Dr. Wen-Biao Gan is a professor in the Department of Neuroscience and Physiology and Skirball Institute at New York University School of Medicine. He obtained his Ph.D. in Neurobiology from Columbia University in 1995. Dr. Gan's research focuses on understanding how the brain is able to integrate 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 shown that the majority of dendritic spines in diverse regions of the cortex persist throughout adulthood and can serve as a structural basis for long-term information storage. In addition, learning and novel sensory experience lead to a small degree of new dendritic spine formation via a highly selective process. These new spines likely play an important role in modifying neuronal circuit function and contribute to new information storage. Over the years, his laboratory has contributed to the understanding of how motor learning, fear learning and extinction, stress hormone glucocorticoids, microglia, and sleep regulate the development, plasticity and maintenance of synaptic connections in the living mouse cortex.