INSTITUT PARIS DESCARTES NEUROSCIENCES COGNITION

UNIVERSITÉ PARIS DESCARTES
SCIENCES FONDAMENTALES ET BIOMÉDICALES

Neuroscience Seminar Series

Friday, October 17th, 2014 at 11:30 am

Salle des Conferences (R229)
Centre Universitaire des Saints-Pères
45 rue des Saints-Pères, 75006 Paris

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University of California at Davis

Sculpting the brain: activity-dependent mechanisms of neural circuit refinement

A fundamental goal in the field of developmental neurobiology is to understand how neural circuits are established during development and how they are refined by experience and altered in disease. Of particular interest are the circuits in the cerebral cortex, a part of the vertebrate brain with a central role in many higher order brain functions, including learning and memory, perception and cognition. Disorders in development of cortical circuits are thought to contribute to the etiology of many neurological diseases. Research in the Zito lab focuses on understanding the activity patterns and signaling mechanisms that drive the formation and loss of synaptic connections during experience-dependent modification of neural circuits and in disease. We use molecular genetic techniques and electrophyisological approaches combined with two-photon imaging technologies that enable both visualization and functional characterization of synaptic connections. I will discuss our latest progress in defining the neural activity-dependent mechanisms that drive structural plasticity of synaptic connections in the cerebral cortex.