

Special Issue

Synaptic Plasticity and the Neurobiology of Learning and Memory

Message from the Guest Editors

Learning and memory functions require modification of neural networks through the key mechanism of synaptic plasticity, the process in which the strength of synapses is altered in response to the pattern of activity.

The synaptic modification and sculpting of neuronal connections in response to environmental inputs are crucial steps in the chain of cellular and biochemical events that lead to memories formed in cell assemblies and neural networks. Synaptic modifications of neural networks are what account for the cognitive basis of learning and memory. In mammals, various brain areas participate in distinct forms of memory, and the cellular and molecular mechanisms are closely similar and utilize elements of a common genetic program.

The present Special Issue is aimed at examining the synaptic plastic mechanisms underlying various forms of memory and learning. Although many data have partially elucidated the physiological mechanisms at synapse and network levels, many questions remain open about the relationship among the intracellular biochemical processes, the plasticity of neuronal networks, and learning and memory processes.

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Cells has become a solid international scientific journal that is now indexed on SCIE and in other databases. We have successfully introduced a special issues format so that these issues serve as mini-forums in specific areas of cell science. *Cells* encourages researchers to suggest new special issues, serve as special issues editors, and volunteer to be reviewers. Our main focus will remain on cell anatomy and physiology, the structure and function of organelles, cell adhesion and motility, and the regulation of intracellular signaling, growth, differentiation, and aging. We are open to both original research papers and reviews.

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