

# OptoDBS 2022

## Campus Biotech

### Geneva, June 15-17

## Wednesday June 15<sup>th</sup> 2022

### Session 1 : New Methods and Developments

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13:10 – 13:20 :	<b>Christian Lüscher</b> – Introduction
13:20 – 13:50 :	<b>Mackenzie Mathis</b> – Markerless Pose Estimation
13:50 – 14:20 :	<b>Tommaso Patriarchi</b> – Genetically encoded neuromodulator sensors
14:20 – 14:50 :	<b>Ofer Yizhar</b> – A new generation of bistable GPCR-rhodopsins for pathway-specific modulation of neural circuits

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14 :50– 16:45: *Coffee Break and Poster Session*

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16:45 – 17:00 :	<b>Adam Packer</b> - All-optical interrogation of neuronal excitability during acute focal seizures
17:00 – 17:15 :	<b>Maximilian Scherer</b> - SCG-DBS disrupts pathophysiological network dynamics in TRD
17:15 – 18:00 :	<b>Philip Starr (keynote)</b> – Mechanisms of DBS in movement disorders : Lesson from chronic invasive brain recording

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19:00 : *\*\*\* Speaker's Dinner \*\*\**

## Thursday June 16<sup>th</sup> 2022

### Session 2 : DBS in Movement Disorders

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08:30 – 09:00 :	<i>Welcome with Drinks and Croissants</i>
09:00 – 09:30 :	<b>Grégoire Courtine &amp; Jocelyne Bloch</b> – Optogenetically-inspired neuromodulation therapies for spinal cord injury
09:30 – 10:00 :	<b>Wolf-Julian Neumann</b> – Segregating Direct, Indirect and Hyperdirect Pathways by means of DBS
10:00 – 10:15 :	<b>Gerd Thinkhauser</b> - From temporal dynamics of neurophysiological manifestations toward implementation of adaptive DBS

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10:15 – 10:45 : *Coffee Break*

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10:45 – 11:15 :	<b>Alexandra Nelson</b> – Circuit Mechanisms of Parkinson's Disease in DBS
11:15 – 11:45 :	<b>Nadine Gogolla</b> – Face Expression in Mice
11:45 – 12:15 :	<b>Birte Forstmann</b> – Toward a mechanistic understanding of the human subcortex

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12:15 – 14:00 : *Lunch and Poster Session*

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

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- 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
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- 16:00 – 16:30 : **Coffee Break**
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- 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
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- 19:30 : **OptoDBS after dinner party at the Restaurant de la Plage**

## **Friday June 17<sup>th</sup> 2022**

### **Session 4 : DBS in Clinical & Systems Neuroscience**

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- 08:30 – 09:00 : **Welcome with Drinks and Croissants**
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- 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 : **Andreas Horn** – Multi-Site Connectomic DBS Modeling in Neurology & Psychiatry
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- 10:30 – 11:00 : **Coffee Break**
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- 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 : **Olexiy Kochubey** - Small changes with large consequences: closely related channelrhodopsin variants in a GABAergic circuit produce different behavioral outcomes
- 12:00 – 12:45 : **Joshua Gordon (keynote)** – Optogenetic approaches to enhancing connectivity
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