

**OptoDBS 2024**  
**Campus Biotech**  
**Geneva, June 12-14**

**Wednesday June 12<sup>th</sup> 2024**

**Session 1 : Preclinical ideas (Chair Christian Lüscher)**

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- 13:10 – 13:20 : **Christian Lüscher & Andreas Horn**– Introduction
- 13:20 – 14:20 : **Nader Pouratian - Aryn Gittis** - (Keynote)
- 14:20 – 14:50 : **Manuel Mameli** - Emotional contagion, serotonin and habenula in the regulation of resilience
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- 14:50 – 16:45 : ***Coffee Break and Poster Session***
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- 16:45 – 17:15 : **Andrea Kühn** - The role of chronic brain sensing technology for individualized deep brain stimulation therapy
- 17:15 – 17:45 : **Serge Picaud** - From prosthetic devices to optogenetic and sonogenetic therapies for restoring vision
- 17:45 – 18:15 : **Alan Carleton** - Improving cognitive functions in animal models of psychiatric disorders by targeting the claustrum
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- 19:00 ***Speaker's Dinner***
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**Thursday June 13<sup>th</sup> 2024**

**Session 2 : Methods development (Chair Valerie Voon)**

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- 08:30 – 09:00 : ***Welcome with Drinks and Croissants***
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- 09:00 – 09:30 : **Valerio Zerbi** - Integrative Imaging: invasive and non-invasive fMRI explorations of circuits, mental states, and brain dynamics
- 09:30 – 10:00 : **Andreas Horn** - The Connectome links Invasive and Noninvasive forms of Neuromodulation

10:00 – 10:30 : **Helen Mayberg** - Decoding Multimodal Recovery Signals to Optimize DBS for Depression

10:30 – 10:45: **Lotfi Hadjas** - Excitatory inputs drive opposite responses in PD-vulnerable and PD-resilient dopamine neurons

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10:45 – 11:15 : **Coffee Break**

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11:15 – 11:45 : **Andres Lozano** - Advances in the use of DBS

11:45 – 12:30 : **Round table: Roadmaps for translation in circuit neuroscience**  
**Lüscher (Chair) – Mayberg - Hutson – Lozano - Voon**

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

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### **Session 3 : Non invasive neuromodulation (tTDS) (Chair Ingo Willuhn)**

14:00 – 14:30 : **Indrit Bègue** - Negative symptoms of schizophrenia – looking for answers in the cerebellum with neuroimaging and brain stimulation

14:30 – 15:00 : **Friedhelm Hummel** - Non-invasive deep brain stimulation: a new perspective to enhance human behavior

15:00 – 15:15 : **Chencheng Zhang** – Non-invasive Temporal Interference Stimulation for Neural Circuit in Depression: A Proof-of-Concept Study

15:15 – 15:30 : **Alexander Hoyningen** – Single-nuclei mRNAseq reveals distinct cell populations in the mouse subthalamic nucleus

15:30 – 16:00 : **Nir Grossman** - Non-invasive temporal interference electrical stimulation of the human hippocampus

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16:00 – 16:30 : **Coffee Break**

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16:30 – 17:00 : **Clement Hamani** - Translational Research on Deep Brain Stimulation for Posttraumatic Stress Disorder

17:00 – 17:30 : **Tifei Yuan** - A cortical substrate for accumbal deep brain stimulation

- 17:30 – 17:45 : **Martin Parent** - Raman and diffuse reflectance spectroscopy for improved guidance during DBS neurosurgery
- 17:45 – 18:15 : **Bechir Jarraya** - Resting-state dynamics as a guide for DBS: an example of recovery of consciousness in a primate model
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## Friday June 14<sup>th</sup> 2024

### Session 4 : Psy DBS (Andreas Horn)

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

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09:00 – 09:30 : **Ingo Willuhn** - Identifying therapeutic mechanisms of deep-brain stimulation in a mouse model for OCD

09:30 – 10:00 : **Bryan Strange** - Deep-brain stimulation of the human nucleus accumbens-medial septum enhances memory formation

10:00 – 10:30 : **Nicole Provenza** - Ethological neurobehavioral investigations in obsessive-compulsive disorder

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10:30 – 11:00 : *Coffee Break*

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11:00 – 11:20 : **Paul Johnson** - Non-invasive hyper-concentrated focal drug delivery to the brain

11:20 – 11:40 : **Paulo Andrade** - DBS beyond movement disorders: actual status

11:40 – 12:00 : **Sarah Ayash** - translational mouse model of resilience to social stress

12:00 – 12:30 : **Andrew Sharrott** - Towards closed-loop deep brain stimulation for the treatment of Alzheimer's disease

12:30 – 13:15 : **Valerie Voon** - The heterogeneity of impulsivity: insights from intracranial subthalamic stimulation

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13:15 – 14:15 : *Light farewell apéro*

