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Translating Innovation into Impact: Our Journey with the Low-Dose Radialis Positron Emission Mammography System

Tuesday 10 June 2025 10:15 (30 minutes)

Early and accurate detection of breast cancer in high-risk women with dense breast tissue remains a critical unmet clinical need, as conventional mammography is less effective for these patients due to tissue density obscuring cancerous lesions. To address this challenge, we have developed an innovative molecular imaging technology: ultra-high sensitivity, low-dose breast-targeted Positron Emission Tomography (PET), often referred to as Radialis Positron Emission Mammography (Radialis PEM). This presentation highlights our journey from fundamental physics research to commercialization through the Radialis venture, and the clinical implementation of Radialis PEM.

Pioneered at Lakehead University and the Thunder Bay Regional Health Research Institute, our breast-targeted PET technology leverages novel detector designs and advanced engineering to achieve a tenfold reduction in radiation dose compared to traditional whole-body PET, while enhancing diagnostic accuracy. Clinical results demonstrate Radialis PEM's ability to detect cancers missed by conventional mammography, reduce unnecessary biopsies, and address overdiagnosis associated with other imaging modalities such as MRI.

The presentation will also explore the broader potential of targeted PET imaging for other cancers, including prostate cancer, and outline the path from academic research to regulatory approval and commercialization. By bridging physics, engineering, and clinical practice, this work demonstrates how innovation can translate into real-world impact, improving patient outcomes and advancing the field of medical imaging.

Keyword-1

Keyword-2

Keyword-3

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