

City University of Hong Kong
Department of Biomedical Sciences
presents a seminar



“fMRI Dissection of Auditory and Visual Cortical Descending Inputs to Midbrain Auditory Processing”

by

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Time: 10.00am to 11.30pm

Venue: Room 3500, 3/F, Academic 2 Building, CityU

Abstract

The cortex contains extensive descending projections, yet their impact on brainstem sensory processing remains poorly understood. In the central auditory system, the auditory cortex contains widespread projections to nuclei of the auditory midbrain, called the inferior colliculus (IC), which integrates almost all ascending signals from multiple brainstem nuclei and is the origin of several important auditory processing properties. In this study, we developed a number of auditory fMRI methods to map the auditory processing functions in the IC of rodent models. We further employed these fMRI techniques, together with cortical ablation or cortical optogenetic neuromodulation, to interrogate how cortex inputs influence the IC BOLD responses to external auditory stimuli. Our experimental findings directly revealed the large-scale influences of cortical descending projections, from both auditory and visual cortices, on the IC auditory processing in the midbrain.

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All are welcome