

## Recommended Seminar

Contributed by Yannick KREMPP  
Wednesday, 18 November 2015

Dear CIF users,

Professor Alain Chédotal will give a seminar on the analysis of transparent tissues at the DNF. Topics such as tissue clarification and ultramicroscopy will be part of this talk.

As the CIF now provides access to this type of equipment (Epalinges platform), we highly recommend those interested in the use of our ultramicroscope to attend to this seminar.

Thursday, November 26th at 12:15 in the Petit Auditoire of the DNF

rue du Bugnon 9.

“3D Analysis of Axon Guidance in Transparent  
Vertebrate Embryos”

Prof. Alain Chédotal

INSERM, Institut de la Vision, Paris, France

### Abstract

Over the past few years, many tissue clearing techniques have been developed to clear mouse brains, thereby preserving three-dimensional structure but their complexity has limited their use. We showed recently (Belle et al., 2014) that immunolabeling of axonal tracts followed by optical clearing with solvents (3DISCO) and light sheet microscopy reveals brain connectivity in mouse embryos and post-natal brains. This method can be used to rapidly screen and describe axon guidance defects in knockout mice. Using appropriate antibodies and software, the number of neurons within specific brain nuclei can be easily and rapidly counted in 3D. We have also adapted this technique to vertebrate embryos from many vertebrate species such as *Xenopus*, birds or reptiles. I will illustrate how this method facilitates the analysis axon guidance and, using commissural neurons as a model system. I will also present a project aimed at providing the first comprehensive description of neuronal development in human embryos during the first trimester of gestation.

### Reference

Belle, M., Godefroy, D., Dominici, C., Heitz-Marchaland, C., Zelina, P., Hellal, F., Bradke, F. and Chédotal, A. (2014) A Simple Method for 3D Analysis of Immunolabeled Axonal Tracts in a Transparent Nervous System. *Cell*

Reports 9: 1191-1201.

Access:

To access the DNF, please use preferentially public transportation (<http://www.unil.ch/dnf/en/home/menuinst/comment-nous-atteindre.html>). If however you need to drive your car, please come a little before the beginning of the seminar, so that the DNF can provide you with a temporary parking permit.