

November 29, 2019

RE: Master Project on Tissue Characterization with Cardiac Magnetic Resonance Imaging (MRI)
Boston Children's Hospital, Harvard Medical School, Boston, Massachusetts, USA

Cardiovascular MRI Center at Boston Children's Hospital and Harvard Medical School is looking for a graduate student in the area of tissue characterization with cardiac MRI in children and fetuses. The successful candidate should have background in mathematics, signal processing, and computer programming including MATLAB and C++.

The longitudinal and transvers relaxation times (T_1 and T_2) have long been used for tissue characterization in adults. More recently, there has been a surge in interest in measuring T_1 and T_2 of the myocardium with cardiac MRI. Increased non-contrast myocardial T_1 value have been related to the myocardial infarction. In this project, we aim to develop a sequence to simultaneously estimate the T_1 and T_2 of the myocardium in children and fetuses.

Task List

- To review the relevant literature.
- To develop and implement a new sequence for simultaneous estimation of T_1 and T_2 .
- To evaluate the development on children and fetuses.
- To report the results at the Journal of Magnetic Resonance in Medicine.

Requirements

- Solid background in mathematics, signal processing, and computer programming.
- Scholarship and/or own sufficient financial resources to cover the living expenditure (\$12,000-\$15,000).
- Starting the project in April 2020.
- The project will take 6-8 months for Master Thesis.

Candidates with an interest in this position should contact Mehdi Hedjazi Moghari at Boston Children's Hospital by mid-January 2020:

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