Special Issue

Plasticity and Computation in Cerebellar Neurons and Microcircuits

Message from the Guest Editor

The cerebellum is a very rare and powerful example of an experimental and computational model for studying synaptic plasticity. To date, several forms of synaptic plasticity (LTP, LTD, STDP) with multiple and different mechanisms of induction and expression have been demonstrated at distinct cerebellar synapses, the understanding of which may be greatly aided by integrated circuit modeling. This Special Issue will explore circuit plasticity of the cerebellum, presenting research articles, reviews and short communications combining experimental and modeling techniques to provide new insights and explanatory models capable of accounting for the complexity of the synaptic machinery involved in plasticity at cerebellar synapses. Research areas may include (but are not limited to) the following:

- Induction and expression of LTP and LTD;
- Spike-timing-dependent plasticity;
- Short-term plasticity;
- Hebbian mechanisms of synaptic changes;
- Intracellular signaling related to synaptic modification;
- Presynaptic modification of neurotransmitter release;
- Heterosynaptic plasticity;
- Plasticity at inhibitory synapses;
- Neuromodulation.

Guest Editor

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Deadline for manuscript submissions

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A major strength of biological science is the diversity of approaches that biological scientists apply to their research problems. *Biology* reflects this diversity and brings together studies employing the varied experimental and theoretical approaches that are fueling biological discovery. *Biology*, the journal, is a fully peer-reviewed publication with a rapid and economical route to open access publication and is listed on PubMed. All articles are peer-reviewed and the editorial focus is on determining that the work is scientifically sound rather than trying to predict its future impact.

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