

<b>Title of the thesis</b>	Music rhythmic Interaction in Aging and Alzheimer disease
<b>Acronym</b>	MUSICA2
<b>Reference number</b>	015

<b>Hosting institution</b>	<b>Employer</b>
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<b>Hosting research unit 1</b>	<b>Hosting research unit 2</b>
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<b>Thesis information</b>	
<b>Keywords</b>	Music; Memory; Communication; Aging; Neuropsychology
<b>Abstract</b>	<p>The 3-year Ph.D project entitled “<b>Music rhythm interaction in Aging and Alzheimer disease</b>” involves an interdisciplinary team including Pr. Séverine Samson, Dept. of psychology (<i>Neuropsychology and Audition</i> team leader --- <i>PSITEC Lab</i>) and Pr. François Puisieux, Faculty of Medecine (<i>Public Health: Epidemiology and Quality of Care</i>) and Head of the Geriatric Hospital, University of Lille (France).</p> <p><b>Description of the project.</b> Music is the art of combining sounds according to certain rules and is often referred as the language of emotions. It has the power to modulate cognition, trigger movements and communicate emotions without verbal mediation, and can elicit functional and anatomical changes in the brain. With an interdisciplinary approach, combining cognitive and social psychology with brain imaging and gerontology, music will be used as a cognitive and sensory stimulation tool to take advantage of the communicative properties of music and sung lyrics. Based on the theory-driven evidence, we plan to develop therapeutic tools and in particular, adapt and design serious games on a tablet via mobile technology. The ultimate aim will be to investigate how music training can facilitate brain plasticity and improve the care and wellbeing of patients (and their caregivers) with communication and memory disorders (Alzheimer's disease and related disease). Understanding musically induced brain plasticity provides new insights with which to experimentally investigate potential therapeutic applications of music in the rehabilitation of cognitive and affective disorders. The project builds upon our recognized knowledge in the fields of music cognition and emotion, neuropsychology, neurosciences, gerontology, electrophysiology, and neuroimaging. The position is</p>

	<p>part of an international collaborative project between the universities of Lille and of Ghent providing cross-border cooperation. International secondments are proposed with Pr. Leman, director of the <i>Institute for Psychoacoustics and Electronic Music</i> (IPEM), University of Ghent (Belgium) and/or with Pr. Dalla Bella, co-director of the International Laboratory for BRAIn, Music and Sound Research (BRAMS) in Montreal (Canada). An intersectorial secondment is also proposed in French company, NaturalPad. Scientific and industrial valorisations are expected by presenting to international meetings (Neuroscience of Music, Alzheimer's Association International Conference), publishing in peer reviewed international journals and by developing deliverable prototype.</p> <p><b>Research environment.</b> The interdisciplinary approach used combines clinical studies with the experimental rigor of basic research, at the interface of art, science and cognition. The candidate will be affiliated to:</p> <ul style="list-style-type: none"> <li>- <i>PSITEC</i> Lab. from Social Sciences and Humanities, known for its expertise in using music intervention in non pharmacological treatment of Alzheimer disease</li> <li>- <i>Public health: Epidemiology and quality of life</i> Lab. from Biostatistics and Health Sciences and the <i>Geriatric Hospital</i> (Lille university Hospital) with a strong experience in investigating preventive strategies and treatment for patients with neurodegenerative disease.</li> </ul> <p><b>Qualifications and interests.</b> Master in Cognitive Neurosciences, Neuropsychology, Cognitive Psychology, Biomedical Sciences, Cognitive Musicology or related fields is required. Interests in studying brain organisation and psychological processes underlying joint action during music activities in normal and clinical populations. Academic English and French recommended.</p>
<p><b>Expected profile of the candidate</b></p>	<p>The candidate must have a strong motivation for research and clinical studies. Knowledge of music, research design, statistical and basic programming skills (e.g., MATLAB) are highly recommended. Prior experience with neuroimaging methods (EEG or fNIRS) or clinical practice would be a plus. Applicants must be fluent in English and the ability to communicate in French is strongly desirable, as the research project would require human interactions in clinical environments.</p>
<p><b>Application procedure</b></p>	<p>The application procedure is detailed on the European programme PEARL website <a href="http://www.pearl-phd-lille.eu">www.pearl-phd-lille.eu</a>. The funding is managed by the I-SITE ULNE Foundation, which is a partnership foundation between the University of Lille, Engineering schools, research organisms, the Institut Pasteur de Lille and the University hospital. The application file will have to be submitted before April 15, 2020 (10h Paris Time) and emailed to the following address: <a href="mailto:international@isite-ulne.fr">international@isite-ulne.fr</a>.</p>
<p><b>Net salary and Lump Sum</b></p>	<p>A net salary of about €1,600 + €530 per month to cover mobility, travel and family costs.</p>