

POST-DOCTORAL POSITION IN NEURAL CONTROL OF MOVEMENT PREPARATION

Project title:

Understanding the contribution of the motor system to action preparation

Principal investigator and host laboratory:

Julie Duque, Institute of Neuroscience, UCLouvain, Brussels, Belgium

A postdoctoral Research Fellow position (24 months) is available in the laboratory of Julie Duque located in Brussels (<https://www.coactionslab.com/>), at the Institute of Neuroscience of the Université catholique de Louvain. The lab explores a range of questions pertaining to the **cognitive neuroscience of human behavior**. We conduct experiments to explore the interaction between cognition and action in neurologically healthy and impaired individuals. We use a variety of techniques to characterize the functional role of different parts of the motor pathways including transcranial magnetic stimulation (TMS), functional magnetic resonance imaging (fMRI) and electroencephalography (EEG). We are currently developing a virtual reality system to study movements in simulated worlds.

Project Description:

The candidate will contribute to a project supported by the Belgian National Fund for Scientific Research (FNRS). The program combines various methodologies including TMS and EEG in neurologically healthy and impaired individuals in order to identify how the motor system - including the basal ganglia and the cerebellum - contributes to action preparation at the level of both motor choices and the control of overt movements.

Required skills and experience for the position:

Candidatures should be highly motivated and independent scientists, with a competitive CV.

- PhD is required.
- Backgrounds in neurosciences, psychology, engineering and motor science are welcome.
- **Expertise in human EEG and/or data modelling is essential.**
- Programming skills (Matlab, R, Python, C++) are highly expected.
- Prior experience with TMS is a plus.
- Good English skills (spoken and written) are required.
- Communication and teamwork skills are crucial.

Main responsibilities of the candidate:

- To contribute as a key member of the team through conducting experiments on human subjects.
- To test healthy subjects and patients in behavioral tasks (visually guided movements).
- To use Matlab (or equivalent) to program the behavioral tasks and analyze data.
- To make various EEG recordings, including TMS-evoked potentials, and study their relationship with MEPs elicited by TMS in targeted muscles.
- To work on the analysis and interpretation of the behavioral and neural data.
- To prepare papers and presentations at scientific conferences.
- To continually update knowledge and understanding in the field of action preparation.
- To provide guidance and supervision for student projects and participate to the training of students.

Starting date of the project is June 2019 – Funding is provided for 2 years

For more details about the position, please contact Julie Duque: julie.duque@uclouvain.be.

Candidates should send a CV, a motivation letter and contacts of two referees for recommendation letters.