



**University of
Zurich**^{UZH}

Clinical Research Priority Program Sleep and Health

A black and white photograph of a Zurich street scene, featuring a large Gothic church tower (Grossmünster) and a river with a tram in the foreground. A teal semi-transparent banner is overlaid on the image.

Sleep & Health Zurich 2018



**Psychiatric
University Hospital Zurich**

UNIVERSITY
**CHILDREN'S HOSPITAL
ZURICH**

**The hospital of the
Eleonore Foundation**



**UniversityHospital
Zurich**



Thursday, February 1st, 2018

Workshops

09:00 – 09:50 **Workshop 1 (Room KO2-F-175)**

Machine learning tools in sleep research and sleep medicine

Alexander Malafev (University of Zurich, CH)

Ramin Khatami (Clinic Barmelweid, CH)

Workshop 2 (Room KO2-F-174)

Tracking the internal clock

Steven A. Brown (University of Zurich, CH)

Derk-Jan Dijk (University of Surrey, UK)

09:50 – 10:10 Coffee break (Lichthof)

10:10 – 11:00 **Workshop 3 (Room KO2-F-175)**

Sleep and neurodegeneration

Daniela Noain (University Hospital Zurich, CH)

Christian Baumann (University Hospital Zurich, CH)

Workshop 4 (Room KO2-F-174)

Targeted memory reactivation

Björn Rasch (University of Fribourg, CH)

Inès Wilhelm (University of Zurich, CH)

11:10 – 12:00 **Workshop 5 (Room KO2-F-175)**

Local aspects of sleep and wakefulness

Reto Huber (University Children's Hospital Zurich, CH)

Bigna Bölsterli (University Children's Hospital Zurich, CH)

Workshop 6 (Room KO2-F-174)

Imaging sleep and dreams

Sebastian C. Holst (Copenhagen University Hospital, Denmark)

Francesca Siclari (University Hospital Lausanne, CH)

12:00 – 13:30 Lunch (Lichthof)

12:15 – 13:15 **Business meeting (Room KOL-F-123)**

Zurich Center of interdisciplinary Sleep Research (ZiS)

ZURICH SLEEP MEDICINE SYMPOSIUM 2018

Phenotyping of patients with OSA

Moderator: Konrad Bloch (University Hospital Zurich, CH)

13:30 – 13:50 **Real-time breath analysis: How will it help to track sleep?**

Pablo Martinez Lozano Sinues (University of Basel, CH)

13:50 – 14:10 **Exhaled breath metabolomics in patients with OSA**

Malcolm Kohler (University Hospital Zurich, CH)

14:10 – 14:40 **Phenotyping OSA patients**

Andrew Wellman (Harvard Medical School, USA)

14:40 – 15:10 **Do miRNA predict blood pressure response to CPAP treatment?**

Ferran Barbe (University of Lleida, Spain)

15:10 – 15:45 Coffee break (Lichthof)

Sleep and stress

Moderator: Erich Seifritz (Psychiatric University Hospital Zurich, CH)

15:45 – 16:15 **Work stress, sleep and health: What are the links?**

John Axelsson (Karolinska Institutet, Sweden)

16:15 – 16:35 **Sleep and emotional learning: Relevance to mental health and psychotherapy**

Birgit Kleim (University of Zurich, CH)

16:35 – 16:50 **Neural correlates of trauma memory and sleep**

Géraldine Gvozdanovic (University of Zurich, CH)

16:50 – 17:10 **The MemoSleep Hypothesis: How does cognition influence sleep?**

Björn Rasch (University of Fribourg, CH)

SYMPOSIUM OF THE CLINICAL RESEARCH PRIORITY PROGRAM SLEEP & HEALTH

17:15 – 17:30 **Opening remarks**

Jean-Marc Fritschy (Vice-Dean of the Faculty of Medicine, UZH)

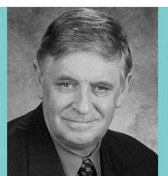
Gregor Zünd (President of the University Hospital Executive Board)

17:30 – 18:30 **Keynote lecture**

Moderator: Malcolm Kohler (University Hospital Zurich, CH)

Developing personalized approaches to sleep disorders

Allan I. Pack (University of Pennsylvania, USA)



18:30 Apéro (Lichthof)

Friday, February 2nd, 2018

SYMPOSIUM OF THE CLINICAL RESEARCH PRIORITY PROGRAM SLEEP & HEALTH

Sleep projects directed by women

Moderator: Irene Tobler (University of Zurich, CH)

08:45 – 09:00 **Heritability of sleep in adolescence**

Leila Tarokh (University of Bern and University of Zurich, CH)

09:00 – 09:15 **Babies, bedtimes and bacteria**

Salome Kurth (University Hospital Zurich, CH)

09:15 – 09:30 **Establishing the influence of sleep oscillations on brain and body functions using auditory stimulation**

Caroline Lustenberger (ETH Zurich, CH)

09:30 – 10:00 Coffee break (Lichthof)

Sleep biomarkers

Moderator: Hans-Peter Landolt (University of Zurich, CH)

10:00 – 10:20 **A systems genetic approach to the effects of sleep deprivation in mice**

Paul Franken (University of Lausanne, CH)

10:20 – 10:50 **Establishing a national network and a national biobank for sleep and circadian disorders**

Julie Carrier (University of Montréal, Canada)

10:50 – 11:20 **Human sleep-wake regulation: A multilevel approach**

Derk-Jan Dijk (University of Surrey, UK)

11:20 – 11:35 **From wakefulness to sleep: What are the underlying metabolic changes in the human brain?**

Mick Lehmann (University of Zurich, CH)

11:45 – 13:00 **Poster session** and lunch (Lichthof)

Circadian regulation of sleep:

Insights from humans and animal models

Moderator: Steven A. Brown (University of Zurich, CH)

13:00 – 13:30 **Effects of sleep and circadian disruption on the human microbiome**

Kenneth Wright (University of Colorado, USA)

13:30 – 14:00 **Suprachiasmatic circuits**

Michael Hastings (MRC Laboratory of Molecular Biology, Cambridge, UK)

14:00 – 14:20 **New insights into the circadian regulation of sleep in *Drosophila***

Emi Nagoshi (University of Geneva, CH)

14:20 – 14:35 **Circadian activity in the wake-maintenance zone**

Ben Collins (University of Zurich, CH)

Sleep, brain and behavior

Moderator: Reto Huber (University Children's Hospital Zurich, CH)

- 14:40 – 15:10 **Ultrastructural evidence for synaptic scaling across the sleep-wake cycle**
Luisa de Vivo (University of Wisconsin-Madison, Madison, USA)
- 15:10 – 15:30 **Deep sleep maintains learning efficiency of the human brain**
Sara Fattinger (University Children's Hospital Zurich, CH)
- 15:30 – 15:50 **Animal models of restless legs syndrome and periodic limb movements syndrome**
Mauro Manconi (Neurocenter of Southern Switzerland, Lugano, CH)
- 15:50 – 16:10 **Chronic sleep restriction: Local aspects of altered behaviors**
Angelina Maric (University Hospital Zurich, CH)
- 16:10 – 16:30 Coffee break (Lichthof)

Sleep - from synapses to patients

Moderator: Alexander A. Borbély (University of Zurich, CH)

- 16:30 – 16:50 **Sleep and wake at cortical synapses: a glial perspective**
Michele Bellesi (University of Wisconsin-Madison, Madison, USA)
- 16:50 – 17:10 **Mechanisms of circadian plasticity**
Steven A. Brown (University of Zurich, CH)
- 17:10 – 17:30 **Who is vulnerable to sleep deprivation?**
Hans-Peter Landolt (University of Zurich, CH)
- 17:30 – 17:50 **The impact of sleep on neurological disease**
Christian Baumann (University Hospital Zurich, CH)

17:50 – 18:50 **Keynote lecture**

Moderator: Alexander A. Borbély (University of Zurich, CH)

Sleep and Health: A Clinical Research Priority

Charles A. Czeisler (Harvard Medical School, USA)



- 18:50 – 19:00 **Closing Address of the President of UZH**
Michael Hengartner (President of the University of Zürich)
- 19:00 Closing cocktails (Lichthof)

Poster Session

Sleep-Wake Regulation

01. Cold-Inducible RNA Binding Protein (CIRBP) contributes to quality of waking, REM sleep homeostasis and refines the molecular response to sleep deprivation (SD)

Marieke Hoekstra, Yann Emmenegger, Paul Franken

02. Micro-regulators of sleep homeostasis in mice

Konstantinos Kompotis, Geraldine Mang, Sonia Jimenez, Yann Emmenegger, Paul Franken

03. 0.02 Hz-oscillation in sigma power times spontaneous transitions from non-REM sleep

Sandro Lecci, Romain Cardis, Anita Lüthi

04. Changes in human grey matter density during long-term caffeine consumption and caffeine withdrawal

Lin, Y.-S., Weibel, J., Landolt, H.-P, Francesco S., Garbazza, C., Meyer, M., Slawik, H., Borgwardt, S. , Cajochen, C., Reichert, C

05. Deep brain stimulation of the sleep-promoting center VLPO modulates slow wave sleep in healthy rats

Sophie Masneuf, Fabian Büchele, Giovanni Colacicco, Lukas Imbach, Marco Penner, Christian Ineichen, Ali Jahanshahi, Yasin Temel, Oguzkan Sürücü, Christian R. Baumann, Daniela Noain

06. mGluR5-dependent nuclear speckle assembly drives sleep-wake transcriptomics

A. Spinnler, K. Seignette, D. Colameo, M. Znidaric, G. Bosshard, T. Gschwind, M. Zaichuk, W. ElGrawani, E. Moriggi, D. Mircsof, F. Brüning, M. Tafti, S. Nakagawa, T. Hirose, J.-M. Fritschy, S. K. Tyagarajan, S. A. Brown

07. Investigation of the possible effects of the BDNF Val66Met polymorphism on the sleep EEG in a large, homogenous sample

Laura van Bommel, Diego Bauer, Mairav Zion-Cohen, Sebastian Holst, Wolfgang Berger, Peter Achermann, Hans-Peter Landolt

08. Diurnal changes in glutamate/glutamine assessed by MRS are related to EEG sleep slow wave activity

Volk C., Jaramillo V., Merki R., O’Gorman Ruth L., Huber R

09. Influence of habitual caffeine consumption and its withdrawal on subjective sleepiness, vigilance, caffeine craving, and melatonin

Weibel, J, Lin, Y.-S., Landolt, H.-P, Garbazza, C., Meyer, M, Slawik, H, Borgwardt, S, Reichert, C, Cajochen, C.

10. Sleep deprivation affects microRNA expression profile in humans

Susanne Weigend, Sebastian C. Holst, Josefine Meier, Matthias Brock , Malcolm Kohler, Hans-Peter Landolt

Poster Session

Sleep in Children and Adolescents

- 11.** Later school start times alleviate sleep deprivation and social jetlag in adolescent high school students
Anna Biller, Carmen Molenda, Maria Vuori, Till Roenneberg and Eva Winnebeck
- 12.** Relationship between infant sleep behavior and gut microbiome beta diversity
Sarah F. Schoch, Bingfeng Leng, Josué L. Castro-Mejía, Witold Kot, Łukasz Krych, Dennis S. Nielsen, Salome Kurth
- 13.** Homeostatic response to sleep restriction in adolescents
Jelena Skorucak, Chelsea Reynolds, Scott Coussens, Mary Carskadon, Peter Achermann, Michelle Short

Sleep and Plasticity

- 14.** Interacting with spike-wave-activity by closed-loop acoustic stimulation during sleep? A pilot study in patients with childhood epilepsies
Sara Fattinger, Bigna Bölsterli Heinzle, Georgia Ramantani, Lucia Abela, Reto Huber, Bernhard Schmitt
- 15.** Local, spindle-enriched non-REM sleep in mouse somatosensory cortex enabled through heterogeneous thalamic burst propensity
Laura M.J. Fernandez, Gil Vantomme, Elidie Béard and Anita Lüthi
- 16.** Prototype development for mobile and automated auditory sleep stimulation
Maria Laura Ferster, Caroline Lustenberger, and Walter Karlen
- 17.** Acoustic modulation of slow-wave sleep in rats: effect of boosting or inhibiting delta activity in SWS on motor learning.
Carlos Gonçalves Moreira, Maria Laura Ferster, Daniela Noain, Christian Baumann
- 18.** High-density EEG recordings combined with Magnetic Resonance Spectroscopy to study the relationship between sleep and diurnal changes in markers of cortical plasticity in children
Jaramillo V., Volk C., Merki R., Furrer M., O’Gorman Ruth L., Huber R.
- 19.** Spatio-temporal characterization of theta and sigma power following auditory stimulation during slow-wave sleep
Elena Krugliakova, Manuela Rytz, Sara Fattinger, Reto Huber
- 20.** How the efficiency of auditory closed-loop stimulation during deep sleep depends on the timing and morphology of slow waves
Miguel Navarrete, Anugrah Honesty, Helen Le Seur, Jules Schneider, Nihkil Kurian, Hong-Viet V. Ngo, Mario Valderrama, Penelope Lewis, Alex Casson
- 21.** Glutamatergic recruitment of thalamic reticular nucleus by postsubiculum projections: role in head-direction system?
Gil Vantomme, Zita Rovó, Georgia Katsioudi, Laura MJ Fernandez, Anita Lüthi

Poster Session

Sleep and Cognition

22. Performance on the Stroop Color-Word task in healthy adults is inversely associated with habitual sleep duration

Mairav Cohen-Zion, Valérie Bachmann, Peter Brugger, and Hans-Peter Landolt

23. I want to sleep better: Effects of voluntarily control on objective sleep parameters

Selina L. Combertaldi & Björn Rasch

Sleep and Stress

24. Poor sleep quality reduces resilience - may social networks act as a buffer? A prospective daily diary study in at risk- individuals

Yasmine S. Azza, Tiffany Guarnieri, Prisca Feinaigle, Erich Seifritz & Birgit Kleim

25. Field-study on the role of sleep in stress resilience in rescue workers: First preliminary analyses of polysomnographic data

Ian Clark, Yasmine Azza, Zora Kaiser, Stefan Müller, Walter Karlen, Erich Seifritz, Birgit Kleim, Hans-Peter Landolt

26. Sleep and psychobehavioral difficulties in internally displaced children in Georgia

Irine Sakhelashvili, Marine Eliozishvili, Nikoloz Oniani, Nato Darchia

27. Sleep quality of medical students from the State University of Medicine and Pharmacy of the Republic of Moldova

Sofia Zubcu, Vovc Victor, Lupusor Adrian

Poster Session

Sleep and Medical Disorders

28. Automatic snoring detection from respiratory sleep sounds in adults and children

Mustafa Cavusoglu

29. Cognitive impairments in obstructive sleep apnea patients depending on morning headache

Ana Diaconu, Victor Vovc, Adrian Lupușor

30. The effect of obstructive sleep apnea on pain

Spînu Doina, Victor Vovc, Adrian Lupușor

31. Anxiety and depression in patients with insomnia versus patients with obstructive sleep apnea syndrome

Adrian Lupusor, Victor. Vovc and Ion Moldovanu

32. Sleep stage related heart rate variability distinguishes between insomnia and normal sleep

Thorsten Mikoteit, Marcel A. Pawlowski, Eleonora Seelig, Stefan Bilz, Edith Holsboer-Trachsler, Axel Steiger, Martin Hatzinger

33. Deep non-rapid eye movement (NREM) sleep predicts motor progression in Parkinson's disease

Simon J. Schreiner, Lukas L. Imbach, Philipp O. Valko, Tobias Murer, Esther Werth, Rositsa Poryazova, Heide Baumann-Vogel, Daniela Noain, Christian R. Baumann

34. Assessing human sleep dynamics in real-life and large numbers

Eva Winnebeck, Dorothee Fischer, Tanya Leise and Till Roenneberg

Other

35. Learning to lucid dream enhances aspects of personal growth

Karen Konkoly and Christopher Burke

Symposium endorsed by the European Sleep Research Society.



Continuous medical education

	01.02.2018	02.02.2018
Schweizerische Gesellschaft für Pneumologie Société Suisse de Pneumologie (SGP-SSP)	6	6
Swiss Neurological Society (SNG-SSN)	8	8
Swiss Society of General Internal Medicine (SGAIM-SSMIG-SSGIM)	7.5	6.5
Swiss Society for Sleep Research Sleep Medicine and Chronobiology (SSSSC)	7.5	7.5
	Credits	

Venue

University of Zurich, Main Building
Ramistrasse 71, 8006 Zurich
Lecture Hall: KOH B 10



Organisation

Clinical Research Priority Program Sleep and Health
Department of Neurology
Frauenklinikstrasse 26, CH-8091 Zurich
caroline.kopp@usz.ch



www.sleep.uzh.ch



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