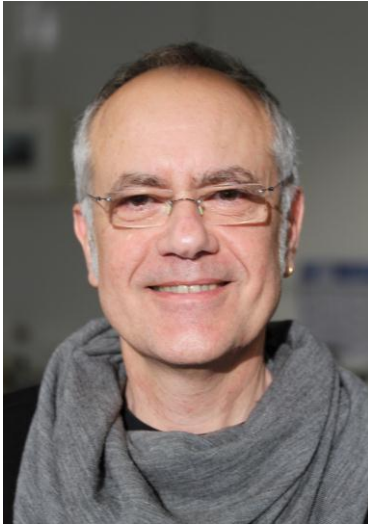


# LES CONFÉRENCES DE L'ICM



**Pascal LEGENDRE**

INSERM U 952, CNRS UMR 7224/UPMC

[pascal.legendre@snv.jussieu.fr](mailto:pascal.legendre@snv.jussieu.fr)

Hosted by Stéphane CHARPIER

If you would like to meet the speaker, please use the following contact: [stephane.charpier@upmc.fr](mailto:stephane.charpier@upmc.fr)

**Pascal LEGENDRE**

**february 20, 2012 at 11:00**

***"Synaptic release and paracrine release of neurotransmitters shapes the merging electrical activity of motoneurons in the embryonic spinal cord"***

The development of the spinal cord is a complex event that depends on both genetic and environmental factors, which together orchestrate the genesis of the first functional neural networks controlling motoneuron activity. Although many studies have demonstrated that the embryonic spinal cord neuronal networks can generate a spontaneous electrical rhythmic activity that propagates along the cord as early as embryonic day 11.5 (E11.5) in mice (E3-E3.25 in the avian embryo), early synaptogenesis on motoneurons remain poorly explored.

Most of the electrophysiological data in the early embryo were obtained using extracellular recording techniques, which preclude obtaining any direct information on the role of synapse formation on the control of early spinal cord activity. Until recently it was assumed that synaptic network were responsible of this early activity. Our last discoveries challenge these assumptions. Effectively, at early embryonic stages synaptogenesis begins after the onset of the embryonic spinal cord electrical activity and we demonstrated that this embryonic electrical activity was regulated by paracrine non-vesicular release of glycine from radial glial cells and was controlled both by synaptic release and paracrine vesicular release of GABA from newly formed interneurons.

**Lundi 20 février 2012 à 11H00**  
**Auditorium de l'ICM**  
**Hôpital Pitié-Salpêtrière**  
**47, boulevard de l'hôpital - 75013 Paris**