Schulich MEDICINE & DENTISTRY

Western

Department of Otolaryngology – Head and Neck Surgery

47th Annual (Virtual) Residents' Research Day

Friday, May 13, 2022

https://www.schulich.uwo.ca/otolaryngology/cme/researchday/2022.html

PROGRAM

OVERALL LEARNING OBJECTIVES

By the end of this program, participants will be able to:

1. Critically appraise the scientific presentations with respect to methodology and clinical applicability pertaining to Otolaryngology – Head and Neck Surgery.
2. Discuss the scientific presentations and reflect on their potential implications for patient care.

STUDY CREDITS

This event is an Accredited Group Learning Activity (Section 1) as defined by the Maintenance of Certification Program of the Royal College of Physicians and Surgeons of Canada, and approved by Continuing Professional Development, Schulich School of Medicine & Dentistry, Western University. You may claim a maximum of 4.5 hours (credits are automatically calculated).

Each participant should claim only those hours of credit that he/she actually spent participating in the educational program.

DISCLOSURES

* I have/ **have not had in the past 2 years a financial interest, arrangement, or affiliation with one or more organizations that could be perceived as a direct or indirect conflict of interest in the context or content of this education program.

Continuing Professional Development Planning Committee

- Dr. Lorne Parnes **
- Dr. Josée Paradis **
- Dr. Kevin Fung **
- Dr. Kathryn Roth *Sanofi-Genzyme, London Regional Cancer Program
- Dr. Leigh Sowerby * Mylan, Sanofi-Genzyme, GlaxoSmithKline, Catalytic Health, Medexus, Freudenberg Medical, Darvis, Stryker, Olympus, Astrazeneca, Optinose, NeilMed

Session Chairs

- Dr. Josée Paradis
- Dr. Adrian Mendez

At least 25% of this program is dedicated of participant interaction.

DISTINGUISHED VISITING PROFESSOR

Dr. Peter Hwang, MD
Professor and Vice-Chair
Department of Otolaryngology – Head and Neck Surgery
Chief of Rhinology and Endoscopic Skull Base Surgery
Stanford University School of Medicine

"Pathways to Entrepreneurship in Otolaryngology: Lessons learned from Silicon Valley"

By the end of this session, participants will be able to:

1. Evaluate how to maintain academic integrity in consultancies with industry
2. Review the challenges and pitfalls in management and protection of intellectual property
3. Describe resources for building your skill set for entrepreneurial work
4. Plan a pathway for developing your disruptive innovation

Dr. Peter H. Hwang is Professor and Vice Chair of the Department of Otolaryngology-Head & Neck Surgery at Stanford University School of Medicine. He serves as Chief of the Division of Rhinology and Endoscopic Skull Base Surgery and is Past President of the American Rhinologic Society. Dr. Hwang has served extended tenures as Associate Editor of the International Forum of Allergy and Rhinology and Associate Editor of the World Journal of Otorhinolaryngology-Head and Neck Surgery. Dr. Hwang has authored or co-authored over 250 manuscripts, book chapters, and textbooks, including the award-winning textbook Rhinology: Diseases of the Nose, Sinuses & Skull Base. Dr. Hwang is actively involved in training fellows and residents and is a featured speaker at conferences worldwide. He has consulted for a number of successful Silicon Valley biotech startups and is co-founder of Third Wave Therapeutics.

DISTINGUISHED GUEST ALUMNUS

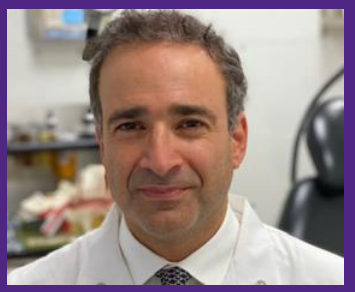
Dr. Eytan David, MD, FRCSC

Otolaryngology – Head and Neck Surgery Clinical Instructor
University of British Columbia and Lions Gate Hospital

“VEMPs, Vestibular Retraining, and Vinyl vs Digital: An Auditory Vestibular Narrative”

By the end of this session, participants will be able to:

1. Describe the clinically meaningful parameters in VEMP testing
2. Review the results of a pilot study of vestibular retraining on self-perceived dizziness symptoms
3. Review the results of a pilot study of vestibular retraining using objective parameters
4. Appreciate the commonalities between the auditory and vestibular systems
5. Describe digital versus analog high fidelity music reproduction and the latter’s implications for the vestibular system



Dr. Eytan David completed his Otolaryngology residency at Western University in 2001, having received research awards from the Canadian Institutes of Health Research and the Triologic Society Eastern Section. He continued to pursue a Fellowship in Otology and Neurotology at the University of Toronto. Eytan returned to Vancouver in 2002 as a Clinical Instructor in the Division of Otolaryngology at the University of British Columbia and Lions Gate Hospital. In the past 20 years, Eytan has enjoyed family life, skiing, and a busy otologic practice. With his latest chapter on ear surgery in Gray’s Surgical Anatomy (2020), there has been a recreational return to publishing on auditory vestibular topics including vestibular evoked myogenic potentials, and peripheral vestibular deficits. He is proud to have welcomed two recent Western University Department of Otolaryngology alumni into the LGH Division of Otolaryngology.

ITINERARY

A.M. SESSION

09:00 – 09:15 Virtual Login

09:15 – 09:30 Welcome, Objectives Overview, and Call to Order

09:30 – 09:40 **Dr. Nathan Farias** (Supervisor: Dr. Elise Graham)

Can Overnight Pulse Oximetry be Used to Screen for Paediatric Vagal Nerve Stimulator Induced Obstructive Sleep Apnea: A Pilot Study

Background: Intermittent electrical stimulation of the vagus nerve, via an implanted vagal nerve stimulator (VNS), effectively terminates seizures in patients with intractable epilepsy. Since its approval in 1997 and has since been shown to reduce seizure frequency and intensity in epilepsy patients by at least 50%. However, the use of VNS is also associated with adverse effects related to laryngeal dysfunction such as dysphonia, sore throat, and VNS associated obstructive sleep apnea (VOSA). In paediatric patients, OSA has been shown to be a significant risk factor for maladaptive social behaviors and poor neuropsychological functioning. Even more concerning is the increase in breakthrough seizure frequency noted in children with OSA and epilepsy. Overnight pulse oximetry (OPO) is a cost-effective and accessible screening test that can reliable diagnose moderate to severe OSA in children. However, the underlying pathology causing VOSA is distinct from that of conventional OSA, the reliability of OPO in detecting VOSA has yet to be validated. Recently our multidisciplinary team at the LHSC Children's Hospital has identified a cluster of patients presenting with upper airway disturbances secondary to VNS. As the overall population of VNS patients is low, this provides us with a unique opportunity to assess how OPO compares to polysomnography (the gold standard) in testing for VOSA.
Objective: Our case series will assess the feasibility, usability, and diagnostic utility of OPO compared to polysomnography in detecting VOSA in our high-risk VNS patients. If OPO proves to be a reliable screening tool for VOSA, the clinical impact would be promising for earlier diagnosis and management of patients with VOSA.

09:40 – 09:45 Interactive Discussion

09:45 – 09:55 **Dr. Kylen Van Osch** (Supervisor: Dr. Elise Graham)

Evaluating Implicit Gender Bias in the Canadian Society of Otolaryngology Annual Meeting

Background: Over the past several decades the number of women entering medical school has continued to increase. Despite this, the number of female physicians in leadership positions has been much slower to equalize. There are also well documented differences in the treatment of women as compared to men in professional settings. Studies have shown that female presenters are less likely to be introduced by their professional title (“Doctor”) for grand rounds and conferences, especially with a man performing the introduction.
Methods: The current study reviewed the Canadian Society of Otolaryngology (CSO) meetings from 2018-2020 to determine the proportion of presenters referred to by their professional title and whether this varied by gender. Chi squared tests of proportion and multivariate logistic regression was used to compare genders and identify factors associated with professional versus unprofessional forms of address.
Results: No significant association was found between professional title use and either introducer gender or presenter gender. Female presenters were introduced with a professional title 64.5% of the time, while male presenters were introduced with a professional title 62.9% of the time. Residents were introduced with a professional title with the most frequency (73.9%), while attending staff were introduced with a professional title with the least frequency (57.1%).
Conclusion: The lack of gender bias in speaker introductions at recent CSO meetings is encouraging and demonstrates progress in achieving gender equity in medicine. Research efforts should continue to define additional forms of unconscious bias that may be contributing to gender inequity in leadership positions.

09:55 – 10:00 Interactive Discussion

10:00 – 10:10 **Dr. Sarah Zahabi** (Supervisor: Dr. Elise Graham)

The Experiences of Motherhood in Female Surgeons: A Scoping Review

Background: Despite almost half of all medical graduates being female, there are still disproportionately low numbers of women choosing surgical specialties. Surgery is often seen as incompatible with childbearing and pregnancy.

Objectives: The objective of this study is to summarize the existing literature on the experiences of motherhood in female surgeons.
Methods: EMBASE, OVID, Web of Science, and MEDLINE were searched for English peer-reviewed articles published between 2001 to 2021 reporting on aspects of motherhood and surgery. The database search identified 1074 articles and 41 articles met our inclusion criteria. Titles and abstracts identified through our search strategy were screened by 3 authors and the full text articles were identified based on the following inclusion criteria: 1) Qualitative/Mixed methods/Quantitative methodology, 2) Population includes MDs, specifically surgeons, 3) mention of any aspect of parenthood, and 4) female gender. Thematic synthesis was employed to review the data, using the Thomas and Harden framework which comprises three stages of detailed synthesis: line-by-line coding of the primary text, construction of descriptive themes, and the development of analytical themes.
Results: Four core themes were identified. 1) Path towards motherhood, subthemes fertility and family planning. 2) The realities of motherhood in surgical specialties, subthemes breastfeeding, pregnancy and career impact. 3) Medical culture and its impact on family life, subthemes personal and family life and perceptions of faculty, peers and of self. 4) Institutional structures and reproductive wellness policies, subthemes maternity leave, childcare and mentorship.
Conclusion: Women were more likely to delay childbearing until after surgical residency and had fewer children than male surgeons. As a result, they experience greater rates of infertility and use of assistive reproductive technologies. Pregnancy during surgical training is associated with many difficulties, such as greater rates of complications (preterm labour, placental abruptions), scheduling issues, and stigma from faculty, peers and self. Perceived institutional barriers for surgeon mothers include limited access to childcare and breastfeeding facilities. Many surgeons felt that their role as a mom negatively impacted their career ambitions and that, conversely, their career negatively impacted their personal relationships. Of note, many surgeon mothers suggested that mentorship and positive role models in both community and academic surgical positions would have a positive impact on maintaining work-family balance for future generations of women entering surgical specialties.

10:10 – 10:15 Interactive Discussion

10:15 – 10:35 Break

10:35 – 10:45 **Dr. Andrew Bysice** (Supervisor: Dr. Kevin Fung)

Establishing Ideal Conditions for An Airway Fire Using Novel Pig Model

Background: Airway fires are a rare but devastating complication that can occur in airway surgery. While considered a never event, it is estimated 300 airway fires occur per year in the United States. While protocols of how to extinguish and manage an airway fire have been discussed, very little has been researched on the ideal conditions of an airway fire.
Objectives: Our study uses pig tracheas to examine FiO2 levels and heat sources that create optimal conditions for igniting an airway fire.
Methods: Pig tracheas were intubated with a 7.5 air filled polyvinyl endotracheal tube (ETT). 3 trials were done at each FiO2 of 100%, 80%, 60%, 40% and 21%. Monopolar and bipolar cautery were used in independent experiments to assess capacity ignite a flame. In both experiments, monopolar cut function was used to enter the trachea. Time began once monopolar coagulation function was stared. In the bipolar trials, time began once the bipolar was turned on. Time stopped once a flame was seen. Thirty seconds was the cut off for 'no fire'.
Results: The average time to ignition for monopolar cautery of an FiO2 at a 100% was 6.3 sec. Subsequently, ignition at FiO2 at 80%, 60%, 40% and 21% was found to be 8.0 sec, 22.7 sec, greater than 30 sec and greater than 30 sec, respectively. While using the bipolar as a heat source, we found that there was no ignition of a flame at an FiO2 of 100%. A qualitative observation was noted that dry tissue eschar shortened the time to ignition. Conversely, moisture in the tissue prolonged the time to ignition.
Conclusion: In our model, we were not able to start an airway fire at an FiO2 of 40% or below using monopolar cautery. Interestingly, at an FiO2 of 100% we were not able to ignite an airway fire using bipolar cautery. It was found that dry eschar shortened the time to ignition. Future directions will be to quantify the tissue eschar to better delineate its role in airway fires.

10:45 – 10:50 Interactive Discussion

10:50 – 11:00 **Dr. James Fowler** (Supervisor: Dr. Corey Moore)

Robot Assisted Nasal Reconstruction: A Cadaveric Study

Background: Cutaneous cancer of the head and neck is very common in Southwestern Ontario, with the nose frequently being involved. Primary therapy involves surgical resection and reconstruction, or radiation (depending on the type of cancer). Resction of the cancer poses both functional and costemtic challenges fro the surgeon. Nasal reconstruction is these cases can be very complex and tedious. To ensure complete

clearance of cancer, underlying soft tissue and cartilage is commonly resected during primary surgery. To provide the support required for the nasal reconstruction, autologous cartilage (auricular or rib) is used during he procedure. Once the cartilage is harvested, it is contoured into the desired shape by the surgeon and inset into position. This is often the most time consuming and rate-limiting step.
Objective: The objective of the current study is to present a novel technique for robot assisted rib cartilage contouring for complex nasal reconstruction. Our study will also analyze efficiency and accuracy of robot contouring, compared to the standard surgical technique.

11:00 – 11:05 Interactive Discussion

11:05 – 11:10 Introduction of Dr. Peter Hwang, Distinguished Visiting Professor

11:10 – 11:55 **Dr. Peter Hwang: Pathways to Entrepreneurship in Otolaryngology: Lessons Learned from Silicon Valley**

By the end of this session, participants will be able to:

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2. Review the challenges and pitfalls in management and protection of intellectual property
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11:55 – 12:10 Interactive Discussion

12:10 – 12:55 Lunch

ITINERARY

P.M. SESSION

12:55 – 13:00 Welcome Back and Call to Order

13:00 – 13:10 **Dr. Palak Suryavanshi** (Supervisor: Dr. Kathryn Roth)

The Virtual Otolaryngology Bootcamp: Postgraduate Foundational Training Then, Now, and Beyond

Background: Surgical “bootcamps” for foundational skills were first described in the field of Otolaryngology (OtoHNS) in 2011. Skills taught at the bootcamps involve high-stakes procedures and emergency scenarios. The first Canadian national OtoHNS Emergencies bootcamp was held in 2011; and has since been an annual event with novel task-trainers, cadaveric models and simulations paired with advocacy-inquiry debriefing. This course was successful due to hands-on experience with guided instruction and small group teaching from experts. Due to the coronavirus pandemic, the 2020 and 2021 courses were virtual.
Summary of the Innovation: Prior curriculum was developed from needs assessments, followed by successive iterations of content expert and participant program evaluation. Each task trainer has been individually evaluated with pre and post knowledge or technique assessments. Simulation scenarios and debriefing were assessed using Non-Technical Skills for Surgeons (NOTSS), and linked to CBME milestones. The virtual edition consisted of pre-reading with video demonstrations, interactive content expert talks, and case-based learning. This edition included live demonstrations of emergencies such as peritonsillar bleeding, management of pediatric foreign body from the operating room and more. Participants grew to include Anesthesia and Emergency Medicine residents. This virtual version was evaluated using mixed methods including pre and post surveys, and focus groups regarding level of realism, interactivity and future on-line innovation.
Conclusion: This virtual iteration of the bootcamp was effective in increasing resident confidence levels. A future hybrid model is planned to promote multidisciplinary participation and increase time spent in hands-on practice opportunities.

13:10 – 13:15 Interactive Discussion

13:15 – 13:25 **Dr. Hannah Ernst** (Supervisor: Dr. Kevin Fung)

RAPSTOR: Rapid Standardized Operating Rooms for Thyroid and Parathyroid Surgery

Objective: To evaluate the impact of a high efficiency rapid standardized OR (RAPSTOR) for hemithyroid/parathyroid surgery using standardized equipment sets (SES) and consecutive case scheduling

(CCS) on turnover times (TOT), average case volumes, patient outcomes, hospital costs and OR efficiency/stress.
Methods: Patients requiring hemithyroidectomy (primary or completion) or unilateral parathyroidectomy in a single surgeon's practice were scheduled consecutively with SES. Retrospective control groups were classified as sequential (CS) or non-sequential (CNS). A survey regarding OR efficiency/stress was administered. Phenomenography and descriptive statistics were conducted for time points, cost and patient outcome variables. Hospital cost minimization analysis was performed.
Results: The mean TOT of RAPSTOR procedures (16 min; n = 27) was not significantly different than CS (14 min, n = 14) or CNS (17 min, n = 6). Mean case number per hour was significantly increased in RAPSTOR (1.2) compared to both CS (0.9; $p < 0.05$) and CNS (0.7; $p < 0.05$). Average operative time was significantly reduced in RAPSTOR (32 min; n = 28) compared to CNS (48 min; $p < 0.05$) but not CS (33 min; $p = 0.06$). Time to discharge was reduced in RAPSTOR (595 min) compared to CNS (1210 min, $p < 0.05$). There was no difference in complication rate between all groups ($p = 0.27$). Survey responses suggested improved efficiency, teamwork and workflow. Furthermore, there is associated decrease in direct operative costs for RAPSTOR vs. CS.
Conclusion: A high efficiency standardized OR for hemithyroid and parathyroid surgery using SES and CCS is associated with improved efficiency and, in this study, led to increased capacity at reduced cost without compromising patient safety

13:25 – 13:30 Interactive Discussion

13:30 – 13:40 **Dr. Khrystyna Ioanidis** (Supervisor: Dr. Elise Graham)

Canadian Women in Otolaryngology - Head and Neck Surgery: How Does Career, Job Satisfaction and Advancement Differ by Gender Identity

Introduction: Women in surgical specialties face different challenges than their male peers. However, there is a paucity of literature exploring these challenges and their effects on a Canadian surgeon's career.
Methods. A RedCAP® survey was distributed to Canadian Otolaryngology–Head and Neck Surgery staff and residents in March 2021 using the national society listserv and social media. Questions examined practice patterns, leadership positions, advancement, and experiences of harassment. Gender differences in survey responses were explored.
Results. 183 completed surveys were obtained, representing 21.8% of the Canadian society membership [838 members with 205 (24.4%) women]. 83 respondents self-identified as female (40% response rate) and 100 as male (16% response rate). Female respondents reported significantly fewer residency peers and colleagues identifying as their gender ($p < .001$). Female respondents were significantly less likely to agree with the statement "My department had the same expectations of residents regardless of gender" ($p < .001$). Similar results were observed in questions about fair evaluation, equal treatment, and leadership opportunities (all $p < .001$). Male respondents held the majority of department chair ($p = .005$), site chief ($p = .002$), division chief ($p < .001$), and program director positions ($p = .015$). Women reported experiencing significantly more verbal harassment and more harassment from patients or family members compared to male colleagues ($p < .001$).
Discussion. There is a gender difference in the experience and treatment of OHNS residents and staff. By shedding light on this topic, as a specialty, we can and must move towards greater diversity and equality.

13:40 – 13:45 Interactive Discussion

13:45 – 13:55 **Dr. Gina Trinh** (Supervisor: Dr. Danielle MacNeil)

Primary Care Physician Engagement in Head and Neck Cancer Survivorship Care: Current Practices and Barriers

Introduction: Head and neck cancer survivors require long term management from both specialists and primary care physicians. Transition from specialist care back to primary care is not clear. Our study aims to elucidate the current perceptions and barriers to survivorship care and identify issues to improve.
Methods: Survey of topics relating to HNC survivorship care was developed in conjunction with otolaryngology and primary care physicians. The survey was distributed to members of the multidisciplinary care team their input. The finalized survey was distributed to primary care physicians within our region by email with a link or QR code.
Results: a total of 35 physicians responded, 32 completing the full survey. There was a wide distribution of HNC survivors within each PCP's practice. Most PCP felt comfortable with general issues such as physical, psychosocial symptoms, sleep, pain, caregiver burnout and addictions health. They reported less familiarity with cancer specific symptoms such as chemo brain, lymphedema or dystonias. The majority of PCP did not feel there was a clear transition from specialist care to primary care. PCP affirmed that a personalized survivorship plans for their patients would be helpful, even before the patient's treatment has concluded.
Conclusions: PCP are interested in learning about cancer treatment related issues to better serve survivors. We identified areas of deficiencies to address. A personalized survivorship care plan for each patient will be helpful in management these patients in the long term.

13:55 – 14:00	Interactive Discussion
14:00 – 14:20	Break
14:20 – 14:25	Introduction of Dr. Eytan David, Distinguished Guest Alumnus
14:25 – 15:10	**Dr. Eytan David: VEMPs, Vestibular Retraining, and Vinyl vs Digital: An Auditory Vestibular Narrative** **By the end of this session, participants will be able to:** 1. Describe the clinically meaningful parameters in VEMP testing 2. Review the results of a pilot study of vestibular retraining on self-perceived dizziness symptoms 3. Review the results of a pilot study of vestibular retraining using objective parameters 4. Appreciate the commonalities between the auditory and vestibular systems 5. Describe digital versus analog high fidelity music reproduction and the latter's implications for the vestibular system
15:10 – 15:25	Interactive Discussion
15:25 – 15:30	Residents Day Attendee Draw
15:30 – 15:35	Simon Kirby Most Caring Resident Award
15:35 – 15:45	Farewell message to PGY5 Residents
15:45 – 15:50	Evaluation Form Completion, Announcements, Final Comments
16:15 – 16:45	Awards Ceremony

AWARDS AND PRIZES

SIMON KIRBY MOST CARING RESIDENT AWARD
Presented to the resident who demonstrates excellence in compassionate care

OUTSTANDING RESIDENT TEACHER AWARD FOR POSTGRADUATE EDUCATION
Presented to a senior resident (PGY 4 or 5) who has provided consistently outstanding teaching experiences to their junior residents

CHESKI INNOVATIVE RESIDENTS RESEARCH FUND AWARD
Presented for the most novel research project

UNDERGRADUATE TEACHING AWARD
Presented to the resident with the highest teaching evaluation

EXCELLENCE IN UNDERGRADUATE MEDICAL EDUCATION AWARD
Presented to a faculty member who has demonstrated excellence in undergraduate medical education to all students

PETER CHESKI INNOVATIVE RESEARCH AWARD
Presented for the most innovative research project

C. A. THOMPSON SCIENTIFIC ACHIEVEMENT AWARD
Presented for the most impactful research project

DR. W. GREGORY CHERNOFF IMPACTFUL PRESENTATION AWARD
Presented for the most skillfully presented project

RESIDENT AWARDS
Presented to residents who did not receive one of the above awards

CLINICAL TEACHERS AWARD FOR RESIDENCY TEACHING

Presented to a faculty member who has provided consistently outstanding teaching experiences to all Residents

This program was supported in part by an education grant from the following sponsors

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