Post-doctoral position – Interventional MRI – High Intensity Focused Ultrasound
IHU LIRYC – Hôpital X Arnozan, Avenue du Haut Lévêque – 33600 Pessac France
Bruno Quesson – bruno.quetson@u-bordeaux.fr

How to Apply: please send CV and application letter to bruno.quesson@u-bordeaux.fr.

Job description – interventional MRI - HIFU
A 2 years post-doctoral position is immediately available at university of Bordeaux in the field of Magnetic Resonance guided High Intensity Focused Ultrasound (MR-HIFU). Several topics will be part of the research project, including:
- the development of new methods and preclinical applications of MR-HIFU (e.g. cardiology)
- the development of rapid and high resolution MR thermometry and HIFU methods at 9.4 T on rodents
- the development of MR-HIFU at 1.5T for the non-invasive treatment of breast tumors, in collaboration with the Anticancer Center Bergonié (Dr J Palussière, Bordeaux) and University of Utah (Pr Dennis Parker, Salt Lake city, USA).

Candidate profile
A candidate holding a PhD in MRI methodology, with strong background in MR physics and pulse sequence programming in either Bruker or Siemens MRI systems. Good skills in Matlab and C++ programming and established experience in interventional MRI and/or HIFU will also be considered as added values for this position. The candidate will integrate the imaging team (head Dr Bruno Quesson) of the IHU LIRYC Institute, and will work in close collaboration with all the members of the imaging team together with academic researchers and clinicians.

Research facilities

**HIFU systems:**
1- a MR compatible 256 elements phased array HIFU system (transducer and generator) dedicated to preclinical research at 1.5T on large animals.
2- a MR compatible 8 elements HIFU system dedicated to preclinical research at 9.4T on rodents.
3- a MR compatible 256 elements phased array HIFU system dedicated to the clinical treatment of breast cancer.

Each HIFU system is driven with the same software interface (Thermoguide™, Image Guided Therapy SA- Pessac, France) for planning of the treatment, online display of MR-temperature images and control of individual electrical signals driving each transducer element. Access to programming environment for implementation of new software modules is available with support from the company located at direct vicinity from the research lab.

**MRI systems:**
1- a 1.5T Siemens (avanto) MRI magnet 100% dedicated to MR methodology developments and preclinical imaging (IHU LIRYC).
2- a 9.4T/30 cm Bruker horizontal bore magnet 100% dedicated to research.
3- a 1.5T Siemens (Aera) MRI magnet dedicated to clinical imaging (Anticancer center Bergonié) with dedicated time to clinical treatment of breast cancer with MR-HIFU.

For each system, the pulse programming environment for MRI sequence development is available, with internal expertise of the research team in real-time MRI (fast acquisition sequences, online raw data transfer and reconstruction within the gadgetron framework, including motion correction and associated susceptibility compensation) and direct access to support from both MRI manufacturers (Siemens and Bruker).

**Research team:**
1 engineer in MRI sequence development, 2 engineers in software development, 2 postdocs, 2 PhD students, 1 technician, 1 vet. The team collaborates with several academic groups and has strong connections with several industrial partners in imaging and therapy. The research lab includes all necessary facilities for performing preclinical experiments.