



Western
The Brain and
Mind Institute

Visiting Speaker

Sebastian Ausili

Donders Institute

“Spatial hearing by Cochlear Implant users”

Sound localization of normal-hearing listeners in the horizontal (azimuth) plane relies predominantly on the neural processing of binaural acoustic differences in sound level (interaural level differences [ILDs]) for frequencies above 3 kHz, and phase (interaural time differences [ITDs]) for frequencies below about 1.5 kHz. In bilateral CI users, localization cues are negatively affected by the CI systems in a number of ways. For example, typical CI coding strategies are based on envelope extraction, limiting access to the temporal fine structure in the acoustic input. This prevents the use of fine structure ITDs as a localization cue.

Second, ILDs might be substantially distorted due to the mapping of intensity to electrical charge. But, although ILDs and ITDs might be highly distorted in patients with bilateral CI hearing, the learning brain might be plastic enough to use available cues after bilateral fitting if these cues are consistent and veridical.

Knowing and trying to better understand these factors in patients with electrical hearing is what triggers the questions that are going to be discussed during this presentation. Does bilateral input equate to binaural processing? Which are the mayor problems that bilateral Ci users show in their sound localization performance? What about bilateral deaf patient fitted with one CI only? What type of cues they use to localize sound around them? How can we measure spatial hearing in general?

Date: Friday September 8, 2017

Time: 11:30 am

Location: Room 2262T,
Elborn College

If you require information in an alternate format or if any other arrangements can make this event accessible to you, please contact Denise Soanes at dsoanes4@uwo.ca