



Research Day 2023: Clusters of Diverse Research Excellence

TUESDAY, JANUARY 24 | AMS STUDENT NEST

Presentation Synopses



Cone-Beam Computed Tomography

Dr. David MacDonald, Professor

Cone-beam computed tomography (CBCT), from its commercial debut in 1999, has so deeply penetrated dental practice in the West that it is considered by many as indispensable to their practice. Nevertheless, ALARA, joined by a new safety code 30, urge caution. The radiation dose imparted by this modality is still higher than that of conventional technologies, with the more radiation-sensitive child a pressing concern. Therefore, it must only be used where it can make a real impact on patient care, such as clear diagnostic and therapeutic advantage in complex retreatment endodontic cases. There is the added value of using different reconstructions—especially in the evaluation of difficult impacted teeth and pathology—and also the application of artificial intelligence, such as when identifying the mandibular canal.



The 2020–2021 Students' and Instructors' Experiences: A Cross-Sectional, Multi-Centred Study

Dr. HsingChi von Bergmann, Professor

In this short presentation, data analyses results gathered at both the University of Toronto and the University of British Columbia using SOLO and DEMO surveys will be presented. This study looked at both students' and instructors' perceptions and experiences with on-line education during the first year of the COVID-19 pandemic.



Characterizing the Impact of CSF1R+ Cell Depletion on Craniofacial Development

Dr. Jessica Rosin, Assistant Professor

Depleting colony-stimulating factor-1 receptor (CSF1R)-expressing cells (i.e., microglia, macrophages, osteoclasts, etc.) during embryogenesis (E3.5 to birth) in mice using the CSF1R inhibitor PLX5622 results in craniofacial and dental abnormalities in P21 and P28 offspring. Using this pharmacological mouse model as an entry point to study the involvement of CSF1R+ cells in craniofacial morphogenesis, this talk describes the wide range of phenotypes that are apparent as early as E11.5. Specifically, I will discuss the impact of CSF1R+ cell depletion on the development of nerves, muscles, and various craniofacial bones during embryogenesis and early postnatally. Detailed characterization of the vast craniofacial disruptions associated with this pharmacological mouse model will help us better understand the cellular processes that go awry during development.