

## Master Thesis: Electrophysiology of predictive processes in action-perception interactions and the sense of agency

*The Brainlab offers the opportunity for brilliant young researchers or very talented students to join our adventure. If you are passionate for science, highly motivated, hard-worker and ambitious seeking for advanced training in cognitive and auditory neuroscience in an incomparable and inspiring working environment, we want you!*



We can supervise the **official research period** or the **Master thesis** in either the **Master of Neurosciences** or in **International Master Program in Behavior and Cognition**.

### Description

The general objective of the research period will be to provide the student with the basic and necessary skills for scientific research in the area of cognitive neuroscience. The student will carry out an empirical study with the electroencephalography (EEG) technique. In doing so, the student will be familiarized with the scientific method, and become skilled in the recording and interpretation of EEG and event-related brain potentials to study and assess cognitive function and its abnormalities.

The training will take place at the BrainLab, where the student will integrate in the research line “Predictive processes in motor-sensory interactions”, in which we investigate how voluntary actions shape perception, and how the interactions between action and perception give rise to the sense of agency (for more information visit the project [website](#)). The student will participate in all the activities of the BrainLab, including lab meetings, seminars and talks, running experiments, etc.

The training obtained during this research period should set the basic skills to afford a future more extended training as researcher or clinical psychophysiological/neuroscientist at professional level.

### Tasks and acquired skills

#### Skills to be acquired

- Use of databases for scientific information
- Analysis of scientific publications in cognitive neuroscience
- Introductory notions to experimental designs in EEG/ERP research
- Recording and analysis of electric brain activity
- Statistical analysis and graphic representation of results
- Conclusion drawing and preliminaries of scientific writing
- Bibliographic search and classification of documents

#### Specific Tasks

- Analysis of research papers
- Setup of experiments: stimulus sequences and recording parameters
- Attachment/removal/disinfection of electrodes
- Registration of EEG data
- Graphic and statistical analysis of EEG and ERPs
- Writing of research and/or clinical reports
- Attendance to regular lab meetings
- Other research activities

### Requirements

#### Language

The working language of the group is English, thus a high level of this language is expected to be able to participate in the group’s activities

#### Dates

You should join the lab no later than mid-October, preferably already in September. The Master thesis period will finalize in June. The schedule for the specific tasks is flexible.

*Skills required*

Undergraduate courses in Neuroscience and Cognitive/Experimental Psychology  
Computer skills (preferably, with notions in Matlab)

**Details**

<i>Tutor</i>	<a href="mailto:isanmiguel@ub.edu">Dr. Iria San Miguel (isanmiguel@ub.edu)</a>
<i>Research group</i>	<a href="#">BrainLab</a>
<i>Center</i>	Dep. of Clinical Psychology and Psychobiology and Institute of Neurosciences, Psychology Faculty (Campus Mundet), UB
<i>Eligible Master programs</i>	<ul style="list-style-type: none"><li>• <a href="#">M.S. Research in Behavior and Cognition</a></li><li>• <a href="#">Neurosciences Master</a></li></ul>