

# PERFORM QBIN EEG & NIRS Training

Software-specific instruction dedicated to EEG and NIRS analysis

Monday, May 14 & Tuesday, May 15, 2018

Loyola Jesuit Hall and Conference Centre,  
7141 Sherbrooke Street West (Loyola Campus)



## Introduction

Recent developments and software packages have allowed Electro-Encephalography (EEG) and Near Infra-Red Spectroscopy (fNIRS) to evolve from basic and standard scalp monitoring to more advanced 3D spatio-temporal neuroimaging techniques, providing a unique access to brain activity in realistic environment experienced in everyday life.



The objective of this week's training sessions are to introduce the concepts of these modalities and data acquisition, while providing hands-on software-specific instruction dedicated to EEG and NIRS analysis. All steps, from data preprocessing and quality check to more advanced modeling consisting in 3D reconstructions and statistical analysis, will be covered.

The training sessions are geared towards students and staff interesting in learning more about the following modalities, using dedicated user-friendly software environments:

- **Electro-Encephalography (EEG):** scalp measurements of neuronal bioelectrical activity
- **Near Infra-Red Spectroscopy (fNIRS):** scalp monitoring of cortical hemodynamic processes, and notably fluctuations of oxy- and deoxy-hemoglobin concentrations

The sessions are dedicated to both new EEG or NIRS users, who are interested in learning more about those techniques, as well as to more advanced users, in order to introduce them interesting software solutions for their research.

### Brief presentation of the software packages presented during the sessions

- [Brainstorm Software](#) for EEG analysis and source localization
- [NIRSTORM](#): a new Brainstorm plugin dedicated to NIRS data analysis
- [NIRS Toolbox](#): software developed by Ted Huppert

*Please note that similar evoked related high-density EEG and NIRS data will be considered for both the EEG and the NIRS training sessions.*

## Schedule of the day

Concurrent training sessions on EEG and on NIRS will be offered on both May 14 and 15

### Monday, May 14

**8:00 a.m. – 8:45 a.m.**

Introductory lecture: EEG data acquisition and source analysis I01  
*Christophe Grova, PERFORM Centre, Concordia University*

**8:45 – 9:00 a.m.**

Coffee break

**9:00 a.m. – 12:00 p.m. (Coffee break 10:30 – 10:45 a.m.)**

- EEG Brainstorm training (Part 1)
- NIRS training on NIRSTORM

**12:00 – 2:00 p.m.**

Lunch and EEG/NIRS data acquisition demo

**2:00 – 5:00 p.m. (Coffee break 3:30 – 3:45 p.m.)**

- EEG Brainstorm training (Part 2)
- NIRS training on NIRS Toolbox

### Tuesday, May 15

**8:00 a.m. – 8:45 a.m.**

Introductory lecture: NIRS data acquisition, Montage design and 3D reconstructions I01  
*Christophe Grova, PERFORM Centre, Concordia University*

**8:45 – 9:00 a.m.**

Coffee break

**9:00 a.m. – 12:00 p.m. (Coffee break 10:30 – 10:45 a.m.)**

- EEG Brainstorm training (Part 1)
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