



OptoDBS 2015

Optogenetic and Deep Brain Stimulation to
investigate and treat pathological brain
circuits

Geneva, Switzerland

May 7-9, 2015

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Welcome

Deep brain stimulation is a recognised treatment, which is believed to reduce pathological circuit function for the benefit of the patient suffering from selected neurological disorders. Optogenetic approaches on the other hand enable powerful investigations of neuronal circuit function in animal models of a wide range of brain diseases.

OptoDBS 2015 will discuss the state of the art of current therapies for DBS and ask how a better understanding of neural circuit dysfunction in pathology could inspire novel protocols. A particular emphasis will be on novel DBS indications such as obsessive compulsive disorders (OCD), depression or addiction. Cutting-edge optogenetic presentations will interleave with clinical studies from leading experts. The meeting will also serve as the kick-off of an initiative by the Medical Faculty of the University of Geneva to promote research in DBS and optogenetics.

We are extremely thankful to the Divesa Foundation part of the Assura Group, Carigest SA and the Geneva Academic Society for their generous support, which as allowed us to have a program with a line-up of distinguished invited speakers.

This meeting has been recognized as one and a half day of continuing education for animal experimentation by Swiss Association of Cantonal veterinaries.

The Organizers : Pierre **Pollak** (University of Geneva - Geneva University Hospital)
 Christian **Lüscher** (University of Geneva - Geneva University Hospital)



THURSDAY, MAY 7th

11 :00 WELCOME

12 :00 Opening remarks
Bertrand Levrat, Director of University Hospital
Henry Bounameaux, Dean of Medical Faculty

Followed by refreshments

Session 1: OPTOGENETIC CHARACTERIZATION OF DISEASE RELEVANT BRAIN CIRCUITS

13 :30	Anatol Kreitzer	Insights into basal ganglia function from optogenetics
14 :00	Rui Costa	Shaping actions with basal ganglia circuits
14 :30	Susanne Ahmari	Understanding the OCD brain: using new technologies to build bridges between humans and mice
15 :00	COFFEE BREAK	
15 :40	Oded Klavir	Controlling fear associations through optogenetic modulation of amygdala to prefrontal connectivity
16 :00	Arto Nurmikko	Optoelectronic Toolkit for DBS
16 :20	Cheng Xiao	Tonic activity of pedunculopontine cholinergic neurons governs locomotion and reward
16 :50	Christian Lüscher	An optogenetic model of addiction
19 :30	SPEAKERS DINNER	

FRIDAY, MAY 8th

08:15 WELCOME COFFEE & CROISSANTS

Session 2: BASIC MECHANISMS

08:40	André Zacharia	Effect of STN-DBS frequency on cortical excitability and motor performance in Parkinson's disease
09:00	Suzanne Haber	Neuroanatomy of deep brain structure
09:30	Ann Graybiel	Selective effects of optogenetic manipulation of the medial prefrontal cortex
10:00	Cameron McIntyre	Biophysics of optogenetic and electrical stimulation
10:30	COFFEE BREAK	
11:00	Damien Benis	Electrophysiological correlates of emotional prosody recognition in the nucleus accumbens of patients with depression
11:20	Lydia Kerkerian	Neuroadaptive changes under prolonged subthalamic nucleus DBS
11:50	Abdelhamid Benazzouz	Effects of DBS on the basal ganglia function
12:20	Hagai Bergman	Closed loop DBS

FRIDAY, MAY 8th

12:50 LUNCH AND POSTERS

Session 3: NEUROMODULATION IN NON-MOTOR DISEASE

14 :00	Christelle Baunez	DBS and optogenetic manipulation of STN on motivational processes and addiction
14 :30	Meaghan Creed	Optogenetically inspired DBS for addiction
15 :00	Jens Kuhn	First clinical results of DBS of the Nucleus accumbens in severe addiction
15 :30	COFFEE BREAK	
16 :00	Sina Kohl	Effects of DBS on prepulse inhibition in obsessive compulsive disorder
16 :20	Alister Rogers	Deep brain stimulation of the internal pallidum for patients with Huntington disease
16 :40	Paul Krack	From neurological to psychiatric disorders
17 :10	Damiaan Denys	DBS in OCD
20:30	PARTY AT THE "BUVETTE DU BATEAU"	

SATURDAY, MAY 9th

08 :00 WELCOME COFFEE & CROISSANTS

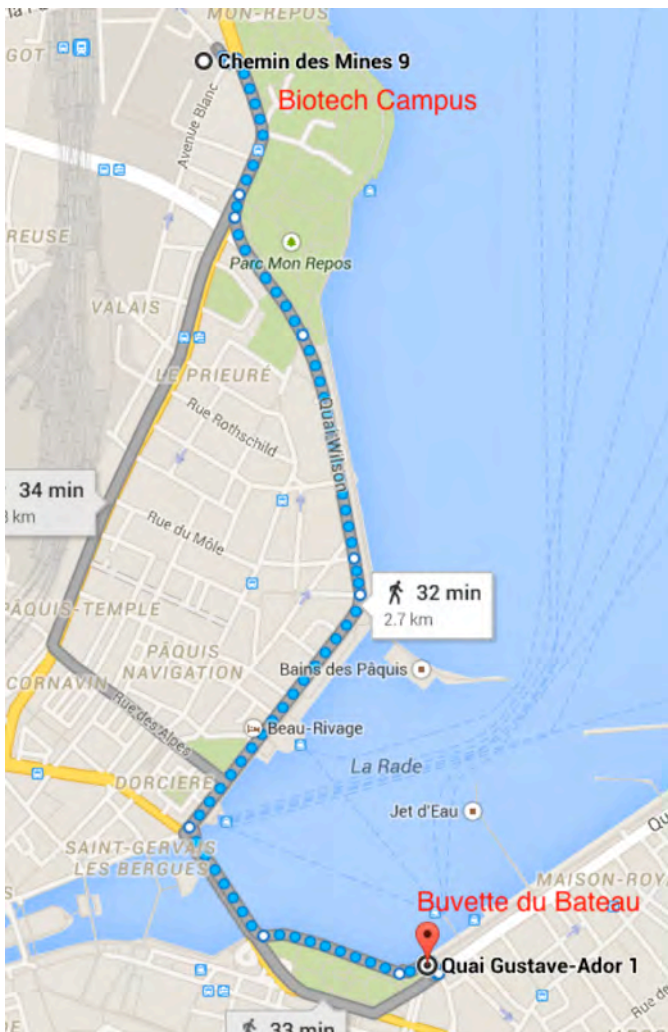
Session 4: NEUROMODULATION IN MOTOR DISORDERS

08 :20	Huiling Tan	Physiological functions of beta oscillations in cortico-basal ganglia network in motor error evaluation
08 :40	Daniel Côté	Optimal illumination and collection with microoptical fiber-based devices
09 :00	Peter Brown	Closed loop stimulation in patients
09 :30	Claudio Pollo	Directional DBS improves therapeutic window: from computer model to human application
10 :00	Maria Fiorella Contarino	Directional stimulation: recording possibilities and clinical implications
10 :30	COFFEE BREAK	
11 :00	Léonie Asboth	Uncovering and enhancing cortical contribution to motor recovery after spinal cord injury
11 :20	Helen Bronte-Stewart	Electrical recordings under DBS
11 :50	Pierre Pollak	The many ways to stimulate deeply in the brain: lessons from the PPN
12 :20	FAREWELL APERO	
13 :00	END OF THE CONFERENCE	



PARTY FRIDAY MAY 8TH

8.30 pm



You are all invited to join
the party on
Friday May 8th at the
« Buvette du Bateau »

This will be a great
opportunity to network &
have a good time

Limited host bar !

Participants

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