

## **Two 3-year post-doc and two PhD positions in neurodevelopment and rhythm processing in Canada and France**

We are looking for two 3-year post-doc researchers and two PhD students for the projects PreMusic and BabyMusic funded by the French National Research Agency ANR and the Fondation pour l'Audition. The deadline for applications is March 31st, 2023. Applications will be evaluated as they come in, and the positions will be open until filled.

The consortium of the projects aims to evaluate the development of rhythm perception starting from the third trimester of gestation into infancy, and the impact of early musical interventions in the NICU on preterm infants' development. In these cross-sectional and longitudinal studies, we will evaluate the development of auditory rhythm processing capacities with EEG, and behavioral protocols. The project consortium involves four academic partners with complementary expertise in early neurodevelopment, cognitive neurosciences of music, neural data processing (in particular EEG), and music analysis.

The aim is to put together a cross-disciplinary team that together covers the following methods: protocol design and implementation, EEG signal processing, behavioral studies, video analysis, statistics, machine learning.

The positions will be with Laurel Trainor in Hamilton, Canada (Institute for the Music and the Mind), and with Sahar Moghimi in Amiens (INSERM U1105), in collaboration with Barbara Tillmann in Dijon (LEAD-UMR5022).

1) Hamilton (<https://livelab.mcmaster.ca/mcmaster-institute-for-music-the-mind-mimm/>)

The positions include developing auditory stimuli and experimental protocols, extracting the neural response from EEG signals, as well as behavioral results during experimental protocols. The candidates will conduct the experiments on the infants in conjunction with graduate students and technicians in the lab.

Required: PhD (or undergraduate degree for PhD applications) in neuroscience, biomedical engineering, computer science, psychology, or related fields, strong background and research expertise in EEG signal processing, advanced skills with scripting languages, such as Matlab or Python, knowledge in the field of music cognition, neuroscience of music and/or auditory perception, high verbal and written communication skills

Preferable: Expertise in perceptual development and in sound measurement and analysis

2) Amiens (<https://gramfc.u-picardie.fr/>)

The post-doc/PhD will be fully dedicated to extracting the EEG correlates of rhythm processing in the course of development, aiming to extract the neural response to different rhythmic characteristics, and to evaluate the impact of musical interventions on neurodevelopment.

Required: PhD (MSc for PhD applications) in neuroscience, biomedical engineering, computer science, or related fields, strong background in neural signal processing, advanced skills with scripting languages, such as Matlab or Python, research experience in EEG signal processing/modeling, high verbal and written communication skills

Preferable: knowledge in the field of neurosciences of music and/or auditory perception, French fluency

All applications should include a CV, a cover letter specifying research interests and motivation, and contact details for two referees. Applications should be sent to either Laurel Trainor [ljt@mcmaster.ca](mailto:ljt@mcmaster.ca) (positions in Hamilton) or Sahar Moghimi [sahar.moghimi@u-picardie.fr](mailto:sahar.moghimi@u-picardie.fr) (positions in Amiens).