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## Postdoc opportunity on MRI of the glymphatic system and its translation to cognitive decline populations

A shared postdoctoral position is available between the Department of Radiology at the Lausanne University Hospital (CHUV) and the Memory Center at the Geneva University Hospital (HUG), conducting research on a highly innovative approach to map the glymphatic system in the human brain.

**PROJECT DESCRIPTION:** The project focuses on using state-of-the-art MRI hardware and acquisition strategies to quantify the glymphatic flow in a specific and non-invasive way and translate these developments to the characterization of potentially impaired glymphatic clearance in patient populations. It will involve MRI data acquisition at Campus Biotech Geneva, the development of processing pipelines for data analysis, conducting statistical analyses to establish correlations between 7T MRI measurements and Alzheimer's Disease biomarkers and synthesizing the findings into scientific publications.



**START DATE:** April 1, 2024. The position is open until filled. Candidates are encouraged to apply early.

**SALARY:** In compliance with Swiss National Science Foundation guidelines. Funding is available for one year with possibility of extension.

### REQUIREMENTS:

- A Ph.D. in biomedical engineering, psychology, neuroscience, computer science or related field.
- The successful candidate will be a motivated researcher with initiative, curiosity, rigor and a strong background in neuroimaging and data analysis.
- Proficiency in programming (either Matlab or Python) is necessary and experience with typical neuroimaging software and bash scripting is preferred.
- Good statistical skills
- Demonstrated track record of scientific publications.
- Excellent written and oral communication skills in English

**ENVIRONMENT:** You will be part of the Microstructure Mapping Lab led by Prof. Ileana Jelescu at CHUV-UNIL and of the groups of Prof. Giovanni Frisoni at the Geneva Memory Center and Prof. Valentina Garibotto at the Nuclear Medicine and Molecular Imaging division (HUG-UNIGE). The MicMapLab is a research group of engineers and neuroscientists with access to state-of-the-art clinical MRI scanners (CHUV), preclinical MRI scanners (EPFL) and ample GPU computing. Prof. Frisoni's group specializes in clinical research for understanding cognitive impairment, using advanced neuroimaging and biomarkers. Their focus is on enhancing the pathophysiological understanding of Alzheimer's Disease for improved diagnosis, prognosis, and treatment strategies. Prof. Garibotto's group focuses on the development and clinical evaluation of molecular imaging tools in neurodegenerative conditions. You will actively collaborate with clinicians, psychologists, and Siemens Healthcare engineers. The CHUV and HUG are founding partners of the CIBM Center for Biomedical Imaging, along with the EPFL, UniGE and UNIL, with over 100 affiliate members in a variety of disciplines ranging from MRI to signal processing, EEG and PET.

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