

# Postdoc on GABA, Forgetting, and PTSD

Review of applications will continue until the position is filled

- INSERM – Brain imaging center, Cyceron, Caen 14000, France
- Fixed term full-time position (2 years)

The INSERM-UNICAEN-EPHE U1077 research unit based in Caen (Normandy, France, <https://nimh.unicaen.fr/fr/accueil/>) invites applications for a position as a Postdoc in the field of GABA neurotransmitter imaging, active forgetting and Post-Traumatic Stress Disorder (PTSD).

The position is related to the research program REMEMBER: “Resilience and modification of brain control network following November 13”, led by Dr. Pierre Gagnepain (PhD).

REMEMBER is part of a larger collaborative and transdisciplinary research program (<http://www.memoire13novembre.fr/>) aiming to understand the construction and evolution of both individual and collective memory of the November 13 Paris attack.

We are ideally looking for an experienced Postdoc with a strong expertise in fMRI or PET imaging, excellent programming and engineering skills, and a solid background in biophysics or mathematics.

## Research Environment at Cyceron

The Caen Cyceron Neuroimaging Platform (France) offer an exciting and friendly multi-disciplinary research environment with ample opportunities for training and collaboration, and excellent technical facilities. Cyceron is a structure devoted to multimodal imaging (pre-clinical and clinical) and provides a stimulating work environment as it groups several research units and several research instruments, such as a cyclotron for molecular marking, 2 PET-CT, 2 MRI (including a brand new GE 3T), and a molecular and cellular imaging department.

Cyceron is a friendly environment with an excellent work-life balance. We are located 12 km away from the Normandy coast and beaches. Caen is a young and vibrant city with many venues for music and culture.

## The project

This is a multiwave longitudinal neuroimaging study in a group of 120 direct survivors of November 13 Paris terrorist attacks and 72 additional non-exposed control participants.

Both structural (T1, DTI image, high-resolution T2 images for hippocampal subfield delineation) and functional (task-based and resting-state) brain imaging data have been collected at about 1 and 3 years following the attacks. In 2021, the project will evolve and include imaging sequences of the GABAergic transmission using PET scan.

The current job offer will be centered around the modification of GABA synaptic activity provoked by memory suppression and active forgetting, and its potential relationship with response variation following trauma (Mary et al., *Science*, 2020; Postel et al., *Neurobiology of Stress*, 2021).

Another fascinating and parallel aspect of the November-13 research program concerns the recording of the evolution of individual narratives and memories of the attack (measured here through filmed interviews of 1000 individuals directly, indirectly or not connected to the

attacks) and their potential interactions with collective memory (e.g. Gagnepain et al., *Nature Human Behavior*, 2020).

### What we expect from you

Your task will be to contribute to the development of analysis tools and algorithms of clinical and PET/fMRI imaging data, including modelling of large-scale neural dynamics (e.g. *virtual brain* approach).

Potential transdisciplinary project to study the relationship between the narrative content of traumatic memory and the neurobiological underpinning of active forgetting will also be welcomed.

Importantly, you will also be asked to standardize the preprocessing pipeline, optimize the quality control, and contribute to the training and supervision of younger PhD student in the lab.

Finally, you will be asked to participate and help to the third round of data collection starting 2021, and help with the methodological development of new projects.

### Competences requested

- You have academic qualifications at PhD level, preferably within one or more of the following areas neuroscience, biophysics, neurobiology, mathematics.
- Demonstrating skills in analysis of brain imaging data and programming is important.
- Proficiency with Matlab and Python is essential as well as experience with fMRI or PET analyses.
- A high level of written and spoken English is important.
- Knowledge of French language is beneficial but is not required.

### Your application

Please include the following documents in your application: motivation letter including academic goals and research interests, curriculum vitae, and at least one recommendation letter. A maximum of five publications that you believe of greatest relevance to the job may also be submitted. Applications, questions or informal enquiries about the position, should be sent to Dr. Pierre Gagnepain ([gagnepain@cyceron.fr](mailto:gagnepain@cyceron.fr)).

### Terms of employment

- Gross salary is 2569,96 Euros for a fulltime postdoc position with less than 2 years of working experience after PhD graduation, and 2948,5 Euros between 2 and 4 years of working experience.