# PhD grant in Bordeaux, FranceURGENT !!MRI characterization of the metastatic dissemination in mice

A doctoral research fellow is offered at the CRMSB (Centre de Résonance Magnétique des Systèmes Biologiques) (UMR 5536-Université Bordeaux, Dir : JM Franconi, Dir-Adjoint : S Miraux) in Bordeaux, France. This position is funded by the french government. This project seeks to develop MRI sequences in order to detect early, follow and quantify the dissemination of cancer cells from a primary tumor. Indeed, in most cases, patients survivals drop after the treatment of the primary tumor and when metastases develop in several organs of the body. Consequently, there is need to get more knowledge about metastasis development in an integrative manner.

For this purpose, whole-body imaging will be necessary, generating long acquisition time and motion artifact mainly. Consequently, non-cartesian encoding methods, motion-supression modules will be developed. Furthermore, the combination of the new sequences with a new whole-body MR coil will have to be evaluated.

Mice bearing orthotopic breast primary tumors or melanoma will be scanned repetitively in order to obtain longitudinal information on the disseminated cancer cells.

The project will be performed at 7T using a small-animal Bruker system.

The project, in collaboration with biologists, chemists and physicists, offers the unique opportunity to work at the interface between different disciplines.

### **Research topics:**

- **MRI** (Magnetic Resonance Imaging)

- Cell Biology (Iron-based Particles - Cell labeling - Cell culture)

Key words: MRI - Metastasis - Sequence - Iron Particle - Whole-body - mouse

# **Research facilities:**

### **Research team:**

The PhD student will be under the supervision of **Dr Emeline Ribot**, CR2 CNRS in an interdisciplinary team (Biologist and physicists).

Members of the team: 2 CR CNRS in MRI, 1 MCU in BioPhysics, 2 post-doc, 1 technician in cell biology, 1 CNRS engineer in MRI.

### **Research Environment :**

This doctoral proposal provides an excellent opportunity to work in an interdisciplinary environment. The team has strong connections with several industrial partners in imaging (Brüker Biospin).

# Laboratory facilities:

The candidate will benefit from numerous MRI scanners (systems at 0.2, 1.5, 3, 4.7, and 7T) and a molecular and cellular biology platform.

The CRMSB laboratory has at its disposal its own nursery.

# **Candidate profile:**

Proficiency in bioimaging, MRI data acquisition and analysis is needed. Considering the pluridisciplinarity of the project, knowledge and/or interest in biology and MR physics is necessary. How to Apply: please send CV and application letter to <u>ribot@rmsb.u-bordeaux2.fr</u>

# Location:

Centre de Résonance Magnétique des Systèmes Biologiques- UMR 5536 CNRS/Université Bordeaux

Lab website: http://www.rmsb.u-bordeaux2.fr/