



Neural Plasticity

Special Issue on
**Molecular Mechanisms of Memory Consolidation,
Reconsolidation, and Persistence**

CALL FOR PAPERS

The experience of a salient event can lead to the formation and storage of a long term memory that can sculpt and alter future behavior up to a lifetime. In the brain, specific signalling pathways and patterns of gene expression are required in neuronal and nonneuronal cells for the stabilization and long-term persistence of synaptic changes that underlie memory. Depending on the retrieval conditions, these fully consolidated memories can undergo reconsolidation or extinction that will maintain or inhibit the expression of the original memory, respectively. These opposing memory processes recruit distinctive subcellular events in order to restabilize the original memory or to form a new inhibitory memory trace.

The persistent nature of maladaptive memory components is a common characteristic in several psychiatric disorders including posttraumatic stress disorder (PTSD), specific phobias, and drug addiction. Understanding the molecular mechanisms underlying the formation, persistence, and maintenance of different forms of memories will prove to be invaluable at both the foundational and translational levels, helping the design and development of new therapeutical approaches.

Potential topics include, but are not limited to:

- ▶ Cellular components required for original and extinction memory formation and persistence
- ▶ Subcellular pathways underlying the formation and persistence of aversive and appetitive memories
- ▶ Role of neurochemical signalling in memory formation and persistence
- ▶ Molecular mechanisms underlying the formation and persistence of instrumental memories
- ▶ Effects of retrieval on memory persistence, at both the molecular and behavioral levels
- ▶ Recent advances in molecular biological tools for the study of memory
- ▶ Interactions between different brain structures that support memory formation and persistence

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