



Open post-doc position at the Coma Science Group

The Coma Science Group, directed by Drs. Olivia Gosseries and Aurore Thibaut, has an open position for a **full-time post-doctoral researcher** (3 years funding, with one year trial period). The candidate will be located at the Coma Science Group - GIGA Research Centre, University of Liège (Belgium), and work on the European project “**Combining model free and model-based biomarkers for the consciousness diagnosis**”, in collaboration with the teams of Jacobo Sitt (Paris), Gustavo Deco (Spain) and Maria Erxsey-Ravasz (Romania).

This project will use both **model-free biomarkers** (e.g., functional connectivity, TF decomposition, graph theory metrics) and **model-based biomarkers** (e.g., PILI, global coupling factor, effective connectivity, STN-Lyapunov) to advance our understanding of the underlying causal mechanisms of consciousness, by constructing **whole-brain computational models of multimodal neuroimaging data** of various states of consciousness after a coma. The candidate will help develop computational whole-brain models based on single-patient neuroimaging data, extract metrics from the adjusted model parameters and from in-silico simulations, and test the utility of these biomarkers for the diagnosis of patients with chronic disorders of consciousness. These biomarkers will then be contrasted with a set of previously developed model-free biomarkers. Finally, the candidate will analyze the diagnostic and prognostic capacity of these biomarkers in post-coma patients in an acute stage, as well as evaluate these biomarkers in the frame of therapeutic intervention efficacy (using pharmacology and non-invasive brain stimulation).

Position starts in **April/May 2022**.

Required diploma:

Candidates must have a PhD degree in engineering, physics, or a closely related discipline with excellent grades and a strong interest in conducting research from an interdisciplinary perspective.

Expected qualifications:

- Highly motivated candidate with strong interest in the understanding of human consciousness and improving diagnosis, prognosis and treatment of patients with disorders of consciousness
- Candidate must speak fluent English both oral and written (speaking French and Flemish/Dutch is an advantage)
- Excellent programming knowledge (Python, MATLAB)
- Experience with experimental research
- Strong experience with neuroimaging biomarkers (including data preprocessing) and modelling analysis
- Excellent statistical knowledge (SPSS, SAS, Statistica, R, MATLAB)
- Excellent knowledge of MS-Office (Word, Excel and PowerPoint)
- Candidate should be able to work independently at a multidisciplinary level, while engaging in close internal and external collaborations
- Able to supervise PhD students and coordinate projects

The application must include:

- One-page statement of motivation and research interests
- Curriculum Vitae
- Copies of educational certificates
- Two letters of recommendation (with names and contact details)

All documents should be in English. Any questions related to the position can be directed to Olivia Gosseries at the following: ogosseries@uliege.be.

Applicants must send the required documents to caroline.leboutte@uliege.be before **March 15 2022**.