



18TH ANNUAL RESEARCH DAY

APRIL 24, 2024



McGill

Faculty of
Dental Medicine and
Oral Health Sciences

Faculté de
médecine dentaire et des
sciences de la santé orale

Land Acknowledgement

McGill University is on land which has long served as a site of meeting and exchange amongst Indigenous peoples, including the Haudenosaunee and Anishinabeg nations. We acknowledge and thank the diverse Indigenous peoples whose presence marks this territory on which peoples of the world now gather.

L'Université McGill est située sur un territoire qui a longtemps servi de lieu de rencontre et d'échange autochtone, notamment pour les Haudenosaunee et les Anishinaabeg. Nous saluons et remercions les divers peuples autochtones qui ont enrichi de leur présence ce territoire qui accueille aujourd'hui des gens de partout dans le monde.

Welcome to the 18th Annual Research Day of McGill University's Faculty of Dental Medicine and Oral Health Sciences!

We are celebrating the remarkable achievements of our graduate and undergraduate students, with over 80 oral and poster presentations of their research findings. These presentations cover a vast array of areas related to dental and oral health sciences, showcasing the depth and breadth of knowledge and expertise within our Faculty.

We are honored to have two outstanding keynote speakers this year: Professor Eduardo Franco of the Division of Cancer Epidemiology of McGill, and Dr. Paul Zaslansky of Charité - Universitätsmedizin Berlin. Professor Franco will share his thoughts with us on the future of scientific publishing in the face of open-access publications, and Dr. Zaslansky will share his recent insights in the pros and cons of using research-grade tomographic methods for looking at bone structure.

Research Day is not possible without the efforts of our dedicated organizing committee, who have worked relentlessly over the past several months to design the scientific program, find keynote speakers, and evaluate submissions. Their hard work is key to the success of this event.

We are truly grateful to all of our session moderators and judges for their generosity in contributing their time and expertise to evaluate the oral and poster presentations.

Finally, we would like to express our deepest gratitude to all of our sponsors for their invaluable support. Your contributions allow us to recognize the outstanding work conducted by our students and award them for their exceptional efforts.

We thank you for joining us today, and we hope that you enjoy the presentations and the lively discussions. On behalf of the organizing committee, we wish you a fruitful and engaging 18th Annual Research Day.

Sincerely,

Bettina Willie
Academic Chair, Organizing Committee

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People

Organizing Committee

Bettina Willie, Crystal Noronha, Dana Jafarpour, Chelsea Wang, Janaki Iyer, Amal Idrissi Janati, Beatriz Dos Santos, Svetlana Tikhonova, Gauri Sethi

Students and Staff

Arvhic Salazar, Kevin Calder, Daniela Botoca, Despoina Moirakidou, Raphael Chackal

Session Moderators

Mohammed Badwelan, Yue Ying, Akshaya Upadhyay, Rachita Seth, Krithika Priyadharshini Arunagiri, Muhammad Khan, Nona Attaran Kakhki, Nasim Khosravi

Poster Presentation Judges

Mari Kaartinen, Simon Tran, Nathalie Reznikov, Pierre Moffatt, Carolina Meloto, Amal Idrissi Janati, Sreenath Madathil, Nora Makansi, Svetlana Tikhonova, Alissa Levine, Raphael de Souza, Jordan Gigliotti, Etienne Vachon-Preseu, Emerson Krock

Oral Presentation Judges

Paul Allison, Marc O. Martel, Monzur Murshed

Lightning Talk Judges

Elham Emami, Amal Idrissi Janati

Critically Appraised Topic Summaries Judges

Beatriz Ferraz Dos Santos, Julia Cohen-Lévy, Jad El Jabi, Samira Amini

Sponsors and Donors

We would like to thank our sponsors and donors for their generous support, without whom the 18th Annual Research Day would not have been possible.



SUNSTAR



**Network for Canadian
Oral Health Research**
**Réseau canadien de recherche
en santé buccodentaire**



123DENTIST
We'll make you smile.

Event Schedule

8:00-8:25 a.m.	Registration
8:25-8:30 a.m.	Land acknowledgement
8:30-8:45 a.m.	Welcome address by Associate Dean, Research and Graduate Education, Bettina Willie
8:45-9:45 a.m.	Oral presentations
9:45-10:25 a.m.	Professor Eduardo Franco "The Uncertain Future of Scholarly Publishing in Sciences"
10:25-10:40 a.m.	Coffee break
10:40-11:40 a.m.	Oral presentations
11:45-12:00 p.m.	RiSBOD presentation
12:00-1:30 p.m.	Lunch and Poster Sessions
1:30-2:10 p.m.	Dr. Timothy J. Quirt "The impact of AI on the future of Dentistry"
2:10-2:50 p.m.	Dr. Paul Zaslansky "Radiation, radiography and bones: a love-hate relationship, especially at high resolutions"
2:50-3:50 p.m.	Oral presentations
3:50 - 4:20 p.m.	Lightning talk
4:20-4:45 p.m.	Coffee Break
4.45-5:30 p.m.	Awards Ceremony
5:30-5:35 p.m.	Research Day Committee address and thank you from Dean Elham Emami

Keynote Speakers

THE UNCERTAIN FUTURE OF SCHOLARLY PUBLISHING IN SCIENCES

Eduardo L. Franco

Eduardo L. Franco is a Distinguished James McGill Professor and Director of the Division of Cancer Epidemiology and former Chairman (2011-2023) of the Department of Oncology at McGill. Since 1985, he has conducted epidemiologic research on the causes of cancer and on the means to prevent it or to improve patient survival, topics on which he has published hundreds of articles and two books. He is the Editor-in-Chief of the Journal of the National Cancer Institute, Editor-in-Chief Emeritus of Preventive Medicine, and Senior Editor of eLife. He is an Officer of the Order of Canada and a Fellow of the Royal Society of Canada and of the Canadian Academy of Health Sciences.



The Uncertain Future of Scholarly Publishing in Sciences

Science communication has a 350-year history. In the second half of the 20th century, academic publishing became a mostly for-profit activity, justified by the complex logistics of curating science, printing journals, and distributing them to institutions and individuals. The advent of the Internet in the mid-1990s disrupted this process, considerably lowering the costs of publishing scientific journals, but the savings were not passed on to consumers, i.e., academic libraries and subscribers. This untenable situation led to the onset of the open-access (OA) movement at the turn of the century, which shifted the costs of publishing from readers to authors, thus democratizing access to scientific knowledge. The OA business model is widely seen as improving how science is disseminated, but there were unintended consequences. The last decade has also ushered in open science principles, which have changed academia's attitudes and beliefs concerning the role of peer review and the value of expedited dissemination of scientific findings via publicly accessible preprint archives. As we experiment with new concepts in academic publishing, the credibility of science and scientists has reached what is arguably its lowest level in history. Moving forward, we must not lose sight of the critical importance of teaching integrity in science to those entering the profession. Integrity must go hand-in-hand with the passion for discovery.

Keynote Speakers

RADIATION, RADIOGRAPHY AND BONES: A LOVE-HATE RELATIONSHIP, ESPECIALLY AT HIGH RESOLUTIONS

Paul Zaslansky

Dr. Paul Zaslansky graduated as Doctor of Medical Dentistry (DMD) from the Hebrew University-Hadassah, Jerusalem in 1991 and worked as a private and community dentist for nearly a decade. In 2005 he obtained his PhD at the Weizmann Institute of Science in Israel on the subject of structure-function relations in human teeth followed by postdoctoral training in the department of Biomaterials in the Max-Planck Institute for Colloids and Interfaces, Potsdam, Germany. In 2011 he became a staff scientist at the Julius Wolff Institute for bone regeneration in the Orthopedics biomechanics labs of the Charité - Universitätsmedizin Berlin. He moved to the Center for Dental and Craniofacial Sciences dental school in 2016, where he set up AG Zaslansky based on several DFG funded projects. He recently became a Professor of Material Science in Dentistry in the Department of Operative, Preventive and Pediatric Dentistry of the CharitéCenter for Oral Health Sciences. He is the speaker of the DFG funded research group FOR2084: InterDent bridging the disciplines of materials science and dentistry for improving the longevity of dental interzones. His biomineralization research interests span coral to bones and teeth.



Radiation, radiography and bones: a love-hate relationship, especially at high resolutions

X-rays and other forms of radiation are widely used for imaging of bones and similar biomineralized tissues, complementing analysis by electron microscopy methods. The high density of calcium in bones and similar biogenic ECM matrices almost begs analysis by X-ray radiation methods, though other forms of radiography, such as neutrons, also deliver structural insights. The main challenge relates to understanding the structure at higher resolution and high sensitivity. One common approach is to using increasingly available high-power and high-energy radiation sources. Less known is that, when bony tissue samples are exposed to high flux, a significant amount of the incoming energy is absorbed by different compartments in the mineralized matrix. In this presentation we showcase some recent insights into bone structure taking into consideration pros and cons of using exciting research-grade tomographic methods.



Awards

Prizes are sponsored by our generous donors: 123 Dentist, Réseau québécois de recherche intersectorielle en santé buccodentaire et osseuse durable, Sunstar, Colgate-Palmolive, and the Network for Canadian Oral Health Research



DMD CAT appraisal

3 prizes of \$3,000 sponsored by 123Dentist and Sunstar



DMD Summer

1 prize of \$200



Residents prize: GPR

1 prize of \$250 sponsored by Nikhil Sharma



Residents prize: OMFS

1 prize of \$250



Best Poster Presentation

3 prizes of \$300, \$200, and \$100



Best Lightning Talk

1 prize of \$200



Best Oral presentation prize

3 prizes of \$300, \$200, and \$100



Knowledge Translation

1 prize of \$100



Best Publication

2 prizes of \$100

Oral Presentations

Oral Presenters	Title	Time
Grusha Akade	Patient and Caregiver's Experiences with Home-Based Oral Health Care Services in Quebec: A Qualitative Study	8:45-9:45 a.m.
Allutas Alhamwi	Perineuronal Nets in Dorsal Root Ganglia: Implications for Chemotherapy-Induced Peripheral Neuropathy and Pain Modulation	8:45-9:45 a.m.
Hans Shih/Jacob Thomas	Depth of invasion threshold for recommending elective neck dissection in T1 and T2 oral squamous cell carcinoma	8:45-9:45 a.m.
Antoine Karoichan	Mesenchymal Stem Cell-Derived Extracellular Vesicles Mimetics for Enhanced Bone Healing and Regeneration	8:45-9:45 a.m.
Leandro Machado Oliveira	A cross-national comparison of the alcohol harm paradox on tooth loss among older adults in Brazil and the United States	8:45-9:45 a.m.
Alicia Bessette-Leclerc	Parents' perceptions of oral health behavior practices at home for their children with Autism Spectrum Disorder	10:40-11:40 a.m.
Joshua Hazan Mea	Chronic Pain Characterization in New Murine Model of Traumatic Spinal Cord Injury	10:40-11:40 a.m.
Mridul Sharma	Uncertainty Quantification of Large Language Models in Oral Lesion Diagnosis	10:40-11:40 a.m.
Yue Ying	Composition of oral microbiota and dental caries	10:40-11:40 a.m.
Neha Dinesh	Fibronectin in Postnatal Skeletal Development	10:40-11:40 a.m.
David Bertrand	Adaptive Response to Loading is Impaired in a Mouse Model of Osteogenesis Imperfecta Coincident with Altered Periosteal Lacunar Properties	10:40-11:40 a.m.
Ghazoua Mezni	L'Analyse de l'Impact du PAC sur le Traitement et la Prévention des Infections bucco-dentaires	2:50-3:50 p.m.
Megan Araujo	Immune recruitment and HPV subtype in predicting response to neo-adjuvant chemotherapy: insights into head and neck cancer	2:50-3:50 p.m.
Rachita Seth	Sensitivity to change of the COVID-19 Anxiety Syndrome Scale among Canadian dentists	2:50-3:50 p.m.
Wen Bo Sam Zhou		2:50-3:50 p.m.
Mahdokht Mahmoodi	Plasma fibronectin regulates trabecular bone mass and bone remodeling in aging mice	2:50-3:50 p.m.
Akshaya Upadhyay	Treatment of Salivary Gland Organotypic Tissue Culture Slices with Mesenchymal Stem Cell Conditioned Media Ameliorates Radiation Injury	2:50-3:50 p.m.

Poster Presentations

12:00-1:30 p.m.

Poster ID	Poster Presenters	Title
1	Mahdokht Mahmoodi	Decreased plasma fibronectin levels are associated with increased fracture rates in men – a pilot study on Canadian Multicentre Osteoporosis Study (CaMos) participants
2	Mahdokht Mahmoodi	Plasma fibronectin contributes to adipose tissue extracellular matrix, affects adipocyte differentiation and insulin sensitivity of normal adipose tissue
3	Fatemeh Soltani	Neutrophil Factor XIII-A transglutaminase contributes to Neutrophil Extracellular Trap (NET)-mediated fibrin network formation and crosslinking
4	Taylor DeVet	Examining the role of the osteocyte lacunocanalicular network architecture in craniosynostosis
5	Madalina Patron	Scoping Review of literature on Ground-Based Models of whole-body Cosmic Radiation exposure in rodents
6	Meghan Morrell	Systemic Administration of Bone-Targeting Anabolic Drug Mes-1022 to Accelerate Early Bone Healing
7	Priyesh Patel	Development of rare disease meta-analysis, a meta-analytical method incorporating case studies
8	Valentin Nelea	Cryo-electron microscopy structure and functional characterization of microfibril-associated glycoprotein 4 with relevance to elastogenesis
9	Sahar Ebrahimi Samani	Transglutaminase 1 – a novel regulator of osteoclastogenesis and bone remodeling: insights from in vitro and in vivo studies
10	Joseph Deering	Multiscale formation of mineralized tissues: Insight from the 3D structure of the reptilian eggshell
11	Neha Dinesh	Fibronectin Mutations Impair Chondrogenesis in Spondylometaphyseal Dysplasia
12	Benazir Khurshid	Characterization of mineralized bone trabeculae formed in vitro by the OmGFP66 osteogenic cell line
13	Isabela Vitienes	In vivo loading impairs bone microstructure and endocortical bone formation in chickens
14	Elahe Mirzarazi-Dahaghi	Plasma Fibronectin Regulates Adipocyte Differentiation and Lipid Droplet Size
15	Muaddi Hassan	Chitosan scaffold seeded with neuron-like cells differentiated from labial salivary gland derived mesenchymal stem cells promote regeneration of rats sciatic nerve
16	Sabah Oghazian	The Role of Physical Effects in Material Induced Bone Formation
17	Mariia Mielkozorova	Localization and quantification of stem cells in salivary glands of different age and sex groups

Poster Presentations

12:00-1:30 p.m.

Poster ID	Poster Presenters	Title
18	Sarah Boucenna	Investigation of β cell-derived extracellular vesicles in stimulating the insulin secretion in mouse cell spheroids
19	Sarah Ford	Bone formation by osteoid-osteocytes and osteocytes in C57Bl/6 mice
20	Ramshaa Mahalingam	Fibulins and LTBP4 Interact with Syndecans to Regulate Elastogenesis
21	Iram Fatima Siddiqui	Adipose tissue-specific fibrillin-1 knockdown leads to reduced body weight and causes metabolic dysregulation
22	Nadine Lebcir	Effect of Botulinum Toxin (A) injections on locomotion and bone architecture in unloading mouse model
23	Yannis Karamitsos	Epithelial Cell Adaptation on Nanoporous Titanium Surfaces
24	Nesma El-Amier	3D-Printed Polyether Ether Ketone (PEEK) for Biohybrid Root-Analogue Dental Implants
25	Ahmad AlAli	Robotic Orthognathic Surgery: Proof of concept preliminary study
26	Hawraa Issa	Eugenol as a potential adjuvant therapy for gingiva carcinoma
27	Matthew Faigan	Patient Perceived Functional and Esthetic Outcomes Following Orthognathic Surgery in Patients with Anxiety, Depression, or Body Dysmorphic Disorder
28	Jenna Bouassaly	Understanding the genetic factors associated with treatment response in HPV-related head and neck cancer
29	Varsha Reddy Durgempud	Role of soluble CD109 in the progression of oral squamous cell carcinoma
30	Vallerie Markopoulos	Timing of and reason for the first dental visit in pediatric patients diagnosed with Global Developmental Delay
31	Manal Dahdah	Exploration du potentiel antifongique du Virolexir dans le domaine de la santé buccodentaire
32	Assia Tsyvian	How Does the Diagnosis of Potentially Malignant Oral Disorder Affect Smoking Behaviors and Alcohol Use? Protocol of a Retrospective Cohort Study
33	Jesse Ilbanez	Is Same-Day Discharge Safe for Outpatient Orthognathic Surgery? - A research Protocol
34	Marjana Ali	Utilization of Psychosocial Oncology Services by Oral Cancer Patients: a Study Protocol

Poster Presentations

12:00-1:30 p.m.

Poster ID	Poster Presenters	Title
35	Heba Madi	Characterizing the inflammation around dental implants: Bacterial infection, hypersensitivity, or both? A Feasibility study
36	Anisha Rodrigues	Zygomatic-implant Fixed Rehabilitation for the Atrophic Maxilla: A Network Meta-analysis
37	Elaheh Akbari	Radiation Impact on Endodontic-Treated Teeth in Head-Neck Cancer Patients
38	Eric Krochmalnek	Retentive Properties of Tin-coated Novaloc and Locator Overdenture Abutments
39	Chetan Shirvankar	User-Centered Development of Humanoid Robots for Primary Care of Older Adults
40	Amees Sanghavi	Validation Of The OHIP-EDENT Using Factor Analysis Methods
41	Yu Yao Chang	Jaw Movement and Orofacial Muscle Activity During Singing
42	Yu Yao Chang	Validity of Remote Video Screening with Screenshot Photography in Orthodontics: A Pilot Study
43	Homa Fathi	Time To Decolonize Global Oral Health
44	Krithika Arunagiri	A Realist Review on Implementation Strategies in Increasing Teledentistry Adoption in Dental Practices
45	Mounah Thoen	Comparison between two nasal rehabilitation methods in children with persisting sleep apnea
47	Mattias Neset	Citizen Science for Optimizing Oral Health Education, Research and Practice: A Scoping Review
48	Isabella Turquete	COVID-19 vaccination in Canadian dental schools
49	Sydney Zuckerman	Shared Genetic Risk Factors Between Periodontal Disease and Colorectal Cancer: A Scoping Review Protocol
50	Shashank Kannan	Factors associated with increased Dental service utilization among Working adults residing in North America- An exploratory review
51	Houda Feguery	COVID-19-Related work absenteeism among students and employees in Canadian Dental Universities

Poster Presentations

12:00-1:30 p.m.

Poster ID	Poster Presenters	Title
52	Harsimran Kapoor	Identifying Differential DNA Methylation Patterns in people with and without Head and Neck Cancer
53	Muhammad Khan	Exploring Corporate Dentistry: A Scoping Review
54	Bahareh Amirhosseini	Implementation Strategies of Evidence-Based Caries Management Approach in Dental Education: a scoping review
55	Victor Thibeault	Clinical and radiographic outcomes of NeoMTA and NeoPUTTY pulpotomies in primary molars: A Randomized Controlled Trial
56	Brodeur Audrey	Return to Work and the Role of Prosthodontic Rehabilitation in Head and Neck Cancer Survivors: a Scoping Review Protocol
57	Claudia Antwi-Boasiako	Sex of Patient influences on the Inflammatory Microenvironment in Head and Neck Cancer
58	Aynaz Khodayari	The Feasibility and Clinical Utility of the Use of Virtual reality (VR) for the Management of Pediatric Dental Anxiety
59	Aia Naksho	Effect of the Radiation therapy on Temporomandibular joint and its function: a prospective study
60	Joseph Petruccelli	Dorsal Scapular Nerve: Is it a target for scapular pain?
61	Aiwei Sun	Therapeutic potentials of extracellular vesicles derived from mouse DRG-conditioned media-primed human mesenchymal stem cells
62	Kioumars Tavakoli Tafti	Evaluation of causal understanding in AI models for oral lesion diagnosis: A counterfactual approach
63	Praveen Kumar Elango	Can Unmeasured Confounders explain Oral Health-Head and Neck Cancer association?
64	Hannah Cho	IgG antibodies from fibromyalgia patients bind more mouse gut bacteria

Lightning Talks

3:50-4:20 p.m.

Lightning Talk Presenter	Title
Zaneta de Souza	A benchmark database for evaluating accuracy, uncertainty, and reasoning abilities of large language models in diagnosing oral cancer
Newsha Toreihi	Creating a Culture of Sustainability in the McGill Faculty of Dental Medicine and Oral Health Sciences
Mai Atique	Genetic Mutations Associated with Inflammatory Response Caused by HPV Integration in Oropharyngeal Squamous Cell Carcinoma
Jax Norman	Racial and Ethnic Discrepancies in Oral Health Conditions in the UK Biobank
Celine Agnes	Encapsulation of Glycogen Synthase Kinase 3B (GSK3 β) Phosphorylation Inhibitor, 6-Bromoindirubin-3'-Oxime (BIO), in a Chitosan Based Scaffold for the Treatment of Critical Size Bone Defects
Abeer Ahmed	Is chronotherapy a pertinent approach in the context of treating osteoporosis?

Critically Appraised Topic Summaries

Groups	Critically Appraised Topic Summary (CAT Summary)
Mahid Syed, Rachel Imai, Jingjing Zhao, Yuyao Chang, Svetlana Tikhonova, Amal Idrissi Janati	Flowable vs. conventional composite: a comparison of restoration success rates for non-carious cervical lesions - CAT Summary
Micaela Buchbinder, Kaitlin Chow, Gucci Ding, Amanda Janes, Ashima Razdan, Svetlana Tikhonova	Can orthodontic vibrational devices accelerate tooth movement? CAT Summary
Quentin Basiren, Michelle Cwintal, Sebastien Bleau, Raphael Chackal, Svetlana Tikhonova	Do bitewing radiography paired with visual-tactile diagnosis lead to better caries treatment outcomes in primary teeth? CAT Summary
Sophia Ghiassi, Jennifer Bilbul, Christina Charara, Camille Contant, Samuel Srinivasan, Svetlana Tikhonova, Amal Idrissi Janati	Survival of different restorative materials used for treatment of class V caries lesions: CAT summary
Joey Chammas, Kenneth Drummond, Matthew Goldsmith, Vishwendra Singh, Svetlana Tikhonova, Amal Idrissi Janati	Are there differences in survival rate between zirconia and porcelain-fused to metal crowns? CAT Summary
Saby Xavier, Jia Xin Li, Eric Ge, Babasola Sodipo, Svetlana Tikhonova	Non-restorative treatments for root caries in adults: CAT Summary
Emily Levens, Eric Krochmalnek, Tudor Ioan, Nicolas Akst, Munzer Alkourdi, Svetlana Tikhonova	What is the effect of silver diamine fluoride combined with potassium iodide on caries arrest and tooth discoloration? CAT summary
Hayeon Min, Damian Rendon, Maryam Minhas, Sabeen Khalid, Sophie Zhu, Svetlana Tikhonova, Amal Idrissi Janati	Resin sealants vs conventional composite restorations for treatment of dentinal lesions on deciduous teeth: CAT summary
Arieh Bouhadana, Tyler Baliesh, Nathaniel Mellul, Reza Shahmohammadi, Ripandeep Kaur, Svetlana Tikhonova	A battle of isolation: cotton rolls versus rubber dam - CAT summary




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THANK YOU



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