



Post-doc Position

(Analysis of Brain connectivity during development)

University of Picardie Jules Verne
Amiens, France

The Research Group on Multimodal Analysis of Brain Function (GRAMFC, Inserm UMRS 1105) is an internationally renowned research laboratory located at the University Hospital of Amiens and the medical school of Picardy University, with access to a wide range of experimental facilities - including fMRI (GE 3T MRI scanner), two research-dedicated high resolution EEG systems (equipped for both 64 and 128 channel recordings), four Near Infrared Spectroscopy (NIRS) instruments (frequency domain, and continuous wave systems) for functional imaging of human brain. Our group focuses on functional brain development and the cognitive deficits associated with neurological disorders in children of all age groups, from premature infants to adolescents with an emphasis on early language and attention brain development and the effects of epilepsy on cognitive development. We work in collaboration with other research groups from University of Montreal, University of Illinois, and Neurospin (France).

Project: In addition to the structural connections, temporal dynamics in functional or effective connectivity may provide additional neurophysiological information. Because, neurodevelopmental disorders such as epilepsy, autism, ... might rely on alteration of the neuronal network connectivity (functional/effective connectivity) , our team aims at analyzing the development of neuronal connectivity from healthy premature to young children based on High resolution EEG (64 channels in premature to 128 channels in neonates) and High density optical imaging using fNIRS. As we did in epilepsy, pathological situations, such as autism will also be considered for connectivity analysis.

Requirements: Applicant must have a PhD degree in Computer Science, Electrical or Biomedical Engineering, Image processing or related fields. This position involves multimodal analysis of the neuronal connectivity using of different modalities including cerebral EEG, and NIRS. Candidates with a strong interest in and experience with methods for connectivity analysis (spectral coherence or phase-locking, Granger causality and transfer entropy), are in particular encouraged to apply. Experience in using SPM, as well as in multiple programming language types including Python and MATLAB are preferable. Applicant should be self-motivated and must have a willingness to do inter-disciplinary research and collaborative teamwork.

Duration: Applications are invited for a twelve-month postdoctoral position extendable to 2 years (full-time) in the medical school of University of Picardy Jules-Verne, under the supervision of Prof. Fabrice Wallois. The position is fully funded by the French National Institute of Health and Medical Research (INSERM).

Supervisor: If interested, please send your CV, letter of motivation, and the names and contact information by e-mail to Prof. Fabrice Wallois (fabrice.wallois@u-picardie.fr) at your earliest convenience. We will consider applications until June, 30 2107 if position is not yet filled.