

PGY 1 & PGY 2 RESEARCH ORIENTATION

DEPARTMENT OF SURGERY, UNIVERSITY OF TORONTO

MONDAY, SEPTEMBER 24, 2018 – 5:30 – 7:30 pm

As the evening began, it was encouraging to see over 40 residents, Surgeon Scientist Training Program (SSTP) residents, former SSTP residents and staff assemble for this evening's resident research orientation. **Dr. Michael Fehlings** welcomed everyone and stated that the evening will include inspiring short talks from staff and residents who have been in the SSTP, supervise residents in the SSTP or who are still in the SSTP. Dr. Fehlings introduced Val Cabral, Research Program Manager, who is responsible for SSTP enrollment, etc. Nancy Condo is Business Manager in the Department of Surgery and deals with all salary related issues. The personal highlights of the evening will potentially start as a guide to the residents who have thought of entering the SSTP or who will be starting the SSTP as of July 2019. Dr. Fehlings gave a short summary of his journey from resident to Vice Chair Research. He entered the University of Toronto Neurosurgical Training Program in 1984. During his residency, it was recommended that he pursue his PhD through the SSTP. He was in the SSTP from 1985 – 1988 under the supervision of Dr. Charles Tator. He received his PhD in March 1989 from the Institute of Medical Science for his work on experimental spinal cord injury. Dr. Fehlings confirmed that the SSTP is the best Program worldwide for residents to pursue a degree in their 2nd, 3rd or 4th year in residency. It is a 2–4 year break from clinical training to focus on a research topic which is of interest to them. Dr. Fehlings stated that the Ministry of Health supports salary & benefits for residents in certain divisions (Cardiac, General, Neurosurgery) covering their first year in research, is an additional benefit. There are, however, four divisions that MOH does not support (Orthopaedics, Plastic & Reconstructive Surgery, Urology, Vascular Surgery) for their research years. Division Heads have introduced internal programs within their divisions to assist residents if they are interested in the SSTP to apply for salary support. The Clinician Investigator Program (CIP) has been an added bonus to support SSTP residents in their first or second year in the Program. The Department of Surgery remains very committed to the SSTP.

Dr. Albert Yee started the evening highlighting his journey from resident to his present role as Orthopaedic Surgery Vice Chair Research, Head of the Division of Orthopaedic Surgery at Sunnybrook Health Sciences Centre (SHSC), where he holds the Marvin Tile Chair in Orthopaedic Surgery. Dr Yee is an Orthopaedic Spine Surgeon at SHSC, Associate Scientist (Physical Sciences Platform) at Sunnybrook Research Institute and a Consultant in Surgical Oncology, Bone Metastasis Clinic, Odette Cancer Centre. He is Full Professor at the University of Toronto in the Institute of Medical Science with a cross appointment in the Institute of Biomaterials and Biomedical Engineering. He is also Co-Director of the Department of Surgery Spine Program, University of Toronto. Dr. Yee is the current president of the Canadian Orthopaedic Research Society, an Executive Member of the Canadian Spine Society and Co-Chair of Bone & Joint Canada. He is the Canadian Lead for the Young Investigators Initiative of Bone & Joint Canada and the US Bone & Joint Initiative, a grant mentoring and career development program. Dr. Yee has over 110 peer reviewed publications and has received academic honours including the Canadian Orthopaedic Foundation J. Edouard Samson Award (2011), Canadian Orthopaedic Research Society Founders' Medal (2011), Charles H. Tator Surgeon-Scientist Mentoring Award (2012) and the American British Canadian (ABC) International Travelling Fellowship, American Orthopaedic Association/Canadian Orthopaedic Association (2013). Dr. Yee's lab focuses on translational spine and orthopaedic research - pre-clinical models of surgery evaluate novel therapies (e.g. photodynamic therapy, radiofrequency ablation) for the minimally invasive surgical treatment of vertebral metastasis. His work has led to the first human clinical trials, FDA approval and commercialization of new minimally invasive spinal technology. His work also focuses on understanding mechanisms of disease in cancer invasiveness in bone with an aim towards targeting potential new promising therapeutics. Dr. Yee was in the SSTP from 1994 – 1996, working with Drs. Rod Davey and Earl Bogoch toward his MSc. He stressed that what and how you practice by mid-career will most likely be different from what was considered 'gold' standard of care during your surgical residency. These changes stem from research discoveries (either directly in the field or indirectly in line with new knowledge outside the field). Fast-forward from his time as resident to young investigator to his present role, the SSTP was one of the key stepping stones in his career. Keeping current is important - medicine is a life long process. Your skill set will shift many times in your career. There is an incredible opportunity to be involved in academic surgery; keep an open mind. The SSTP is a Department of Surgery "gem" not to be missed during surgical residency.

Dr. Andras Kapus is Associate Vice Chair Research in the Department of Surgery, University of Toronto. Dr. Kapus is a senior scientist at St. Michael's Hospital. Dr. Kapus stated that the SSTP started as a concept by Dr. Bernard Langer in 1984 and grew to being the staple SSTP it is today. He spoke about the unmatched opportunities that the SSTP offers both in researchable topics and the availability of potential supervisors in the Department of Surgery (including > 170 surgeon scientists, surgeon investigators and 44 basic scientists) and at U of T in general. The purpose of the SSTP is to provide exceptional research training for surgical residents who wish to pursue a career in academic surgery. The focus is on excellent research training, not on a specific discipline or project. Topics encompass basic research (e.g., cellular and molecular biology, pathology, pathophysiology, neuroscience, bioengineering), clinical research, clinical epidemiology, medical bioethics, or health services research. The 'psychology' of being a successful SSTP trainee, calls attention to challenges of the transition from a very structured to a predominantly self-motivated and organized lifestyle, and the most effective strategies that minimize the stress and sense of incompetence, and maximize the creativity and productivity of the trainees. Dr. Kapus encouraged future SSTP residents to consider and capitalize on working with one of more than 40 basic scientists at the Department of Surgery.

Dr. Thomas Waddell is the Pearson-Ginsberg Chair, Division of Thoracic Surgery, University of Toronto and Head of the Division of Thoracic Surgery at University Health Network, including Toronto General Hospital. Dr. Waddell received his MD from the University of Ottawa in 1987. He completed his surgical internship at St. Michael's Hospital before joining the University of Toronto General Surgery Residency Program. He pursued basic lab training for 5 years as part of the SSTP, completing his MSc with Dr. Alec Patterson in 1992 and his PhD with Dr. Greg Downey in 1995. He runs a large lab with external funding. His lab focuses on alternative approaches to the chronic shortage of donor lungs, especially stem cell and regenerative medicine approaches to lung disease. He leads the lung group at the McEwen Centre for Regenerative Medicine. His clinical interests include lung transplantation and lung volume reduction surgery, lung cancer and especially minimally invasive and robotic thoracic surgery. He pointed out that there needs to be a passion for research if you want to pursue the path to a surgeon scientist.

Dr. Marcelo Cypel is a staff thoracic surgeon at University Health Network (UHN) and Associate Professor of Surgery at the University of Toronto. He is the Surgical Director of the Artificial Lung Program at UHN and Director of the Extra-Corporeal Lung Support (ECLS) Program at UHN. Dr. Cypel received his MD in 1999 and completed his general surgery and thoracic surgery residency program in 2004. In 2005 he started his Post-Doctoral research fellowship at the Latner Thoracic Surgery Lab. During this time, he developed a new method of lung preservation and donor lung repair called Ex Vivo Lung Perfusion (EVLV). Dr. Cypel endorsed research in thoracic surgery as a very sustainable connection to significant research. There is a team of academic surgeons and researchers in Thoracic Surgery who have accepted trainees in the SSTP with outstanding outcomes.

Dr. Elisa Greco is a staff vascular surgeon at St. Michael's Hospital. She is assistant professor and surgeon teacher in the Division of Vascular Surgery, Department of Surgery, University of Toronto. Dr. Greco completed her residency in General Surgery, followed by a residency and fellowship in Vascular Surgery through the University of Toronto. During this time, she completed a research fellowship at The Wilson Centre for Research Education, while also obtaining a Master's Degree in Education (MEd) through the Ontario Institute for Studies in Education, in the SSTP. She completed the Stepping Stones program from the Centre for Faculty Development. She expressed interest in medical education to the Chair at that time, who was her clinical supervisor during residency. He was the co-founder of the Wilson Centre at Toronto General Hospital. Both staff members agreed to be her supervisors during her Masters of Education voyage. Her research focus was with surgical simulation. The study was a mixed method, qualitative, and quantitative, looking at common errors or problems trainees have with learning laparoscopic surgery and whether or not a commercially available laparoscopic simulator was able to identify and highlight these errors. She did her research through the Ontario Institute for Studies in Education (OISE). OISE is the largest, most research-intensive institution of education in Canada. OISE is recognized as one of the leading centres of graduate studies, scholarship and continuing professional learning in education in the world. OISE offers a wide range of programs in education and human development. This extends a meticulous foundation for a career in professional practice, research, policy and community development. Dr. Greco was in the SSTP from 2008 – 2010. Her journey led to her present position as Undergraduate Medical Education Director.

Dr. Nancy Baxter is a colorectal surgeon and the Head of the Division of General Surgery at St. Michael's Hospital. She is a Health Service Researcher with interests in screening effectiveness, long-term survivorship of cancer survivors and quality of surgical care. She was in the SSTP from 1993-1997

working with Dr. Robin McLeod and received her PhD in clinical epidemiology. Participation in the SSTP gave her the tools to develop her current program of research; she acquired expertise in research methods, critical thinking and medical writing. She states that training in clinical epidemiology provides you with fundamental knowledge that is easily transferred - you are not tied to a particular molecule or disease. This is a wonderful path for those with clinical curiosity - you have the ability to ask and answer clinically important questions and have an impact on medical care in a relatively short period of time.

James Drake is the new Surgeon-in-Chief at The Hospital for Sick Children. Born in London, Ontario, and educated at Princeton University (1969-1974), Royal College of Surgeons in Ireland (1974), University of Toronto (1986-1987), and Royal College of Surgeons of Canada (1987). Dr. Drake assumed his appointment in the Division of Neurosurgery, Department of Surgery in 1988, and has been on the surgical staff at The Hospital for Sick Children in the Division of Paediatric Neurosurgery since then. Primary research and clinical interests relate to the science and surgery of hydrocephalus. Laboratory interests lie in the applications of engineering science to developing novel techniques for diagnosing and treating hydrocephalus, and image guided surgery. Clinical research includes clinical trials in hydrocephalus and management of complex spinal disorders. Works include over 80 peer reviewed publications, and a co-authored a book on cerebrospinal fluid shunts. A member of the editorial board of Computer Assisted Surgery, and the Medical Advisory Board for the Hydrocephalus Association in San Francisco, California. Dr. Drake is Full Professor at the University of Toronto. Dr. Drake has supervised and is supervising residents in the SSTP. He is very supportive of this Program which gives residents an opportunity to establish a fundamental path in research.

Dr. Joseph Catapano is a PGY-4 resident in the Division of Plastic and Reconstructive Surgery. He defended his PhD in June 2017, through the Institute of Medical Science as part of the Surgeon Scientist Training Program (SSTP) at the University of Toronto. Under the supervision of Dr. Gregory Borschel, his research investigated a novel surgical procedure to prevent vision loss in patients with neurotrophic keratopathy. After completing residency and fellowship training, his goal is to continue translational laboratory research as a Surgeon-Scientist in the future. He echoed the ongoing statements that the SSTP was an essential route to his aims for the future.

Dr. Ashton Connor is a PGY V general surgery resident at the University of Toronto. During his residency, he completed a PhD through the Surgeon Scientist Training Program with Dr. Steven Gallinger in colorectal and pancreatic cancer genomics. Ashton gave us a brief overview of his path to doing research, including the importance of finding inspiration and identifying early on role models and mentors to help in choosing a research topic and field. He learned that you will be taken out of your comfort zone many times. You have to embrace and absorb these changes to your benefit.

Dr. Christopher Ahuja is a PGY-4 Neurosurgery SSTP, pursuing a PhD. Research focus is on human stem cell research for traumatic spinal cord injury with Dr. Michael Fehlings at Toronto Western Hospital, University Health Network. He indicated that the SSTP provides residents with an invaluable safeguard to undertake graduate training and aids in developing a rich network of mentors. He would encourage upcoming surgeon-scientist trainees to explore fields they are passionate about, engage a supervisor early on, apply broadly to funding opportunities, and strongly consider the unique resources offered by the SSTP. Chris discussed his motivation to join the SSTP and the highly positive experiences thus far. He also highlighted the importance of keeping all options open as you choose your career path. Chris is co-representative of the SSTP residents on the Department of Surgery Research Committee.

Dr. Kevin Zuo is a resident in the Division of Plastic & Reconstructive Surgery. He grew up in Edmonton, AB where he completed his undergraduate and medical degrees at the University of Alberta and moved to Toronto in 2015 to start his post-graduate training. He is currently in the Surgeon Scientist Training Program (SSTP) working towards a Masters of Applied Science (MASc) in the Institute of Biomaterials and Biomedical Engineering (IBBME) at SickKids Research Institute under the supervision of Dr. Gregory Borschel. Kevin is investigating novel strategies to reconstruct peripheral nerve defects with acellular nerve allografts and local drug delivery to support and enhance axon regeneration. Kevin is co-representative of the SSTP residents in the Department of Surgery Research Committee.

Dr. James Rutka welcomed the residents and stressed that the Department of Surgery with Dr. Fehlings leadership will host many events to enlighten residents on their choices from resident to staff member. The SSTP started with just 3 surgery residents in 1984, which he was one. He started in July 1984 and worked towards his PhD in 1987. The Program's status in the Department grew over the next decade with the gradual involvement of other specialties to 49 trainees at present in the Program. During the same time there was a gradual change in the culture in the Department where research accomplishments developed the same respect as clinical expertise. This is the only Program worldwide that is available for

residents to continue to be paid their PGY level salary and to take a break from clinical duties to focus on research with a degree in the end of their research endeavour.

Dr. Carol Swallow informed us that the General Surgery Program Director, Dr. Fred Brenneman, in consultation with the members of General Surgery Council (GSC) and Dr. Swallow, has decided that the U of T GS residency program shall henceforth consist of 5 clinical years. This will bring U of T graduates into compliance with American Board of Surgery requirements for board eligibility, which is necessary to apply to some US-based fellowship programs. However, the main motivation for adopting a 5-year clinical program is to ensure that graduates are fully clinically competent. Because of this development, first year SSTP participants from the GS program will not be eligible for support by an MOH salary.

Dr. Fehlings wrapped up the evening thanking all for making this event a success. He encouraged everyone to mingle and stay on for a while longer.