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

"Mechanisms of phantom sound perception"

by

Dr. Shaowen Bao
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University of Arizona

Date: 13 Dec 2016
Time: 10:30am to 12:00pm
Venue: G5-317, 5/F, Academic 1, City University of Hong Kong

Abstract
Tinnitus is the perception of phantom sounds. It is believed to be mediated by enhanced basal neuronal activity following hearing loss. Both Hebbian and Homeostatic plasticity can enhance neuronal activity, but their contributions to tinnitus is incompletely understood. I will discuss our recent studies examining the roles of the two types of synaptic plasticity in tinnitus.

Research Focus
Dr. Bao's group's research goal is to understand sensory processing. The way a stimulus is processed is not static. Instead, it can be altered by experience. These adaptive changes are guided presumably by certain principles. His group try to elucidate these principles by examining how experience alters sensory processing. For instance, their auditory system becomes highly specialized for processing native speech sounds in early infancy without explicit instructions. The information that instructs such unsupervised learning is believed to be embedded in the sensory input. Using developing auditory cortex of model animals, they are trying to determine what information in the acoustic input is important for normal development of sensory representations and how the cortical circuit uses the information. Sensory processing in adult animals can also be altered by perceptual learning. They study cortical sound representations in adult animals that have been trained to improve sound perception, and examine sensory perception in animals whose cortical representations have been artificially altered. By correlating representations and perception, they try to delineate the neural correlates of perception. Ultimately, they hope to extend their knowledge into unique human sensory processing, such as that of speech and music, by examining human brains.

After his BS/MS graduation of Tsinghua University, Dr. Bao obtained a Ph.D in 1999 at the University of Southern California. He was a post-doctoral fellow at the University of California, *San Francisco in 1999.* In 2011, he was an adjunct associate professor at the University of California, Berkeley. In 2015, he has been an associate professor at the University of Arizona. He is a member in Society for Neuroscience, American Physiological Society, Association for Research in Otolaryngology and American Tinnitus Association.

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All are welcome