



The Ecole polytechnique fédérale de Lausanne (EPFL) is one of the most dynamic university campuses in Europe and ranks among the top 20 universities worldwide. The EPFL employs 6,000 people supporting the three main missions of the institutions: education, research and innovation. The EPFL campus offers an exceptional working environment at the heart of a community of 16,000 people, including over 10,000 students and 3,500 researchers from 120 different countries.

The Laboratory of Cognitive Neuroscience (Olaf Blanke: <https://www.epfl.ch/labs/lncn/>) and the Medical Image Processing Lab (Dimitri Van De Ville: <https://miplab.epfl.ch/>) open a joint open fMRI post-doc position on the early detection of memory and executive deficits and their relationship to hallucinations in patients with mild cognitive impairments and Parkinson's disease.

The position is part of a larger project between both Labs on cognitive decline in neurodegeneration, mild cognitive impairments, and health-related brain changes using cutting-edge signal analysis methods (such as innovation-driven co-activation patterns 1; toolbox for co-activation patterns 2) and a recently developed neuroengineering platform, including immersive Virtual Reality, robotically-controlled stimulations during fMRI acquisition, psychophysics.

fMRI post-doc position on cognitive and psychiatric complications in patients with mild cognitive impairment and neurodegeneration

Your mission :

The project aims at investigating how hallucinations in the elderly and in patients with Parkinson's disease are associated with mild cognitive impairment and dementia, using advanced neurotechnology and brain imaging data analysis in large patient populations.

Related previous research from our labs showed that so-called minor hallucinations and cognitive decline in patients with Parkinson's disease results from brain processes of impaired sensorimotor integration in fronto-temporal cortex and altered connectivity (Bernasconi et al., BioRxiv 2020).

Computational approaches to probe large-scale network dynamics have linked cingulo-prefrontal regions to clinical risk for psychosis (Zöllner et al., Biological Psychiatry: CNNI, 2019).

Main duties and responsibilities include :

The current project aims at investigating striatal-cortical functional and structural mechanisms in elderly and identify early markers for psychiatric and cognitive vulnerability and decline.

Your profile :

The ideal candidate should have a Master's degree (or equivalent) in engineering, computer science, or physics, hold a PhD in neuroimaging correlated field and be strongly motivated with a keen interest in cognitive-systems neuroscience.

Skills in assembling advanced processing pipelines and/or methods development are valued.

Experience in PD, MCI, neurodegeneration, or memory is a plus.

We offer :

The successful applicant will join the EPFL Laboratory of Cognitive Neuroscience which is led by Prof. Olaf Blanke and focuses on the neuroscientific study of consciousness, the adaptation and development of technologies for human neuroscience, and the development of cognitive neuroprostheses in clinical research.

The laboratory is based in Campus Biotech, Geneva.

Start date :

October 1, 2020

Term of employment :

Fixed-term (CDD)

Work rate :

100%

Duration :

One year renewable as per mission.

Contact :

Interested candidates should send their application to Dr. Fosco Bernasconi fosco.bernasconi@epfl.ch

Shortlisted candidates will be contacted and scheduled for an interview. Letters of recommendation will be requested from shortlisted candidates only.

The call will remain open until an ideal candidate will be found.

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