



Memory & Consciousness: Plasticity, Brain Rhythms and Sleep

PROGRAM

Summer School 2014

Tübingen, 30 July – 2 August 2014

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Welcome to Tübingen

Dear colleagues,

We warmly welcome you in Tübingen – this proud and old university town. As one of the first and most renowned universities in Europe, the university of Tübingen was founded in 1477 and has continued to promote lively and excellent research and teaching ever since.

We are delighted to welcome you to the Summer School „Memory and Consciousness – Plasticity, Brain Rhythms and Sleep” that will hopefully stand in the tradition of bringing together outstanding research and teaching. This Summer School is organized by young researchers from the Department of Medical Psychology and Behavioral Neurobiology of the University of Tübingen and the Transregional Collaborative Research Center “Plasticity and Sleep” of the

Universities of Tübingen, Lübeck and Kiel (TR-SFB 654).

The focus of these research institutions is on the study of states of diminished consciousness and the modulation of brain states, as well as on the consolidation of memory during sleep and its underlying plastic processes. The Summer School is intended to bring together young and established researchers working in these fields of research to foster scientific exchange and lively discussions about the links between memory processes, brain oscillations and different states of consciousness.

We wish you an exciting and stimulating meeting and an enjoyable stay in Tübingen.

Susanne Diekelmann
Gordon B. Feld
Eduard Kelemen

General Information

Organizing committee

Dr. Susanne Diekelmann, Dr. Gordon B. Feld, Dr. Eduard Kelemen, Anja Otterbein, PD Dr. Manfred Hallschmid, Dr. Katharina Zinke, Jens Klinzing, Albrecht Vorster, Prof. Dr. Boris Kotchoubey

Venue

University Hospital Tübingen
Campus Schnarrenberg (Uni-Kliniken Berg)

Lecture halls:

Children's Hospital, Hoppe-Seyler-Str. 1, Lecture Hall, Floor C3
CRONA Clinics, Hoppe-Seyler-Str. 3, Main Lecture Hall 210, Floor B04

Directions

Nearest bus station: Uni-Kliniken Berg
Bus numbers 5, 13, 18 and 19 run regularly between the city center and the university hospital (about 10 minutes from Tübingen main station). Limited parking is available on campus with parking fees.

Registration desk

Registration will open on Wednesday, 30 July, before the welcome reception at the cafeteria. From Thursday to Saturday, the registration desk will remain open and will be located in front of the lecture hall in the Children's Hospital.

| | | |
|-------------------------|---------------|---------------------|
| Wednesday, 30 July 2014 | 18:00 – 20:00 | Cafeteria |
| Thursday, 31 July 2014 | 09:00 – 18:30 | Children's Hospital |
| Friday, 1 August 2014 | 09:00 – 18:30 | Children's Hospital |
| Saturday, 2 August 2014 | 09:30 – 13:00 | Children's Hospital |

Welcome reception

The welcome reception takes place at the terrace of the cafeteria, which is located right opposite the lecture hall of the Children's Hospital. Drinks and snacks will be served.

Summer island ("Sommerinsel")

The "Sommerinsel" is a traditional 10-day festival in Tübingen, celebrating the summer, good food and drinks at a scenic pond in the heart of Tübingen. The festival area is located at the Anlagensee, next to Tübingen main station. For Thursday, 31 July, we have reserved tables from 20:00 for the Summer School next to the pavilion of Hotel Krone. Food and drinks can be ordered at any pavilion.

Dinner party

The Dinner takes place on Friday, 1 August, at 20:00 at the restaurant "Die Kelter" (Schmiedtorstrasse 17). Food and drinks are included for all speakers and participants. After the Dinner, we will head to the club "Tangente" (Pfleghofstrasse 10) to enjoy some good music, dancing and drinks. Participants will receive two vouchers for drinks upon registration. All participants and speakers should wear their badge throughout the event as the badge serves as the ticket for the Dinner and the ensuing party.

Punting trip

Punting ("Stocherkahn") is a traditional Tübingen sport and leisure activity. All speakers and participants are welcome to join us on a punting boat trip on Saturday, 2 August, from 15:00-16:00 along the scenic river Neckar and the waterfront of Tübingen Old Town. Meeting point for the boat trip is the Neckarbrücke, in front of the restaurant Bellevue, at 14:45.

Coffee breaks and lunch

Coffee, tea, water, juice and snacks will be served during coffee breaks in front of the lecture room of the Children's Hospital. During lunch breaks, lunch can be ordered at the cafeteria, which is located right opposite the lecture hall of the Children's Hospital. Vouchers for the lunch will be provided upon registration.

Speakers

Speakers should make sure to copy their presentation on the presentation computer during the break before their talk. A laptop with Windows Office 2010 and a pointer will be available for presentations.

Poster

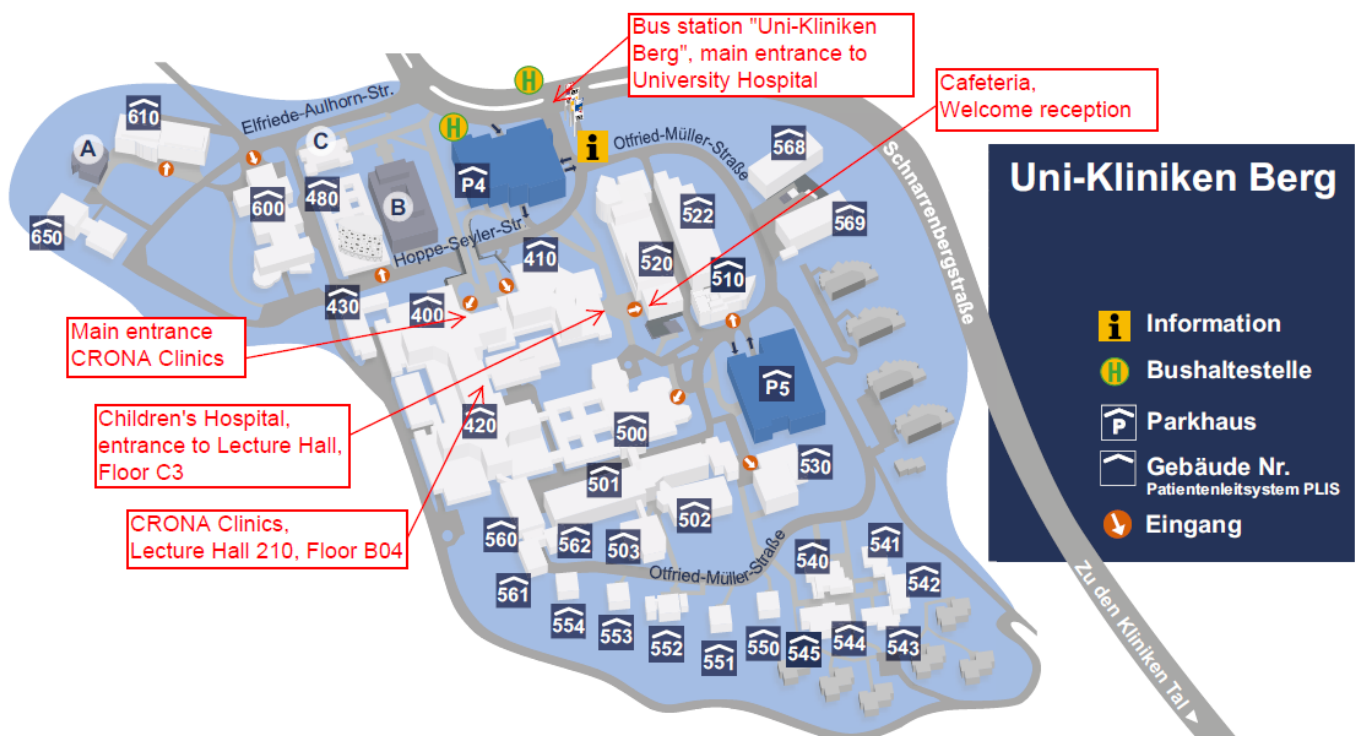
Poster size: 119 x 84 cm (A0), upright format

Poster numbers will be indicated at poster boards. Posters should be put up on Friday, 1 August, during the lunch break. Presenters should be available at their poster during Poster Session A or B as indicated. In the Poster Blitz session, all presenters will introduce their poster in a 2-minute presentation in the order of poster numbers. The abstracts of the posters are available on the website: www.summerschool-tuebingen-2014.de.

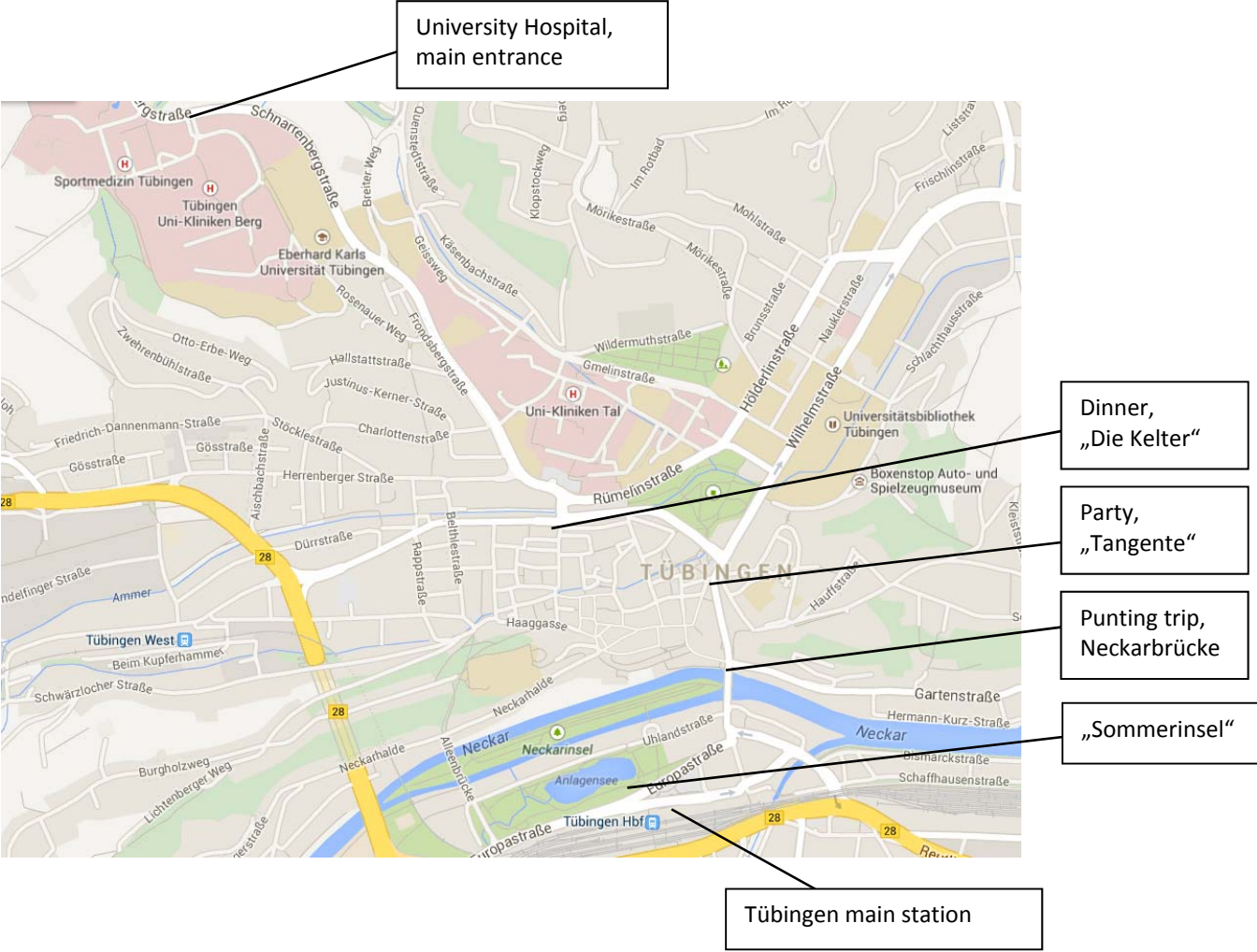
Internet

Wifi will be available in the lecture hall of the Children's Hospital. Information on the internet access will be provided upon registration.

University Hospital map



City map



Program

Wednesday, 30 July 2014

| | | |
|---------------|----------------------|---|
| 16:45 – 17:00 | <i>CRONA Clinics</i> | <i>Welcome address</i> Jan Born , University of Tübingen, Germany Andrea Schaub , University of Tübingen, Germany |
| 17:00 – 18:00 | <i>CRONA Clinics</i> | <i>Keynote lecture</i> Georg Northoff , University of Ottawa, Canada What brain imaging can and cannot tell us about consciousness |
| 18:00 – 21:00 | <i>Cafeteria</i> | <i>Welcome reception</i> |

Thursday, 31 July 2014

| | | |
|---------------|----------------------------|--|
| 09:00 – 09:40 | <i>Children's Hospital</i> | Bruno Bontempi , CNRS and University of Bordeaux, France Tracking the memory trace during systems-level memory consolidation |
| 09:40 – 10:20 | <i>Children's Hospital</i> | Penny Lewis , University of Manchester, UK Sleep, consolidation, and semantic memory formation |
| 10:20 – 10:40 | | <i>Coffee break</i> |
| 10:40 – 11:20 | <i>Children's Hospital</i> | Almut Hupbach , Lehigh University, US Mechanisms of Episodic Memory Change |
| 11:20 – 12:00 | <i>Children's Hospital</i> | Rebecca Spencer , University of Massachusetts Amhurst, US Filtering memories for consolidation over sleep: How wide is the funnel? |
| 12:00 – 13:30 | <i>Cafeteria</i> | <i>Lunch break</i> |
| 13:30 – 15:00 | <i>Children's Hospital</i> | Young Investigator Symposium |
| 15:00 – 15:20 | | <i>Coffee break</i> |
| 15:20 – 16:00 | <i>Children's Hospital</i> | Loren Frank , University of California San Francisco, US Awake replay: A potential substrate for memory retrieval and consolidation |
| 16:00 – 16:40 | <i>Children's Hospital</i> | Ted Abel , University of Pennsylvania, US The molecular impact of sleep deprivation on hippocampal function |
| 16:40 – 17:00 | | <i>Coffee break</i> |
| 17:00 – 18:00 | <i>CRONA Clinics</i> | <i>Keynote lecture</i> Yadin Dudai , The Weizmann Institute of Science, Israel The First Seconds of a New Item in Real-Life Episodic Memory |
| 20:00 | | "Sommerinsel" at Anlagensee |

Friday, 1 August 2014

| | | |
|---------------|----------------------------|---|
| 09:40 – 10:20 | <i>Children's Hospital</i> | Jacobo Sitt , Institut National de la Santé et de la Recherche Médicale, France Insights and applications from contrasting conscious states |
| 10:20 – 10:40 | | <i>Coffee break</i> |
| 10:40 – 12:00 | <i>Children's Hospital</i> | Poster Blitz |
| 12:00 – 13:30 | <i>Cafeteria</i> | <i>Lunch break</i> |
| 13:30 – 14:15 | <i>CRONA Clinics</i> | Poster Session A |
| 14:15 – 15:00 | <i>CRONA Clinics</i> | Poster Session B |
| 15:00 – 15:20 | | <i>Coffee break</i> |
| 15:20 – 16:00 | <i>Children's Hospital</i> | Todd Sacktor , State University of New York, US Physiological role and null-mutant compensation for PKMzeta in long-term memory storage |
| 16:00 – 16:40 | <i>Children's Hospital</i> | Cliff Abraham , University of Otago, New Zealand Metaplasticity wars: Braking vs accelerating plasticity |
| 16:40 – 17:00 | | <i>Coffee break</i> |
| 17:00 – 18:00 | <i>CRONA Clinics</i> | <i>Keynote lecture</i> Nicola S. Clayton & Clive Wilkins , University of Cambridge, UK Memory as the Mirror for Tomorrow |
| 20:00 – 23:00 | | Dinner at „Die Kelter“ |
| 23:00 | | Party at „Tangente“ |

Saturday, 2 August 2014

| | | |
|---------------|----------------------------|---|
| 10:00 – 10:40 | <i>Children's Hospital</i> | Jennifer Windt , University of Mainz, Germany Memory and dreams: A philosophical perspective |
| 10:40 – 11:20 | <i>Children's Hospital</i> | Denise Manahan-Vaughan , Ruhr-University Bochum, Germany Synaptic plasticity at the interface between experience and the creation of hippocampal memories |
| 11:20 – 11:40 | | <i>Coffee break</i> |
| 11:40 – 13:00 | <i>tba</i> | Meet The Expert |
| 13:00 – 13:15 | <i>Children's Hospital</i> | <i>Closing – Farewell</i> |
| 13:15 – 14:15 | <i>Cafeteria</i> | <i>Lunch break</i> |
| 15:00 – 16:00 | | Punting trip at Neckarbrücke |

Young Investigator Symposium

Thursday, 31 July, 13:30 – 15:00

The benefits of targeted memory reactivation are contingent on both the strength and type of newly-formed memories

Cairney S, Lindsay S, Paller K, Gaskell MG

Universities of York and Dundee, UK; Northwestern University, USA

Emotional modulation of pain processing in dental phobia: Dissociation of somatosensory evoked potentials and subjective pain perception

Genheimer H, Spitz E, Baumgarten J, Gerdes ABM, Mühlberger A, Wieser MJ

Universities of Würzburg, Mannheim and Regensburg, Germany

Sleep deprivation impairs and sleep supports the consolidation of fear extinction memories

Melo de Carvalho I, Ehrlich I

University of Tübingen, Germany

Visual deprivation has local effects on EEG spectral power density during sleep

Rångtell F, Scherff RR, Nguyen J, Rose D, Wamsley E, Stickgold R

University of Uppsala, Sweden; Harvard Medical School, USA

Cortisol synthesis suppression alters emotional and neutral memories

Rimmele U, Besedovsky L, Lange T, Born J

Universities of Geneva, Switzerland, and Tübingen and Lübeck, Germany

Memory systems interactions evolve over sleep

Schönauer M, Pargent F, Wörsching J, Czisch M, Gais S

Universities of München and Tübingen, Germany; Max Planck Institute, München, Germany

Poster Session A

Friday, 1 August 2014, 13:30 – 14:15

- A1 [Effects of D-cycloserine given during sleep on the consolidation and the learning of declarative memory](#)
Alizadeh Asfestani M, Schwidetzky J, Born J, Feld GB
University of Tübingen, Germany
- A2 [Can sleep improve memory consolidation for completed intentions?](#)
Barner C, Born J, Diekelmann S
University of Tübingen, Germany
- A3 [Disentangling sleep, memory, and emotion](#)
Cunningham TJ¹, Bolinger E², Lathrop QN¹, Born J², Payne JD¹
Universities of ¹Notre Dame, USA, and ²Tübingen, Germany
- A4 [The influence of music on memory consolidation and EEG signals](#)
Chockley AS, Fell J
University of Bonn, Germany
- A5 [To sleep perchance, to dream; but will you remember? The role of vivid dreams and nightmares in the memory consolidation of an associative cognitive task](#)
Cosgrave J, Van Heugten D
University of Oxford, UK
- A6 [Cortical nNOS/NK1 neurons as a neuronal substrate for homeostatic sleep regulation](#)
Dittrich L¹, Heiss JE², Warriar DR², Morairty SR², Kilduff T²
¹DZNE, Bonn, Germany; ²SRI International, Menlo Park, USA
- A7 [Self-regulation of neuronal oscillations for brain-computer interfaces](#)
Fomina T, Grosse-Wentrup M
MPI-IS, Tübingen, Germany
- A8 [Reactivation during sleep stabilizes declarative memories independent of the type of reminder](#)
Forcato C, Weber FD, Born J, Diekelmann S
University of Tübingen, Germany

- A9 [Classification of affective states in EEG during processing of emotional sounds in healthy individuals](#)
Hettich DT¹, Bolinger E¹, Matuz T¹, Birbaumer N^{1,3}, Bogdan M^{1,2}, Rosenstiel W¹
Universities of ¹Tübingen, ²Leipzig, Germany; ³Ospedale San Camillo, IRCCS, Venice, Italy
- A10 [Large-scale cortical correlation structure of spontaneous oscillatory activity](#)
Hipp J¹, Hawellek DJ², Corbetta M³, Engel AK⁴, Siegel M¹
¹University of Tübingen, Germany; ²New York University and ³Washington University School of Medicine, St. Louis, USA; ⁴University Medical Center Hamburg-Eppendorf, Hamburg, Germany
- A11 [Sleep pattern in mice with suppressed interleukine-6 trans-signaling in the central nervous system or in the periphery](#)
Oyanedel Salmerón C¹, Kelemen E¹, Born J¹, Rose-John S²
Universities of ¹Tübingen and ²Kiel, Germany
- A12 [Early to bed, better to prescribe? Prospective memory performance in medical students after sleep extension or reduction](#)
Kellar I¹, Ellison GTH¹, Scullin MK², Weighall A¹
¹University of Leeds, UK, and ²Emory University School of Medicine, USA
- A13 [Tracking the time-course of novel word learning and lexical competition in adults and children: A visual world eye-tracking study](#)
Weighall A¹, Henderson L², Gaskell MG²
Universities of ¹Leeds and ²York, UK
- A14 [Sleep mentation reflects memory reactivation](#)
Kirchner S¹, Schönauer M¹, Graetz M¹, Schneider M¹, Gais S²
Universities of ¹München and ²Tübingen, Germany
- A15 [Sleep facilitates declarative memory consolidation in infants](#)
Seehagen S¹, Konrad C¹, Herbert JS², Schneider S¹
Universities of ¹Bochum, Germany, and ²Sheffield, UK
- A16 [Sleep benefits children's episodic memory](#)
Wang J, Weber FD, Zinke K, Inostroza M, Born J
University of Tübingen, Germany
- A17 [Sleep dependent reorganization of neocortical microcircuits](#)
Niethard N, Inostroza M, Sato T, Born J
University of Tübingen, Germany

Poster Session B

Friday, 1 August 2014, 14:15 – 15:30

- B1 **Spindle activity during sleep slow oscillations**
Klinzing J¹, Mölle M², Supp GG³, Engel AK³, Born J¹
Universities of ¹Tübingen and ²Lübeck, Germany; ³University Medical Center Hamburg-Eppendorf, Germany
- B2 **The modulation of sleep continuity by periodical transcranial direct current stimulation**
Krone L¹, Selhausen P¹, Frase L¹, Piosczyk H¹, Feige B¹, Nitsche M², Riemann D¹, Nissen C¹
University of ¹Freiburg and ²Göttingen, Germany
- B3 **The impact of post-learning sleep on false recognition memory of nonverbal visual stimuli**
Lutz N, Hinse-Stern P, Rauss K, Diekelmann S, Born J
University of Tübingen, Germany
- B4 **Effects of mental fatigue and motivation in a long-lasting choice response task - An ERP study**
Möckel T¹, Beste C², Wascher E¹
¹Leibniz Research Centre for Working Environment and Human Factors, Dortmund, Germany; ²University of Dresden, Germany
- B5 **Novel insight into object permanence in macaques**
Nekovarova T¹, Englerova K², Galik M², Klement D¹, Rokyta R²
¹Academy of Sciences of the Czech Republic and ²Charles University, Prague, Czech Republic
- B6 **Effects of noninvasive brain stimulation during slow wave sleep on visual memory in younger and older adults**
Paßmann S, Külzow N, Flöel A
Charité-Universitätsmedizin, Berlin, Germany
- B7 **Sleep and cognition during the prodromal phase of psychosis**
Purple R, Cosgrave J, Wulff K, Porcheret K
University of Oxford, UK

- B8 [The recovery of semantic memory from interference after sleep](#)
Reid AM, Gaskell MG
University of York, UK
- B9 [Modeling the sleeping thalamo-cortical system](#)
Schellenberger Costa M^{1,2}, Weigenand A², Ngo HV^{1,2}, Claussen JC³, Martinetz T²
Universities of ¹Tübingen and ²Lübeck, Germany; ³Jacobs University Bremen, Germany
- B10 [Improved visual memory by noninvasive brain stimulation during a daytime nap](#)
Schneider J, Külzow N, Flöel A
Charité-Universitätsmedizin, Berlin, Germany
- B11 [Grouping of MEG gamma oscillations by fast and slow sleep spindles](#)
Weber FD¹, Born J¹, Mölle M²
Universities of ¹Tübingen and ²Lübeck, Germany
- B12 [Effects of phase-independent auditory stimulation on sleep and memory](#)
Weigenand A, Mölle M, Marshall L, Martinetz T
University of Lübeck, Germany
- B13 [Is a run as good as a rest? Comparing the effects of exercise, wakeful-rest and interference on memory for newly learned words in adulthood](#)
Weighall A¹, Astill S¹, Coates R¹, Finlayson G¹, Henderson L²
(with Izon E¹, Sieglar K¹, Thompson J¹, Whiteman N¹)
Universities of ¹Leeds and ²York, UK
- B14 [Memory reactivation during sleep supports qualitative changes in memories](#)
Wilhelm I¹, Guggenbühl P¹, Haltinner S¹, McMakin D², Huber R¹
Universities of ¹Zürich, Switzerland, and ²Pittsburgh, USA
- B15 [EEG and carbon dioxide sensitivity for early detection of panic disorder](#)
Yudiarso A
University of Surabaya, Indonesia
- B16 [Does sleep after initial learning influence long-term procedural memory performance in children?](#)
¹Zinke K, ²Wilhelm I, ¹Bayramoglu M, ¹Klein S, ¹Born J
Universities of ¹Tübingen, Germany, and ²Zürich, Switzerland
- B17 [Conditioned to sleep? - Effect of sleep on classical conditioning in *Aplysia californica*](#)
Vorster APA, Born J
University of Tübingen, Germany

We would like to thank our funding agencies and sponsors:



Institutional Strategy of the University of Tübingen

