Supervisor/Project Information Form

Supervisor Name: Navneet Singh MD MPH PhD

Project Title: Detection of Human Coronary Inflammation by Perivascular Adipose Tissue Computed Tomography Imaging

Hospital/Research Institution: Sunnybrook Health Sciences/Sunnybrook Research Institute

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Field of Research (2 keywords): radiology, cardiology

Department: Medical Imaging

School of Graduate Studies Appointment (IMS, LMP, IHPME etc)? Yes/No: No.

If YES, please name:
**Brief Project Description (<300 words):**

Coronary inflammation is a hallmark of atherosclerosis (1). Early identification of coronary inflammation would allow for targeted prevention and intervention strategies. Existing biochemical and imaging markers are deficient in their ability to reliably detect and measure coronary inflammation.

Perivascular adipose tissue (PVAT) is emerging as a promising measurable sensor of coronary inflammation (3) and predictor of coronary events in humans (4). Early and accurate identification of coronary inflammation would also allow for targeted prevention and intervention strategies.

CT allows measurement of PVAT overcoming limitations of existing efforts to detect and monitor changes in coronary inflammation.

This project therefore aims to investigate CT for PVAT identification, quantification, and monitoring of serial changes in a cohort of patients.

The project would involve setting up recruiting patients, setting up new scanner protocols, and reliability studies.

It is expected that this project would generate at least one peer-reviewed publication. The student would gain skills in scanning protocols and post-processing imaging software while studying a novel imaging biomarker.

Please e-mail me if you would like further information regarding the specifics for this project!