UNIVERSITAT DE BARCELONA

Institut de neurociències de la Universitat de Barcelona

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PhD CANDIDATE INTERESTED IN APPLYING FOR AN INPhINIT RETAINING FELLOWSHIP IN NEUROSCIENCES

NEUROIMAGING IN DEGENERATIVE DISORDERS

The doctoral fellowship programme INPhINIT "la Caixa" is devoted to attracting talented Early-Stage Researchers—of any nationality—who wish to pursue doctoral studies.
Universitat de Barcelona- a leading European University- allows you to work in a first class research environment while benefitting from an attractive salary to cover living, travel and family costs.

Group and project information

Applicants will be integrated into the research group "NEUROIMAGING IN DEGENERATIVE DISORDERS" (P.I. Carme Junqué), a multidisciplinary team with the main aim of studying the consequences of cerebral damage into clinical and cognitive outcome of the patients through the use of magnetic resonance imaging (MRI) and advanced image processing and statistical techniques. The team has several ongoing projects as well as international collaborations.

The project will be carried out under the co-supervision of Dr Roser Sala-Llonch, in a collaboration between the department of Biomedicine and the department of Medicine, both at the Faculty of Medicine at the University of Barcelona.

The main goal is to develop cutting-edge techniques to preprocess and analyze MRI data, with special focus in multimodal approaches that combine structural and functional data, as well as non-imaging data, such as cognitive and clinical measures. The specific objectives are two-fold: (1) To perform empirical analyses with real and simulated images in order to understand and validate the accuracy of the measures, and (2) to use the image and non-image data in statistical settings, using Machine Learning approaches and Bayesian statistics towards classification and prediction in healthy populations and in different disorders, including Parkinson's and Alzheimer's diseases.

Functions and tasks

The student will be directly involved in all the parts of the project. For the data collection, he/she will design and perform experiments to obtain empirical data in addition to gather data from available datasets (both public datasets and those from international consortiums). For the image processing and analysis, the student will use available tools as well as his/her own developed software.
In addition, the candidate will prepare manuscripts and communications and he/she will participate in scientific discussions and meetings with the team as well as with the external collaborators.

Offer Requirements

- **Experience:** At the call deadline (February 2021), applicants must be in the first four years (full-time equivalent research experience) of their research careers and not yet have been awarded a doctoral degree.
- **Studies pursued:** At the time of recruitment (Nov 2021), candidates must comply with one of the following options:
  - To have completed the studies that lead to an official university degree adapted to the European Higher Education Area awarding 300 ECTS credits, of which at least 60 ECTS credits must correspond to master level.
  - To have completed a degree in a university not adapted to the European Higher Education Area that gives access to doctoral studies. The verification of an equivalent level of studies

to the ones mentioned above will be made by the university when the admission procedure starts.

- **Geographic mobility:** Candidates must have resided or have carried out their main activity (work, studies, etc.) in Spain for more than 12 months in the 3 years immediately prior to the call deadline. Short stays, such as holidays, done in a country other than their country of usual residence (where they carried out their main activity), will be considered as time spent in their country of usual residence. Candidates who obtain a fellowship must carry out their PhD at a university or research center where they have not studied their bachelor degree.
- **Level of English:** Candidates must have a demonstrable level of English (B2 or higher).
- **Other skills:** 1) Education within the biomedical engineering or related fields (i.e., computer science, physics, bioinformatics). 2) Solid background in programing (knowledge of python or matlab is essential). 3) Experience in neuroimaging and/or in clinical applications of engineering.

Working conditions

- Duration: 3-year contract under the Spanish or Portuguese labour legislation in force, respecting health and safety, and social security provisions in a stimulating research training environment, with access to appropriate equipment, facilities and opportunities.
- Budget: The maximum total payment amount will be €122,592 + Optional prize of €7,500

Submission

Please submit your application (CV and letter of interest) to: Roser Sala-Llonch (roser.sala@ub.edu)

Support for applicants

The Institute of Neurosciences offers support to applicants (eligibility check, info sessions, feedback on the draft proposal) and has recently launched a Mentoring programme.

Further information Call

Deadline: 4 December 2020