ERASMUS+ TRAINEESHIP / PLACEMENT OFFER

Project title: Genetic underpinnings of human brain function and structure

Project description:

KEYWORDS Genetics, neuroimaging, environment, verbal fluency, white matter, grey matter, brain connectivity, dopamine synthesis, fMRI, sMRI, DTI, PET, schizophrenia, bipolar disorder, polygenic risk scores, GWAs.

CONTEXT Several aspects of brain function and structure are known to be highly heritable but little is known about what specific genes contribute to them. For example, while specific genetic variations have been associated with cognitive abilities and susceptibility to many psychiatric illnesses, we still do not know how they operate or increase risk. How do genetic variations modulate executive function such as verbal fluency and risk of bipolar disorder and schizophrenia? We will investigate their impact directly on brain activation, anatomy and dopamine synthesis.

TOOLS We will use an existing database of controls and bipolar disorder and schizophrenia patients, in whom MRI data (functional and structural MRI, Positron Emission Tomography (PET) and Diffusion Tensor Imaging –DTI) and genotyping (including genome-wide GWA) human data has been collected, to correlate genetic with neuroimaging measurements in healthy humans, and patients with schizophrenia and bipolar disorder. We mainly use MATLAB, SPM, FSL, free surfer and MIBCA software.

COLLABORATION King's College London (UK) and Oxford University Hospitals (UK).

Department: Physics

R&D Unit: IBEB (FCUL) - Biomedical Neuroscience Lab

Field of study: Biomedical and Cognitive Neuroscience

Supervisor: Diana Prata   **Personal webpage:** https://dpratalab.wordpress.com/

Number of weeks offered: 24   **Within the months:** from October to July

Number of working hours per week: 35

Publication date: 14 / 10 / 2019   **Closing date:** 31 / 01 / 2020

Requirements

General:
- A very good academic record;
- Good writing and presentation skills;
- Good social and organisational skills;
- Very good proficiency in spoken and written English; knowledge of Portuguese language is an asset.

Specific:
- Level of education: Bachelor's or Master's degree in Neuroscience, Psychology, Medicine;
- Biomedical Engineering, Data Science, Statistics or IT ;
- _____.

Applications

Applications should include the following information:
- a cover letter, including a description of your research interests and an explanation for why you are applying for this project;
- a curriculum vitae (CV);
- an official transcript of grades issued by your home institution;

and be submitted no later than 31 / 01 / 2020 via email to internacional@ciencias.ulisboa.pt.

Contacts

For inquiries regarding this project you are welcome to contact: diana.prata @ciencias.ulisboa.pt.

For inquiries regarding the application procedure you are welcome to contact: internacional@ciencias.ulisboa.pt.