NEUROSCIENCE SEMINAR SERIES

TOPIC: Learning and sleep-dependent dendritic spine plasticity and maintenance
SPEAKER: Wen-Biao Gan, New York University School of Medicine
TIME: 12:00-13:00, 20 October, 2017
VENUE: Room 385, Geography Building, 3663 Zhongshan Road North, Shanghai
(华东师范大学中山北路校区，地理楼385室)

ABSTRACT OF THE TALK
Dendritic spines are the postsynaptic sites of most excitatory synapses in the mammalian brain. In vivo imaging of dendritic spines in the mouse cerebral cortex indicates that spines are highly plastic during development and become remarkably stable in adulthood. In my presentation, I will discuss how learning experiences regulate the development and plasticity of dendritic spines, as well as the role of sleep in dendritic spine plasticity and maintenance. Because dendritic spines are the key elements for information acquisition and retention, understanding how they are formed and maintained in the living brain provides important insights into the structural basis of learning and memory.

BIOGRAPHY
Dr. Wen-Biao Gan is a professor at New York University School of Medicine. His research focuses on understanding how the brain integrates new information continuously while stably maintaining previously stored memories. Using transcranial two-photon microscopy to study changes in postsynaptic dendritic spines in living mouse cerebral cortex, his laboratory has investigated how motor learning, fear learning and extinction, stress hormone glucocorticoids, microglia, and sleep affect synaptic plasticity. More recently, his laboratory has developed new behavioral paradigms to image activity of dendrites and dendritic spines in the cortex of awake behaving mice and identified an important role of dendritic calcium spikes in learning-dependent synaptic plasticity.