



Jewish General Hospital
Lady Davis Institute for Medical Research



"Random walks: A journey from physics to functional brain imaging"

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Abstract:

Functional Magnetic Resonance Imaging (fMRI) using the Blood Oxygen Level Dependent (BOLD) contrast had its origins in Bell Labs, but has found application across disciplines as disparate as psychology, physiology, marketing and medicine. As with many discoveries, serendipity played a large part in the story and in the first half of the seminar I'll tell that story from my perspective. In the second half of the seminar, I'll present some of the physics and physiology that governs fMRI at the submillimetre scale and the technological challenges that have to be met to do functional imaging in the human brain at the columnar and laminar level - levels that define the fundamental building blocks of mesoscopic cortical organization.