Early development of auditory temporal processing: BabyMusic

2 Postdoc Positions

A Franco-Canadian Research Project supported by
La foundation pour l'audition

Introduction

Two postdoctoral research positions are available in the framework of the International collaborative research project between France and Canada, BabyMusic, funded by la fondation pour l'audition. This project which is based on a bimodal neuroimaging approach (electroencephalography and functional near-infrared spectroscopy), aims to investigate the capacities related to auditory rhythm perception during very early neurodevelopment starting from premature neonates to infants during the first year of life. The Post-doctoral researchers will be welcomed at **McMaster Institute for Music and the Mind (directed by Prof. Laurel Trainor), Hamilton, Canada**, and at **INSERM U1105, Groupe de Recherches sur l'Analyse Multimodale de la Fonction Cérébrale (directed by Prof. Fabrice Wallois), Amiens, France**. The successful candidates will be working in committed, interdisciplinary teams in Canada and France with many years of internationally renowned expertise in cognitive and developmental neuroscience, neurocognition of music, and clinical care of neonates. The post-doctoral fellows will be working in collaboration with both laboratories in France and Canada, and joining two groups of researchers, graduate students, and postdocs, while having the majority of the research conducted in one of the laboratories.

Post-doc Position (#1)

INSERM U1105 (University of Picardie Jules Verne)
Amiens, France

Directed by Prof. Fabrice Wallois, INSERM lab, Groupe de Recherches sur l'Analyse Multimodale de la Fonction Cérébrale, invites applications for a Postdoctoral Research position in the neuroscience of rhythm perception in neonates using EEG/fNIRS signal processing.

Job description

The principal research topic aims to address the neural correlates of auditory rhythm processing in premature neonates. The research will include developing experimental protocols, extracting information and characterizing the neural response by developing complex neural data processing approaches, and addressing the role of early development in rhythm coding and perception. The neural signals to be analyzed consist of (but are not limited to) high resolution EEG and high density fNIRS. The research includes also participation in data recording, although the task is mainly conducted by research technicians at the lab. Publications of high quality are expected contributing to novel analytical approaches as well as to basic questions about the underlying neural mechanisms of rhythm perception and auditory development.

Required qualification

The candidate must have completed a PhD in neuroscience, biomedical engineering, computer science, or related fields with a strong publication record, and must have a very strong background in neural signal processing. Advanced technical skills with scripting languages such as Matlab or Python as well as research experience in EEG signal processing and modeling, and machine learning are required. Experience with neural signals such as magnetoencephalography, and fNIRS will be considered as an advantage. Knowledge in the field of neuroscience of music and/or auditory perception is required.

Applicant should have high verbal and written communication skills and the ability to work effectively both independently and in collaboration with other investigators.

Starting date: September, 2022

Contract duration: 1 year, renewable for a total of up to 3 years.

Employment level: 100%

Application deadline: applications will be considered until the position is filled.

Salary: about €2000 net, re-evaluated according to the candidate's experience.

Please send a CV with up-to-date list of publications, a motivation letter, and the names and contact information for three references to Dr. Sahar Moghimi, sahar.moghimi@u-picardie.fr, copying Prof. Fabrice Wallois, fabrice.wallois@u-picardie.fr, and Prof. Laurel Trainor ljt@mcmaster.ca

Post-doc Position (#2)

McMaster Institute for Music and the Mind, McMaster University
Hamilton, Canada

Directed by Prof. Laurel Trainor, McMaster Institute for Music and the Mind, invites applications for a Postdoctoral Research position in the neuroscience of rhythm perception in infants using EEG signal processing.

Job description

The principal research topic aims to address the neural correlates as well as behavioral manifestations of auditory rhythm processing in infants during the first year of life. Toward this purpose, the job includes developing auditory stimuli and experimental protocols, extracting and characterizing the neural response from EEG signals, as well as the behavioral results during the experimental protocols, and drawing conclusions about the early development of auditory rhythm perception. The post-doctoral fellow will be conducting the experiments at the lab and will be in contact with the infants. Publications of high quality are expected contributing to novel analytical approaches as well as to basic questions about the underlying neural mechanisms of rhythm perception.

Required qualification

The candidate must have completed a PhD in neuroscience, biomedical engineering, computer science, or related fields with a strong publication record, and must have a very strong background in neural signal processing. Advanced technical skills with scripting languages such as Matlab or Python as well as research experience in EEG signal processing and modeling, and machine learning are required. Knowledge in the field of music cognition, neuroscience of music and/or auditory perception is required. Expertise in sound measurement and analysis will be advantageous.

Applicant should have high verbal and written communication skills and the ability to work effectively both independently and in collaboration with other investigators.

Starting date: September, 2022

Contract duration: 1 year, renewable for a total of up to 3 years.

Employment level: 100%

Application deadline: applications will be considered until the position is filled.

Salary: about €2000 net, re-evaluated according to the candidate's experience

Please send a CV with up-to-date list of publications, a motivation letter, and the names and contact information for three references to Prof. Laurel Trainor ljt@mcmaster.ca