



POST-DOCTORAL RESEARCH POSITION

A postdoctoral position funded by the «*Agence Nationale pour la Recherche*» (ANR) is offered to work with the exercise and NMR research groups inside the *Institut Fédératif de Recherche “RMN Biomédical: de la cellule à l’homme”* of the Joseph Fourier University in Grenoble, France. This position is open from January 2010 and is tenable for up to 2 years.

Project . The project aims to evaluate the effect of hypoxia on brain adaptation to exercise in healthy human. In particular, the objective is to assess the brain neurophysiological response to a fatiguing exercise, including cerebral perfusion and oxygenation, cerebral activation, cortical excitability as well as the resultant motor command while inhaling normoxic or hypoxic gas mixtures. To fulfill these objectives, complementary methodological approaches will be used during exercise both normoxic and hypoxic conditions: functional magnetic resonance imaging (fMRI) will be used to evaluate cerebral activation, the perfusion imaging arterial spin labeling (ASL) nuclear magnetic resonance method will assess regional cerebral perfusion, near infrared spectroscopy (NIRS) will allow measurement of cerebral oxygenation, measurement of motor evoked potential in response to transcranial magnetic stimulation (TMS) will assess the cortical excitability, measurement of the level of central activation (assessed by TMS) and the electromyographic (EMG) signals will evaluate the motor command.

Profile. The candidate must have a PhD degree and has to be highly motivated and autonomous. She/he should be a physiologist or a neuroscientist having expertise in cerebral NMR exploration (fMRI, ASL... and related data processing; scientific software use and development skills would be an asset). In addition, expertise in exercise testing (e.g. motor task within NMR magnet) and/or inhalation of gas mixture (O₂, CO₂) is welcome. French speaking is not a requirement.

Contact. For informal inquiries or full application including CV + cover letter describing research experience and interest + references, please contact:

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Deadline for application. 16th October 2009