DEPARTMENT OF Surgery REVIEW 2018

BY THE NUMBERS:

Undergraduate medical students **100** Undergraduate <u>visiting electives</u> **71**

Postgraduate orthopaedic surgery residents **1**5

Postgraduate general surgery residents **17**

Adjunct faculty 34

Postgraduate fellows 8

Administrative staff 🖊

Active clinical faculty 45





2 Welcome message from the department head

EDUCATION

- 6 Undergraduate medical education
- 7 Competency-Based Medical Education
- 8 Surgical Foundations program
- 9 General Surgery Residency program
- 10 Orthopaedic Surgery Residency program
- 11 Collaborative effort leads to full accreditation

NEW PROGRAMS

- 14 Breast Reconstruction program
- 16 Bariatric Centre of Excellence launches in Kingston
- 17 Live Donor Kidney Transportation program
- **18** Institute for Clinical Evaluative Sciences

NEW FACULTY

- 20 Dr. Glykeria Martou
- 20 Dr. Boris Zevin
- 21 Dr. Wiley Chung
- 22 Dr. Gianluigi Bisleri
- 23 Dr. Ryan Alkins
- 24 2018 New faculty

STUDENT PROFILES

- 26 Dr. Mina Tohidi
- 26 Nicole Morse
- 27 Dr. Stefania Spano

RESEARCH

- 30 Hybrid solution: Arrhythmia surgery achieves a first
- 31 Transforming surgery: International collaboration on NaviKnife enters research phase
- **32** The new skeletal observation laboratory offers insights into intricacies of human joints
- 33 Can a smartphone improve patient care?
- **34** Brain Canada grant targets new approaches to understanding Alzheimer's disease
- **35** Studies of metabolic "fingerprinting" of cancer tissues lead to young investigator grants for two Queen's researchers
- **36** Stimulating science: Interdisciplinary research that changes lives

CONTENTS

LECTURES AND EVENTS

- 38 Charles Sorbie Department of Surgery faculty research day
- 39 The William Ersil Resident research day
- 41 The Dr. Hugh and Miriam McGuire Lectureship in Surgery
- **42** The Dr. Andrew Bruce and Margaret Bruce Endowment for Visiting Scholars in Surgical Innovation

AWARDS

- 44 Dr. D.J. Cook named one of Canada's top 40 under 40
- **45** Winning Ways: Dr. Andrea Winthrop wins 2017 John Provan Outstanding Surgical Educator Award and 2017 Queen's FHS Education Award
- 46 Dr. Michael Chan Award in General Surgery
- 47 Resident Prize for Excellence in Undergraduate Teaching
- 48 John Rudan awarded CAHS Fellowship

PROMOTIONS

50 Faculty promotions

RETIREMENTS

- 52 Jeanine MacRow
- 53 Dr. Dale Mercer

GRANTS AND PUBLICATIONS

- 55 2016–2017 Department funding
- 57 2016–2017 Publications

welcome message from the Department Head



"The world as we have created it is a process of our thinking. It cannot be changed without changing our thinking." ALBERT EINSTEIN

JOHN RUDAN, BRITTON SMITH CHAIR IN SURGERY, PROFESSOR AND HEAD, DEPARTMENT OF SURGERY

The practice of medicine is always in a state of flux, but never more so than in today's environment, with the explosion of advanced technologies and techniques. These advances, however, also require us to alter our own perspectives and take on the challenge of new ideas. This is where our department thrives – in an environment of transformation and discovery.

Competency-Based Medical Education (CBME), introduced at Queen's School of Medicine in July 2017, is an excellent example of our ability to lead change. As the first medical school in Canada to implement CBME across all departments, Queen's has demonstrated leadership in education and training, and faculty members in our department are being sought out by other schools to help them learn from our experiences. Our students have embraced the shift to a training program that focuses on individualized learning and meaningful feedback, throughout four stages of training. This report includes several stories that demonstrate just how talented and dedicated our students are. These up-and-coming stars are already making an impact in research, in medical education, and at the bedside. Many of them are contributing to medical education, coordinating programs such as the Surgical Skills and Technology elective program for second-year medical students and presenting their work at national and international conferences. Our own annual Resident Research Day regularly highlights some of the excellent work that our trainees are doing in conjunction with their mentors.

We have experienced world-leading achievements over the past two years through the development of emerging technologies and processes that are transforming surgical practice. From the NaviKnife to new atrial fibrillation procedures, our clinician-scientists are collaborating with like-minded peers across many disciplines toward a common goal of driving innovation in interactive tools.



Five new chairs in surgery have been created, thanks to an investment by our own surgeons, who are deeply committed to the research and academic activities in the department. Our research programs are making substantial contributions to medical education and patient care, from diagnoses to treatments, and our population health program is flourishing, with residents actively working toward their degrees. Queen's continues to increase its commitment to research capacity, and we are responding with interdisciplinary and industry partnerships that position our department and the university as a global leader in many areas of surgical approaches and tools. We are creating globally but also acting locally, providing new services, such as our Breast Reconstruction program and our Bariatric Surgery Centre of Excellence, to our communities, eliminating the need for our patients to travel to other centres for treatment. We continue to attract new talent to our team and have welcomed eight new faculty members over the past three years.

The Department of Surgery thrives because of the dedication and commitment of teams who truly believe in a multidisciplinary approach to education, research and patient care. Together, we are changing our thinking – and changing our world.

DR. JOHN RUDAN



EDUCATION

Undergraduate medical education



UNDERGRADUATE MEDICAL STUDENTS, SSTEP PROGRAM



DR. MILA KOLAR UNDERGRADUATE SURGICAL EDUCATION DIRECTOR

The Undergraduate Surgery program continues to grow and transform, adding new teaching methods and collaborative activities that build on existing strengths in medical education.

Our teachers are not only accomplished surgeons: they are also dedicated educators and mentors for our students. This is evidenced not only by the high scores that our students continue to receive on Medical Council of Canada Qualifying (MCCQ) exams but also by the exceptional rates of satisfaction noted by students through course and faculty evaluations.

The Undergraduate Surgical Education Committee (USEC) has been a leading force responsible for enhancing and building on the teaching strengths in the Department of Surgery. There have been a number of achievements, including the restructuring of Gastroenterology and Surgery courses, the development of new teaching modules, and the implementation of new teaching sessions and new modalities of team-based learning, which have fostered a culture of innovation and creativity.

The major innovation in clerkship is Queen's adoption of 13 Entrustable Professional Activities (EPAs) into the curricular framework. These EPAs are a common set of abilities expected of all medical graduates that can be observed in clinical practice, in various contexts of training. We continue to finalize the mapping of required core and discipline-specific skills and competencies for surgery clerkship. We have also created a few new assessment tools, including the mini Clinical Evaluation Exercise (CEX), a rubrics and daily encounter card assessment tool that facilitates the assessment of a student's clinical performance and enhances the quality of feedback. Initially tested in the Surgery rotation, the rubrics are now being used in all clerkship programs, allowing for better monitoring of students and the ability to act in a timely way when needed.

Based on the Surgery Clerkship course and Faculty Evaluation report for the class of 2018, our faculty and residents are highly valued and respected by our students, with high performance scores in both Kingston and Oshawa. We've also introduced a new 16-week integrated Surgery Clerkship rotation in Collingwood and are currently working to implement an integrated Surgery Clerkship in Cobourg.

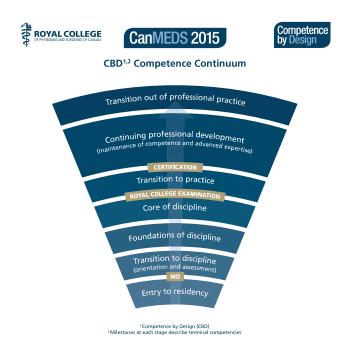
The Undergraduate Medical Education program is succeeding because of the commitment of faculty, residents, and allied health-care professionals to teaching excellence and student support, as well as the excellent stewardship of the Curriculum Committee. We look forward to continuing to implement new tools and processes to ensure that our students learn and thrive in an innovative and supportive learning environment.

competency-based Medical education: Leading the way in surgical education

T's been more than a year since Queen's Faculty of Health Sciences undertook the launch of Competency-Based Medical Education (CBME) across all programs. This ambitious endeavour, while challenging, has been a major success in the Department of Surgery and is positioning the university as a leader in medical education across the country.

CBME has resulted in the residency programs being restructured into four stages of learning, each with a different focus. Rather than basing promotion on time-based rotation blocks, residents are promoted based on their ability to demonstrate competence by accomplishing clinical tasks known as Entrustable Professional Activities (EPAs).

"CBME allows for greater granularity when evaluating our surgical residents," says Dr. Darrin Payne, Program Director for Surgical Foundations and a cardiac surgeon. "It also provides for more individualized learning and dedicated supervision to ensure that details don't get missed."



Residents are assessed more frequently in the new system, and those who demonstrate competency at an accelerated pace can use their time to pursue additional enrichment opportunities, such as research projects.

CBME also places a greater emphasis on communication and collaborative skills, preparing students for real-world conversations with patients and their families. Residents are given opportunities to practise and hone these skills, so that they are better prepared to deal with issues such as obtaining consent for a procedure or dealing with a difficult patient.

Dr. Payne notes that colleagues across the country have referenced Queen's over the last year in preparation for their own CBME rollout. "We've had a very successful roll-out, and others are interested in our experience," he says. "Queen's is ahead of the curve and already providing our students with evidence-based medical training that fully prepares them for their career."

PROGRAM UPDATES: Surgical Foundations program



UGO MANCINI, KATHRYN HAY, GENERAL SURGERY RESIDENTS

ver the past two years Dr. Darrin Payne, Surgical Foundations Program Director, has been dedicated to and fully invested in revamping the Surgical Foundations program to reflect the Queen's University transition to a Competency-Based Medical Education (CBME) program. Dr. Payne has worked very closely with the Royal College Advisory Committee in an effort to ensure a smooth transition between the traditional time-based curriculum to CBME, which has been proven to be quite successful.

With the adoption of Competency-Based Medical Education, the Surgical Foundations program has undergone several changes. The curriculum has been extensively revised both in its content and delivery. The core surgical program, which had a previous timeline of two years, has been condensed to a 15-month program. The curricular content remains comprehensive, and there is now greater utilization of simulation and OSCE examination evaluations.

DR. DARRIN PAYNE PROGRAM DIRECTOR SURGICAL FOUNDATIONS

By streamlining Surgical Foundations we are able to fully prepare students for their Surgical Foundations Examination (which has been moved from March to September in their PGY2 year) as well as facilitate faster progression to their sub-specialty training. With the transition to a CBME assessment system, residents are now paired with Academic Advisors who serve as mentors, providing guidance and advice to the residents throughout their training. A much more rigorous evaluation process has been adopted, with the establishment of a formal Surgical Foundations Competence Committee that meets regularly to review resident progress and promotion based on the CBME Entrustable Professional Activities (EPAs) and Milestones. Overall, we have made considerable advancements in the Surgical Foundations program in a short period of time, which we feel will be very beneficial to the residents throughout their training.

8 EDUCATION

GENERAL SURGERY residency program



GENERAL SURGERY SKILLS LAB

DR. DIEDERICK JALINK PROGRAM DIRECTOR GENERAL SURGERY

G rowth and innovation continue to be strong themes for the General Surgery Residency program. Not only has our research capacity grown over the last few years, but the introduction of a new bariatric surgery program is proving to be an excellent learning experience for our residents. With the introduction of Competency-Based Medical Education (CBME) and our continued growth in simulation-based learning, our residents are constantly being exposed to new operative skills and techniques that will assist them in becoming successful surgeons.

The introduction of CBME has provided us with significant opportunities for tracking and measuring progress in our General Surgery program. The CBME curriculum has created a new outlook and outcome for our program in which our learners are entrusted not based on the duration of their training but on their competency in utilizing the individual skills that are developed in order to become a general surgeon. An increase in simulation-based learning is helping our residents hone their talents and grow their confidence. The Queen's Simulation Centre continues to expand, giving students the opportunity to practice hands-on skills using the latest surgical technology and tools. This style of learning aligns well with both the rise in the use of technology in the operating room and CBME.

The introduction of a bariatric program has resulted in new rotation opportunities in an area of high patient need. The program has seen substantial growth over the past two years and provides students with valuable opportunities for hands-on learning in upper GI surgery.

Our post-graduate research has grown over the past two years, with our students well represented at national and international conferences. More residents are also moving into high-level post-graduate degrees, resulting in an increase in academic surgeons who guide our future learners.

orthopaedic surgery residency program



2017-2018 ORTHOPAEDIC RESIDENTS

DR. DAVIDE BARDANA PROGRAM DIRECTOR ORTHOPAEDIC SURGERY

The Orthopaedic Resident Training Program welcomed Dr. Davide Bardana as the new program director in July 2017. Dr. Bardana graduated from the Queen's Orthopaedic Surgery program in 1999 and went on to continue his training by completing two fellowships: Orthopaedic Sports Medicine at the University of Utah in 2000, and Orthopaedic Trauma at Monash University in Melbourne, Australia, in 2002. Dr. Bardana has been a part of the Division of Orthopaedic Surgery at Queen's University since 2002 and continues to strive in both his clinical practice and his research projects.

Dr. Bardana jumped into his new role with great enthusiasm and many ideas on how to improve on the already highly successful program. In November 2017, Dr. Bardana, with the help of Dr. Mark Harrison, developed and ran the first ever Orthopaedic Surgery Boot Camp at Queen's University. The program, an intensive week of teaching and simulations, was developed for PGY2 residents to reintroduce them to Orthopaedic Surgery after their Surgical Foundations specialty-specific rotations. This reintroduction helps residents enhance their previously developed orthopaedic skills, such as total knee/hip

replacements, upper/lower extremity anatomy and basic approaches, arthroscopy and intra-articular injections, plating, casting, and reducing fractures, as well as traction.

The Orthopaedic Surgery program has introduced a new evaluation system for all incoming residents as part of the implementation of Competency-Based Medical Education (CBME) in July 2017. Dr. Mark Harrison has moved into the role as CBME Lead for the Division of Orthopaedics, working closely with Dr. Bardana. Dr. Harrison's passion for education and competency-based medicine has been a valuable asset during the transition to CBME. The Royal College of Physicians and Surgeons of Canada has projected that CBME for Orthopaedic Surgery will roll out nationally on July 1, 2020.

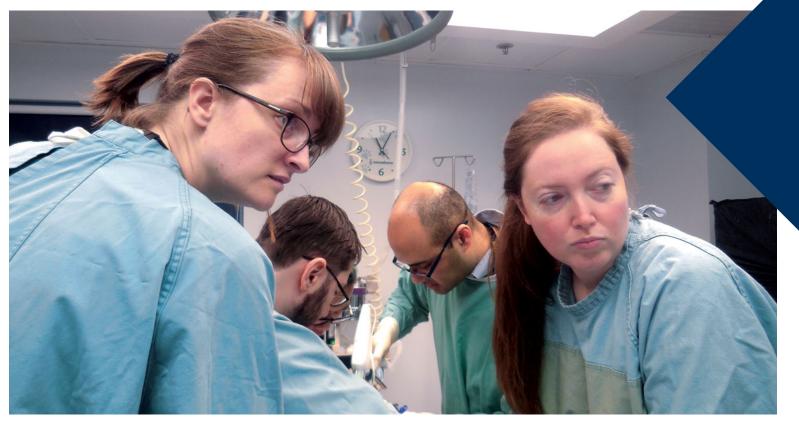
Residents in the Orthopaedic Surgery program are also actively involved in several research projects and are mentored and coached through their projects with the support of Dr. Ryan Bicknell, Orthopaedic Research Coordinator.

Collaborative effort leads to full accreditation

The Department of Surgery is pleased to report that all three programs (Surgical Foundations, General Surgery and Orthopaedic Surgery) were recommended for full accreditation in March 2018, thanks to a team of dedicated faculty and staff who worked hard to prepare information for surveyors and ensure that documentation was completed in a timely manner.

Accreditation from the Royal College of Physicians and Surgeons of Canada (RCPSC) ensures that our residency programs meet the highest possible standards and are fully preparing our students to succeed in providing outstanding care to their patients. The review panel, made up of medical educators from across the country, visited the Queen's campus as well as sites in Belleville, Peterborough and Oshawa.

The accreditation process was somewhat different this year, given the roll-out of Competency-Based Medical Education (CBME). Feedback from the external reviewers was very positive but also very helpful in terms of providing an external perspective for the new program and for continuous improvement.



2017-2018 GENERAL SURGERY CHIEF RESIDENTS



2018-2019 GENERAL SURGERY RESIDENTS DR. JULIE LA, DR. MICHAEL YANG AND DR. EKATERINA KOUZMINA



2018-2019 ORTHOPAEDIC SURGERY RESIDENTS DR. MUHAMMAD ALBESHER, DR. AMELIA SUDDABY, DR. JOSHUA HOBSON 12 EDUCATION

NEW PROGRAMS

Breast Reconstruction program

The Breast Reconstruction program in the Department of Surgery has seen significant growth and success over the past two-and-a-half years, providing women in the South East Local Health Integration Network (LHIN) with a wide range of reconstruction options. This comprehensive program has enormous benefits for patients who now have local access to breast reconstruction and can make an informed and timely decision about their care.

Breast reconstruction is considered an indicator of quality of care for breast cancer and is an essential component of every consultation for a mastectomy. "The majority of the women we see in the breast reconstruction clinics choose reconstruction," says Dr. Glykeria Martou. "That says something about the importance of this procedure and a woman's desire to feel whole again."

There has been a substantial increase in the number of breast reconstructions through the program, growing from 35 procedures in the first year to 55 in 2017. Patients meet with both the breast surgeon and Dr. Martou soon after diagnosis to discuss options for immediate or delayed reconstruction. Although the information may seem overwhelming at the time, Dr. Martou notes that having the option of reconstruction during treatment offers women the chance to take an active role in their care.



DR. JAY ENGEL AND DR. GLYKERIA MARTOU

"A cancer diagnosis can bring your whole life to a halt," Dr. Martou says. "Immediate reconstruction, when appropriate, can help women through treatment, giving them the ability to have some sense of control over their body and life during a very vulnerable time."

The breast reconstruction program has received a wide range of support. Along with government funding, additional support has been provided by the Rose of Hope program through the University Hospitals Kingston Foundation (UHKF) and by the Davies Foundation, which has contributed funds to organize educational materials for the breast reconstruction clinics. The Canadian Breast Cancer Foundation supported the first Breast Reconstruction Awareness Day (BRA Day) in Kingston in October 2016 and has helped to promote the new program to the community. BRA Day is held annually. "After the surgery and treatments, I wondered how I would look – not necessarily to others, but for myself," she says. "This year, I actually went out and bought bikini tops!"

Elizabeth Adamson was only 36 when she underwent a double mastectomy as part of her breast cancer treatment. A single mother with young children, her diagnosis was shocking and all-consuming. So when she received an appointment for a breast reconstruction consultation, she really didn't know what to expect.

"The last thing you are thinking about when you get the diagnosis is breast reconstruction," she says. "I was still trying to process everything." That consultation, with her breast surgeon and Dr. Martou, proved to be key to her healing process.

"Both doctors sat down with me to discuss the procedure and the various options for reconstruction," she says. "I immediately felt like I had a supportive team around me." Adamson chose to have immediate partial reconstruction, which meant that she came out of her mastectomy with breasts. "They were not quite what I expected, but they really helped me cope. I had already gone through so many other changes, such as losing my hair and gaining weight because of the treatments – I didn't want to lose any more of my identity."

Adamson notes that, as a single mother, having the program offered locally also made a huge difference to her and her family. "I can't even imagine what it would have been like if I had to travel and make arrangements for my kids," she says.

Dr. Martou has continued to work with Adamson on her breast reconstruction to ensure that she gets the results that she wants. "She is incredibly detailed in her approach," says Adamson, who calls Dr. Martou "an artist." "I trust her implicitly and I think she's made my breasts look incredible."

Since her surgeries, Adamson has met with other women who have received a breast cancer diagnosis, to show them what breast reconstruction can do for them. "They are amazed when they see how good my breasts look," says Adamson. "It gives them hope and helps them see that they have options."

Most of all, Adamson says that the breast reconstruction has given her back her confidence.

Bariatric Centre of Excellence launches in Kingston



DR. BORIS ZEVIN AND THE BARIATRIC TEAM

besity treatment in Kingston became more accessible in 2016 with the opening of the Kingston Bariatric Centre of Excellence, located in the Hotel Dieu site of Kingston Health Sciences Centre. The centre offers multidisciplinary surgical and medical weight management interventions, including minimally invasive bariatric surgery, the gold standard of weight-loss surgery.

Previously, patients eligible for bariatric surgery had received presurgical assessment and post-surgical follow-up and behavioural counselling in Kingston, but had to travel to Toronto or Ottawa for the surgical procedure.

"Approximately 30 per cent of adults in our Local Integrated Health Network (LHIN) are obese," says Dr. David Robertson, Assistant Professor of Surgery at Queen's and a bariatric surgeon at the centre. "For patients who elect to undergo weight-loss surgery, we now have the critical surgical component needed to offer a complete continuum of care in their own community."

"For patients who are eligible, this surgery is the most effective treatment for extreme obesity," he adds. "In addition to substantial weight loss, they experience improvements in co-morbidity conditions such as diabetes, liver disease, sleep apnea, and pain to muscles and joints. They also lower their mortality risk from diseases such as cancer or heart disease."

The centre began offering surgeries in mid-September 2016 and by March 2018 had completed 260 operations. The surgery, called Roux-en-Y gastric bypass, reduces the size of the stomach and alters the way the body absorbs nutrients and calories. Patients are in hospital only one or two nights and are selected on criteria such as age, weight and co-morbidity factors, to reduce surgical risks.

The centre, led by Director Dr. Boris Zevin, a specialist in minimally invasive bariatric and upper gastrointestinal (GI) surgery, also offers a comprehensive non-surgical medical weight management program, focused on dietary and lifestyle changes for improving overall health.

"We are fortunate to be able to offer our community a wealth of multidisciplinary expertise and a minimally invasive approach to bariatric surgery," he says. "These all translate into excellent care for patients and families."

Live Donor Kidney Transplantation program



DR. DAVID HOLLAND, DR. KHALED SHAMSEDDIN, DR. SULAIMAN NANJI AND DR. TOM MCGREGOR

The Live Donor Kidney Transplantation program, an initiative that had been in the planning stages for some time, was introduced at Queen's in 2017. Since that time, teams working in the program have changed the lives of patients with kidney failure by eliminating the need for dialysis and improving their overall health and well-being.

The main objective of the Live Donor Kidney Transplantation program is to provide patients with the convenience of receiving live donor kidney transplants within their local catchment area instead of having to travel out of town. Live donor kidney transplantation is considered to be the optimal form of transplanting, particularly if the donor is related. Transplantation also significantly improves the quality of life for renal patients, who would otherwise require dialysis therapy several times a week.

The surgical team is led by Dr. Tom McGregor from the Department of Urology and Dr. Sulaiman Nanji from the Department of Surgery, collaborating to perform both the live donor nephrectomy and subsequent transplantation of the kidney. Dr. Nanji notes that having a local program has a significant impact on patients and families. "Offering a full complement of services to our patients in our community means that they can be close to their family and friends during the transplant process, and also receive quick and efficient follow-up," he says.

The Live Donor program raises the profile of Kingston Health Sciences Centre as a premium academic centre providing complex surgical care, and encourages increased collaboration between the departments of Surgery, Urology and Medicine. It also fills the Royal College of Physicians' mandate for nephrology fellowship training, and residents in surgery, urology and medicine will have the opportunity to broaden their exposure and understanding of transplantation as they gain clinical exposure to these complex surgical patients.

Dr. McGregor notes that the program has been very well received by both patients and their health-care teams. "This is an excellent opportunity for colleagues to work together to improve patient care," he says. "This program opens the door to a new way of life for renal disease patients."

INSTITUTE FOR Clinical Evaluative Sciences



DR. SUSAN BROGLY

I fyou needed to have surgery, would you guess that it would be better to have your procedure during the day or at night? That's one of many questions that the Department of Surgery helps to answer through its research program using Institute for Clinical Evaluative Sciences (ICES) data. For the past few years, faculty and residents have been working to provide trusted evidence to improve surgical patient outcomes, to influence policy and to improve healthcare services.

ICES researchers are located across the province and access a vast and secure array of Ontario's health-related data, including population-based health surveys, anonymous patient records, and clinical and administrative databases. Along with guiding treatment and best practices, the data expands capacity for health policy research.

Dr. Susan Brogly, an epidemiologist, Associate Professor in Surgery and ICES scientist, says that the databases are critical in identifying trends, conducting population-based studies, and providing the evidence needed to help clinicians make important decisions about patient care. "Given the large amounts of data within ICES, we can ask pressing research questions and use the evidence to inform clinical practice," she says.

ICES data has been used for many studies in Queen's Department of Surgery, with research questions ranging from timing of appendectomies and complications, to identifying effective end-of-life care to improving outcomes of infective endocarditis patients with a history of substance abuse.

Dr. Brogly notes that the quantity and quality of ICES data provides researchers with the ability to dig deep into questions that have an impact on patient care. "Data tells a story," she says, "and that story can be the key to improved techniques, treatment and patient outcomes."

NEW FACULTY

DR. GLYKERIA MARTOU



A desire to give women back some control over their life after a breast cancer diagnosis is at the heart of Dr. Glykeria Martou's passion for breast reconstruction surgery. Since her arrival at Queen's in January 2016, she has developed and grown a breast reconstruction program that is helping women manage not just the physical but also the emotional and psychological effects of breast surgery.

Dr. Martou received her Medical Degree from McMaster University and a Masters of Science Degree in Human Physiology from the University of Toronto. She is also a graduate of the Plastic Surgery Residency Program at the University of Toronto, and completed her fellowship training at Sunnybrook Health Sciences Centre. She went on to become a Fellow of the European Board of Plastic, Reconstructive and Aesthetic Surgery (EBOPRAS) and the American Board of Plastic Surgery (FACS). She joined the Sunnybrook Plastic Surgery Team in 2012, focusing her practice in breast reconstruction during the opening of the Louise Temerty Breast Cancer Centre.

Dr. Martou says that the high level of collaboration and interdisciplinary participation is key to the Breast Reconstruction program's success. "The surgeons and other allied health professionals are so supportive of the program and contribute so much to make it work," she says. "It's truly a team effort."

Dr. Martou is focusing her research on the outcomes of breast reconstruction in relation to a patient's quality of life after the procedure. It is hoped that the results will help to identify which types of reconstruction work best for women in terms of aesthetic outcome and design strategies that minimize breast deformities.

"Obviously, the type of reconstruction is an individualized choice," says Dr. Martou. "But the more we know about the long-term issues of the reconstruction options we offer, the better information we can provide women and the better decisions we can help them make."

DR. BORIS ZEVIN



The arrival of Dr. Boris Zevin at Queen's Department of Surgery in 2016 has resulted in some significant developments in bariatric and upper gastrointestinal surgery for residents of the South East LHIN, as well as novel strategies for medical education.

Offering a unique combination of surgical and educational expertise,

Dr. Zevin was recruited as a SEAMO Medical Education Scholar in anticipation of Queen's transition to Competency-Based Medical Education in 2017. He has developed several approaches to teaching and assessment in surgery at the undergraduate, post-graduate, and continuing education levels, and implemented a simulation-based curriculum in upper GI and bariatric surgery for general surgery residents in 2017.

A specialist in minimally invasive, bariatric and upper gastrointestinal surgery, Dr. Zevin is Director of the Kingston Bariatric Centre of Excellence, which was launched at the Kingston Health Science Centre's Hotel Dieu site in 2016. One of seven in Ontario, the centre offers minimally invasive bariatric surgery, as well as a non-surgical program for treating obesity. Previously, patients had to travel to Toronto or Ottawa for bariatric surgery.

"We're now able to offer comprehensive multidisciplinary medical and surgical care to patients with morbid obesity in the South East LHIN, from their initial referral to discharge," says Dr. Zevin. "In addition, our Bariatric Surgery program gives general surgery residents the opportunity to gain valuable experience in advanced, minimally invasive surgery."

Dr. Zevin's expertise in this area was recognized in 2017 by the American College of Surgeons Division of Education, which selected him as a Member of its Bariatric Decision-Making Workgroup, part of its broader educational program focusing on intraoperative decision-making and surgical judgment, leading to excellence and safety in surgery, and the best operative care to patients.

"I'm grateful for the encouragement I've received from the Department of Surgery and the Division of General Surgery," Dr. Zevin says. "As a division, as a department, and as an institution, people have been extremely supportive of both my research and clinical initiatives."

DR. WILEY CHUNG



Our department's strength in minimally invasive surgery has been enhanced with the arrival of Dr. Wiley Chung, an Assistant Professor and general and thoracic surgeon who arrived at Queen's in July 2016.

Dr. Chung has extensive training in minimally invasive general and thoracic surgery. One of only a few surgeons in Canada to have incorporated

uniportal video-assisted thoracic surgery (VATS) into his practice, he was the first surgeon in Canada to complete a uniportal VATS esophagectomy. He is currently working on developing an enhanced thoracic surgery recovery pathway at Kingston Health Sciences Centre. He is currently the Surgeon Champion for Kingston Health Sciences Centre as part of the American College of Surgeons National Surgical Quality Improvement Program. He is also an adviser on Cancer Care Ontario's Thoracic Cancer Advisory Committee.

A graduate of the University of British Columbia, Dr. Chung completed general surgery residency training at the University of Toronto, followed by thoracic surgery residency at Foothills Medical Centre, University of Calgary. He is currently an Assistant Professor in the Department of Surgery as well as an attending staff member at Kingston Health Sciences Centre.

Dr. Chung's clinical work involves both general and thoracic surgery. He treats benign and malignant upper gastrointestinal diseases and lung cancer.

His research focuses on surgical innovation and technologies, particularly on developing surgical instruments and devices for use in the areas of general and thoracic surgery. He has recently developed, with his colleagues Dr. Alex Chee (Harvard University) and Dr. Sumesh Thomas (University of Calgary), a life-saving device for inserting chest tubes safely and quickly, for use in acute care and military settings. This patented device incorporates a pressure detection system for depth control and an impedance detection system for intracavitary recognition. He is currently in the process of commercializing this device.

Dr. Chung is also researching the management of empyema, a condition in which pus collects in the cavity between the chest wall and lungs. With his team he is currently setting up a randomized control trial that compares two different methods for addressing this condition. He has additional collaborations with Dr. Robert Bechara, Dr. Boris Zevin, and Dr. Sunil Patel.

"Collaboration is key to addressing the challenges that lead to better patient outcomes, and it is integral to my research," says Dr. Chung. "I'm thrilled to be part of our department's supportive, esteemed and innovative team."

DR. GIANLUIGI BISLERI



Leading-edge expertise in cardiac arrhythmia drew Dr. Gianluigi Bisleri to Queen's University's Department of Surgery in 2016. Trained at University of Brescia Medical School, Brescia, Italy, Dr. Bisleri pursued fellowships in the United States, Poland and the United Kingdom, specializing in arrhythmia research and minimally invasive and robotic surgery, followed by academic appointments at Brescia, where he also co-led the institution's Arrhythmia Program and was director of the Aortic Surgery Program.

Dr. Bisleri's unique combination of cardiac surgical skills and arrhythmia research found a perfect home at Queen's. "There is a limited focus in arrhythmia among the surgical community, and there is definitively lack of a structured partnership with electrophysiologists to treat common forms of irregular heart rhythm," he says. "I was thrilled to find a team here that was looking at not only advancing treatments but also doing so collaboratively. We're working together to bring things to the next level and we have already achieved incredible findings – many of them firsts internationally."

This collaborative approach has resulted in significant accomplishments. In 2017, Dr. Bisleri and electrophysiologist Dr. Ben Glover successfully completed Canada's first hybrid cardiac ablation procedure for the treatment of atrial fibrillation, the most common form of cardiac arrhythmia, using keyhole incisions and sophisticated systems for mapping the heart.

Several other innovations have been performed over the past two years, including a novel minimally invasive approach to treat aortic valve disease. For this approach, Dr. Bisleri used a sutureless valve and keyhole surgery to replace a diseased valve with a prosthetic valve that needs no stitching to be kept in place. This work led Kingston Health Sciences Centre to become one of just four health centres in Canada to take part in an international clinical trial looking at the effectiveness of sutureless valves compared to traditional valves.

Dr. Bisleri has also been working with his colleagues to expand the surgical treatment of complex aortic disease, using a new approach combining a vascular graft and a stent for the first time in North America. "This is an incredible opportunity to expand our collaboration with the team of vascular surgeons and interventional radiologists in this extremely complex subset of patients," he says.

Other research includes assessing the impact of a minimally invasive technique that uses a tiny incision, a minuscule camera and exquisitely small "scissors" to harvest arteries or veins used in cardiac bypass surgery and assessing the tissue quality of these harvested conduits. "The adoption of this technique in North America is led by KHSC-Queen's and this Centre is the site for proctoring for any surgeon interested in the approach," says Dr. Bisleri. "We have already trained three different Canadian sites over the past few months, with plans to also host US-based surgeons soon." Dr. Bisleri is also an inventor, with two United States patents for an endoscopic radial artery retractor and a scissor bit for endoscopy.

Recently, another less invasive procedure for the treatment of mitral valve disease has been introduced, which avoids the need for a long breastbone incision and utilizes endoscopic cameras for the visualization of heart valves.

"This is another important option we have added in the portfolio of procedures that can be offered to patients for less invasive approaches." Dr. Bisleri says. "It's why I came here. Queen's has the novel techniques, the experience and the infrastructure to develop new tools and techniques that improve care. And this is possible thanks to the incredible support at all levels, from Cardiology to Anesthesia and all the other healthcare professionals who are playing a crucial role in this successful pathway."

DR. RYAN ALKINS



Dr. Ryan Alkins joined the Department of Surgery in August 2016 and is collaborating with others in Neurosurgery on several research projects that are resulting in new therapies for life-altering diseases and an enhanced understanding of the effects of ultrasound interactions in the brain.

Dr. Alkins completed his PhD in Medical Biophysics at the University of Toronto under the supervision of Dr. Kullervo Hynynen, well known as one of the pioneers of therapeutic ultrasound. During this time, Dr. Alkins focused on the role of ultrasound in blood-brain barrier disruption, and was a co-investigator on the world's first clinical trial of blood-brain barrier disruption using MRI-guided transcranial focused ultrasound in brain tumour patients. He completed his clinical fellowship at Queen's and has clinical interests in skull-based and vascular neurosurgery.

Dr. Alkins' current research focus is on gaining a better understanding of the physiological mechanisms and downstream effects of lowintensity ultrasound in the brain, with an emphasis on brain tumour therapy and stroke recovery. Bridging the present gaps in knowledge will help optimize current treatment algorithms and possibly reveal novel therapeutic targets and applications. Therapeutic ultrasound involves the use of high-frequency sounds waves to create biological effects in tissue; these can range from heating to permeabilization of blood vessels. Therapeutic ultrasound is currently approved in North America for the treatment of essential tremor but is being studied in a number of diseases, including brain cancers, stroke, mood and movement disorders, and Alzheimer's.

Dr. Alkins is also involved in the iKnife project, with a goal to collect and analyze tissue in conjunction with neuro-navigation to determine whether the iKnife can help guide and improve brain tumour resections.

Dr. Alkins hopes to eventually obtain a clinical focused ultrasound platform at KHSC. "Therapeutic ultrasound devices are more appealing for centres to obtain now because there are finally approved indications," he says. "It's not just an investigational device anymore. There's a lot of potential and I hope that, with the success of the recent human blood barrier opening trials, we can get a clinical device here and start treating patients locally."

WE WERE PLEASED TO WELCOME THE FOLLOWING NEW FACULTY MEMBERS IN AUGUST AND SEPTEMBER 2018:



DR. MICHAEL HENDRY

Dr. Michael Hendry is a Canadian-certified plastic and reconstructive surgeon with specialty interests in hand and wrist surgery. He received his MSc and residency training at the University of Toronto and completed an Orthopaedic Hand Fellowship at Harvard Medical School.

Dr. Hendry's clinical interests include peripheral nerve surgery and reconstructive microsurgery. He is also academically engaged in basic science research of peripheral nerve regeneration and outcomes-based research in hand and wrist surgery.



DR. TIM PHILLIPS

Dr. Phillips is a head and neck oncologist and reconstructive surgeon who joins Queen's from his fellowship in UC Davis in Sacramento, California. After completing his BSc at the University of King's College and medical degree at Dalhousie University, Dr. Phillips completed his Otolaryngology– Head and Neck Surgery residency at Dalhousie. During this time, he earned

a Master of Education degree in Curriculum Studies for Health Professionals at Dalhousie.

Dr. Phillips has received several teaching awards and has an interest in researching ways to improve surgical training and education within otolaryngology. He also has research interests in clinical outcomes for head and neck patients.

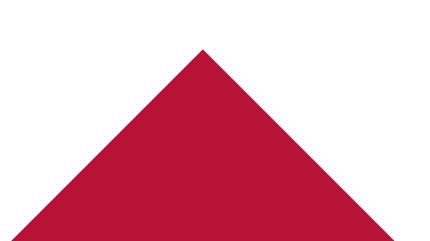


DR. RACHAEL DA CUNHA

Dr. Da Cunha attended the University of Alberta for a Bachelor of Science degree with a specialization in Chemistry and obtained her medical education at the University of Calgary, where she completed both medical school and an orthopaedic surgery residency. After graduating from

her residency in 2016, Dr. Da Cunha pursued fellowship training in Foot and Ankle Surgery at the Hospital For Special Surgery. Following this, she completed further subspecialty fellowship training in Limb Lengthening and Complex Deformity Reconstruction Surgery at the Hospital for Special Surgery as well.

Dr. Da Cunha began her practice at Queen's University in September 2018, specializing in foot and ankle surgery, as well as trauma reconstruction surgery and complex deformity reconstruction.



STUDENT PROFILES

A FINE BALANCE: THE ROLE OF THE CLINICIAN-SCIENTIST

Mina Tohidi loves to create research questions, appraise research articles and delve into databases to strategically extract information that can create new tools or practices for patients. But she's equally at home working in the operating theatre, and she envisions a future as a clinician-scientist balancing the best of both worlds.

Dr. Tohidi is currently pursuing her PhD in Epidemiology, a field she feels complements her oneon-one interaction with patients. "Public Health Sciences allows us to look at a broader audience to see trends," she says. "These trends can then be translated

DR. MINA TOHIDI

into clinical practice." She has already been recognized for her work, receiving a Best Paper in Orthopaedic Surgery award during the Department of Surgery Research Day in the fall of 2017.

Dr. Tohidi chose surgery because she thrives on seeing the positive impact she can have by working with her hands. She initially intended to go into the field of obstetrics/gynaecology but ultimately chose orthopaedics after doing a trauma rotation. "There are so many different problems to solve in orthopaedics," she says. "With surgery, we can often make a difference to a patient's quality of life right away."

Dr. Tohidi notes that she loves the team and environment at Queen's and the affiliated hospitals, including the ability to balance her surgical time with research time. "The clinical experience helps me develop research questions," she says. "and my research makes me a better clinician. In the operating room, I can help one person, but in my research role, I can help many."

THE FUTURE OF CANCER DIAGNOSIS AND TREATMENT



A cancer diagnosis for Nicole Morse's grandfather set the stage for a lifelong interest in learning more about the disease and how to cure it. Today, as a master's student working in Dr. David Berman's lab, Morse is part of a leading-edge team investigating biomarkers that can identify aggressive forms of prostate cancer to determine appropriate course of treatment.

Morse began her university career looking at several avenues in biology and soon pursued a passion for diagnostic studies of diseases. "I've always been interested in diagnosis and how we can create tools and practices

NICOLE MORSE

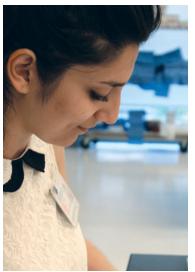
to better stratify patients," she says. In 2016, she worked as a summer student alongside Dr. Martin Kaufmann, researching the use of mass spectrometry to study tumour tissues using a new metabolomics platform called Desorption Electrospray Ionization Mass Spectrometry (DESI-MS). DESI has been used to help "train" the NaviKnife and improve both diagnostics and clinical management of cancer.

Their work was presented at the 2017 Mass Spectrometry Applications to the Clinical Lab (MASCL) conference, an event that Morse found both exciting and somewhat intimidating. "It was somewhat nerve-wracking to be a student presenting in front of all of these esteemed researchers," she says, "but I really enjoyed the opportunity, and it was a great honour to be asked to represent our group."

Asked about her work in Dr. Berman's lab, Morse says, "It can be challenging for a patient to think that their cancer doesn't need treatment. We are gathering evidence to more accurately identify these patients and provide justification as to why their cancer does or not need immediate treatment."

Morse says that the variety of the work makes for a challenging and exciting career. "I love working with a multidisciplinary group and seeing what results we can achieve," she says. "Together we can make a real contribution to the future of cancer diagnosis and treatment."

PRACTICE MAKES PERFECT: SURGICAL SKILLS TRAINING FOR SECOND-YEAR MEDICAL STUDENTS



Dr. Stefania Spano was at one of the dean's dinners for medical students when a discussion arose around surgical skills and Competency-Based Medical Education (CBME). While there was a first-year surgical residency "boot camp," secondyear medical students were experiencing some stress over not having enough hands-on practice time for basic surgical skills training, particularly given the imminent transition to CBME. That conversation led to further discussions with the Faculty, that ultimately resulted in the development of the Surgical Skills and Technology

DR. STEFANIA SPANO

Elective Program (SSTEP) for second-year medical students.

SSTEP is an eight-day pre-clerkship elective summer course providing early foundational surgical skills development in a simulation environment. The goal is to provide complementary training to the existing Clinical Skills program and to enhance students' comfort level and confidence by giving them opportunities to practise necessary skills and work with surgical technologies. Using the first-year Surgical Residency Bootcamp as a guide, Dr. Spano and her colleagues developed workshops to help students learn technology skills and basic surgical techniques, such as suturing, endoscopy and virtual laparoscopy. Facilitators from the faculty donate their time to prepare lessons and provide hands-on guidance.

"Everyone at the faculty and the Department of Surgery has been so supportive of this initiative," says Dr. Spano. "They have been generous with funding, with guidance and with their time." The program is supported financially by the Medical School Excellence Fund, which is resourced by donations from alumni and friends.

The first SSTEP workshop took place in May and June of 2014, and the program has since continued to grow and thrive. Student satisfaction with SSTEP is high, based on feedback from participants. "The opportunity to have direct instruction on how to suture and tie knots was fantastic," said one participant. "The opportunity to have hands-on suturing instruction from the dean of Medicine is pretty awesome."

The team presented the program at the Canadian Conference on Medical Education in 2015 and also received an award for their presentation at the Department of Surgery's Research Day that year.

Dr. Spano says that, along with helping students become more confident, SSTEP offers an incredible leadership opportunity. "Each year, a different group of second-year students takes on the planning role," she says. "It really is a huge collaborative effort that brings students, faculty and administrative staff together to help make us the best surgeons we can be."



RESEARCH

HYBRID SOLUTION: Arrhythmia surgery achieves a first

hen the electronic signals of the heart misfire, it can cause rapid heartbeat, breathlessness, fatigue and even hospitalization. Cardiac arrhythmia can be hard to treat, and even fatal. In recent years cardiac ablation, a minimally invasive procedure for treating arrhythmia, has become an important area of expertise at Queen's University.

Now a unique collaboration between two recently recruited cardiac specialists at Queen's is advancing an innovative hybrid approach for treating atrial fibrillation, the most common form of arrhythmia.

Dr. Ben Glover, a cardiologist and chief of the heart rhythm service in Kingston, specializes in cardiac ablation using state-of-the-art surgical mapping tools to navigate inside the heart via a catheter. A tool at the end of the catheter creates scarring that stops the signals causing arrhythmia. In 2016, Dr. Glover became the first in North America to use the Ensite Precision mapping system to guide him in this procedure.

His colleague, Dr. Gianluigi Bisleri, a cardiac surgeon focused on minimally invasive surgical approaches, develops novel heart repair techniques for a variety of heart problems, including arrhythmia, using leading-edge tools and small incisions that do not require opening up the chest. Recognizing the potential benefit of combining their respective expertise in atrial fibrillation, in August 2016 the two clinicianscientists successfully completed the first "inside-outside" cardiac ablation procedure in Canada, using keyhole incisions and a sophisticated navigation system for mapping the heart.

In the new procedure, the cardiologist uses digital technology to map and treat problem areas inside the heart while the surgeon performs ablation on the outside of the heart using another device. The operation requires only three keyhole incisions to navigate to the heart, removing the need to open the patient's chest.

This minimally invasive approach reduces the risk of complications, helps patients heal faster, and can reduce or even stop the need for medication. It also reduces the likelihood of return hospital visits.

The hybrid procedure has since been performed on more than 10 patients from across Eastern Ontario.

"We have observed excellent outcomes in this initial group of patients," says Dr. Bisleri, "and we are now receiving referrals from other LHINs given the uniqueness of this procedure for selected patients. This is truly groundbreaking clinical research that is helping us understand and improve the treatment of complex forms of atrial fibrillation."



TRANSFORMING SURGERY: International collaboration on NaviKnife enters research phase

The Department of Surgery's international collaboration to advance an exciting new tool for image-guided surgery made significant progress this year. Surgeons and researchers at Queen's University and Imperial College London have partnered with industry to combine leading-edge imaging software and systems developed at Queen's Laboratory for Percutaneous Surgery (PERK) with the iKnife to create the NaviKnife.

An enhanced version of the UK-developed "intelligent" electrosurgery tool, the NaviKnife incorporates real-time, GPS-like mapping capability that enables the mass- spectrometry-enabled knife to "see" the precise size and location of tumours, ensuring complete removal of cancerous tissue with minimal healthy tissue loss, and eliminating the risk of repeat surgeries.

"Imaging is key to tumour surgery," says Dr. John Rudan, who led the effort to bring the iKnife to Queen's, "and we're translating it into surgical research activity." While the iKnife is not yet approved for use in surgery, Kingston became the first North American location to use the tool in research, joining a select group of centres in Europe.

Current research using the tool is directed at breast and brain cancer tumours. The value of this work was recognized earlier this year

when Dr. Jay Engel was awarded funding from the Innovation Fund, a joint initiative of the Ministry of Health and Long-Term Care (MOHLTC) and the Ontario Medical Association (OMA). The grant will support his project, entitled "Navigated iKnife: Lumpectomy navigation with mass spectrometry tissue analysis."

"The broader vision is to integrate this image-guided capability into other kinds of cancer surgery as well as areas such as vascular and neurosurgery," says Dr. Rudan.

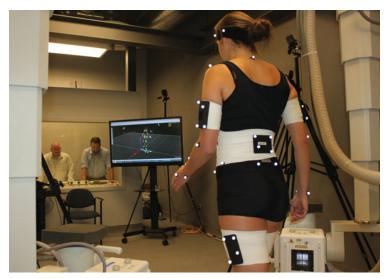
The iKnife collaboration at Queen's achieved further recognition in November, with a visit by the iKnife's inventor, Dr. Zoltan Takats, Department of Cancer and Surgery, Imperial College, who was named this year's Dr. Andrew Bruce and Margaret Bruce Visiting Scholar in Surgical Innovation, sponsored by the departments of Surgery and Urology at Queen's. Dr. Takats gave a public lecture, "What do the Molecules Tell Us? The quiet revolution of chemical information," and met with faculty and students during his four-day visit.

"Queen's is where transformational research is going on, and the NaviKnife is part of the future," says Dr. Engel. "The navigation system is ready, and we're bringing it all together. We have the plan and the technology. This is the only place in the world where this is happening."



IKNIFE CONSORTIUM – IMPERIAL COLLEGE LONDON, MAASTRICHT UNIVERSITY, AND QUEEN'S UNIVERSITY

The new Skeletal Observation Laboratory offers insights into intricacies of human joints



HIGH-SPEED SKELETAL IMAGING (HSSI) LABORATORY

Human joints are remarkable in their ability to facilitate motion while transferring large forces. They are very complex, with their function notoriously challenging to measure and understand, and even more challenging to repair.

Dr. Michael Rainbow, a biomedical engineer recruited to Queen's University from Harvard Medical School, is working to change that. His Skeletal Observation Laboratory at Kingston Health Sciences Centre's Hotel Dieu site is one of the few facilities in the world capable of measuring the human skeleton in motion.

Opened in 2017, the 1,500-square-foot lab is the most recent addition to the state-of-the-art infrastructure affiliated with the Human Mobility Research Centre (HMRC), a unique university-hospital collaboration hub for multidisciplinary, bench-to-bedside research. The Skeletal Observation Lab's sophisticated motion-capture system enables researchers to observe and precisely measure the mechanics and internal structures of nearly any joint in the body during active movement. High-speed X-ray imaging, video cameras and sensorequipped floors provide a full-body record of movement variables such as motion, speed and impact forces on joints. A synchronized ultrasound system measures the mechanical properties and stretch of soft tissues such as ligaments and tendons.

An assistant professor in the Queen's Department of Mechanical and Materials Engineering and an HMRC faculty member, Dr. Rainbow has a special interest in overuse injuries and has developed mathematical models to help him better understand the intricate mechanics of joints. He is collaborating with orthopaedic surgeons Dr. Dan Borschneck, Dr. David Pichora and Dr. Ryan Bicknell on overuse injury studies, including, with Dr. Borschneck, research into patellofemoral pain, better known as "runner's knee." He is also using the Skeletal Observation Laboratory to study knee motion during running or other dynamic motions. The data collected will enable him to model the mechanics of the joint and study how bone shape affects the likelihood of a person getting knee pain.

Dr. Rainbow's work also includes longitudinal studies of patients with overuse injuries, leading to better diagnosis and treatment of these kinds of injuries. "The information we glean from this imaging and modelling lab could help surgeons determine ahead of time if a patient would respond better to rehabilitation or surgery and then customize their treatment accordingly," he says. "The goal is to develop interventions that account for each patient's particular anatomy, mechanics and activities."

Ultimately the new facility offers the means to develop better treatments and strategies for joint health and mobility that could improve quality of life for patients of all ages and abilities, from high-performance athletes to senior citizens.

Can a smartphone improve patient care?



DR. SUNIL PATEL

an an app change the way that patients prepare for a hospital procedure? Dr. Sunil Patel, a colorectal surgeon, is studying whether a smartphone reminder app can help patients better prepare for a colonoscopy and ensure a more successful procedure.

The app, funded by an Innovation Grant, automatically populates patients' phones with calendar reminders and pre-recorded messages regarding cessation of solid food intake, and the need for clear fluid intake, as well as timing of their bowel

regimens seven days prior to the procedure. The hope is that, if the app is successful, similar apps can be developed for other uses to help patients prepare for surgery or other diagnostic tests.

In addition to the use of new technologies, Dr. Patel's research interests focus on population health. He has a particular interest in colorectal and anal cancers and the delivery of care to patients with these diagnoses. He has noted an increase in colorectal cancers, particularly among a younger demographic, but has also noticed that many patients are not getting tests or treatments that could help diagnose and better treat their diseases.

"We have many great treatments, but, for one reason or another, people don't always get them," says Dr. Patel. "I'm interested in finding out what the barriers are to what should be a standard level of care." Barriers could include patient factors, such as time constraints or where they live. "Radiation treatments, for example, can require a patient to have five days of treatments for five weeks," he says. "That could be a real challenge for a patient who lives far away from the treatment." Other barriers include delays in testing due to waiting lists for equipment such as MRIs.

Dr. Patel uses population data from the Institute of Clinical Evaluative Sciences (ICES) to look at the standards of care and the factors that can affect those standards. He's also interested in how health professionals order diagnostic tests and whether some cases are over-investigated. He notes that while it's important to continue to develop new treatments and therapies, it's also important to ensure that existing treatments are available.

"It's great that we are discovering new tests and therapies," he says, "but at the same time we should also be ensuring that patients have access to the technology and treatments that we already have."

"I'm interested in finding out what the barriers are to what should be a standard level of care."

BRAIN CANADA GRANT TARGETS NEW APPROACHES TO understanding Alzheimer's disease



DR. D.J. COOK, DR. DOUG MUNOZ, DR. RON LEVY

collaboration between neurosurgeons Dr. DJ Cook and Dr. Ron Levy, and neuroscientists Stephen Scott and Doug Munoz was recognized in 2017 with funding of \$857,062 from Brain Canada's Multi-Investigator Research Initiative, with financial support from Health Canada through the Canada Brain Research Fund.

The three-year grant will support research into the effects of Alzheimer's disease on the brain and will support the development of new approaches to slow the progression of the disease.

The group will build on work with their collaborator Dr. Fernanda Felice of Rio de Janeiro, whose team developed a method to create Alzheimer-like pathology in tissue cultures, helping them to better understand how the disease works at the cellular and molecular levels. The Queen's group will use amyloid-beta oligomers – amino acid peptides that are a main component of the plaques found in the brains of Alzheimer's patients – to see if they trigger features that resemble those of Alzheimer's. They will also explore using growthpromoting molecules and electrical stimulation to promote regrowth and plasticity of affected cells.

"If you have an older patient with a brain that is no longer working the way it used to, you won't be able to reverse it back to the time when that brain was young and healthy," says Dr. Munoz. "What we aim to do, on the other hand, is to develop treatments that could allow the brain to work around the disease, alleviating some of the devastating effects of Alzheimer's for the patient."

The researchers aim to identify a strategy that could slow the progression and even interrupt the onset of Alzheimer's, improving quality of life for patients.

studies of metabolic "fingerprinting" of cancer tissues lead to Young Investigator grants for two Queen's researchers



eading-edge work using mass spectrometry to study tumour tissues by two early-career investigators at Queen's was recognized last year at the Mass Spectrometry Applications to the Clinical Lab (MASCL) conference.

Dr. Martin Kaufmann, a post-doctoral fellow in the Department of Surgery and Nicole Morse, a master's student in the Department of Biomedical and Molecular Sciences, were awarded Young Investigator Travel Grants from MSACL after their research abstracts were accepted for presentation at the prestigious conference in Palm Springs, California, in January 2017.

The two researchers presented findings from their work using a new metabolomics platform called Desorption Electrospray Ionization Mass Spectrometry (DESI-MS) on tumour tissues. The technology enables the creation of two-dimensional chemical "fingerprints" that identify cancer tissue based their dysregulated metabolism. "DESI works by scanning across the surface of a thin slice of tissue to detect small metabolites that are present in different concentrations in tumour versus benign tissue," Dr. Kaufmann explains.

DR. MARTIN KAUFMANN (LEFT) AND NICOLE MORSE (RIGHT)

His work was highlighted in his conference presentation, "Distinct Metabolite Profiles Acquired by DESI Mass Spectrometry Imaging Discriminate Between Tumor and Non- Neoplastic Tissue from Multiple Organs."

Morse also presented at the conference, on "Simulated Breast Cancer Resection Margin Assessment using Desorption Electrospray Ionization (DESI) Mass Spectrometry Imaging (MSI) with "Histology Correlation."

"It was a great vote of confidence from the organizers to be selected to represent the growing expertise of our multidisciplinary group at the meeting," says Morse, who conducted the work as a summer student under Dr. Kaufmann's supervision in 2016. She has since begun a master's degree on prostate cancer biomarker discovery using DESI in Dr. David Berman's lab (see page 26 for more).

"This work by Dr. Kaufmann and Ms Morse builds on a growing body of knowledge and expertise at Queen's in molecular imaging and guidance," says John Rudan, Head, Department of Surgery. "It advances our goal of integrating our NaviKnife, a massspectrometry-enabled technology based on the Imperial College iKnife, into the operating room, leading to better surgical outcomes for patients."

stimulating science: Interdisciplinary research that changes lives



DR. RON LEVY

Provide the server of the server aspect of human activity – from the way we sense the world and move our bodies to the complex cognitive processes underlying decision-making to direct behaviour. It also has a direct impact on quality of life, as seen by the success of interdisciplinary work in neuromodulation to address a broad range of diseases that can profoundly affect daily activities for those who suffer from them.

Clinician-scientist Dr. Ron Levy has been working with colleagues across the Faculty of Health Sciences and the Centre for Neuroscience Studies to develop a neuromodulation and stereotactic program to address four distinct areas of neurological disease that affect large groups in our population: pain, movement disorders, epilepsy and brain tumours.

Dr. Levy notes that these diseases are common and can have a significant impact on a person's quality of life. Chronic pain is a prevalent health issue with limited treatment options. Implanted electrodes that deliver electrical stimulation to the spinal cord can be carefully modulated to minimize pain, reduce the use of opioids to manage the condition and give patients a new lease on life. Patients are managed in conjunction with Dr. Scott Duggan at the KHSC Chronic Pain Clinic.

Donald Gibson, who has suffered from back pain due to degenerative disc disease for over 20 years, says that the implanted stimulator has made all the difference to his quality of life. "I can garden, clean the yard and play with my grandchildren," he says. "This is the best year that I've had in two decades." Gibson notes that the stimulator has also allowed him to wean off hydromorphone, which is having a positive mental effect on his well-being. Movement disorders, such as Parkinson's disease, affect approximately 1 in 100 older adults and elderly individuals. Neuromodulation using deep-brain electrical stimulation reduces Parkinsonian symptoms and gives people back some freedom. Working closely with movement disorder neurologists Dr. Giovanna Pari and Dr. Stuart Reid, patients are being recruited to receive this effective treatment.

Similarly, Dr. Levy notes that deep-brain stimulation is now approved for epilepsy. This condition affects 0.7 per cent of Canadians, but for one-third of those, seizures are not adequately controlled by medication. The stereotactic program will facilitate both resection and stimulation surgeries for epilepsy, and will enhance care given by epilepsy neurologist Dr. Lysa Boisse Lomax's newly funded Epilepsy Program.

In addition, stereotactic equipment is being used to perform minimally invasive and awake biopsies of brain tumours in a same-day procedure, reducing the need for surgery and freeing up hospital beds. This option increases the utility of biopsies in the management of brain tumours by neurosurgeons and oncologists at KHSC.

Importantly, all of this clinical work is being integrated into research at the Queen's University Centre for Neuroscience. Basic research scientists are actively collaborating to study these patient groups to improve their outcomes and develop novel treatments — for example, electrophysiological techniques developed by Dr. Levy to record and stimulate brain activity in patients with Parkinson's disease and epilepsy. This work will be a collaborative effort with Dr. Doug Munoz, who specializes in eye movements, and Dr. Stephen Scott, who studies motor control. An important area for future development of the neurostimulation research will be in the area of mental disorders, where we are in the beginning stages of understanding and discovery.

Dr. Levy believes that patient care and research go hand in hand, aligned to advance discovery which results in improved care. "Every patient is unique," he says. "By learning more about each patient, we can develop the tools we need to improve their condition while adding to the greater body of knowledge to find a cure."

LECTURES AND EVENTS

Charles Sorbie Department of Surgery Faculty Research Day



DR. DAVID BREMAN AND DR. JOHN RUDAN

The Charles Sorbie Research Faculty Research Day provides participants with a valuable opportunity to learn more about the research activities within the Department of Surgery. Along with presentations from researchers across the department, this annual day-long event features a guest speaker and, in 2018, the presentation of the inaugural John Rudan Resident Award for Excellence.

This event is made possible by a generous donation from Dr. Janet Sorbie, in loving memory of her husband, Dr. Charles Sorbie, who was a member of the Department of Surgery for 45 years. Dr. Sorbie had a distinguished career as a researcher and a surgeon during his time at the university and was the first chairman of the Orthopaedic Residency Training Program. He had a founding role in the Human Mobility Research Centre and also served as the head of the Department of Surgery for 10 years.

The 2016 Research Day was held on April 15, 2016, and featured guest speaker Dr. Mark Ormiston, Assistant Professor in the departments of Biomedical and Molecular Sciences, Medicine and Surgery. Dr. Ormiston presented on the topic of "Targeting Endothelial and Immune Dysfunction for the Treatment of Pulmonary Vascular Disease."

Dr. Ormiston is an Assistant Professor at Queen's University and a Tier 2 Canada Research Chair in Regenerative Cardiovascular Medicine. His research centres on the cellular mechanisms governing vascular remodelling in health and disease, particularly on the capacity of circulating cells of the immune system to regulate the integrity, growth and repair of blood vessels. This interest is rooted in his study of Pulmonary Arterial Hypertension, a disease of pathological vascular remodelling and right heart failure that is linked to immune dysfunction.

The 2017 event was held on March 31, 2017, and featured guest speaker Dr. Stephen Archer, Head of the Department of Medicine and Program Medical Director, Medicine. Dr. Archer's presentation was titled "The Mighty Mitochondria – new targets for treating human disease."

Dr. Archer is the head of the Department of Medicine at Queen's University, Kingston Health Sciences Centre, and Providence Care, and is a Tier 1 Canada Research Chair in Mitochondrial Dynamics and Translational Medicine. He has published over 220 peerreviewed articles and is the author of several key guideline documents, including the AHA 2009 guidelines on pulmonary hypertension and the 2010 guidelines on management of submassive venothromboembolism. Dr. Archer's research interests include pulmonary hypertension, cancer, mitochondrial dynamics, mitochondrial metabolism, oxygen-sensing, aortic diseases and valvular heart diseases.

In 2018, the Charles Sorbie Research Day was held on April 20, 2018. Featured guest speaker Dr. David Berman, Professor of Pathology and Molecular Medicine and Director of the Queen's Cancer Research Institute, spoke on "Differentiation Pathways in Prostate and Bladder Cancer."

Dr. Berman is a pathologist and clinician scientist at Queen's University and the director of the Queen's Cancer Research Institute. He pursued MD and PhD degrees at U.T. Southwestern (Texas), where he cloned the cDNA for the enzyme 5-alpha reductase and elucidated its role in prostate development. He also ran a research laboratory at Johns Hopkins for nine years. Dr. Berman's research focuses on high-impact biomarkers in prostate and bladder cancer, and he is leading a team of scientists across Canada who are studying a large number of genes that will form the foundation of new tests for prostate cancer.

The William Ersil Resident Research Day



DR. PATEL, DR. HERNANDEZ-ALEJANDRO, DR. NANJI, 2017 WILLIAM ERSIL RESIDENT RESEARCH DAY

The William Ersil Resident Research Day is an annual day-long event designed to enable residents from the Department of Surgery to present ongoing clinical and basic science research performed during the year under the supervision of attending staff. It also provides a forum for surgeons to renew or establish professional and personal liaisons. Dr. William Ersil obtained his medical degree from Queen's in 1979. He entered the Orthopaedic Surgery program at Queen's but passed away during his second year of residency training. The 2016 Research Day was held on Monday, November 21, 2016 and featured guest speaker Dr. Laura Snell from the Division of Plastic and Reconstructive Surgery at Sunnybrook Health Sciences Centre.

Dr. Snell's presentation was titled "Breast Reconstruction: What, How, When and Why." Dr. Snell is an active educator of residents and fellows in the areas of post-mastectomy breast reconstruction and microsurgery. Her research interests include the evaluation and management of patient expectations and health-related quality of life in breast reconstruction. She also conducts studies aimed at improving intraoperative microsurgery education using technology and simulation. The 2017 William Ersil Resident Research Day took place Monday, November 20, 2017, and featured guest speaker Dr. Hernandez-Alejandro, Department of Transplant Surgery, University of Rochester Medical Center, whose lecture was titled "Pursuing an academic career – the importance of personal experience, mentors and training experiences."

Dr. Hernandez-Alejandro has been the Chief of the Division of Transplantation at the University of Rochester and Professor of Surgery since August 2016, and was formerly the Director of Liver Transplantation at Western University. In addition to his transplant work, Dr. Hernandez-Alejandro is heavily focused on liver resections for malignancies, and is one of only a handful of surgeons in the United States actively performing the ALPPS procedure (Associating Liver Partition and Portal vein Ligation for Staged hepatectomy). This surgical technique, which permits resection of advanced tumors by making use of the liver's regenerative capacity, is now offered to patients with multiple liver metastases and in some instances, primary tumors of the liver.

CONGRATULATIONS TO THE 2016 RESEARCH DAY AWARD WINNERS:

Best Paper in General Surgery Award (\$1000) to Gabrielle Gauvin for: NaviKnife Technology in Breast-Conserving Surgery: a Novel Method Providing Real-Time Feedback Intraoperatively

Gauvin, G, MD; Ungi, T, MD, PhD; Lasso, A, PhD; Yeo, C.T., MD; Fichtinger, G, PhD; Jabs, D, MD; Walker, R, MD; Merchant, S, MD, MHSc; Rudan, J, MD; Engel, C.J., MD

Best Paper in Orthopaedic Surgery Award (\$1000) to Varun Sharma for: A Study of the Trabecular Bone Density Distribution in the Scapula Relevant to Reverse Shoulder Arthroplasty

Matt A. Daalder; Varun Sharma, MD; Gabriel Venne, DO, MSc; Michael Rainbow, PhD; Timothy Bryant, PhD; Ryan T. Bicknell, MD, MSc, FRCSC

Best Poster Award (\$500) to Mercedes Pilkington for: Why so Late? Barriers to timely access to Pediatric Surgical care at Mbarara Regional Referral Hospital, Uganda

Mercedes Pilkington [1], Martin Situma [2], Andrea Winthrop [1], Dan Poenaru [3]

Best Non-Resident Orthopaedic Surgery Paper (\$500) to Shelby Stanojev for: Effect of patellar tendon strap bracing on the motor performance and biomechanics of healthy adolescent athletes

Shelby, S, BSc; MacLean, A, BSc; Hutchinson, L, MSc; Deluzio, K, PhD; Borschneck, D, MD, FRCSC

40 LECTURES AND EVENTS

CONGRATULATIONS TO THE 2017 RESEARCH DAY AWARD WINNERS:

Best Paper in General Surgery Award (\$1000) to Mercedes Pilkington for: Quantifying Delays and Self-Identified Barriers to Timely Access to Pediatric Surgery at Mbarara Regional Referral Hospital, Uganda

Pilkington, M, MD; Situma, M, MMED FCS Paeds Surg COSECSA

Best Paper in Orthopaedic Surgery Award (\$1000) to Mina Tohidi for: COMMON: Complications, Outcomes, Morbidity, and Mortality of ONtario Hip Fractures

Tohidi, M, MD; Brogly SB, PhD; Lajkosz, K, MSc; Hall, SF, MD, MSc, FRCSC; Mann, SM, FRCSC

Best Poster Award (\$500) to Faizal Kassam for: Objective Assessment of Sensorimotor, Postural Control, and Gait in Patients with Cervical Stenosis

Kassam, F, MD; Levy, R, PhD, MD, FRCSC; Scott, S, PhD; Yen, D, MD, FRCSC; Alkins, R, MD, PhD, FRCSC

Best Non-Resident Orthopaedic Paper (\$500) to Tiffany Lung for: Factors Contributing to Glenoid Baseplate Micromotion in Reverse Shoulder Arthroplasty

Lung, T, BKin; Cruickshank, D MD; Bryant, T, PhD; Rainbow, M, PhD; Bicknell, R, MD



The Dr. J. Hugh and Miriam McGuire Lectureship in Surgery



DR. MONICA MORROW

DR. RUDAN, DR. LEFF, MIRIAM MCGUIRE AND DR. ENGEL

he Dr. J. Hugh and Miriam McGuire Lectureship in Surgery was established with a generous gift made to Queen's University by Miriam McGuire in honour of her late husband, Dr. J. Hugh McGuire, a Queen's alumnus and devoted general surgeon at Humber River Regional Hospital (formerly York Finch) from 1971 to 2003. Miriam McGuire, RN, CPN (C), worked at the same hospital from 1978 to 2002.

The gift allows the Department of Surgery to invite a Visiting Scholar to bring special expertise to Queen's and to stimulate new ideas and new methodologies among Queen's medical scientists, clinicians and students.

The first annual event Lectureship took place in March 2016 and featured Dr. Monica Morrow, Chief, Breast Service, Anne Burnett Windfohr Chair of Clinical Oncology at Memorial Sloan-Kettering Cancer Center in New York, and Professor of Surgery, Weill Medical College of Cornell University. Dr. Morrow spoke on "Progress in the Surgical Treatment of Breast Cancer."

Dr. Morrow is the editor of three breast cancer textbooks and has published more than 350 book chapters, manuscripts, and editorials. She has served on the Board of Directors of the American Society of Clinical Oncology and the Society of Surgical Oncology and was the president of the Society of Surgical Oncology in 2012–2013. Her interests include the application of clinical trials data in practice, the evaluation of new technology related to local therapy of breast cancer and surgical decision-making.

Dr. Daniel Leff of the Department of Surgery and Cancer in the Faculty of Medicine at the Imperial College London was the invited speaker for the second annual event in November 2017. He spoke on "Margin Assessment for Breast Cancer Surgery: Disruptive Innovations or Traditional Disruptions."

Dr. Leff trained in oncoplastic breast surgery at several centres of excellence, including the breast unit at Imperial College Healthcare NHS Trust and the Royal Marsden NHS Foundation Trust. He has also undergone advanced oncoplastic training, having been competitively selected for a Training Interface Group (TIG) National Oncoplastic Fellowship, one of only nine such training posts in the United Kingdom. His research interests include studying and improving surgical performance and minimizing re-operation rates following breast conserving surgery through innovative technologies.

THE DR. ANDREW BRUCE AND MARGARET BRUCE ENDOWMENT for Visiting Scholars in Surgical Innovation



The Dr. Andrew Bruce and Margaret Bruce Endowment for Visiting Scholars in Surgical Innovation brings prominent scholars to Queen's who contribute special expertise in surgical scholarship, introduce new research and ideas, and teach new methodologies to Queen's students, medical scientists and clinicians. Along with a public lecture, scholars spend time at Queen's touring labs, meeting with faculty and students, and sharing ideas.

The 5th Annual Dr. Andrew and Margaret Bruce Fund Lectureship in Surgical Innovation was held in March 2017. The Department of Surgery hosted Dr. Garnette Sutherland, a renowned clinicianscientist and the director of the Seaman Family MR Research Centre at Alberta Health Services. The lecture, presented by Dr. Sutherland, was titled "What next...? The Nuances of Innovation in Medicine."

In collaboration with NRC-Canada, Dr. Sutherland developed the world's first intraoperative MRI system based on a moveable 1.5T magnet, as well as neuroARM, an image-guided MR-compatible robotic system. He was appointed to the Order of Canada in 2011 for his lifetime achievement in health-care innovation and in 2014, was inducted into the Space Technology Hall of Fame for neuroArm. In 2015, NASA recognized his contributions with the NASA Exceptional Technology Achievement Medal.

The 6th Annual Dr. Andrew and Margaret Bruce Fund Lectureship in Surgical Innovation took place in November 2017, featuring guest speaker Dr. Zoltan Takats from Imperial College London.

Dr. Takats's presentation "What do the Molecules Tell Us?" focused on precision medicine and the need for information to be presented in real time in the operating room.

DR. GARNETTE SUTHERLAND



DR. ROB SIEMENS, DR. ZOLTAN TAKATS, DR. ANDREW BRUCE, DR. JOHN RUDAN

Dr. Takats is the inventor of the iKnife, an operative tool that can detect cancer at the time of surgery. He is also the primary inventor of electrosonic spray ionization, desorption electrospray ionization, and jet desorption ionization (DESI), which will revolutionize pathology. Besides pursuing a scientific career, he has been deeply involved in the introduction of a mass spectrometry-based neonatal screening program in Hungary and has served as the head of one of Hungary's national screening laboratories.

Dr. Andrew Bruce is an alumnus of Queen's University, an entrepreneur and a strong proponent of surgeons and innovation. He agreed to fund an endowment provided the Department of Surgery match his donation. We are very fortunate to have Dr. Bruce back at Queen's as a member of the Faculty of Health Sciences Campaign Cabinet and are honoured that Dr. Bruce and his late wife Margaret made it their wish to make a major investment in Queen's with the establishment of the Dr. Andrew Bruce and Margaret Bruce Endowment for Visiting Scholars in Surgical Innovation.

AWARDS

Dr. D.J. Cook named one of Canada's Top 40 under 40



DR. D.J. COOK

E ach year Canada's Top 40 Under 40 serves as a showcase for emerging leaders across the country. This year, neurosurgeon Dr. D.J. Cook was recognized for his work in developing minimally invasive surgical procedures for complex brain disorders, as well for his innovative research focusing on therapy and treatments to enhance recovery for patients who have suffered a stroke.

"This is a real honour. I know that a few neurosurgeons have been recognized in the past, but this is a list focused on leaders in the private sector. So, it's a big honour to be considered for this award as a surgeon-scientist," says Dr. Cook. "I think it speaks to the impact of the work we are doing at Queen's and Kingston Health Sciences Centre with the Translational Stroke Research Program."

Founded in 1995 by the Caldwell Partners, Top 40 has recognized more than 680 outstanding Canadians since its inception. This year's 40 winners were selected from over 800 nominees by an independent Advisory Board, comprising more than 20 business leaders from across Canada. Honourees were chosen on four key criteria: Vision and Innovation; Leadership; Impact and Influence; and Social Responsibility.

Dr. Cook credits his nomination for this prestigious award to the strong, innovative environment provided through the clinicianscientist program offered by the Southeastern Ontario Academic Medical Association in partnership with Queen's and Kingston Health Sciences Centre. "I must also thank my highly supportive partners in the Neurosurgery Program who help facilitate my sometimes overwhelming research schedule," says Dr. Cook.

"It was a rigorous process that included a series of interviews with business leaders from across the country. I think the panel was interested in the impact our work is having in academia and the promise it holds for health care and our society," says Dr. Cook. "It's recognition that our research in stroke and neurosurgery is of interest to a broader audience who understand the potential benefit for patients worldwide."

WINNING WAYS: Dr. Andrea Winthrop wins 2017 John Provan Outstanding Surgical Educator Award and 2017 Queen's FHS Education Award

he Canadian

education. She was also the recipient of the 2017 Queen's

Undergraduate Surgical

Education Committee



DR. ANDREA WINTHROP

Faculty of Health Sciences Education Award for excellence in teaching, recognized for her many contributions to Queen's and innovative approaches to learning.

Dr. Winthrop joined Queen's in 2011 to take on a leadership role in the undergraduate medical education program; however, she is also an alumnus, having earned her medical degree at the university in 1981. While her academic activities have included nutrition and trauma research, medical education, and pediatric trauma/burns, Dr. Winthrop's true passion is medical education. "I believe there is a true distinction between excellent teaching, scholarly teaching and educational scholarship," she says. "I view all three as essential, in order to achieve the optimal educational experience for the learners."

Dr. Winthrop has significant expertise in medical education, including medical student, resident, and fellowship education as well as continuing professional development. She has also been

actively involved in national education organizations, including the Association for Surgical Education, the Association of Faculties of Medicine of Canada, the Canadian Association of Medical Education, and the Canadian Undergraduate Surgical Education Committee. She is the chair of the Education Committee of the Canadian Association of Pediatric Surgeons. In addition, she is currently pursuing her Master's of Health Professions Education from the University of Illinois, Chicago.

Dr. Winthrop says that her approach is to guide students by facilitating their learning. "By creating and/or identifying opportunities for learning, I know that I can foster students' ability to have those 'ah ha' moments, when they can apply prior foundational knowledge to a new clinical encounter or problem," she says.

Dr. Winthrop is exceptionally well-regarded by students and peers, as evidenced by the many reference letters submitted on her behalf as part of the award nomination. A student referred to her "genuine passion for teaching and individualized concern for each student," and a peer describes her as "an invaluable inspiration and mentor."

Dr. Winthrop believes that teaching and learning are inseparable for both the student and the teacher. "Education is most successful when the teacher and student are both passionate and $engaged_{i}$ she says. "It is a partnership. Students thrive when they know that their teachers really care about their learning."

Dr. Michael Chan Award in General Surgery

young surgeon with a passion for patients is the is the first recipient of the Dr. Michael Chan Award in General Surgery. Dr. Caitlin Yeo was presented the award, which is intended to reward excellence in clinical care, by Dr. Chan at the 2017 General Surgery Annual Holiday Party on December 8, 2017.

Dr. Yeo holds BSc and MD degrees from Queen's, and is currently a final-year resident in General Surgery. She studied with Dr. Gabor Fichtinger as an undergraduate, and spent a summer working in his research lab, where she became involved in the development of the NaviKnife technology, a new tool for image-guided surgery. Her work with Dr. Fichtinger and Dr. Jay Engel led to her being named on the patent application for this groundbreaking new tool. She is currently engaged in several projects, including the development of computer-assisted medical training tools and an image-guided navigation toolkit. "It's amazing to be working on research projects that will be transformed into tools for the operating room," she says.

Dr. Yeo says that she loves research, but she also has a real passion for interacting with patients. "I love research and discovering new ideas and tools, but following a patient case and seeing the results from surgery is so gratifying," she says. "The work that we do in surgery is exciting, meaningful, and reminds me why I'm here." She counts Dr. Engel as a mentor, and says that his approach and technique has inspired her work in oncology surgery.

The Dr. Michael Chan Award is to be presented annually to a general surgery resident who has consistently demonstrated dedication to the delivery of compassionate, comprehensive care of patients, and is meant to inspire residents to always pursue excellence in clinical care.



DR. MICHAEL CHAN AND DR. CAITLIN YEO, GENERAL SURGERY RESIDENT

Resident Prize for Excellence in Undergraduate Teaching



DR. JULIE CHAN

ongratulations to Dr. Julie Chan, 2017 winner of the Resident Prize for Excellence in Undergraduate Teaching! Dr. Chan, a senior orthopaedic resident, was chosen as the best teaching resident by a majority of the year's 100 graduating students who were taught by her. The award recognizes "substantial contribution to teaching in the Undergraduate Education Program" by a resident registered in the Postgraduate Education Program at Queen's.

THE DR. JOHN RUDAN RESIDENT AWARD OF EXCELLENCE

This award was established to value the academic development of a surgical resident. It recognizes an individual that consistently demonstrates all the qualities of an excellent surgical resident, specifically the highest level of professionalism, collegiality, and clinical care.

> The winner of the inaugural John Rudan award for 2017 was orthopaedic resident Dr. Daniel Banaszek.

The 2018 John Rudan Resident Award for Excellence was awarded to general surgery resident Dr. Daniel Sisson.

The Dr. John Rudan Resident Award of Excellence at Dr. David Bacason, Ontopastic Surgery 2018 Dr. David Bacason, Control Surgery

THE DR. JOHN RUDAN RESIDENT AWARD OF EXCELLENCE

John Rudan awarded CAHS Fellowship

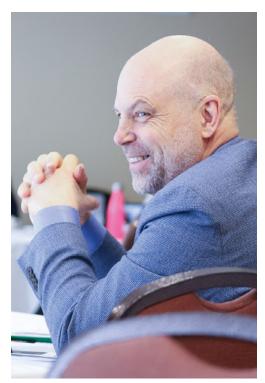
r. John Rudan, Head of the Department of Surgery, joined illustrious company this year with his induction into the Canadian Academy of Health Sciences (CAHS). One of the highest honours in Canadian academia, fellowship in the CAHS recognizes leadership, academic performance, scientific creativity and willingness to serve. Dr. Rudan was cited for his "transformative" impact on medical education, research and patient outcomes at Kingston Health Sciences Centre and affiliated institutions.

Dr. Rudan was honoured for his vision and success in a number of initiatives. He led the drive to establish the Human Mobility Research Centre and continues to build its capabilities and its international reputation; he has championed, commercialized, and pioneered the use of computer-assisted technologies for orthopaedic surgery (including performing the world's first computer-aided knee realignment); and he has attracted world-class talent and fostered strong training programs, ensuring new generations of highly trained surgeon-researchers.

More recently, Dr. Rudan spurred an international collaboration with Imperial College London and Queen's University's Laboratory for Percutaneous Surgery (PERK) to enhance the image-guided capabilities and applications of a novel research and surgical tool, the iKnife. Kingston is now the first city in North America to have access to this technology.

Within his profession, he has served on expert panels and committees for the Royal College of Physicians and Surgeons, the Canadian Orthopaedic Association and Health Quality Ontario; and he helped to establish the Southeastern Ontario Academic Medical Organization (SEAMO), an innovative model for university–hospital health-care research and education.

"Interdisciplinary approaches are the key to advancing academic health sciences," says Dr. Rudan. "They increase productivity and enhance the transfer of knowledge into practices and technologies that benefit patients. I'm honoured to serve the CAHS and its mission of creating a healthier Canada."



DR. JOHN RUDAN



FACULTY PROMOTIONS

FACULTY PROMOTIONS

Dr. Susan Brogly

ICES Research Promoted to Associate Professor

Dr. D.J. Cook

Neurosurgery Promoted to Associate Professor

Dr. Lindsay Davidson

Orthopaedic Surgery Promoted to Professor

Dr. Mark Harrison

Orthopaedic Surgery Promoted to Associate Professor

Dr. Diederick Jalink

General Surgery Promoted to Associate Professor

Dr. Sulaiman Nanji

General Surgery Promoted to Associate Professor

Dr. David Yen

Orthopaedic Surgery Promoted to Professor

RETIREMENTS

JEANINE MACROW



Jeanine MacRow has retired after a long and illustrious career in the Department of Surgery.

Jeanine began her career with KGH 38 years ago and joined the Department of Surgery in 1987, taking on the role of Administrative Secretary in 1999. In 2009, she became the Program Assistant for the Residency Training Programs, a responsibility that she took on with great passion and enthusiasm.

Jeanine says that working in Surgery was never boring. "I was excited every time a new procedure, or new piece of technology was introduced for our patient care," she says, "and I was proud every June when we graduated new surgeons and every July when we welcomed the new trainees. There are always great things going on in Surgery!"

Along with her responsibilities at KGH, Jeanine was very committed to her profession and her colleagues across the province, serving on the executive and as president of the Ontario Medical Secretaries Association for several years. She gave tremendously to this organization and was well respected for it.

Jeanine is also known for her exceptional work ethic. Although she had the opportunity to retire a few years before she did, she stayed on to help with the most recent round of accreditation, and played a key role in the department's success.

Although she is looking forward to travelling and spending more time working on her farm, Jeanine says that she will miss her coworkers, the surgeons and the residents. "I have been given many opportunities to grow and develop as a better person and team member," she says. "I am and will be forever proud and grateful to have been a part of the Queen's Department of Surgery."

DR. DALE MERCER



MARY ANNE MERCER AND DR. DALE MERCER

Dr. Dale Mercer came to Queen's as a student in the fall of 1972. Since 1983, he has been a general surgeon and esophagogastric specialist at Hotel Dieu Hospital and Kingston General Hospital. In addition to his clinical practice, he is a professor in the Faculty of Health Sciences, Department of Surgery at Queen's University, where he also completed his medical school and surgical residency training. His clinical interests focus on esophageal and gastric surgery and endoscopy. He was the first and only physician to perform minimally invasive benign esophageal surgery in Kingston.

Dr. Mercer was the Howard Wright Fellow at the Virginia Mason Medical Centre working with Dr. Lucius Hill in thoracoesophageal surgery. His early research stemmed from this fellowship and focused on esophageal disease. Currently, his research interests have shifted to questions related to surgical administration, specifically characterizing and minimizing surgical wait times. His varied research has resulted in numerous publications in peer-review journals and an edited comprehensive surgical textbook on the esophagus.

Dr. Mercer has instructed in both the undergraduate medical and the post-graduate surgical programs at Queen's University. He has been a visiting professor at a number of institutions worldwide – including in Canada, China, the United States, Kenya and Guyana – normally speaking on clinical aspects of esophageal/gastric disease. He has received numerous teaching awards for his educational work, including the Canadian Association of Medical Education Certificate of Merit.

Dr. Mercer has served in many administrative positions, both within the Kingston hospital system and in the greater medical community. He served as Queen's University Department Head of Surgery from 2004 to 2009 and more recently as Chief of Staff and Chief of Medical and Academic Affairs at the Hotel Dieu Hospital from 2010 to 2014. He was president of the College of Physicians and Surgeons of Ontario and has continued committee work on educational and physician performance matters with this organization for over 15 years.

Dr. John Rudan, Head of the Department of Surgery, says "Those of us who have had the privilege of knowing Dale are not surprised that whatever he did and wherever he went, he was respected. He is respected not only for the high quality of his work, but as well for his intellect, his honesty and his empathetic ability to relate to one and all. Dale is a person who possesses the skill, integrity and humility to make him the best kind of surgeon."

After many years of invaluable leadership, dedication and commitment, Dr. Mercer retired from Queen's in December 2016. He will be sorely missed by our faculty, staff and students.

GRANTS AND PUBLICATIONS

2016 GRANTS

Principal investigator: **Alkins, Ryan**, Surgery Sponsor: Queen's Faculty of Health Science Total awarded: 180,000 Project title: Bioeffects of Therapeutic Ultrasound in the Treatment of Malignant Brain Tumours: Beyond Blood–Brain Barrier Disruption

Principal investigator: **Borschneck**, **Daniel**, Surgery Co-investigators: Ellis, Randy; Kunz, Manuela Sponsor: University Hospitals Kingston Foundation Total awarded: 15,000 Project title: Minimally Invasive Spine Surgery

Principal investigator: **Cook, Douglas J**, Surgery Co-investigators: Nashed, Joseph Sponsor: Canadian Institutes of Health Research Total awarded: 90,000 Project title: Understanding Functional Outcomes and Cortical Plasticity following Middle Cerebral Artery Occlusion in a Non-Human Primate

Principal investigator: **Engel**, **C Jay**, Surgery Sponsor: University of Calgary Total awarded: 76,500 Project title: (KGH)-Reducing the bUrden of Breast Cancer in Young Women (RUBY) Principal investigator: **Engel**, **C Jay**, Surgery Co-investigators: Fichtinger, Gabor; **Rudan**, **John** Sponsor: Southeastern Ontario Medical Association (SEAMO) AFP Innovation Grant Total awarded: 94,056 Project title: Computer-Assisted Breast Conserving Surgery – Proof of Concept Study on Non-Palpable Tumors

Principal investigator: Fichtinger Gabor, School of Computing Co-investigators: **Engel, C Ja**y; **Rudan, John** Sponsor: Canada Foundation for Innovation Total awarded: 358,342 Project title: Real-time Navigated iKnife System for Breast Cancer Surgery

Principal investigator: Fichtinger Gabor, School of Computing Co-investigators: **Engel, C Jay; Rudan, John** Sponsor: Ministry of Research, Innovation and Science Total awarded: 358,342 Project title: Real-time Navigated iKnife System for Breast Cancer Surgery

Principal investigator: Johnson, Ana, Public Health Sciences Co-investigators: Xu, Yan; **Yen, David** Sponsor: Canadian Institutes of Health Research Total awarded: 5,000 Project title: Impact of Joint Replacement Surgery Trends on Lumbar Fusion for Degenerative Conditions Principal investigator: **Kolar, Mila**, Surgery Co-investigators: Katsoulas, Eleni Sponsor: Southeastern Ontario Academic Medical Organization Education Award Endowment Total awarded: 13,300 Project title: Development and Validity of an Assessment System for Surgery Clerkship

Principal investigator: **Levy**, **Ron**, Surgery Co-investigators: Sponsor: Queen's University Total awarded: 10,000 Project title: Selective Modification of Synaptic Plasticity in the Output Nuclei of the Basal Ganglia in Healthy and Parkinsonian Non-Human Primates

Principal investigator: **Merchant, Shaila**, Surgery Co-investigators: Booth, Christopher; Brogly, Susan; **Nanji, Sulaiman; Patel, Sunil** Sponsor: Queen's University, Research Initiation Grant Total awarded: 30,000 Project title: A Population-Based Analysis of End-of-Life Care in Advanced Gastrointestinal Malignancies

Principal investigator: Munoz, Douglas, Centre for Neuroscience Studies Co-investigators: **Cook, Douglas J; Levy, Ron**; Scott, Stephen Sponsor: Brain Canada Foundation Total awarded: 154,426 Project title: Testing Therapeutic Approaches to Improve Cognitive Dysfunction in a Primate Model of Alzheimers Disease

Principal investigator: Munoz, Douglas, Centre for Neuroscience Studies Co-investigators: **Cook, Douglas J; Levy, Ron**; Scott, Stephen Sponsor: Queen's University, Department/Centre Total awarded: 77,213 Project title: Therapeutic Approaches to Improve Cognitive Dysfunction in a Primate Model of Alzheimers Disease

Principal investigator: Munoz, Douglas, Centre for Neuroscience Studies Co-investigators: **Cook, Douglas J; Levy, Ron**; Scott, Stephen Sponsor: Queen's University, Faculty of Health Sciences Total awarded: 77,213 Project title: Therapeutic Approaches to Improve Cognitive Dysfunction in a Primate Model of Alzheimers Disease

Principal investigator: **Patel, Sunil**, Surgery Sponsor: Queen's University Research Initiation Grant Total awarded: 30,000 Project title: Barriers to Standard of Care Treatment for Rectal Cancer Patients in Ontario, Canada and the Effect on Cancer Outcomes: A Population-Based Study

Principal investigator: Saha, Tarit, Anesthesiology and Perioperative Medicine Co-investigators: Boyd, Gordon; Chen, Kai; DuMerton Shore, Debbie; Ho, Anthony; **Payne, Darrin**; Phelan, Rachel; Tanzola, Robert Sponsor: Queen's University, Faculty of Health Sciences Total awarded: 10,000 Project title: Electroencephalography Guidance of Anesthesia to Alleviate Geriatric Syndromes (ENGAGES-CANADA) Study: A Pragmatic, Randomized Clinical Trial Principal investigator: Saha, Tarit, Anesthesiology and Perioperative Medicine Co-investigators: Bryant J Timothy; Couture-Tremblay Joel; DuMerton Shore Debbie; Fenton Paul; Murrell Nicole; **Petsikas Dimitri**; Phelan Rachel; Prince Julia; Stroman Patrick Sponsor: Queen's University, Faculty of Health Sciences Total awarded: 10,000

Project title: Functional and Anatomical MRI of the Spinal Cord and Perispinal Tissues 6 Months following Cardiac Surgery with Standard vs. Gradual Sternal Retraction: Implications for Chronic Post-surgical Pain

Principal investigator: **Yach, Jeff**, Surgery Sponsor: St. Michael's Hospital Total awarded: 10,000 Project title: Treatment of periprosthetic distalfemur fractures: a randomized controlled trial of locking plate osteosynthesis versus retrograde nailing

Principal investigator: **Yach, Jeff**, Surgery Sponsor: Orthopaedic Trauma Association Total awarded: 10,000 Project title: Isolated Locked Compression Plating Versus Cable Plating and Strut Allograft with Cerclage Wiring for Vancouver B1 Periprosthetic Femoral Fractures: A Randomized Controlled Trial

2017 GRANTS

Principal investigator: **Bicknell**, **Ryan**, Surgery Sponsor: Zimmer of Canada Total awarded: 134,878 Project title: Comprehensive Nano Post Market Data Collection

Principal investigator: **Bicknell**, **Ryan**, Surgery Co-investigators: Bryant, J Timothy; Rainbow, Michael Sponsor: Kingston General Hospital Research Institute Total awarded: 16,200 Project title: Micromotion Measurement for Reverse Shoulder Arthroplasty: A Cadaver Study

Principal investigator: **Bisleri**, **Gianluigi**, Surgery Sponsor: Queen's University, Research initiation Grant Total awarded: 30,000 Project title: Hemodynamic Analysis of Flow Turbulence in Large Arteries

Principal investigator: **Bisleri, Gianluigi**, Surgery Sponsor: Medtronic Total awarded: 70,000 Project title: Endoscopic Vessel Harvesting

Principal investigator: Boyd, J Gordon, Medicine Co-investigators: D'Arsigny, Christine; **Drover, John**; Georgescu, Ilinca; Heffernan, Paul; Maslove, David; Muscedere, John; Sibley, Stephanie Sponsor: Canadian Institutes of Health Research Total awarded: 42,500 Project title: The NEUROlogically-impaired Extubation Timing Trial (NEURO-ETT) Principal investigator: Chamberlain Susan, Obstetrics and Gynaecology Co-investigators: Glover, Benedict; McEwen, Laura; **Zevin, Boris** Sponsor: Queen's University, Maudsley Scholarship and Research Fund Total awarded: 4,550 Project title: As a Launching Point for Formal Feedback Dialogues with

Attendings, How Does Having Residents Document their 'Recollection of In-Situ Feedback' Impact the Assessment Process?

Principal investigator: **Cook, Douglas J**, Surgery Sponsor: Southeastern Ontario Academic Medical Organization, APF Innovation Research Fund Total awarded: 99,700 Project title: Brain Network Remodeling during Recovery from Sport-Related Brain Injury

Principal investigator: **Cook, Douglas J**, Surgery Sponsor: ABLYNX Total awarded: 584,000 Project title: Efficacy of Nanobodies Ii Thromboembolic MCA Stroke Model in Non-Human Primates

Principal investigator: Flemming Jennifer, Medicine Co-investigators: Booth, Christopher; DeWit, Yvonne; **Nanji, Sulaiman** Sponsor: Southeastern Ontario Academic Medical Organization, Research (CTAQ) Endowment Fund Total awarded: 14,795 Project title: The Role of Sex in the Outcomes of Patients with Biliary Tract Cancers in Ontario: A Population-Based Study

Principal investigator: Fichtinger Gabor Co-investigators: **Rudan, John** Sponsor: Queen's University QROF Total awarded: 4,100 Project title: Electrical Impedance Imaging Guidance in Breast Cancer Surgery

Principal investigator: MacDonald, Susan, Family Medicine Co-investigators: Dalgarno, Nancy; Egan, Rylan; Field, Sean; Fundytus, Adam; Le Blanc, Sarah; Schultz, Karen; Smith, Karen; David, Taylor David; Van Wylick, Richard; **Walker, G Ross**; Zimmerman, Daniel Sponsor: Southeastern Ontario Academic Medical Organization, Research (CTAQ) Endowment Fund Total awarded: 17,548 Project title: Developing and Implementing an Integrated Medical Assistance in Dying (MAID) Curriculum into the Specialty Residency Training Programs at Queen's University

Principal investigator: **Mann, Stephen**, Surgery Co-investigators: Beesley, Theresa; Egan, Rylan Sponsor: Queen's University, Maudsley Scholarship and Research Fund Total awarded: 4,460 Project title: Exploring Residents' Perceptions of Competency-Based Medical Education: Informing Tool Development for Competency Entrustment at the National, Provincial and Institutional Levels Principal investigator: **Patel, Sunil**, Surgery

Co-investigators: Hookey, Lawrence; Yu, David Sponsor: Southeastern Ontario Academic Medical Organization, AFP

Innovation Research Fund

Total awarded: 40,400

Project title: The Use of a Novel Smart Phone Application and the Quality of Bowel Preparation for Colonoscopy, a Randomized Controlled Trial

Principal investigator: **Patel, Sunil**, Surgery Co-investigators: Booth, Christopher; Brogly, Susan; **Merchant, Shaila** Sponsor: Southeastern Ontario Academic Medical Organization Total awarded: 19,200 Project title: Barriers to Standard of Care Treatment for Rectal Cancer Patients in Ontario, Canada and the Effect on Cancer Outcomes: A Population-Based Study

Principal investigator: Saha, Tarit, Anesthesiology and Perioperative Medicine Co-investigators: Cummings, Michael; **Payne, Darrin** Sponsor: Daiichi Sankyo Inc. Total awarded: 331,600 Project title: Edoxaban versus Standard of Care and their Effects on Clinical Outcomes in Patients Having Undergone Transcatheter Aortic Valve Implantation – In Atrial Fibrillation

Principal investigator: Sawhney, Mona, School of Nursing Co-investigators: **Harrison, Mark**; Jaeger, Melanie; VanDenKerkhof, Elizabeth Sponsor: Kingston General Health Research Institute, Women's Giving Circle Total awarded: 16,200 Project title: Does Pain Predict Recovery and Healthcare Use following Short-stay Total Joint Arthroplasty for the Treatment of Osteoarthritis

Principal investigator: Scott, Stephen, Centre for Neuroscience Studies Co-investigators: **Cook, Douglas J** Sponsor: Canadian Institutes of Health Research Total awarded: 100,000 Project title: Impact of Temporary Lesions of Frontoparietal Circuits on Feedback Processing During Voluntary Motor Actions

Principal investigator: **Zevin, Boris**, Surgery Co-investigators: Fichtinger, Gabor; Holden, Matthew; Ungi, Tamas; Yeo, Caitlin Sponsor: Queen's University Total awarded: 30,000 Project title: Computational Assessment of Surgical Competency: A Proof of Concept Study Principal investigator: **Zevin**, **Boris**, Surgery Co-investigators: **Jalink**, **Diederick**; Sheahan, Guy Sponsor: Southeastern Ontario Academic Medical Organization, Education Award Endowment (Research) Total awarded: 4,200 Project title: Implementation and Evaluation of a Comprehensive Simulation-based Resident Training Curriculum in Bariatric Surgery at Queen's University Co-principal investigators: **Zevin**, **Boris**, Surgery; Barber, David, Family Medicine Co-investigators: Birtwhistle, Richard; Dalgarno, Nancy; Grady, Colleen; Houlden, Robyn; Morkem, Rachael; Smith, Karen; Sponsor: Medtronic Total awarded: 291,490

Project title: Exploring Barriers for Access to Weight Management Care for Morbidly Obese Patients with Type II Diabetes within Southeast LHIN

2016 PUBLICATIONS

Almosnino S, Dvir Z, **Bardana DD**. Consistency of Strength Curves for Determining Maximal Effort Production during Isokinetic Knee Testing of Anterior Cruciate Ligament-Deficient Patients. 4-2016, *Physiotherapy Theory and Practice*, Vol. 32(3):202-8

Anas EM, Rasoulian A, Seitel A, Darras K, Wilson D, John PS, **Pichora D**, Mousavi P, Rohling R, Abolmaesumi P. Automatic Segmentation of Wrist Bones in CT Using a Statistical Wrist Shape + Pose Model. 8-2016, *IEEE Transactions on Medical Imaging*, Vol. 35(8):1789-801

Anas EM, Seitel A, Rasoulian A, John PS, Ungi T, Lasso A, Darras K, Wilson D, Lessoway VA, Fichtinger G, Zec M, **Pichora D**, Mousavi P, Rohling R, Abolmaesumi P. Registration of a Statistical Model to Intraoperative Ultrasound for Scaphoid Screw Fixation. 6-2016, *International Journal of Computer Assisted Radiology and Surgery*, Vol. 11(6):957-65

Azimi K, Prescott IA, Marino RA, Winterborn A, **Levy R**. Low Profile Halo Head Fixation in Non-Human Primates, 8-2016, *Journal of Neuroscience Methods*, Vol. 268, 23-30

Bailey CA, **Bardana DD**, Costigan PA. Using an Accelerometer and the Step-up-and-over Test to Evaluate the Knee Function of Patients with Anterior Cruciate Ligament Reconstruction, 11-2016, *Clinical Biomechanics*, Vol. 39, 32-7

Banaszek D, Pickell M, **Wood GC**, **Campbell A**. Injected versus Oral Deep Vein Thrombosis Prophylactic Therapy: A Patient Satisfaction Study, 4-2016, *International Journal of Bone and Rheumatology Research* (*IJBRR*), Vol. 3(2):28-32

Banaszek D, Pickell M, Wilson E, Ducsharm M, Hesse D, Easteal R, **Bardana DD**. Anatomical Evaluation of the Proximity of Neurovascular Structures during Arthroscopically Assisted Acromioclavicular Joint Reconstruction: A Cadaveric Pilot Study, 8-2016, *Arthroscopy*, Vol. 33, Issue 1:75–81 Belkova A, **Pichora DR**, Ellis RE. Calibration of Mobile-Gantry Computed Tomography for Surgical Navigation. 4-2016, *International Journal of Computer Assisted Radiology and Surgery*, Apr;11(4):521-7

Biagi JJ, Mackillop WJ, **Nanji S**, Wei X, Peng Y, Hanna TP, Krzyzanowska MK, Booth CM. Utilization and Effectiveness of Adjuvant Chemotherapy (ACT) for Colon Cancer (CC) in the General Population. 10-2016, *Journal of Clinical Oncology*, Vol. 34, 702

Bisleri G, Aortic Valve Repair. 11-2016, *Current Opinion in Cardiology*, Vol. 31(6):581-584

Booth CM, **Nanji S**, Wei X, Biagi JJ, Krzyzanowska MK, Mackillop WJ. Surgical Resection and Peri-Operative Chemotherapy for Colorectal Cancer Liver Metastases: A Population-Based Study. 3-2016, *European Journal of Surgical Oncology*, Vol. 42(2):281-7

Booth CM, **Nanji S**, Wei X, Mackillop WJ, Outcomes of Resected Colorectal Cancer Lung Metastases in Routine Clinical Practice: A Population-Based Study. 4-2016, *Annals of Surgical Oncology*, Vol. 23(4):1057-63

Booth CM, **Nanji S**, Wei X, Peng Y, Biagi JJ, Hanna TP, Krzyzanowska MK, Mackillop WJ. Use and Effectiveness of Adjuvant Chemotherapy for Stage III Colon Cancer: A Population-Based Study. 1-2016, *JNCCN*, Vol. 14(1):47-56

Brison RJ, Day AG, Pelland L, Pickett W, Johnson AP, Aiken A, **Pichora DR**, Brouwer B. Effect of Early Supervised Physiotherapy on Recovery from Acute Ankle Sprain: Randomised Controlled Trial. 11-2016, *BMJ* (Clinical research ed.), Vol. 355, i5650

Chan B, Auyeung J, **Rudan JF**, Ellis RE, Kunz M. Intraoperative Application of Hand-Held Structured Light Scanning: A Feasibility Study. 6-2016, *Int J Computer Assist Radiol Surg*. Vol. 11(6):1101-1108

Chandhoke G, Wei X, **Nanji S**, Biagi J, Peng Y, Krzyzanowska M, Mackillop WJ, Booth CM. Patterns of Referral for Adjuvant Chemotherapy for Stage II and III Colon Cancer: A Population-Based Study. 8-2016, *Annals of Surgical Oncology*, Vol. 23(8):2529-38

Chang J, Banaszek DC, Gambrel J, **Bardana D**. Global Rating Scales and Motion Analysis Are Valid Proficiency Metrics in Virtual and Benchtop Knee Arthroscopy Simulators. 4-2016, *Clinical Orthopaedics and Related Research*, Vol. 474(4):956-64

Choi AH, Nelson RA, **Merchant SJ**, Kim JY, Chao J, Kim J. Rates of Lymph Node Metastasis and Survival in T1a Gastric Adenocarcinoma in Western Populations. 6-2016, *Gastrointestinal Endoscopy*, Vol. 83(6): 1184-1192.e1

Chung K, Wyllie K, **Davidson J.** From WWII to Kingston, Ontario: The History of Queen's University School of Medicine, Division of Plastic and Reconstructive Surgery, 10-2016, *Plast Surg*, Vol. 24(3): 171-72

CSES Group (25 members), Rouleau DM1, Alami G, Balg F, Beauchamps M, Beaumont P, **Bicknell R**, Blanchette D, Drosdowech DS, Faber K, Gagnon S, Gaudelli C, Godbout V, Griffin S, Hawkins R, Lap, Design and Implementation of the 2012 Canadian Shoulder Course for Senior Orthopedic Residents. 10-2016, *Orthop Traumatol Surg Res.* Vol. 102(7):885-890

Dickinson AW, Rasquinha BJ, **Rudan JF**, Ellis RE. Personalized Guides for Registration in Surgical Navigation. 9-2016, *Stud Health Technol Inform*. Vol. 220, 98-102

Dickinson AWL, Rasquinha BJ, **Pichora DR**, Ellis RE. Accuracy of Hybrid Electromagnetic Tracking and Personalized Guides for Glenoid Models. 11-2016, *Int J Comput Assist Radiol Surg*, Vol. 11(Suppl 1):S104-S106

Edwards JP, Dharampal N, **Chung W**, Brar MS, Ball CG, Seto J, Grondin SC. Has the Quality of Reporting of Randomized Controlled Trials in Thoracic Surgery Improved?, 5-2016, *European journal of cardio-thoracic surgery: Official Journal of the European Association for Cardio-thoracic Surgery*, Vol. 49(5):1476-82

Flemming JA, Zhang-Salomons J, **Nanji S**, Booth CM. Increased Incidence but Improved Median Overall Survival for Biliary Tract Cancers Diagnosed in Ontario from 1994 through 2012: A Population-Based Study. 8-2016, *Cancer*. Vol. 122(16):2534-43

Guend H, Widmar M, **Patel S**, Nash GM, Paty PB, Guillem JG, Temple LK, Garcia-Aguilar J, Weiser MR. Developing a Robotic Colorectal Cancer Surgery Program: Understanding Institutional and Individual Learning Curves. 11-2016, *Surgical Endoscopy*, Vol. Nov, 9

Harish V, Baksh A, Ungi T, Lasso A, Baum Z, Gauvin G, **Engel J, Rudan J**, Fichtinger G. Measurement of Electromagnetic Tracking Error in a Navigated Breast Surgery Setup. 3-2016, *Medical Imaging 2016: Image-Guided Procedures, Robotic Interventions, and Modeling*, Vol. 9786, 92

Hefny ML, Peoples JJ, Zec ML, **Pichora DR**, Ellis RE. Topologically Consistent Triangulation for Computer Assisted Surgery Planning. 8-2016, *Int J Comput Assist Radiol Surg*, 11(Suppl 1):S109-S111

Ho A, **Winthrop A**, Jones E, Flavin M. Severe Pediatric Bronchomalacia. 6-2016, *Anaesthesiology*, Vol. 124(6), 1395

Lalonde S, **Pichora D**, Zakani S. Phenol Embalming: A New Model for the Biomechanical Study of Flexor Tendon Repair. 12-2016, *Bone & Joint*. Vol. 98-B no. SUPP 21 45

Linehan WM, Spellman PT, Ricketts CJ, Creighton CJ, Fei SS, Davis C, Wheeler DA, Murray BA, Schmidt L, Vocke CD, Peto M, Al Mamun AA, Shinbrot E, Sethi A, Brooks S, Rathmell WK, Brooks AN, ...**Engel J**, Comprehensive Molecular Characterization of Papillary Renal-Cell Carcinoma. 1-2016, *The New England Journal of Medicine*, Vol. 374(2):135-45

Madani A, Watanabe Y, Townsend N, Pucher PH, Robinson TN, Egerszegi PE, Olasky J, Bachman SL, Park CW, Amin N, Tang DT, Haase E, **Bardana D**, Jones DB, Vassiliou M, Fried GM, Feldman LS. Structured Simulation Improves Learning of the Fundamental Use of Surgical Energy? Curriculum: A Multicenter Randomized Controlled Trial. 2-2016, *Surgical Endoscopy*, Vol. 30(2):684-91

McKay DR, Peters DA. What Happened to my Valeant? 6-2016, *Plastic Surgery*, Vol. 24(2):51-53

Murdoch J, Ramsey G, Day AG, McMullen M, Orr E, Phelan R, **Jalink D**. Intraperitoneal Ketorolac for Post-Cholecystectomy Pain: A Double-Blind Randomized-Controlled Trial. 6-2016, *Canadian Journal of Anaesthesia*, Vol. 63(6):701-8

58 GRANTS AND PUBLICATIONS

Nanji S, Biagi J, Mackillop W, Wei X, Peng Y, Hanna T, Krzyzanowska M, Booth C. Utilization and effectiveness of adjuvant chemotherapy for colon cancer in the general population. 10-2016, *Canadian Journal of Surgery*, Vol. 59, S140

Nanji S, Del Paggio J, Peng Y, Wei X, MacDonald P, Nair C, Booth C. Re-evaluating the optimal threshold for lymph node harvest n colon cancer: insights from a population-based study. 10-2016, *Canadian Journal of Surgery*, Vol. 59, S140

Nanji S, Del Paggio J, Wei X, MacDonald P, Booth C. Lymph Node Harvest for Colon Cancer in Routine Clinical Practice: A Population-Based Study, 10-2016. *Canadian Journal of Surgery*, Vol. 59, S141

Pang AJ, Connor A, Farber S, **Nanji S**, O'Brien C, Gallinger S. Prognostic significance of KRAS mutations in resectable colorectal cancer liver metastases. 10-2016, *Canadian Journal of Surgery*, Vol. 59, S117

Patel SV, Klingel M, Sonoda T. An Assessment of the Industry-Faculty Surgeon Relationship within Colon and Rectum Surgical Training Programs. 12-2016, *Journal of Surgical Education*, Vol. 73(4):595-9

Patel SV, Roxburgh CS, Vakiani E, Shia J, Smith JJ, Temple LK, Paty P, Garcia-Aguilar J, Nash G, Guillem J, Wu A, Reyngold M, Weiser MR. Distance to the Anal Verge is Associated with Pathologic Complete Response to Neoadjuvant Therapy in Locally Advanced Rectal Cancer. 10-2016, *Journal of Surgical Oncology*, Vol. 114(5):637-641

Patel SV, Zhang L, Chadi SA, Wexner SD. Prophylactic Mesh to Prevent Parastomal Hernia: A Meta-Analysis of Randomized Controlled Studies. 12-2016, *Techniques in Coloproctology*, Vol. Nov, 9

Peters DA, **McKay DR**. Currency Exchange: Implications for Plastic Surgical Practice. 3-2016, *Plastic Surgery*, Vol. 24(1):53-55

Pickell M, **Mann SM**, Chakravertty R, **Borschneck DP**. Surgeon-driven Neurophysiologic Monitoring in a Spinal Surgery Population. 9-2016, *J Spine Surg*. Vol. 2(3):173-177.

Rasquinha BJ, Loe, KSM, Dickinson AWL, **Rudan JR**, Ellis RE. A Toroidal Probe for Measuring Surgically Exposed Joint Centers. 9-2016, *Stud Health Technol Inform*. Vol. 220:301-307

Repossini A, Fischlein T, Santarpino G, Schäfer C, Claus B, Passaretti B, Di Bacco L, Giroletti L, **Bisleri G**, Muneretto C, Grubitzsch H. Pericardial Stentless Valve for Aortic Valve Replacement: Long-Term Results. 12-2016, *Ann Thorac Surg*. Vol. 102(6):1956-1965

Satkunam N, Wei X, Biagi J, **Nanji S**, Booth CM. Delivery of Adjuvant FOLFOX for Colon Cancer: Insights from Routine clinical Practice, 10-2016, *Journal of Clinical Oncology*, Vol. 34, 15110

Satkunam N, Wei X, Biagi JJ, **Nanji S**, Booth CM. Delivery of Adjuvant Oxaliplatin for Colon Cancer: Insights From Routine Clinical Practice. 12-2016, *Journal of the National Comprehensive Cancer Network: JNCCN*, Vol. 14(12):1548-1554

Sebastyan S, Kunz M, Stewart AJ, **Bardana DD**. Image-guided Techniques Improve Accuracy of Mosaic Arthroplasty. 2-2016, *International Journal of Computer Assisted Radiology and Surgery*, Vol. 11(2):261-9 Tabanfar R, Yan C, Kempston K, **Borschneck D**, Ungi T, Fichtinger G. Clinical Workflow for Spinal Curvature Measurement with Portable Ultrasound. 3-2016, *SPIE, Medical Imaging*, Vol 9786

Tang E, Hall G, Menard A, **Nanji S**. Retrospective Analysis of LI-RADS Observations: Correlation with Clinical and Pathological Outcomes, 10-2016, *Canadian Journal of Surgery*, Vol. 59, S123

Taylor M, Hopman W, **Yach J**. Length of Stay, Wait Time to Surgery and 30-Day Mortality for Patients with Hip Fractures after the Opening of a Dedicated Orthopaedic Weekend Trauma Room. 10-2016, *Canadian Journal of Surgery*, Vol. 59(5):337

Tharmalingam S, Flemming J, Ouellette-Kuntz H, Hurlbut D, Richardson H, **Nanji S**. Surgical Practice Patterns and Outcomes in T2 Gallbladder Cancer in Ontario: A Population-Based Study, 10-2016, *Canadian Journal of Surgery*, Vol. 59, S122

Toprak A, Luhanga U, Jones S, **Winthrop A**, McEwen L. Validation of a Novel Intraoperative Assessment Tool: The Surgical Procedure Feedback Rubric. 2-2016, *American Journal of Surgery*, Vol. 211(2), 369-376

Tsang ME, Mahar AL, Martel G, Hawel J, Rekman J, Boulanger-Gobeil C, Hurlbut D, Meschino M, Morin C, Cleary SP, Gallinger S, **Nanji S**, Balaa FK, Karanicolas PJ, **Jalink D**, Ouellet JF, Hernandez-Alejandr R, Wei AC, Hallet J. Assessing Tools for Management of Non-Colorectal Non-Neuroendocrine Liver Metastases: External Validation of a Prognostic Model. 10-2016, *Canadian Journal of Surgery*, Vol. 59, S116

Tsang ME, Mahar AL, Martel G, Hawel J, Rekman J, Boulanger-Gobeil C, Hurlbut D, Meschino M, Morin C, Cleary SP, Gallinger S, **Nanji S**, Balaa FK, Karanicolas PJ, **Jalink D**, Ouellet JF, Hernandez-Alejandr R, Wei AC, Hallet J. Assessing Tools for Management of Non-Colorectal Non-Neuroendocrine Liver Metastases: External Validation of a Prognostic Model. 12-2016, *Annals of Surgical Oncology*, Vol. 20, S107

Tucker A, **Bicknell RT**, Hiscox C. A Randomized Controlled Trial comparing Arthrographic Joint Injection with and without Steroids for the Treatment of Adhesive Capsulitis. 11-2016, *Bone and Joint J*, Vol. 98-B(Supp 20):81

Ungi T, Gauvin G, Lasso A, Yeo CT, Pezeshki P, Vaughan T, Carter K, **Rudan JF**, **Engel CJ**, Fichtinger G. Navigated Breast Tumor Excision using Electromagnetically Tracked Ultrasound and Surgical Instruments. 8-2016, *IEEE Transactions on Biomedical Engineering*, Vol. 63(3):600-606

Venne G, Ryan S, **Rudan JF**, Ellis RE. Radiological Evidence of 3D Internal Structure in Hip Osteophytes. 8-2016, *Int J Comput Assist Radiol Surg.* 11-2016, 11(Suppl 1):S35-S37

Venne G, Ryan S, **Rudan JF**, Ellis RE. Radiological Microarchitecture of Hip Osteophytes. 4-2016, *Osteoarthritis and Cartilage*, Vol. 24(1):S381-382

Wong S, O'Malley L, Menard A, **Jalink D**, **Nanji S**. The Utility of Radiologist-Performed Intraoperative Ultrasound in Surgical Planning for Hepatic Metastasectomy. 10-2016, *Canadian Journal of Surgery* Vol. 59(4 Suppl 1):S118

Wood GCA, Riolo G, Taylor D, Arora D. Spontaneous Four Limb Compartment Syndrome. 1-2016, *Canadian Journal of General Internal Medicine*, Vol. 10(4):42-44 **Wood GCA**, Alshahrani H. Treatment of Avascular Necrosis of the Femoral Head with Bone Graft and Interference Screw, 5-2016, *MOJ Orthopedics and Rheumatology*, Vol. 4(6):1-6

Wood G, Lalonde S, Cudd S. Exploring Patients' Perceptions of their Surgeon Based on Attire. 12-2016, *Journal of Anesthesia and Surgery*, Vol. 3(7)

Xu Y, **Yen D**, Johnson A. Trends and Costs of Lumbar Fusion and Disc Replacement Surgeries in Ontario: A Population-Based Study. 6-2016, *Can J Surg*, Vol. 59(3 suppl 2):S39

Yan C, Tabanfar R, Kempston K, **Borschneck D**, Ungi T, Fichtinger G. Comparison of Portable and Conventional Ultrasound Imaging in Spinal Curvature Measurement. 3-2016, *SPIE, Medical Imaging*, Vol 9786

Zayan NE, Wetzel TD, Fung E, **Zevin B**. Chylous Ascites in the Setting of Roux-en-Y Gastric Bypass: Case Report and Review of the Literature. 10-2016, *Clin Surg*. Vol. 1, 1161

2017 PUBLICATIONS

Banaszek D, You D, Chang J, Pickell M, Hesse D, Hopman W, **Borschneck D, Bardana DD**. Virtual Reality versus Bench top Simulation in the Acquisition of Arthroscopic Skill: A Randomized Control Trial. 4-2017, *Journal of Bone and Joint Surgery (Am)*, Vol. 99(7):e34

Behnami D, Sedghi A, AbuAnas EM, Rasoulin A, Seitel A, Lessoway V, Ungi T, **Yen D**, Osborn J, Mousavi P, Rohling R, Abolmaesumi P. Modelbased Registration of Preprocedure MR And Intraprocedure US of the Lumbar Spine. 6-2017, *International Journal of Computer Assisted Radiology and Surgery*, Vol. 12(6):973-982

Bisleri G, Di Bacco L, Turturiello D, Mazzoletti A, Giroletti L, Repossini A, Muneretto C. Improved Outcomes of Total Arterial Myocardial Revascularization in Elderly Patients at Long-Term Follow-Up: A Propensity-Matched Analysis. 3-2017, *The Annals of Thoracic Surgery*, Vol. 103(2):517-525

Bisleri G, Glover B. Hybrid Ablation for Atrial Fibrillation: Current Approaches and Future Directions. 1-2017, *Current Opinion in Cardiology*, Vol. 32(1):17-21

Bisleri G, Glover B. Hybrid Ablation for Persistent Atrial Fibrillation: How to Merge the Best from Both Worlds. 12-2017, *Journal of Thoracic Disease*, Vol. 9(12):4837-4839

Bontempi L, Vassanelli F, Cerini M, **Bisleri G**, Repossini A, Giroletti L, Inama L, Salghetti F, Liberto D, Giacopelli D, Raweh A, Muneretto C, Curnis A. Hybrid Minimally Invasive Approach for Transvenous Lead Extraction: A Feasible Technique in High-Risk Patients. *Journal of Cardiovascular Electrophysiology*. 4-2017, Vol. 28(4):466-473

Booth CM, **Nanji S**, Wei X, Peng Y, Biagi JJ, Hanna TP, Krzyzanowska MK, Mackillop WJ. Adjuvant Chemotherapy for Stage II Colon Cancer: Practice Patterns and Effectiveness in the General Population. 1-2017, *Clinical Oncology (Royal College of Radiologists (Great Britain),* Vol. 29(1):e29-e38

Bosco L, Zhou C, Murdoch JAC, **Bicknell R**, Hopman WM, Phelan R, Shyam V. Pre- or postoperative Interscalene Block and/or General Anesthesia for Arthroscopic Shoulder Surgery: A Retrospective Observational Study. 10-2017, *Canadian Journal of Anaesthesia*, Vol. 64(10):1048-1058

Boyd KU, **McKay DR**, Peters DA. Oral Examination: Hand Weakness. 2-2017, *Plastic Surgery*, Vol. 25(1):59-60

Brown P, Mussari B. The Treatment of Complex Aortoiliac and Femoral Disease Rising an Inguinal Approach and Viabhan Stents. 9-2017, *Journal of Vascular Surgery*, Vol. 66, e63

Champagne AA, Bhogal AA, Coverdale NS, Mark CI, **Cook DJ**. A Novel Perspective to Calibrate Temporal Delays in Cerebrovascular Reactivity using Hypercapnic and Hyperoxic Respiratory Challenges. 12-2017, *NeuroImage*, S1053-8119(17)30978-3

Choi AH, O'Leary MP, **Merchant SJ**, Sun V, Chao J, Raz DJ, Kim JY, Kim J. Complications of Feeding Jejunostomy Tubes in Patients with Gastroesophageal Cancer. 2-2017, *Journal of Gastrointestinal Surgery: Official Journal of the Society for Surgery of the Alimentary Tract.* Vol. 21(2):259-265

Clothier AL, Hassan EA, Brandon SCE, **Campbell A**, Rainbow MJ, Deluzio KJ. Identification of Good Candidates for Valgus Bracing as a Treatment for Medial Knee Osteoarthritis. 1-2018, *J Orthop Res*, Vol. 36 (1):351-356.

Clouthier AL, Bohm ER, **Rudan JF**, Shay BL, Rainbow MJ, Deluzio KJ. Correcting Waveform Bias using Principal Component Analysis: Applications in Multicentre Motion Analysis Studies. 1-2017, *Gait & Posture*, Vol. 51, 153-158

Cook DJ, Nguyen C, Chun HN, L Llorente I, Chiu AS, Machnicki M, Zarembinski TI, Carmichael ST. Hydrogel-Delivered Brain-Derived Neurotrophic Factor Promotes Tissue Repair and Recovery After Stroke. 3-2017, Journal of Cerebral Blood Flow and Metabolism: Official Journal of the International Society of Cerebral Blood Flow and Metabolism, Vol. 37(3):1030-1045

Curnis A, Muneretto C, **Bisleri G**, Cerini M, Inama L, Salghetti F, De Vito R, Giroletti L, Rosati F, Giacopelli D, Vassanelli F, Bontempi L. Thoracoscopic Implantation of an Array Electrode in the Pericardium Transverse Sinus to Reduce Defibrillation Threshold. 12-2017, *Innovations (Philadelphia, Pa.)*, Vol. 12(4):e6-e9

Dagnone JD, Chamberlain S, Hall A, Railer J, Stockley D, van Wylick R, Egan R, McEwen L, **Walker R**, Flynn L, Acker A. CBME Program Leads: The Creation of a New Network of Leaders in Postgraduate Medical Education. 4-2017 (e-pub), *Canadian Conference on Medical Education*

Dagnone JD, **Walker R**, Flynn L, Reznick R, Stockley D, Egan R, van Wylick R, McEwen L. Building Capacity for CBME Implementation at Queen's University. 1-2017, *AMEE MedEd publish*, 6 (1), PAPER NO: 15

Del Paggio JC, **Nanji S**, Wei X, **MacDonald PH**, Booth CM. Lymph Node Evaluation for Colon Cancer in Routine Clinical Practice: A Population-Based Study. 2-2017, *Current Oncology (Toronto, Ont.)*, Vol. 24(1):e35-e43 Del Paggio JC, Peng Y, Wei X, **Nanji S**, **MacDonald PH**, Krishnan Nair C, Booth CM. Population-Based Study to Re-Evaluate Optimal Lymph Node Yield in Colonic Cancer. 7-2017, *The British Journal of Surgery*, Vol. 104(8):1087-1096

Dickinson AWL, Zec ML, **Pichora DR**, Rasquinha BJ, Ellis RE. Electromagnetically Tracked Personalized Templates for Surgical Navigation. 6-2017, *Int J Comput Assist Radiol Surg*, Vol. 12(6):1049-1058

Dion JM, Ho AM, **Winthrop A**, Flavin MP. Esophageal Atresia/Tracheoesophageal Fistula Repair Complicated by Tracheomalacia: A Case Report of Successful Management of Respiratory Distress Using Caudal Morphine. 7-2017, *Anaesthesia and Analgesia Case Reports*, Vol. 9(1):28-30

Deluzio K, Brandon S, Clouthier A, Hassan E, **Campbell A**. Biomechanical Analysis of Knee Bracing in Subjects with Knee Osteoarthritis. 1-2017, *Orthopaedic Proceedings*, Vol. 99-B, No. SUPP 1

Ellis RE, Kunz M, Chan B, Kashigar A, **Borschneck DP**. Minimally Invasive Image-Guided Scoliosis Method: A Hybrid Tracking Approach. 8-2017, *Int J Comput Assist Radiol Surg*, Vol. 12(Suppl 1):98-99

Elsolh B, Zhang L, **Patel SV**. The Effect of Antibiotic-Coated Sutures on the Incidence of Surgical Site Infections in Abdominal Closures: a Meta-Analysis. 5-2017, *Journal of Gastrointestinal Surgery: Official Journal of the Society for Surgery of the Alimentary Tract*, Vol. 21(5):896-903

Faqeeh A, **Yen D**. Successful Nonoperative Treatment of a Lumbar Spine Extension Injury with Disruption of all Three Bony Columns in a Patient with Ankylosing Spondylitis: A Case Report.12-2017, *The Open Neurology Journal*, Vol. 11, 92-97

Ferdinand FD, MacDonald JK, Balkhy HH, **Bisleri G**, Hwang HY, Northrup P, Trimlett RHJ, Wei L, Kiaii BB. Endoscopic Conduit Harvest in Coronary Artery Bypass Grafting Surgery: An ISMICS Systematic Review and Consensus Conference Statements. 12-2017, *Innovations* (*Philadelphia*, *Pa.*), Vol. 12(5):301-319

Flemming JA, **Nanji S**, Wei X, Webber C, Groome P, Booth CM. Association Between the Time to Surgery And Survival among Patients with Colon Cancer: A Population-Based Study. 8-2017, *European Journal* of Surgical Oncology: The Journal of the European Society of Surgical Oncology and the British Association of Surgical Oncology, Vol. 43(8):1447-1455

Guend H, Widmar M, **Patel S**, Nash GM, Paty PB, Guillem JG, Temple LK, Garcia-Aguilar J, Weiser MR. Developing a Robotic Colorectal Cancer Surgery Program: Understanding Institutional and Individual Learning Curves. 7-2017, *Surgical Endoscopy*, Vol. 31(7):2820-2828

Hanna TP, Baetz T, Xu J, Miao Q, Earle C, Peng Y, Booth CM, Petrella T, **McKay D**, Nguyen P, Langley H, Eisenhauer E. Mental Health Services Use by Melanoma Patients Receiving Adjuvant Interferon: Association of Pre-Treatment Mental Health Care with Early Discontinuation. 12-2017, *Current Oncology*, Vol. 24(6):503-12

Head LK, **McKay DR**. Economic Comparison of Hand-Sutured and Coupler-Assisted Microvascular Anastomoses., 9-2017, *Journal of Reconstructive Microsurgery*, Vol. 33, 555

Hernandez-Castillo CR, Nashed JY, Fernandez-Ruiz J, Wang J, Gallivan J, **Cook DJ**. Increased Functional Connectivity after Stroke Correlates with Behavioral Scores in Non-Human Primate Model. 7-2017, *Scientific Reports*, Vol. 7(1):6701

Hoffmann H, Oertli D, Mechera R, Dell-Kuster S, Rosenthal R, Reznick R, **MacDonald H**. Comparison of Canadian and Swiss Surgical Training Curricula: Moving on Toward Competency-Based Surgical Education. 1-2017, *Journal of Surgical Education*, Vol. 74(1):37-46

Jantz JJ, Watanabe M, **Levy R**, Munoz DP. Evidence for a task-dependent switch in subthalamo-nigral basal ganglia signaling. *Nat Commun.* 2017 Oct 19;8(1):1039

Karim S, Brennan K, **Nanji S**, Berry SR, Booth CM. Association between Prognosis and Tumor Laterality in Early-Stage Colon Cancer. 10-2017, *JAMA Oncology*, Vol. 3(10):1386-1392

Karmali RJ, Siu JM, You DZ, Spano S, **Winthrop AL**, **Rudan JF**, Reznick RK, Sanfilippo AT, **Belliveau P**. The Surgical Skills and Technology Elective Program (SSTEP): A Comprehensive Simulation-Based Surgical Skills Initiative for Preclerkship Medical Students. 9-2017, *American Journal of Surgery*, S0002-9610(17)31058-9

Karim S, Brennan K, **Nanji S**, Berry SR, Booth CM. Prognostic Impact of Tumour Laterality in Early-Stage Colon Cancer: A Population-Based Study. 8-2017, *J Clin Oncol*, Vol. 35, 15148

Karim S, **Nanji S**, Brennan K, Pramesh CS, Booth CM. Chemotherapy for Resected Colorectal Cancer Pulmonary Metastases: Utilization and Outcomes in Routine Clinical Practice. 8-2017, *J Clin Oncol*, Vol. 35, 236

Karim S, **Nanji S**, Brennan K, Pramesh CS, Booth CM. Chemotherapy for Resected Colorectal Cancer Pulmonary Metastases: Utilization and Outcomes in Routine Clinical Practice. 8-2017, *European journal of Surgical Oncology: The Journal of the European Society of Surgical Oncology and the British Association of Surgical Oncology*, Vol. 43(8):1481-1487

Ko G, Sarkaria A, **Merchant S**, **Patel S**. Systematic Review of Outcomes after Salvage Abdominoperineal Resection for Persistent or Recurrent Anal Squamous Cell Cancer. 8-2017, *Canadian Journal of Surgery*, Vol. 60, S160

Kolar M, Toprak A, **Winthrop A**, Sly L, Sobolesk D. Surgical vs. Nonsurgical Management of Post-traumatic Intercostal Lung Herniation in Children. 1-2018, *Journal of Pediatric Surgery Case Reports*, Vol. 28, 52-58

Kolar M, Katsoulas E, Toprak A, Nowlan-Suart T, Davidson L, Winthrop A, Hastings-Truelove A, Stockley D. The Development and Implementation of New Assessment Tools for the Surgical Clerkship Rotation. 1-2018, *Journal of International Association for Medical Education (AMEE MEDEdPublish)*, Vol. 1, 11-19

Kolar M, Pilkington M, Winthrop A, MacDonald H, Justinich C, Soboleski D, Sly L, Hurlbut D. Free Intestinal Perforation in Children with Crohn's Disease. 1-2018, *Journal of Pediatric Surgery Case Reports*, Vol. 32, 5-10 Kouzmina E, Mir ZM, **Zevin B**. Mechanical Bowel Obstruction from Sclerosing Mesenteritis: Case Report and Review of the Literature. 8-2017, *Clin Surg*, 2:1596

Krishnamurthy A, Kankesan J, Wei X, **Nanji S**, Biagi JJ, Booth CM. Chemotherapy Delivery for Resected Colorectal Cancer Liver Metastases: Management and Outcomes in Routine Clinical Practice. 2-2017, European Journal of Surgical Oncology: The Journal of the European Society of Surgical Oncology and The British Association of Surgical Oncology, Vol. 43(2):364-371

Mann SM, Kunz M, Ellis RE, Rudan JF. Component Position and Metal Ion Levels in Computer-Navigated Hip Resurfacing Arthroplasty. 1-2017, The Journal of Arthroplasty, Vol. 32(1):119-124

McInnes MD, Nanji S, Mackillop WJ, Flemming JA, Wei X, Macdonald DB, Scheida N, Booth CM. Utilization of Pre-operative Imaging for Colon Cancer: A Population-Based Study. 2-2017, Journal of Surgical Oncology, Vol. 115(2):202-207

McKay DR, Peters DA. The Midas Touch: Gold and its Role in the Global Economy. 5-2017, Plastic Surgery, Vol. 25(1):61-63

Merchant SJ, Nanji S, Brennan K, Karim S, Patel SV, Biagi JJ, Booth CM. Management of Stage III Colon Cancer in the Elderly: Practice Patterns and Outcomes in the General Population. 8-2017, Cancer, Vol. 123(15):2840-2849

Merchant SJ, Kim J, Choi AH, Sun V, Chao J, Nelson R. A Rising Trend in the Incidence of Advanced Gastric Cancer in Young Hispanic Men. 3-2017, Gastric Cancer, 20(2): 226-234

Merchant S, Lajkosz K, Booth C, Brogly S, **Patel S**, **Nanji S**, Baxter N. The Last 30 Days of Life: Trends in Aggressive End-Of-Life Care in Gastrointestinal Malignancies. 8-2017, *Canadian Journal of Surgery*, Vol. 60, S174

Merchant SJ, Lajkosz K, Brogly SB, Booth CM, **Nanji S**, **Patel SV**, Baxter NN. The Final 30 Days of Life: A Study of Patients with Gastrointestinal Cancer in Ontario, Canada. 12-2017, *Journal of Palliative Care*, Vol. 32(3-4):92-100

Michaud L, **Yen D**. Can Cefazolin be used in Orthopaedic Surgery for Patients with a Self-Reported non-IgE Mediated Penicillin Allergy? – A Prospective Case Series. 7-2017, *Current Orthopaedic Practice*, Vol. 28(4):338-340

Mir Z, Yu D, **Merchant S**, Booth C, **Patel SV**. A Comparison of Provincial Clinical Practice Guidelines for Rectal Cancer. 8-2017, *Canadian Journal of Surgery*, Vol. 60, S161

Mizubuti G, Koumpan Y, **Hamilton GA**, Phelan R, Ho A, Tanzola RC, Wang LTS. Retrograde Extrusion of Coronary Thrombus during Urgent Aortocoronary Bypass Surgery: A Case Report. 5-2017, *A & A Practice*, Vol. 8, 268-271

Muneretto C, **Bisleri G**, Rosati F, Krakor R, Giroletti L, Di Bacco L, Repossini A, Moltrasio M, Curnis A, Tondo C, Polvani G. European Prospective Multicentre Study of Hybrid Thoracoscopic and Transcatheter Ablation of Persistent Atrial Fibrillation: The HISTORIC-AF Trial. 10-2017, *European Journal of Cardio-thoracic Surgery: Official Journal of the European Association for Cardio-thoracic Surgery*, Vol. 52(4):740-745

Nanji S, Karim S, Patel S, Merchant S, Brennan K, Booth C. Perioperative Blood Transfusion following Hepatectomy for Colorectal Cancer Liver Metastases: Practice Patterns and Outcomes in Routine Clinical Practice. 8-2017, *Canadian Journal of Surgery*, Vol. 60, S154

Nanji S, Karim S, Tang E, Brennan K, McGuire A, Booth C. Pulmonary Metastasectomy for Colorectal Cancer: The role of Lymph Nodes, and Independent Predictors of Survival in Routine Surgical Practice. 8-2017, *Canadian Journal of Surgery*, Vol. 60, S140

Nanji S, Mackillop WJ, Wei X, Booth CM. Simultaneous Resection of Primary Colorectal Cancer and Synchronous Liver Metastases: A Population-Based Study. 4-2017, *Canadian Journal of Surgery*, Vol. 60(2):122-128

Nanji S, Tsang ME, Wei X, Booth CM. Outcomes after Repeat Hepatic Resection for Recurrent Metastatic Colorectal Cancer: A Population-Based Study. 6-2017, *American Journal of Surgery*, Vol. 213(6):1053-1059

Nanji S, Tsang ME, Wei X, Booth CM. Regional Lymph Node Involvement in Patients undergoing Liver Resection for Colorectal Cancer Metastases. 2-2017, *European Journal of Surgical Oncology: The Journal of the European Society of Surgical Oncology and the British Association of Surgical Oncology*, Vol. 43(2):322-329

Patel S, Brennan K, **Nanji S**, **Merchant S**, Karim S, Booth C. Perioperative Blood Transfusion for Resected Colon Cancer: Practice Patterns and Outcomes in a Population-Based Study. 8-2017, *Canadian Journal of Surgery*, Vol. 60, S160

Patel SV, Zhang L, Chadi SA, Wexner SD. Prophylactic Mesh to Prevent Parastomal Hernia: A Meta-Analysis of Randomized Controlled Studies. 1-2017, *Techniques in Coloproctology*, Vol. 21(1):5-13

Patel SV, Brennan KE, **Nanji S**, Karim S, **Merchant S**, Booth CM. Peri-operative Blood Transfusion for Resected Colon Cancer: Practice Patterns and Outcomes in a Population-Based Study. 6-2017, *Diseases of the Colon and Rectum*, Vol. 60, E439

Patel SV, Brennan KE, **Nanji S**, Karim S, **Merchant S**, Booth CM. Peri-operative Blood Transfusion for Resected Colon Cancer: Practice Patterns and Outcomes in a Population-Based Study. 12-2017, *Cancer Epidemiology*, Vol. 51, 35-40

Patel SV, Paskar DD, Nelson RL, Vedula SS, Steele SR. Closure Methods for Laparotomy Incisions for Preventing Incisional Hernias and other Wound Complications. 11-2017, *The Cochrane Database of Systematic Reviews*, Vol. 11, CD005661

Patel SV, Yu D, Elsolh B, Goldacre BM, Nash GM. Assessment of Conflicts of Interest in Robotic Surgical Studies: Validating Author's Declarations With the Open Payments Database. 7-2017 (e-pub), *Annals of Surgery* Peters DA, **McKay DR**. I'm a Plastic Surgeon. How do I Manage my Debt? 8-2017, *Plastic Surgery*, Vol. 25(3):224-6

Peters DA, Boyd KU, **McKay DR**. Oral Examination: Post Bariatric Surgery and Eyelid Ptosis. 8-2017, *Plastic Surgery*, Vol. 25(3):222-4

Prescott IA, Marino RA, **Levy R**. Field Evoked Potentials in the Globus Pallidus of Non-Human Primates. 7-2017, *Neuroscience Research*, Vol. 120, 18-27

Quirt JS, **Nanji S**, Wei X, Flemming JA, Booth CM. Is there a Sex Effect in Colon Cancer? Disease Characteristics, Management, and Outcomes in Routine Clinical Practice. 2-2017, *Current Oncology*, Vol. 24(1):e15-e23

Rasquinha BJ, Rainbow MJ, Zec ML, **Pichora DR**, Ellis RE. Principal components of wrist circumduction from electromagnetic surgical tracking. 2-2017, *Int J Comput Assist Radiol Surg*. Vol. 12(2):315-324

Ren K, Kaufman M, Morse N, Xu AS, **Rudan J**, Berman D, Varma S. Potential Role of Desorption Electrospray Ionization (DESI) Mass Spectrometry Imaging (MSI) as an Adjunct to Histology for Margin Assessment in Lumpectomies for Breast Cancer. 2-2017, *Laboratory Investigation*, Vol. 97, 67A-67A

Ren K, Kaufmann M, Morse N, Xu A, **Engel CJ**, Fichtinger G, **Rudan JF**, Berman DM, Varma S. Ability of Desorption Electrospray Ionization (DESI) Mass Spectrometry Imaging (MSI) to Discriminate Between Tumors and Non-Neoplastic Tissue in Resection Specimens from Multiple Organs. 2-2017, *Laboratory Investigations*, Vol. 97, 534A-534A

Ren K, Kaufmann M, Morse N, Xu A, **Rudan J**, Berman D, Varma S. Mass Spectrometry Imaging (MSI) to Discriminate Between Tumors and Non-Neoplastic Tissue in Resection Specimens from Multiple Organs. 4-2017, *Modern Pathology*, Vol. 30, S2

Ren K, Kaufmann M, Morse N, Xu A, **Rudan J**, Berman D, Varma S. Potential Role of Desorption Electrospray Ionization (DESI) Mass Spectrometry Imaging (MSI) as an Adjunct to Histology for Margin Assessment in Lumpectomies for Breast Cancer. 4-2017, *Modern Pathology*, Vol. 30, S2

Resende RA, Kirkwood RN, **Rudan JF**, Deluzio KJ. How Symmetric are Metal-on-metal Hip Resurfacing Patients during Gait? Insights for the Rehabilitation. 6-2017, *Journal of Biomechanics*, Vol. 58, 37-44

Resende RA, Kirkwood RN, **Rudan JF**, Deluzio KJ. Response to Letter to the Editor concerning "How Symmetric are Metal-on-metal Hip Resurfacing Patients during Gait? Insights for the Rehabilitation." 10-2017, *Journal of Biomechanics*, Vol. 63, 204-205

Repossini A, Di Bacco L, Passaretti B, Grubitzsch H, Schäfer C, Claus B, Giroletti L, Folliguet T, **Bisleri G**, Fischlein T, Santarpino G, Di Bartolomeo R, Laborde F, Muneretto C. Early Hemodynamics and Clinical Outcomes of Isolated Aortic Valve Replacement with Stentless or Transcatheter Valve in Intermediate-Risk Patients. 3-2017, *J Thorac Cardiovasc Surg*. Vol.153(3):549-558 Semrau J, Scott SH, Saha T, **Hamilton A**, **Petsikas D**, **Payne D**, and Boyd JG. Cerebral Oxygenation and Quantified Neurological Outcomes after Cardiac Surgery. 4-2017, *Society of Cardiovascular Anesthesiologists*, Vol. Session 1, 21144

Tharmalingam S, Flemming J, Ouellette-Kuntz H, Hurlbut D, Richardson H, Cleary S, **Nanji S**. Surgical Practice Patterns and Outcomes in T2 Gallbladder Cancer in Ontario: A Population-Based Study. 4-2017, *HPB*, Vol. 19, S121

Tharmalingam S, Flemming J, Richardson H, Nanji S. Surgical Practice Patterns and Outcomes in T₃ Gall bladder cancer: Insights from a Population-Based Study. 8-2017, *Canadian Journal of Surgery*, Vol. 60, S155

Thielmann M, Sharma V, Al-Attar N, Bulluck H, **Bisleri G**, Jh Bunge J, Czerny M, Ferdinandy P, Frey UH, Heusch G, Holfeld J, Kleinbongard P, Kunst G, Lang I, Lentini S, Madonna R, Meybohm P, Muneretto C. ESC Joint Working Groups on Cardiovascular Surgery and the Cellular Biology of the Heart Position Paper: Perioperative Myocardial Injury and Infarction in Patients undergoing Coronary Artery Bypass Graft Surgery. 8-2017, *European Heart Journal*, Vol. 38(31):2392-2407

Tomalty H. Hamilton E. **Hamilton A**, Kukal O, Allen T, Walker VK. Kidney Preservation at Subzero Temperatures Using a Novel Storage Solution and Insect Ice-Binding Proteins 3-2017, *Cryoletters*, Vol. 38,100-107(8).

Tucker A, Hiscox C, AlQahtani S, **Bicknell R**. Analysis of the Clinical Outcome of Arthrographic Steroid Injection for the Treatment of Adhesive Capsulitis. 12-2017, *The Open Orthopaedics Journal*, Vol. 11, 804-809

Ungi T, Gauvin G, Lasso A, Yeo CT, Vaughan T, **Engel CJ**, Fichtinger G, **Rudan JF**. Electromagnetically Navigated Tumor Excision in Nonpalpable Breast Cancer. 6-2017, *International Journal of Computer Assisted Radiology and Surgery*, Vol. 12, S97

Vaughan T, Ungi T, Lasso A, Gauvin G, **Engel CJ**, **Rudan JF**, Fichtinger G. Controlling Virtual Views in Navigated Breast Conserving Surgery using Tracked Instrument. 6-2017, *The Hamlyn Symposium on Medical Robotics*, Vol. 1, 19-20

White BJ, Kan JY, **Levy R**, Itti L, Munoz DP. Superior Colliculus Encodes Visual Saliency before the Primary Visual Cortex. 8-2017, *Proceedings of the National Academy of Sciences of the United States of America*, Vol. 114(35):9451-9456

Wood, GCA. The CT Scan is All You Need. 5-2017, *Canadian Orthopaedic Association Bulletin*, Vol. Spring (116):25-26

Yach J, Kassam F. Length of Stay, Wait Time to Surgery and 30-Day Mortality for Patients with Hip Fractures after the Opening of a Dedicated Orthopaedic Weekend. 1-2017, *Canadian Journal of Surgery*, Vol. 59(No. 5):337-341

Yen D, Albargi A. Results and Limitations of Outpatient Laminectomies for Lumbar Spinal Stenosis. 10-2017, *Canadian Journal of Surgery*, Vol. 60(5):229-234

Yeo CT, Macdonald A, Ungi T, Lasso A, Fichtinger G, **Nanji S**. Segmentation as a Surgical Planning Tool for Residents in Liver Resection Surgery. 8-2017, *Canadian Journal of Surgery*, Vol. 60, S148

Yeo CT, MacDonald A, Ungi T, Lasso A, **Jalink D**, **Zevin B**, Fichtinger G, **Nanji S**. Utility of 3D Reconstruction of 2D Liver Computed Tomography/Magnetic Resonance Images as a Surgical Planning Tool for Residents in Liver Resection Surgery. 8-2017 (e-pub), *Journal of Surgical Education*

Yeung C, McMillan C, Saun TJ, Sun K, D'hondt V, von Schroeder HP, **Martou G**, Lee M, Liao E, Binhammer P. Developing Cognitive Task Analysis-based Educational Videos for Basic Surgical Skills in Plastic Surgery. 9-2017, *Journal of Surgical Education*, Vol. 74(5):889-897

Yu D, Elsolh B, Wexner S, **Patel SV**. Comparison of Conflict of Interests between Robotic and Non Robotic Surgery Studies in Colorectal Surgery: A Case-Control Study. 6-2017, *Diseases of the Colon and Rectum*, Vol. 60, E525

Zakani S, **Rudan J**, Ellis RE, Translatory Hip Kinematics Measured with Optoelectronic Surgical Navigation. 6-2017, *Int J Comput Assist Radiol Surg*, Vol. 12(8):1411-1423

Zevin B, Dedy NJ, Bonrath EM, Grantcharov TP. Comprehensive Simulation-Enhanced Training Curriculum for an Advanced Minimally Invasive Procedure: A Randomized Controlled Trial. *Surg Obes Relat Dis.* 2017 June;13:815–825

Zevin B, Jones EL, Martin Del Campo S, Perry KA. Preoperative esophageal manometry does not alter operative approach or postoperative dysphagia following laparoscopic paraesophageal hernia repair. *Dis Esophagus*. 2017;30:1-6

Zhang L, Elsolh B, **Patel SV**. Wound Protectors in Reducing Surgical Site Infections in Lower Gastrointestinal Surgery: An Updated Meta-Analysis. 6-2017, *Diseases of the Colon and Rectum*, Vol. 60, E184

Zhang L, Elsolh B, **Patel SV**. Wound Protectors in Reducing Surgical Site Infections in Lower Gastrointestinal Surgery: An Updated Meta-Analysis. 7-2017, *Colorectal Disease*, Vol. 19, 56

Zhang L, Elsolh B, **Patel S**. Wound Protectors in Reducing Surgical Site Infections in Lower Gastrointestinal Surgery: An Updated Meta-Analysis of Randomized Controlled Trials. 8-2017, *Canadian Journal of Surgery*, Vol. 60, S121

2016-2017 BOOK CHAPTERS

Chung W, Grantcharov T. Laparoscopic Gastrectomy. 5-2017, Surgical Principles of Minimally Invasive Procedures, Vol. 1, 61-69

Kunz M, **Rudan JF**. Computer Assisted Hip Resurfacing Using Patient Specific Instrument Guides, 10-2016, *Computational Radiology for Orthopaedic Interventions*, Zhen G, Li S (eds), Springer Lecture Notes in Computational Vision and Biomechanics, Vol. 23

Marsh A, **Yen D**. Is it really Cauda Equina Syndrome – 3 cases with a Different Diagnosis Referred as Query Cauda Equina, 8-2016, *Spinal Columns*, Vol. 16, 10

Wood GCA, Alsharhrani H, Taylor M. Pathophysiology of Femoroacetabular Impingement (FAI). 10-2016, *Diagnosis and Management of Femoroacetabular Impingement*, Vol. 1, 51-65

Yen D. Background behind Trends and Costs of Lumbar Fusion and Disc Replacement Surgeries in Ontario: A Population-Based Study. 5-2016, *Spinal Columns*, Vol. 16, 19-20

Zec M, Al-Qahtani, S, **Bicknell RT**. Humeral Head Replacement – Anatomy and Biomechanics. *Anatomic Shoulder Arthroplasty – Strategies for Clinical Management*, 1-2016, Springer, Vol. 1, 15-28

64 GRANTS AND PUBLICATIONS



BREAST RECONSTRUCTION: HELPING PATIENTS CLOSE THE LOOP ON BREAST CANCER

Dr. Glykeria Martou, breast reconstruction plastic surgeon, is demonstrating the difference between textured and smooth implants to breast cancer survivor Lisa Tugnette.

Our primary goal is to help patients make informed decisions about reconstruction post breast cancer.

MOBB





faculty of HEALTH SCIENCES

Department of Surgery Kingston Health Sciences Centre, Victory 3-3-117 76 Stuart Street Kingston, Ontario K7L 2V7 T 613-533-2660 F 613-544-9174 kgh.departmentofsurgery@kingstonhsc.ca