

## **MASTER 2 Fundamental and Clinical Neurosciences**

### **Internship proposal 2026-2027**

*(internship from January to June 2027)*

**Host laboratory:** CRNL (Centre de Recherche en Neurosciences de Lyon) – 95, Bd Pinel – 69677 Bron

**Host team :** PsyR2 team <https://www.psyR2team.com>

**Internship supervisors :** Pr Frédéric Haesebaert, Md, PhD, HDR – [Frederic.haesebaert@ch-le-vinatier.fr](mailto:Frederic.haesebaert@ch-le-vinatier.fr) . Dr Marine Mondino, PhD – [marine.mondino@ch-le-vinatier.fr](mailto:marine.mondino@ch-le-vinatier.fr)

**Project title :** Auditory Localization in Virtual Reality in Patients with a First Episode of Psychosis (*Spatialisation auditive en réalité virtuelle chez des patients avec un premier épisode psychotique - LOCIZ*)

#### **Project summary :**

Auditory localization—the ability to identify where a sound comes from—is essential for navigating and interacting within our environment. It relies on decoding spatial dimensions (azimuth, elevation, distance) and can be improved through movements such as head rotation. In schizophrenia, patients present with disturbances in auditory perception, including difficulties analyzing auditory scenes and localizing sounds, yet this ability remains insufficiently studied. Such deficits may contribute to cognitive impairments such as confusion between sound sources generated by self or other (source monitoring disturbances). The LOCIZ projet aim at characterize localization deficits in early stages of schizophrenia (in comparison to a control population). It also examines how head movement, environmental noise, and basic auditory discrimination abilities influence performance. Relationships with source-monitoring, externalization processes, and symptom severity will also be assessed.

#### **3-5 recent publications :**

Dondé, C., Fivel, L., Haesebaert, F., Poulet, E., Mondino, M., & Brunelin, J. (2024). Mechanistic account of the left auditory cortex for tone-matching in schizophrenia: A pilot transcranial random noise stimulation (tRNS) sham-controlled study. *Asian Journal of Psychiatry*, 92, 103879. <https://doi.org/10.1016/j.ajp.2023.103879>

Fivel, L., Lavandier, M., Grimault, N., Perrin, F., Mondino, M., & Haesebaert, F. (2026). Is it inside my head? Characterization of sound externalization in schizophrenia. *PloS One*, 21(3), e0345074. <https://doi.org/10.1371/journal.pone.0345074>

Fivel, L., Mondino, M., Brunelin, J., & Haesebaert, F. (2023). Basic auditory processing and its relationship with symptoms in patients with schizophrenia: A systematic review. *Psychiatry Research*, 323, 115144. <https://doi.org/10.1016/j.psychres.2023.115144>

Lavallé, L., Brunelin, J., Jardri, R., Haesebaert, F., & Mondino, M. (2023). The neural signature of reality-monitoring: A meta-analysis of functional neuroimaging studies. *Human Brain Mapping*, 44(11), 4372–4389. <https://doi.org/10.1002/hbm.26387>