

# LES CONFÉRENCES DE L'ICM



**Bruce APPEL**

University of Colorado, School of Medicine

Hosted by Brahim NAIT-OUESMAR

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*Bruce APPEL - 30 Mai 2011 à 11H00*

## **"Genetic and imaging analysis of oligodendrocyte development in zebrafish"**

During development, rapidly dividing, multipotent neural precursors produce the many different kinds of neurons and glial cells that make up the central and peripheral nervous systems. During adulthood, small numbers of slowly dividing neural stem cells also give rise to new neurons and glia. What are the mechanisms that maintain neural precursors and stem cells and direct formation of distinct neurons and glia? Can knowledge of developmental mechanisms be used to promote repair of nervous systems damaged by disease or injury? We address these questions using zebrafish as a model system for two fundamental reasons. First, zebrafish embryos are transparent and develop rapidly outside the mother. By marking specific neural cells with transgenically encoded fluorescent proteins, we can directly observe cells as they are born, migrate and differentiate within intact embryos using time-lapse confocal microscopy. Second, because we can raise many zebrafish, we can screen for mutations that disrupt neural development. This is an extremely powerful approach for identifying genes essential to neural development and modeling genetic diseases of the nervous system. Our long-term goal is to identify genes that are targets for therapies to treat developmental, degenerative and cancerous diseases of the nervous system.

**Lundi 30 mai 2011 à 11H00**  
**Auditorium de l'ICM**  
**Hôpital Pitié-Salpêtrière**  
**47, boulevard de l'hôpital - 75013 Paris**