IPEG Tutorials & Conference Meeting:
Please register:
https://uzh.zoom.us/meeting/register/u5Mrce6rqzsiHdz9kJjdGSet9Go5OOaoIh8N
After registration you will receive an email with the information about the meeting and the link.
Please use that to join the meeting/tutorials (i.e., zoom link will work for Wed, Thurs, Fri).

Wednesday, October 27th, 2021

TUTORIALS start @ 8:30AM EST/2:30PM CET

Tutorials will be pre-recorded (~20-25min.) and available for viewing on October 27th, 2021 for all conference registrants. After the conference, they will then be available to all IPEG members in the "members section" of our website.

1. **@ 8:30AM EST/2:30PM CET** [Moderator: Natalia Jaworska]
   Source localization (e.g., LORETA) – **Dr. Derek Fisher**, Dalhousie University (~20-25min)
2. **@ ~8:55AM EST/2:55PM CET** [Moderator: Natalia Jaworska]
   Deep learning – **Dr. Hanneke van Dijk**, Brainclinics (~15min) & **Dr. Sebastian Olbrich**, University of Zurich (~15min)
3. **@ ~9:25AM EST/3:25PM CET** [Moderator: Sebastian Olbrich]
   Pre-clinical sleep EEG – **Prof. Dr. Pim Drinkenburg**, University of Groningen (~20-25min)
4. **@ ~9:50AM EST/3:50PM CET** [Moderator: Sebastian Olbrich]
   Clinical sleep EEG – **Dr. Marcel Zeising**, Klinikum Ingolstadt (~20-25min)
5. **@ ~10:15AM EST/4:15PM CET Moderator** [Moderator: Sebastian Olbrich] → General discussion (~5-10min)

VIRTUAL GENERAL ASSEMBLY @ 11:00AM EST/5:00PM CET October 27th, 2021
30-45min; 15min Q & A
All IPEG members invited via email/Only for members
[Moderators: Sebastian Olbrich & Pim Drinkenburg]

CONFERENCE

Thursday October 28th, 2021

START/Introductions @ 8:45AM EST/2:45PM CET
Sebastian Olbrich (5-10min)

Sebastian – please advertise the posters, and encourage attendees to view them on [link should be advertised]

BREAK: 5-10min

SYMPOSIUM #1 - **"SLEEP"** start time @ 9:00AM EST/3PM CET [Chair - Natalia Jaworska]
1. **@ 9:00AM EST/3:00PM CET** – **Dr. Frederik D. Weber**, Donders Institute & The Netherlands Institute for Neuroscience

Title: *Non-REM sleep EEG features in three datasets of depressed patients*
Summary: *Non-REM sleep EEG in depressed patients remains under-investigated. We comprehensively analysed non-REM sleep EEG in three independently collected, matched-control datasets with MDD patients with varying demographics, treatments and severity. We explored sleep stages, cycles, spectral power, sleep spindles, slow waves (SW), and many more. Overall, our results indicate no major systematic alterations in non-REM sleep architecture in patients but rather subtle changes in microstructure of non-REM sleep (e.g. spindles and their coupling with slow waves) that were dependent on the patient groups (e.g. medication schedule or duration).*

2. **@ 9:25AM EST/3:25PM CET** - **Dr. Marcel Zeising**, Klinikum Ingolstadt

Title: *sLORETA Neuroimaging and Heart Rate Variability during Slow Wave Sleep after Olanzapine in Healthy Subjects*
Summary: *Prior studies have shown that olanzapine prolongs slow wave sleep (SWS) duration and is also linked to cardiac side effects. Within an interventional study design, ten healthy, young, male subjects underwent two 118 channel sleep-EEG recordings i) drug-free before medication and ii) after a stepwise increase of olanzapine dosage across seven days up to 10 mg/d. The results suggest a direct parasympathetic effect of olanzapine within the brain with increases in SWS duration and sgACC alpha activity, but also an indirect anticholinergic and disturbing effect on the brain-heart axis.*

3. **@9:50AM EST/3:50PM CET** - **Dr. Rebecca Robillard**, University of Ottawa

Title: *Electroencephalographic markers of depression in the sleep state*
Summary: *This session will give an overview of some of the electroencephalographic markers of depression emerging during sleep. Elements of sleep macroarchitecture and microarchitecture showing abnormalities in depressive states, such as sleep slow waves and sleep spindles, will be covered. Some examples will be given of how these sleep features can relate to cognitive processes linked to depression and how they may be influenced by pharmacological agents.*

4. **@10:15AM EST/4:15 PM CET** - **General Discussion** (5-10min)

BREAK: 5-10min

1st KEYNOTE @ 10:30 EST/4:30PM CET [Introduction/Moderator - Sebastian Olbrich]
Dr. Diego Pizzagalli, Harvard University
Title: *Neurophysiological and Imaging Approaches to Predict Treatment Response in Depression*
Summary: *In this Keynote Lecture, Dr. Pizzagalli will summarize recent attempts to use EEG, fMRI and PET imaging to predict treatment response in major depression. Opportunities and challenges emerging from this literature will be discussed, along with possible treatment implications.*

BREAK: 5-10min

SYMPOSIUM #2 - "DEPRESSION PREDICTION & STRATIFICATION BASED ON BIOMARKERS"
start time @ 11:35AM EST/5:35PM CET [Chair – Martin Brunovsky]
    1. **@ 11:35AM EST/5:35PM CET** - **Dr. Faranak Farzan**, Simon Fraser University
Title: *EEG and neurostimulation in assessment and treatment of depression*
Summary: *EEG and its combination with neuromodulation modalities provide an opportunity to assess and modulate selective neurocircuitries in depression for diagnostic and treatment applications. In this talk, I will present our studies on EEG/TMS neuromarkers and their utility in treatment selection and development in depression.*
    2. **@12:00PM EST/6:00PM CET** - **Ms. Helena Voetterl**, Brainclinics (on behalf of
      Dr. Martijn Arns)
Title: *Taking the Guesswork Out of Stepped-Care: EEG Biomarker Based Treatment Stratification*
Brief info: *I will review the paradigm-change from one-size-fits-all psychiatry to more personalized-psychiatry, where a distinction is made between 'precision psychiatry' and 'stratified psychiatry'. Using examples in depression and ADHD, I argue that stratified psychiatry, using EEG biomarkers to facilitate patients to best 'on-label' treatments, is a more realistic future for implementing biomarkers in clinical practice.*
    3. **@12:25PM EST/6:25PM CET** - **Dr. Cheng Teng Ip**, Copenhagen University
Title: *How reliable are EEG biomarkers in antidepressant treatment response?*
Summary: *EEG biomarker has shown certain values in identifying the subgroups in depressed cohorts, but independent validations of these markers are missing. Here, I will present the validation of EEG biomarkers in response to standard selective serotonin reuptake inhibitor (SSRI drugs) and also to the fast-acting drug, ketamine.*
    4. **@12:50PM EST/6:50PM CET** - **General Discussion** (5-10min)

End of Day 1

Friday, October 29th, 2021

2nd KEYNOTE @ 8:30AM EST/2:30PM CET [Introduction/Moderator - Natalia Jaworska]
Dr. Georg Northoff, University of Ottawa's Institute of Mental Health Research
Title: *Time & the brain - The dynamics of our mind*
Summary: *Our brain is intrinsically temporal, however, the mechanisms of this property and its functional are not yet fully understood. In this talk, I present data on the brain's intrinsic neural timescales, their hierarchy, their role in input processing, and their important functional role in consciousness, the self, and psychiatric disorders.*

BREAK: 5-10min

SYMPOSIUM #3 - "TRANSLATIONAL PHARMACO-EEG" **start time** [Chair - Steven Leiser]
    1. **@9:35AM EST/3:35PM CET** - **Dr. Rob Gould** Wake Forest School of Medicine

Title: Utilizing EEG to inform on therapeutic index surrounding novel mGlu5 NAMs for treating multiple CNS disorders
Summary: Negative Allosteric Modulators (NAMs) targeting the metabotropic glutamate receptor subtype 5 (mglu5) have been in development for decades to treat multiple CNS disorders including anxiety, depression, and substance use disorders, but adverse risk liability has remained a concern. This presentation will describe recent data with full and partial mGlu5 NAMs and the use of EEG in rodents to aid understanding of both therapeutic potential and adverse effect liability.

2. **@10:00AM EST/4:00PM CET** – **Prof. Dennis Kätzel** Ulm University
   Title: Do rodent and human working memory assays measure the same function? Insights from neurophysiological correlates revealed by single-trial decoding
   Summary: While the importance of interregional neural communication for working memory has been appreciated, the claims of which exact brain areas and connections are essential vary widely. Combining multi-site electrophysiological recordings in mice and humans in multiple working memory task with machine-learning-based analysis (single-trial decoding of choices), we identified a rich neural connectivity underlying working memory that is highly species- and task-specific and widely distributed across brain areas and frequency bands, questioning the translational implications of rodent working memory tasks.

3. **@10:25AM EST/4:25PM CET** – **Dr. Mihály Hajós** *Yale University School of Medicine*
   Title: Neurophysiological Abnormalities in Alzheimer's Disease: Diagnostics, Translational Biomarkers, and Targets for Treatment
   Summary:

4. **@10:50AM EST/4:50PM CET** - **General Discussion**

BREAK: 5-10min

SYMPOSIUM #4 – **ORAL PRESENTATIONS** [Chair - Marcel Zeising]

1. **@11:00AM EST/5:00PM CET** – "*Quantitative Electroencephalographic Evaluations of Electrophysiological Biomarkers and Impaired Functional Networks in Older Adults Diagnosed with Dementia*"
   Kris Williams, Ph.D. candidate, Quietmind Foundation- Elkins Park, Philadelphia USA

2. **@11:15AM EST/5:15PM CET** – "*Simultaneous EEG+fMRI study of brain activity during an emotional Stroop task in individuals in remission from depression*"
   Marie Huc, PhD Candidate, Carleton University, Ottawa, Canada

3. **@11:30AM EST/5:30PM CET** – "*Activity-state dependent reversal of ketamine-induced resting state EEG effects by clozapine and naltrexone in the freely moving rat*"
   Christien Bowman, PhD Candidate, Faculty of Psychology and Neuroscience, Maastricht University, Netherlands

4. **@11:45PM EST/5:45PM** - **General Discussion**

BREAK: 5-10min

CLOSING FORUM @12PM EST/6PM CET
Hosted by IPEG: Big data (EEG consortia) & guidelines

WRAP-UP @12:45PM EST/6:45PM CET [Moderator: Pim Drinkenburg]
PROF. WERNER M. HERRMANN MEMORIAL GRANT PRIZES for best trainee presentations:
1st prize announcement (750 euros)
2nd prize announcement (500 euros)
3d prize announcements (250 euros)
Winner presentations: 3-4min blitz each (each winner is asked to briefly summarize their work)

CLOSING @1PM EST/7PM CET [Sebastian Olbrich]