, dental surgery, gynecology, ophthalmology, oral and maxillofacial surgery and transplant surgery – in the delivery of pediatric surgical services at the Stollery Children's Hospital.

The members of the division of pediatric surgery continue to make significant contributions to the educational and research activities of the Department of Surgery. In order to enhance further expansion and excellence in academic activities, the members of the division of pediatric surgery have made significant contributions to future planning of pediatric surgical services.

Stable and smoothly running clinical services are essential for the further enhancement of academic activities. To this end, members of the division have contributed to the Alberta Health Services 2030 planning for clinical services in division referral areas. The planning process has clearly indicated that a major expansion of resources as well as changes in the models of clinical care will be needed to meet the future care of patients.

Future projections indicate a large increase in demand for clinical services from Alberta but also from provinces within Western Canada. A new Stollery Children's Hospital will be needed

to provide the necessary consolidated pediatric and pediatric surgical resources.

Major changes to the coordination of care with regional partners and optimization of the clinical care processes within the Stollery Children's Hospital will be needed to meet the increased clinical demand. Additional surgeons will also be needed to provide additional forefront surgical skills and to balance the needs of clinical service and academic productivity.



Pediatric heart and lung.





Additional resources are needed in the short-term as building a new Stollery Children's Hospital is a medium- to long-term project. The Stollery Children's Hospital, in partnership with Alberta Health Services, the University of Alberta and the Stollery Children's Hospital Foundation have launched many major capital projects which are likely to make a significant difference to the resources available for the delivery of clinical services and for the enhancement of academic activity. For example, expansions of the critical care units, operating rooms, beds and clinics are likely to provide an increased resource capacity.

As the available resources increase in the short- to medium-term there will be a need to recruit more surgeons. Recruitment has been minimal

in recent years because of the limited available resources. However, future recruitment is essential in order to ensure that pediatric surgical specialties can offer forefront care for patients. Recruitment can also be expected to enhance academic activity from existing members of the division of pediatric surgery and by recruiting surgeons who have academic credentials and successful academic track records.

There are many opportunities at the University of Alberta, within Canada and beyond to build research teams that focus on solving high impact clinical problems.

Major research funding agencies are very supportive of the latter approach to obtaining new knowledge that is likely to significantly advance health care. Another potentially productive area of research in pediatric surgery is in applying modern research methodologies to gaining robust data concerning the benefits, risks and economic outcomes of new health technologies – including procedures and devices. Using an evidence-based approach to the introduction of new procedures and technologies can be expected to significantly enhance future developments in pediatric surgery and surgery in general.



# Plastic Surgery

Divisional Director: Dr. Jaret Olson  
Program Director: Dr. Jonathan Toy

The University of Alberta, Division of Plastic Surgery has had a productive year clinically and academically in 2013. The division continues to grow and has hired one new plastic surgeon in 2013 with two more coming on board early in 2014. Dr. Jay Zhu was first to join the group. Dr. Zhu completed his fellowship training at the University of British Columbia in cranio-facial surgery and in addition, a year of fellowship training at the University of Pittsburgh in hand and wrist. Dr. Zhu has come back full of energy and is already providing excellent clinical care as well as taking a lead role in resident teaching and recently, has become the assistant program director. We look forward to welcoming Dr. Lisa Korus who has completed a hand and wrist fellowship at the Hand and Upper Limb Center in London, Ontario, as well as a breast fellowship in Toronto. Finally, we welcome back Dr. Adil Ladak who has completed a breast fellowship in Kelowna, as well as a peripheral nerve fellowship at The Mayo Clinic.

The division would also like to sincerely thank Dr. Gordon Wilkes for his many years of service as our trusted divisional director. Gord has been an outstanding leader and has guided the division in integrity and ingenuity. On behalf of all division members, we give Gord our most heartfelt thanks for his service and commitment.

Dr. Jonathan Toy is continuing on in his second year as Program Director. Dr. Jay Zhu has joined him as an assistant program director and together they have made some very positive changes in our program. We currently have 16

residents in the program and are being lead very efficiently and effectively by Drs. Toy and Zhu. Highlights from the past year include our Resident Research Day where Dr. Josh Wong won the Clinical Prize and Dr. Peter Kwan won the Basic Science prize. At the Tom Williams Research Day this past year, Dr. Josh Wong won the top clinical prize for his research study. He presented this again at the International American Society of Peripheral Nerve meeting, where he again won the top prize in research.

Our site leaders include Dr. Ted Tredget at the University of Alberta Hospital, Dr. Michael Morhart, Royal Alexandra Hospital, Dr. James Wolfli, Grey Nuns Hospital and Dr. Dave Edwards at the Misericordia Hospital. Dr. Wolfli, in addition has taken on the role of Plastic Surgery lead for undergraduate medical education and the new appointment of Quality Lead for the division.

Dr. Gorman Louie has been increasingly active in the AO Society, as he is currently on the AOCMF Education Council and is an invited lecturer and instructor internationally for this society. Dr. Louie is also past president of the Canadian Society of Plastic Surgery Education Foundation and member of the Nucleus Committee. Also of note, Dr. Blair Mehling, with the help of Drs. James Wolfli, Paul Schembri and the division of general surgery, have created a new Breast Program for Northern Alberta. This is a much needed program as this has become the standard of care across the country. A great deal of work has been done

getting this set up and it is now underway as of January 2014.

## Awards

Dr. Blair Mehling, HBOC Award of Distinction from the Hereditary Breast and Ovarian Cancer Society of Alberta.

Dr. Jaret Olson, Top 10 Teacher Award.

Michele Gervais, Claudette Brown Award.

## Research

The division has been very active in research, and Dr. Ted Tredget's lab leads in this manner. He currently has an Edmonton Civic Employees Department of Surgery grant as well as a Canadian Foundation for Innovation grant. He is supervising two PhD students, two MSc students and two post-graduate basic science students. In addition to running his lab, he is the divisional director for Surgical Research for the department and research lead for the School of Surgery. He is also currently the vice-president

of the Canadian Society of Plastic Surgeons and American Burn Association.

The division also works in close conjunction with Dr. Ming Chan in peripheral nerve research. We have recently had a Master's student successfully graduate from Dr. Chan's laboratory and division members are on multiple grants with him, including a Canadian Institute of Health Research grant, National Institutes of Health grant, a Canadian Foundation for Innovation grant and an Alberta Innovates Health Services grant.

## Invited Presentations:

10 + Dr. Louie contribution

## Book Chapters: 1

## Instructional Course Speakers at

International Meetings: 4

## Visiting Professors: 1



Annual  
Canadian  
Society of  
Plastic  
Surgeons  
meeting,

L to R:  
Dr. D Edwards,  
Dr. J Toy,  
Dr. E Fung,  
Dr. J Wong,  
Dr. K Elzinga,  
Dr. K Sun and  
Dr. J Olson

# Surgical Research

2013 was another exciting year in the Division of Surgical Research. In May, we once again hosted the Edmonton Civic Employees' Charitable Assistance Foundation Board of Trustees at what is now an annual breakfast. Dr. Adetola Adesida and Dr. Bin Zheng 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 \$117,914 of awards to 12 principal investigators in the 2013 competition. This funding competition saw 19 applications this year which saw a success rate of 63 per cent.

Work also 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.

## Tom Williams Surgical Research Day

The Tom Williams Surgical Research Day in May was another successful event. The Division of Surgical Research was the host division for this 25th annual research day. Dr. Garth Warnock, a U of A alumnus and former faculty member, was the guest speaker and judge for the day, which offered 24 oral basic and clinical science presentations, 5 basic science and 7 clinical science poster presentations.

Congratulations to the prize winners:

### Clinical Science

Oral Presentation

1st prize – Joshua Wong

Divisional Director: Dr. Edward Tredget

2nd prize – Vincent Biron  
3rd prize – George Kurien  
Honorable Mention – Adam Kinnaird

Poster Presentation

1st prize – Stephan van Zyl  
2nd prize – Caroline Jeffery

### Basic Science

Oral Presentation

1st prize – Jeevan Nagendran  
2nd prize – Pang Young  
3rd prize – Troy Perry  
Honorable Mention – Joseph LaBossiere

Poster Presentation

1st prize – Mahra Nourbakhsh  
2nd prize – Roger Croutze

A heartfelt thank you to the judges of the proceedings, Drs. Raymond Rajotte, Norman Kneteman, Colin Anderson, Tom Churchill, Nadr Jomha, Richard Fox and the distinguished judge and Grand Rounds presenter, Dr Garth Warnock.



Dr. Garth Warnock speaks at the Surgical Awards dinner.

## Appointments

Dr. Hamdy El-Hakim was appointed Director of Clinical Research in the department. Dr. El-Hakim has been working with NACTRC and is hopeful to have funds in place for clinical research grants in 2014.

## Awards

The George R Graham Postgraduate Memorial Bursary in Surgery is awarded annually to trainees in the postgraduate program in surgery. This award is based on a combination of academic achievements including research, clinical and educational endeavors. The 2013 recipient for this award was Dr. Jeevan Nagendran, a resident in the division of cardiac surgery.

The Department of Surgery brought in over \$4.5 million in grants and awards in 2013. Members of the division accounted for 41 per cent of that in the sum of \$1,881,811.62. Investigators in the department were also successful in being awarded 3 CIHR grants. Congratulations to Drs. Adetola Adesida, Todd McMullen and Babita Agrawal. Additionally, 2 CFI grants were awarded to Tim Darsaut and Colin Anderson.

Dr. Rachel Khadaroo and Dr. Todd McMullen were each successful in their applications for the Partnership for Research and Innovation in the Health System (PRIHS) awards. Dr. Khadaroo's project is 'Optimizing Seniors Surgical Care – The Elder Friendly Surgical Unit and Dr McMullen's project is Rectal Cancer Care Clinical Pathway'. Todd McMullen was also successful in the AIHS Industry Partnered Translational Fund award for 'A Monoclonal Antibody to Restore Radioiodine Sensitivity and Decrease Tumor Burden in Metastatic Papillary Thyroid Carcinoma'.

Congratulations also to James Shapiro on being named to a Tier 1 Canadian Research Chair.



**Edmonton Civic Employees' Charitable Assistance Foundation breakfast (L to R: Dr. Hedden, Dr. Tredget, Ms. B Waluk).**

## Grants

The top research grants awarded to basic scientists in the division this year were:

\$697,183 - Dr. Adetola Adesida from CIHR for "Knee Meniscus Reconstruction Using Mesenchymal Stem Cells".

\$344,445.62 – Dr. Greg Korbitt from JDFI for "Encapsulation of neonatal porcine islets for clinical transplantation".

\$313,199 – Dr. Colin Anderson from CFI for "Visualization of Transplant Biology"

\$159,984 – Dr. Babita Agrawal from CIHR for "New dual-mode antiviral agents for the treatment of hepatitis C virus infection".

\$150,000 – Dr. Greg Korbitt from NCESCN for "Development of GMP E-Learning courses for GMP compliant cell therapy manufacturing facilities".

\$75,000 – Dr. Colin Anderson from the Canadian Diabetes Association for "Generation of chimerism and donor specific tolerance for islet transplantation".

\$50,000 – Dr. Adetola Adesida from University of Calgary for “Evaluate the effects of hypothermic storage on meniscal allograft viability”.

## Publications - Basic Scientists

Croutze R, Jomha N, Uludag H, Adesida A. Matrix forming characteristics of inner and outer human meniscus cells on 3D collagen scaffolds under normal and low oxygen tensions. *BMC Musculoskelet Disord.* 2013 Dec 13;14 (1):353. doi: 10.1186/1471-2474-14-353

Sanghani A, Chimutengwende-Gordon M, Adesida A, Khan W. Applications of stem cell therapy for physeal injuries. *Curr Stem Cell Res Ther.* 2013 Nov;8(6):451-5.

Chowdhury A, Bezuidenhout LW, Mulet-Sierra A, Jomha NM, Adesida AB. Effect of interleukin-1 $\beta$  treatment on co-cultures of human meniscus cells and bone marrow mesenchymal stromal cells. *BMC Musculoskelet Disord.* 2013 Jul 22;14:216. doi: 10.1186-1471-2474-14-216.

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Haddad B, Pakravan AH, Konan S, Adesida A, Khan W. A systematic review of tissue engineered meniscus: cell-based preclinical models. *Curr Stm Cell Res Ther.* 2013 May;8(3):222-31. Review

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Al-Adra DP, Anderson CC. Toward minimal conditioning protocols for allogeneic chimerism in tolerance resistant recipients. *Chimerism.* 2013 Jan-Mar;4(1):23-5. doi: 10.4161/chim.23350. Epub 2013 Jan 1.

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Asai-Coakwell M, March L, Dai XH, Duval M, Lopez I, French

CR, Famulski J, De Baere E, Francis PJ, Sunaresan P, Sauvé Y, Koenekoop RK, Berry FB, Allison WT, Waskiewicz AJ, Lehmann OJ. Contribution of growth differentiation factor 6-dependent cell survival to early-onset retinal dystrophies. *Hum Mol Genet.* 2013 Apr 1;22(7):1432-42. doi: 10.1093/hmg/dd560. Epub 2013 Jan 9.

Oltean M, Churchill TA. Organ-Specific Solutions and Strategies for the Intestinal Preservation. *Int Rev Immunol.* 2013 Dec 12. [Epub ahead of print]

Salim SY, Young PY, Lukowski CM, Madsen KL, Sis B, Churchill TA, Khadaroo RG. VSL#3 probiotics provide protection against acute intestinal ischemia/reperfusion injury. *Benef Microbes.* 2013 Dec 1;4(4):357-65. doi: 10.3920/BM2013.0026.

Kawahara T, Toso C, Yamaguchi K, Cader S, Douglas DN, Nourbkhsh M, Lewis JT, Churchill TA, Yagita H, Kneteman NM. Additive effect of sirolimus and anti-death receptor 5 agonistic antibody against hepatocellular carcinoma. *Liver Int.* 2013 Oct;33(9):1441-8. doi: 10.1111/liv.12275. Epub 2013 Jul 29.

Tso VK, Sydora BC, Foshaug RR, Churchill TA, Doyle J, Slupsky CM, Fedorak RN. Metabolomic profiles are gender, disease and time specific in the interleukin-10 gene-deficient mouse model of inflammatory bowel disease. *PLoS One.* 2013 Jul 9;8(7):e67654. doi: 10.1371/journal.pone.0067654. Print 2013.

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Mital P, Kaur G, Bowlin B, Paniagua NJ, Korbitt GS, Dufour JM. Nondividing, Post-Pubertal Rat Sertoli Cells Resumed Proliferation after Transplantation. *Biol Reprod.* 2013 Nov 27. [Epub ahead of print]

Ellis CE, Suuronen E, Yeung T, Seeberger K, Korbitt GS. Bioengineering a highly vascularized matrix for the ectopic transplantation of islets. *Islets.* 2013 Nov 21;5(5). [Epub ahead of print]

Vulesevic B, McNeill B, Geoffrion M, Kuraitis D, McBane JE, Lochhead M, Vanderhyden BC, Korbitt GS, Milne RW, Suuronen EJ. Glyoxalase-1 overexpression in bone marrow cells reverses defective neovascularization in STZ-induced diabetic mice. *Cardiovasc Res.* 2013 Dec 16. [Epub ahead of print]  
McBane JE, Vulesevic B, Padavan DT, McEwan KA, Korbitt GS, Suuronen EJ. Evaluation of a collagen-chitosan hydrogel for potential use as a pro-angiogenic site for islet transplantation. *PLoS One.* 2013 Oct 18;8(10):e77538. doi: 10.1371/journal.pone.0077538.

McEwan K, Padavan DT, Ellis C, McBane JE, Vulesevic B, Korbitt GS, Suuronen EJ. Collagen-chitosan laminin hydrogels for the delivery of insulin-producing tissue. *J Tissue Eng Regen Med.* 2013 Oct 30. doi: 10.1002/term.1829. [Epub ahead of print]

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# Thoracic Surgery

Divisional Director: Dr. Eric Bédard

The Division of Thoracic Surgery saw a transition in leadership over the latter half of 2013 with Dr. Eric Bédard accepting the position of division director following Dr. Ken Stewart stepping down earlier in the year.

The division hosted Grand Rounds in October 2013 where Dr. Sean Grondin (Calgary) presented his work on workforce planning for thoracic surgeons in Canada.

Teaching remains a priority for the division and, despite its small size, continually contributes to the education of both students and residents with all members participating the Discovery Learning, Gilbert Scholar programs, and / or didactic teaching in addition to RCPSC Examination Committee. Three division members have been awarded awards for excellence in teaching at the undergraduate level.

Dr. Bédard leads clinical and translational research with expanding collaborations with the Cross Cancer Institute. The main focus is on the early diagnosis of lung cancer via a novel sputum based microRNA test developed in Alberta. This collaboration has led to presentations at both National and International meetings.

Over the coming year thoracic surgery will be moving to synoptic OR reporting in collaboration with Cancer Surgery Alberta and will also to develop a platform for synoptic discharge summaries incorporating validated reporting of procedure related morbidity for QA/QI endeavors. These will function as building blocks for a more seamless and robust clinical research and outcome platform and the Section will need to develop both personnel and IT resources in order to support this new direction.

## Awards

Dr. Azim Valji, Top Ten Surgical Subspecialty Teacher Award.

Dr. Ken Stewart, Top Ten Surgical Subspecialty Teacher Award.

Dr. Eric Bédard, Discovery Learning Preceptor Excellence Award.

## Grants

E. Bédard and R. Razzak. "The evaluation of Micro-RNA expression profiles in Sputum, Sera and Urine for the early detection of Non-Small Cell Lung Cancer". Edmonton Civic Employees Research Award, \$9950.

## Publications

Manuscripts: 3 (all peer reviewed)

Published abstracts: 7 (all peer reviewed)

Scientific Presentations (International peer reviewed meetings): 5

Scientific Presentations (National peer reviewed meetings): 3



# Urology

Divisional Director: Dr. Gerry Todd

Program Director: Dr. Niels Erik Jacobsen

The Division of Urology is committed to the improvement of health through excellence in patient care, leadership in education and research, and in preventative initiatives directed at the promotion of increased urological well being. All members of the division are faculty members and take the initiative to interact and educate residents, medical students and elective students.

## Distinguished Visitors

February 3, 2013 - February 16, 2013  
Dr. Toshiaki Tanaka, Professor of Urology,  
Sapporo University.

May 17, 2013  
Dr. Wayne Hellstrom,  
Professor of Urology, Chief of Andrology, Tulane  
University School of Medicine, New Orleans, LA  
“Reconstructive Surgery for Peyronie’s Disease:  
Tricks of the Trade.”

October 4, 2013  
Dr. Wes Kassouf  
Director, McGill Urology Training Program,  
Assistant Professor, Department of Surgery  
(Urology), McGill University  
“Overcoming radioresistance in bladder cancer  
through molecular signalling.”

November 15, 2013  
Dr. Kishore Visvanthan  
Clinical Professor of Surgery, University of  
Saskatchewan, Saskatoon Health Region  
“Turn Frustration into Satisfaction: Quality  
Improvement in a Community Urology Practice.”

## Appointments

July 1, 2013  
Dr. Niels Jacobsen, Associate Professor.

August 1, 2013

Dr. Adrian Fairey, Assistant Professor.

March 1, 2013

Dr. Howard Evans, Appointed Urology Site Chief  
Misericordia Hospital.

March 1, 2013

Dr. Gary Gray, Appointed Site Chief Misericordia  
Hospital.

## Awards

Frank Squires Scholarship in Urology  
Dr. Phil Bach  
Dr. Conrad Maciejewski

Top Ten Teacher Award  
Dr. Tim Wollin  
Dr. Keith Rourke

Top Ten Teacher Award UMG  
Dr. Blair St Martin

Urology Resident Teaching Award  
Dr. Howard Evans

Division of Urology Resident Research Day  
1<sup>st</sup> Place Research Paper – Dr. Joe LaBossiere  
2<sup>nd</sup> Place Research Paper – Dr. Adam Kinnaird  
2<sup>nd</sup> Place Research Paper – Dr. Jeffrey Zorn

The E. William Kuder Memorial Prize in Surgery  
Dr. Nathan Hoy

Second Prize, Best Member Presentation Award,  
Northwest Urology Society  
Dr. Keith Rourke

## Grants

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



\$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.

\$750,000 to Dr. Ron Moore for Development of safer oncolytic poxviruses dependent on cellular dNTP synthesis.

\$750,000 to Dr. Ron Moore for Non-invasive Staging of Prostate Cancer: Translating Biomarkers to Clinical Practice.

\$5,000 to Dr. Keith Rourke for Quality of Life and Clinical Outcomes after Urethral Reconstruction.

\$24,000 to Dr. Keith Rourke for Quality of life and outcomes assessment after urethral reconstruction.

\$5,000.00 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.

\$10,000 to Dr. Peter Metcalfe for Recruitment and Assessment of Mesenchymal Stem Cells in an Animal Model of Partial Bladder Outlet Obstruction.

\$3,000 to Dr. Peter Metcalfe for Retrospective Review of Children with Renal Stones.

\$3,000 to Dr. Peter Metcalfe for Indications for UPJ repair in Children.

\$3,000 to Dr. Peter Metcalfe for A Modification of the TIP Procedure for Distal Hypospadias – the Burrowing Technique.

**Totals \$2,458,161**

## Publications

Book Chapters – 2

Abstracts – 21

Journals – 31

Med Ed Portal Sessions – 5

Internet Publications – 1



# Undergraduate Medical Education

Senior Director: Dr. Jonathan White

Our undergraduate program remains one of the strongest and most innovative in the country, and faculty continues to excel in undergraduate teaching.

The Class MD 2013 scored above the national average in the surgery component of the MCCQE Part 1 and thirty of the graduating class of 2013 took up positions in surgical residency training, (a rate of approximately 1 in 6). We have now established the Summer Studentship Program in Surgical Education; in 2013, there were 7 summer students conducting various projects in the field of surgical education.

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. The undergraduate education team has continued to lead the way and innovate in the use of new teaching technologies. The 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.

The 'Surgery 101' podcast series has continued to attract much attention worldwide. 2013 saw the series exceed 150 episodes and 1,000,000 downloads in over 170 countries. This year a new Surgery 101 app for the iPhone and a new Surgery 101 website was launched and a partnership with the School of Business to explore the field of online marketing.

The program of research in surgical education has continued to grow, with grant- funded

research projects, publications, presentations and an increasing number of graduate students pursuing advanced degrees in education. The UGME team presented 13 projects at the 2013 Canadian Conference in Medical Education and multiple members received teaching awards this year, for research enhancement (Shannon Erichsen), pre-clinical and clinical teaching (Drs. Allan Ho and Kamran Fathimani) and for innovation in education research (Dr. Jonathan White).

The team also continued to renew itself this year, with the appointment of two new clerkship directors for our courses in undergraduate surgery. Dr. Allan Ho replaced Dr. Rob Chan as the director of the Year 4 course, while Dr. Heather Cox replaced Dr. Kam Fathimani as director of the Year 3 course.

## Student Performance in 2012 2013

### **SURG 546 General Surgery, Anesthesiology & Pain Medicine**

152 of 152 students of the Class of 2014 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 2013.



### **SURG 556 Speciality Surgery**

180 of 180 students of the Class of 2013 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 2013. Data shows that UGME was able to accommodate “The Bubble” class with the same level of experiences as previous classes with no issue. The Class MD 2013 scored above the national average in the Surgery component of the MCCQE Part 1.

### **Faculty Performance in 2012 2013**

UGME provided a total of 3302 learning encounters for medical students in the academic year 2012-2013 (a ‘learning encounter’ is defined as an educational experience taking place between a student and a teacher). 213 members were engaged in formal education of our undergraduate students, an increase from the previous year (165 members). Informal teaching was also provided by the residents in various divisions.

Program evaluation data for this year has shown continued improvement across all undergraduate rotations. The average number of learning encounters per teaching surgeon per year was 17. The median student rating of preceptors was 4.47 out of 5. Forty-nine members of the department provided a total of 313 teaching hours in mandatory clerkships with a median student rating of 4.40 out of 5 (these figures do not include sessions in the Gilbert Scholars program, the pre-clinical blocks and Discovery Learning).

Teaching evaluation scores were issued to all department members in January 2014. This teaching evaluation data was used to identify the Top 10 Teachers in the two undergraduate courses, and these educators will be honoured at the Department’s annual Awards Dinner in May 2014.

### **Top 10 Teachers General Surgery 2012-2013**

Dr. Ghassan Alhassani  
Dr. Klaus Buttenschoen  
Dr. Michael Chatenay  
Dr. Curtis Ciona  
Dr. Kam Fathimani  
Dr. Ramesh Juta  
Dr. Shahzeer Karmali  
Dr. James Stewart  
Dr. Jonathan White  
Dr. Walter Yakimets

### **Top 10 Teachers Specialty Surgery 2012-2013**

Dr. Niels Jacobsen  
Dr. Dan O’Connell  
Dr. Keith Rourke  
Dr. Blair St. Martin  
Dr. Ken Stewart  
Dr. Gerry Todd  
Dr. Jon Toy  
Dr. Azim Valji  
Dr. Tim Wollin  
Dr. Erin Wright

# Postgraduate Surgical Education

Senior Director: Dr. Erin Wright

Surgery continued to play a key role in discussions surrounding the resident duty hour issue. Dr. Erin Wright spearheaded Faculty-wide discussion pertaining to the resident duty hours debate when he organized the second and third installments of the Resident Duty Hours Symposium on February 15, 2013 and June 5<sup>th</sup>, 2013. Many program directors in surgery began to implement modifications to their programs with regards to competency based medical education (CBME) and modifying their assessment practices.

Staying on trend in surgical education, programs saw a boom in the implementation of “boot camps” for junior residents. The Surgical Foundations program ran a boot camp through the summer of 2013, introducing PGY-1 residents to the fundamentals of surgery. The Neurosurgery specialty committee collaborated on a 4-day national boot camp, while Orthopaedic surgery organized several hands-on events, incorporated into the resident’s first 6 months.

## 2013 Events

### Surgical Foundations

Dr. Erika Haase implemented a summer long boot-camp session on the Fundamentals of Surgery into the Surgical Foundations curriculum and introduced further START days (Surgery and Trauma Acute Resuscitation training) with Dr. Damian Paton-Gay. An open skills training - advanced wet lab session is being tailored after the pilot installment in 2012.

### CanMEDS Dept-Wide Resident Seminars

Sessions are provided to the entire cohort of surgical residents each year. These sessions address different areas across the CanMEDS competencies.

CanMEDS Role	Topic	Preceptor	Date
Communicator / Health Advocate	"Advanced Care Planning (ACP): Goals for Care Discussions"	Dr. Mike Meier	Jan 11, 2013
Communicator Simulation	"Communication in Crisis: Practical Communication and Crisis Management Skills in Acute Care Surgery"	Dr. Cian O'Kelly & Dr. Peter Brindley	April 12, 2013
Manager	"Starting a Surgical Practice - Choices after Residency"	Dr. Yvonne Chan, University of Toronto	Sept 13, 2013

### 5<sup>th</sup> Annual CanMEDS OSCE: November 12, 2013

The annual PGY-2 Resident CanMEDS OSCE improves each year and continues to be an important part of the formative assessment of residents; providing them with an opportunity for self-awareness. Residents appreciate the immediate feedback from staff after each scenario.

### ICRE, Calgary 2013

In September, Calgary hosted this year’s Royal College International Conference on Residency Education with the theme of “Educational Outcomes: Inspiring Residents, Improving Care”.

Once again, the Department of Surgery supported attendance of three surgical program directors along with Dr. Hedden, chair and Diane Titley, assistant chair. As well, seven administrative staff from the Postgraduate Office of Surgical Education attended the administrator track meeting and conference with the support from the Department of Surgery, the Postgraduate Medical Education Office and the University of Alberta's Human Resources Development Fund (HRDF).

This year, Neurosurgery residency program director, Dr Cian O'Kelly was selected to present in the top five "What Works" paper session on "How to build a national boot-camp: Experience from the Canadian Neurosurgical rookie camp". Dr O'Kelly was also accepted to present in the paper session on resident duty hours where he gave his innovative solutions to neurosurgery coverage at the Royal Alexandra Hospital with "Home-call to address duty hours for neurosurgical residents: Impact on case-volume, qualitative education experience and resource requirements".

### CaRMS 2013

During 2013 CaRMS approximately 184 candidates were interviewed for 19 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-2013

There were 3 new Program Directors in 2013: Dr. Dan Schiller has completed a successful term as general surgery program director and Dr. Kamran Fathimani assumed the new role.

Dr. Keith Rourke turned the role of urology program director over to Dr. Niels Jacobsen.

Dr. Rod MacArthur has also completed a successful term as cardiac surgery program director and Dr. Shaohua Wang assumed the role.

We would like to thank the outgoing program directors for their commitment and outstanding service and look forward to working with this group of enthusiastic and energetic new PDs.

There were 2 New Program Administrators:

Hannah Hamilton, General Surgery Program Assistant.

Peggy Yin, Surgical Foundations Program Administrator.

### Walk for ALS

The Office of Surgical Education spear-headed the organization of a team to participate in the "Walk for ALS" on June 8, 2013, in Hawrelak park. Walking in honour of Dr. Drew Sutherland, the team included Department of Surgery members, their family and friends. Team "Drew's Crew" consisted of 40+ walkers and raised \$32,000 for the ALS community.

### PGME Residents Numbers 2012-2013 year

Division	Residents	Fellows
Cardiac Surgery	5	9
General Surgery	48	7
Neurosurgery	8	5
Orthopaedic Surgery	21	3
Otolaryngology - Head & Neck Surgery	12	4
Plastic Surgery	15	2
Urology	11	2
Clinical Investigator Program (CIP)	7	
Total residents	120	32
Off-service residents on rotation in surgery	338	

# Graduate

# Program

Senior Director: Dr. Tom Churchill

We have been fortunate to maintain a steady enrolment in the Department of Surgery Graduate Program. Approximately half of the master of science students are residents funded through the Clinical Investigator Program (CIP). The program has a number of doctor of philosophy (PhD) students who are residents receiving CIP funding for two years of their program. Funding for the remainder of their program and for all basic science students is dependent on grants, scholarships, awards and/or supervisor support.

## Presentations

Students presented 11 oral abstracts and 3 posters at local conferences. Nationally 3 oral abstracts and 3 posters were presented in addition to 2 oral abstracts and 3 posters presented at international conferences.

## Awards

In 2013 graduate students were awarded \$94,250 in grants and awards. \$36,000 of the total award dollars were from funding agencies outside the University of Alberta.

5 students won awards for either basic or clinical science in both oral and poster presentations at the 2013 Tom Williams Surgical Research Day.

Students receiving awards in 2013 include:

Ali Alsagheir  
Bader Alsaikhan  
Rositsa Bogdanova  
Roger Croutze  
Boris Gala Lopez  
Mohammed Jomah

Mahra Nourbakhsh  
Troy Perry  
Caroline Sheppard  
Joshua Wong  
Pang Young  
Hana Yu

## Publications

Graduate students have successfully submitted articles for publication. 2013 saw 7 publications with program students as first author. An additional 2 abstracts with program students as co-author were also published.

## Graduate Students

### Change of Category

One resident changed from the master of science program to the doctor of philosophy program this year. Dr. Troy Perry made the change effective January 1, 2013.

### Students Successfully completed Candidacy Exam

Shakti Singh – June 26, 2013  
Rotem Lavy – November 22, 2013  
Troy Perry – December 9, 2013  
Rene Razzak – December 16, 2013  
Pang Young – December 18, 2013

### Students Successfully defended MSc Degree

David Chapman  
“Utilizing Positron Emission Tomography to Detect Functional Changes Following Drug Therapy in a Renal Cell Carcinoma Mouse Model” (January 20,

2013) [Supervisor: Dr. Ronald Moore].

Roger Croutze

“Structural and molecular characterization of the human meniscus for application in tissue engineering” (March 29, 2013) [Supervisor: Dr. Nadr Jomha and Adetola Adesida].

Jean-Sebastien Pelletier

“Vasopressin and the Asphyxiated Neonate” (May 24, 2013) [Supervisor: Drs. David Bigam and Po-Yin Cheung].

Joseph LaBossiere

“The use of Doxycycline in Asphyxiated Newborns” (May 29, 2013) [Supervisor: Drs. David Bigam and Po-Yin Cheung].

Joshua Wong

“Sensory Nerve Injuries: Advances in Diagnosis and Novel Therapy to Enhance Sensory Recovery in Humans” (June 4, 2013) [Supervisor: Drs. Jaret Olson and Ming Chan].

Bader Alsaikhan

“The Proteome of Partial Baldder Outlet Obstruction and the Therapeutic Role of Mesenchymal Stem Cells” (June 27, 2013) [Supervisors: Dr. Peter Metcalfe].

Sonia Cader

“TWEAK-Fn14” (December 5, 2013) [Supervisor: Dr. Norman Kneteman].

Hana Yu

“Enhancing Chondrogenesis of mesenchymal stromal cells through anti-Thy1 strategies” (December 10, 2013) [Supervisor: Dr. Nadr Jomha and Adetola Adesida].

**Students Successfully defended PhD Degree**

Mahra Nourbakhsh

“Role of TG Lipases; Arylacetamide Deacetylase and Triacylglycerol Hydrolase in Hepatitis C Life Cycle” (March 22, 2013) [Supervisor: Dr. Norman Kneteman]

Mathew Varkey

“Development of Novel Non-Scarring Tissue Engineered Skin to Treat Burn Patients and others with extensive skin loss” (April 2, 2013) [Supervisor: Dr E. (Ted) Tredget]

Subodh Samrat

“Modulation of Immune Response by HCV-derived F, Core and NS3 Proteins” (September 9, 2013) [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 2013	5	8	7	20	6	7	4	17	37
Fall 2013	8	9	5	22	3	6	4	13	35

