Post-Doctoral Fellowship in Cardiac MRI

Job description

This research position is part of the research project “ECSTATIC” started in 2017 and funded by the European Research Council (http://cordis.europa.eu/project/rcn/206486_fr.html). Objective is to develop new MRI techniques to better characterize the myocardial structural remodelling responsible for cardiac electrical diseases (fibrosis/fatty infiltrations, myofibrillar disarray).

You will be in charge of developing new imaging methods with high spatial resolution and robust against respiratory and cardiac motions. These new imaging sequences will exploit acceleration techniques recently proposed in the literature (SMS, parallel imaging) and/or non-Cartesian sampling of the k-space, with associated image reconstruction algorithms.

The successful candidate should hold a PhD in physics or biomedical engineering with strong background in one or more of the following fields:

- MRI physics and pulse sequence development
- Scientific programming (GPU computing, C/C++, MATLAB, Python), including image reconstruction and motion correction
- Cardiac MRI

A record of peer reviewed journal publications is required.

Research environment

LIRYC is a multidisciplinary research institute dedicated to the study of cardiac electrical diseases. LIRYC currently hosts 120+ researchers with unique competencies and equipment to conduct State-of-the-art research on cardiac electrical diseases. It is highly multidisciplinary, as it comprises experts in applied mathematics, biophysical and statistical modelling, signal processing, imaging, electrophysiology, engineering, all focusing on the topic of electrical disorders of the heart. These diseases are characterized clinically, the Bordeaux Electrophysiology (EP) team being a long time world leader in the field, as well as in large animal models of various electrical disorders which are explored in vivo using MRI and EP mapping (contact and non-contact), and ex vivo from the working organ to the cell level (optical mapping, high field MRI, confocal microscopy, patch clamp).

The site includes 2 MRI systems dedicated to cardiology (one in the hospital and 1 in the lab for large animals and volunteers), 2 combined EP-MRI suites (also one in the hospital and 1 in the lab), and 1 large bore 9.4T MRI for ex vivo imaging on explanted hearts (including human hearts).

Appointment Length and Duration: 2-years post-doctoral fellowship. Start date January 2018 or earlier.

Contact: Please send request for further details on job description or apply by sending CV and motivation letter to Dr. Bruno Quesson (bruno.quesson@u-bordeaux.fr)