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|  | **Conference Professor Alexis Gaudin****Friday December 5 from 10 a.m. to 12 p.m.** |

**Title**
**Specialized Pro-Resolving Mediators: A novel pathway to preserve and regenerate the dental pulp?**

**Abstract**

Dental caries, the leading cause of pulpitis, affects nearly 2.4 billion people worldwide and threatens the dentin–pulp complex, which is essential for tooth vitality and structural integrity. While root canal treatment effectively eliminates infection, it entails major functional losses: abolition of sensory function and immune responsiveness, reduced reparative dentinogenesis, and an increased risk of fracture. Moreover, inadequate management of dental infections may exacerbate systemic comorbidities.

Vital pulp therapies offer a minimally invasive alternative but remain challenged by persistent biofilms and uncontrolled widespread inflammation; regenerative approaches face similar obstacles. Specialized pro-resolving mediators (SPMs): lipoxins, resolvins, maresins, and protectins actively drive the resolution of inflammation, promote tissue repair, and may modulate pain without inducing immunosuppression. Their potential, well established in other medical fields, remains underexplored in dentistry, mainly due to their instability and short half-life, highlighting the need for innovative delivery systems (e.g., hydrogels, nanoemulsions).

This lecture will present the biology of SPMs, preclinical evidence in pulpal and periapical contexts, and emerging translational avenues toward personalized regenerative strategies aimed at preserving vitality and allowing the pulp to heal itself.