Special Issue

The Role of Synaptic Plasticity in Animal Behavior and the Development of Psychiatric Disorders

Message from the Guest Editors

Animal behaviors are driven by the concerted activity of several brain areas, including cortical and subcortical regions, whose neurons are interconnected by billions of synaptic contacts. In these complex networks, synaptic weights can be strongly modified by experience and continuously refined via regulatory mechanisms that preserve homeostatic balance. The phenomenon behind these changes is referred to as synaptic plasticity. Extended evidence supports a central role for synaptic plasticity in the generation of maladaptive and pathological behaviors, such as in addiction or following trauma. Furthermore, many psychiatric disorders have been associated with defective plasticity, including depressive and tic disorders, and novel therapeutic strategies based on non-invasive brain stimulation are being successfully adopted. This Special Issue aims to collect studies on the role of synaptic plasticity in physiological and pathological animal behavior, with particular focus on the development and treatment of psychiatric disorders. Both original research articles and reviews are welcome.

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