

OptoDBS 2022

Campus Biotech

Geneva, June 15-17

Wednesday June 15th 2022

Session 1 : New Methods and Developments

13:10 – 13:20 :	Christian Lüscher – Introduction
13:20 – 13:50 :	Mackenzie Mathis – Markerless Pose Estimation
13:50 – 14:20 :	Tommaso Patriarchi – Genetically encoded neuromodulator sensors
14:20 – 14:50 :	Ofer Yizhar – A new generation of bistable GPCR-rhodopsins for pathway-specific modulation of neural circuits
14:50 – 15:20 :	Kip Ludwig – Calcium Imaging during DBS in Mice
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15:20 – 16:45:	Coffee Break and Poster Session
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16:45 – 17:00 :	Adam Packer - All-optical interrogation of neuronal excitability during acute focal seizures
17:00 – 17:15 :	Maximilian Scherer - SCG-DBS disrupts pathophysiological network dynamics in TRD
17:15 – 18:00 :	Philip Starr (keynote) – Mechanisms of DBS in movement disorders : Lesson from chronic invasive brain recording
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19:00 :	*** Speaker's Dinner ***

Thursday June 16th 2022

Session 2 : DBS in Movement Disorders

08:30 – 09:00 :	Welcome with Drinks and Croissants
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09:00 – 09:30 :	Grégoire Courtine & Jocelyne Bloch – Optogenetically-inspired neuromodulation therapies for spinal cord injury
09:30 – 10:00 :	Wolf-Julian Neumann – Segregating Direct, Indirect and Hyperdirect Pathways by means of DBS
10:00 – 10:30 :	Ueli Rutishauser – Specific Roles of Cancelling Actions vs. Action-Selection in the STN
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10:30 – 11:00 :	Coffee Break
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11:00 – 11:30 :	Alexandra Nelson – Circuit Mechanisms of Parkinson's Disease in DBS
11:30 – 12:00 :	Nadine Gogolla – Face Expression in Mice
12:00 – 12:30 :	Birte Forstmann – Toward a mechanistic understanding of the human subcortex

12:30 – 14:00 : **Lunch and Poster Session**

Session 3 : DBS of the Basal Ganglia : From Bench to Bedside

14:00 – 14:30 : **Carola Haas** – DBS for seizure inference in experimental epilepsy

14:30 – 15:00 : **Andreas Lüthi** – Fear Circuits of the Amygdala

15:00 – 15:30 : **Meaghan Creed** – Arkyvallidal Neurons in Reward

15:30 – 16:00 : **Aryn Gittis** – GPe neuromodulation

16:00 – 16:30 : **Coffee Break**

16:30 – 17:00 : **Asa Mackenzie** – Heterogeneity of the subthalamic nucleus (STN)

17:00 – 17:30 : **Roxanne Lofredi** – The role of the STN in motor control – DBS

17:30 – 17:45 : **Debora Masini** - Targeted activation of midbrain neurons restores locomotor function in mouse models of parkinsonism

17:45 – 18:00 : **Leon Steiner** - Synaptic subcortical circuit activations by subthalamic DBS

18:00 – 18:15 : **Nadine Gut** - Challenges of DBS for correcting gait and postural deficits - A look into the heterogeneity of midbrain motor circuits

20:30 : **OptoDBS after dinner party at the Restaurant de la Plage**

Friday June 17th 2022

Session 4 : DBS in Clinical & Systems Neuroscience

08:30 – 09:00 : **Welcome with Drinks and Croissants**

09:00 – 09:30 : **Esther Florin** – Investigating remote DBS effects by MEG

09:30 – 10:00 : **Robert Jech** – Investigating remote DBS effects by fMRI

10:00 – 10:30 : **Coffee Break**

10:30 – 11:00 : **Andreas Horn** – Multi-Site Connectomic DBS Modeling in Neurology & Psychiatry

11:00 – 11:30 : **Valerie Voon** – Cognitive Models for Neuromodulation in OCD: From Lesions to DBS and Back

11:30 – 11:45 : **Charlotte Piette** - Opto-activation of cortical somatostatin interneurons as an alternative therapy in Parkinson's disease

11:45 – 12:00 : **Gerd Thinkhauser** - From temporal dynamics of neurophysiological manifestations toward implementation of adaptive DBS

12:00 – 12:15 : **Olexiy Kochubey** - Small changes with large consequences: closely related channelrhodopsin variants in a GABAergic circuit produce different behavioral outcomes

12:15 – 13:00 : **Joshua Gordon (keynote)** – Optogenetic approaches to enhancing connectivity

13:00 : **Light Farewell Apéro**