**Workshop title:** Neuronal Oscillations: mechanisms, computational properties and functionality

**Organizers:**
- Adrien Peyrache, McGill University, CANADA
- Vassilis Cutsuridis, University of Lincoln, UK
- Horacio G. Rotstein, NJIT/Rutgers, USA

**Duration:** 1 days

**Number of expected speakers:** 13 (10 confirmed, 3 tentative) + spontaneous data blitz

**Description:**

Oscillations at various frequency ranges have been observed in several brain structures (hippocampus, entorhinal cortex, olfactory bulb and others). They are believed to be important for cognitive functions such as learning, memory, navigation and attention. These rhythms have been studied at the single cell level, as the result of the interaction of a neuron’s intrinsic properties, at the network level, as the result of the interaction between the participating neurons and neuronal populations in a given brain region, and at higher levels of organization involving several of these regions. Recent advances in this field have benefited from the interaction between experiment and theory, and models with varying levels of detail.

The purpose of this workshop is to bring together modelers, experimentalists and theorists with the goal of sharing and discussing their current results and ideas on the underlying mechanisms that govern the generation of these rhythms at various levels of organization, and their functional implications.

Following the tradition of this workshop we have reserved slots for students and postdocs to speak and we will allow for ample time for discussion by keeping the talks relatively brief. With the goal of making this workshop as inclusive as possible, time permits, we will be happy to include additional contributed talks from scientists not included in this list.

This year we will incorporate a new modality of participation by calling for a spontaneous five minutes long data blitz where interesting students and postdocs can briefly present their work and contribute to the discussion.
Speakers:

- Nikolai Axmacher (confirmed) - Ruhr-Universität Bochum (faculty, theory).
- Karim Benchenane (confirmed) - ESPCI/CNRS, France (faculty, experiments).
- Carmen Canavier (confirmed) - Louisiana State University (faculty, theory).
- Jozsef Csicsvari (confirmed) - IST, Austria (faculty, experiments).
- Dan Levenstein (tentative) - NYU, USA (student, theory, Buzsáki+Rinzel labs).
- Farzan Nadim (confirmed) - NJIT/Rutgers, USA (faculty, experiments).
- Wilten Nicola, Imperial College London (postdoc, theory, Clopath lab).
- Bijan Pesaran (confirmed) - NYU, USA (faculty, experiments).
- Adrien Peyrache (confirmed) - McGill University, Quebec, Canada (faculty, experiments).
- Horacio G. Rotstein (confirmed) - NJIT, USA (faculty, theory).
- Frances Skinner (tentative) - Krembil Research Institute, University Health Network and University of Toronto, Canada (faculty, theory).
- Imre Vida (confirmed) - Charité, Berlin, Germany (faculty, experiments)
- John White (confirmed) - Boston University, MA, USA (faculty, experiments)