**UMR INSERM 1107 – Laboratory of Neurosensory Biophysics - Université Clermont Auvergne**

**Contact person: (supervisor):** Fabrice GIRAUDET(MCU-HDR), fabrice.giraudet@uca.fr

Auditory neural function: window on diabetic neurodegeneration

Diabetes is strongly associated with microvascular and macrovascular complications, and neuropathy. Mitochondrial dysfunction is also reported in the pathogenesis of diabetes. Using functional, behavioral and histological multiple approaches, the goal of this project is to investigate consequences of streptozotocin-induced diabetes on the peripheral and central hearing function in mouse model. Innovative functional exploratory procedures (based on auditory evoked potentials) will assess neural energetic failure, neural conduction fatigability or susceptibility to noise. Thus tissues damaged (both cochlear or neural) by diabetes will be also identify. Translating experimental results from this project to the clinic will highlight the insidious effect of noise exposure on the weakened neural auditory function and and thus to establish recommendations regarding the sound-level exposure for diabetic patients. Efficacy of preventive neuroprotective therapies could be also assessed. Finally, this project aim to improve the quality of life for diabetic patients.

Souchal M, Labanca L, Carvalho S, Resende L, Blavignac C, Avan A, **Giraudet F.**

*Transient abnormalities in masking tuning curve in early progressive hearing* *loss mouse model*

Biomed Res Int. 2018 Feb 13;2018:6280969.