Postdoctoral Researcher in simultaneous fMRI and Deep Brain Stimulation with Dr. Alexandre Boutet, MD PhD, Dr. Andres Lozano, MD PhD and Dr. Jurgen Germann, PhD

Krembil Brain Institute, Toronto Western Hospital, University of Toronto

Dr. Alexandre Boutet is a neuroradiologist and early career clinician scientist with more than 150 publications and over 6000 citations. He serves as the Slaight Neuroradiology Lead for Clinical Translation at the University Health Network. His group has developed high field fMRI methods for deep brain stimulation, advanced MR techniques for focused ultrasound, and safety frameworks that have enabled spine and brain imaging in patients with implanted DBS devices. The lab integrates clinical imaging, MR physics, focused ultrasound, and computational approaches to advance image guided neuromodulation.

Dr. Andres Lozano is a world renowned functional neurosurgeon who has several landmark publications in neuromodulation.

Dr. Jurgen Germann is a neuroimaging scientist with extensive expertise in neuroimaging analysis.

Location: Toronto Western Hospital
Collaborations with Movement Disorders Neurology (Dr. Alfonso Fasano) and GE HealthCare

Project Summary
This fellowship supports an NIH funded project that will acquire concurrent DBS stimulation with whole brain fMRI at 3T to identify biomarkers of neuromodulation in movement disorders. The goal is to map whole brain activity patterns during stimulation and to establish imaging biomarkers that predict clinical response and optimal stimulation.

Responsibilities
- Design and implement task based and resting state fMRI paradigms for DBS patients.
- Coordinate imaging sessions with neurology and neurosurgery teams.
- Develop preprocessing and analysis workflows for stimulation conditioned BOLD responses.
- Perform network level analyses, including connectivity, graph metrics, and network modeling.

Ideal Candidate

- PhD in neuroscience, biomedical engineering, neuroimaging, medical physics, or a related discipline.
- Strong experience with fMRI methods, neuroimaging pipelines, and statistical modeling. Familiarity with DBS, neuromodulation, or intracranial electrophysiology is helpful.
- Interest in translational neuroimaging and mechanistic approaches to movement disorders.

Opportunities
- Work within one of the leading DBS imaging programs internationally.
- Access to 3T MRI, large clinical cohorts, and surgical electrophysiology data.
- Ability to contribute to a landmark first in human imaging methodology.

Please submit applications including a brief letter of interest, and CV to:
https://forms.gle/nAmjVdazuXprxt3p7