

MP Newsletter



Christmas Party 2015!

An eventful year 2015 is coming to an end. So let us take the opportunity to celebrate together at our Institute's Christmas Party!

The festivities will take place in the **Meeting Room in Silcherstr. 5 on Friday, December 11th, starting at 7 pm.**

We hope that you will all join us to make it an unforgettable event! Various finger foods and refreshments will be provided.

However, it would be great if you could

help us spice it up to get into a festive mood with Christmas bakery and sweets from your home!

We are excited to announce that we will have live music by the band "*Hippocamblues - everything but blues*" for the occasion!

This means that our party is going to be "Christmas Royale". To fit this theme, we plan to elect a King or Queen of the institute*. Applicants have to fit a number of election criteria - including scientific rigour (see example 1), social prowess (example 2), and organisational talent (example 3). To assess whether you fulfil these requirements, applicants will have to perform several totally science-related, extremely valid tests together with their "parliament". Examples would be: (1) who can judge alcohol contained in mulled wines most efficiently, (2) who manages to engage the highest number of colleagues in a dance competition and (3) who can sort Christmas cookies according to colour most quickly? Each topical group in the institute (e.g. the animal group, the children's sleep lab) should therefore select a candidate who they want to support as King or Queen of the institute*. The group members are their candidate's parliament and must support them in their royal duties and during the election procedure. They will work out an election program together that emphasises their candidate's strengths in the light of what is required to reign. The election programs of the topical parties will be a great opportunity to review of what our institute has achieved during the last year! Of course, all parties deserve to be celebrated for what they pulled off during the last year and - even more so - during the elections. This is why we will round up your Christmas Party with a Royal Disco in honour of the new King or Queen featuring DJs L and L!

We are looking forward to seeing all of you in December! Start baking, get ready - be Royal!

* The name is *Psychology. Medical Psychology.*

— Your CP Team!



Sardinia 2015

by MONI SCHÖNAUER

The year 2015 has had its moments. The annual Institute's Meeting in Sardinia from September 26th to 30th on "Brain, Sleep and Circuits" definitely qualifies as one of the most memorable!

As scientific highlights we want to remind you of an inspirational lecture by Prof. Jan Born on "Future Directions in Sleep Research", a thought-provoking talk by Dr. Susanne Diekmann on "Neuroethics", as well as a brilliant keynote by Prof. Reto Huber "Local sleep and developmental changes in experience dependent plasticity".

Dr. Ander Ramos gave a workshop on grant writing that was an immediate success. In fact, it improved grant writing skills so much that we could convince the heads of our institute to finance a highly risky but potentially rewarding project: Does availability of a foosball table increase sci-

entific output in Medical Psychology? We are excited to hear about the first results soon!

Apart from science, the party organised by Carlos Oyanedel and Laura Herde tops the list of social events. DJs Löra, E and Carlachs made us "*Dance through the Decades*" - until the morning light!

Another outstanding event that kept us up all night was the Blood Moon lunar eclipse which coincided with our stay in Sardinia. Thus, we were inspired to think outside the box and also broaden our knowledge of physics - giving our meeting an unexpected - but beautiful - multidisciplinary aspect!

Many thanks go to Prof. Jan Born and Prof. Niels Birbaumer who support continuing our annual retreat to Sardinia both ideologically as well as financially. We truly value the time we can spend on tightening scientific as well as social bonds within the institute. We also thank the organisers Niels Niethard, Dr. Hannes Noack, and Albrecht Vorster for their great

work and are very much looking forward to the next meeting in autumn 2016!

Institute Clubs

by JINGYI WANG

Are you...

Feeling tired of sitting in the lab all the time? Interested to know the people around you more in person other than only as "colleague"? Willing to make new friends in science? Ladies and gentlemen, please pay your attention on the colourful "after-hours" clubs running in our institute, we are sure that you will find something interesting and people in the same camp!

Language Club - "Let's rebuild the Tower of Babel!"

Aim: Promote integration and understanding (for now focusing on German, but welcome for any specific language exchange).

If you are foreigners who would like to improve German skills, in our weekly Salon with different topics, you are free to practice your fresh-learned German without being laughed at for whatever grammar mistakes you could make, and of course we help you to improve it.

If you are German native speakers/experts, who are generally willing to help foreigners to improve German, interested in knowing another culture, get some good but free food from another country?

Time and place: Thursdays starting from 17:00 at the meeting room of Silchertr. 5 (can be flexible like Café bars, cool restaurants in the town?)

Lunch/dinner dating: t.b.a when we recruit enough "experts" and "learners". *Contact:* Jingyi Wang

Football Club

All football lovers are welcome! Time and place: Wednesdays from 18:30 to 20:00 at the football field of Psychiatry (Calwerstr. 14) *Contact:* Carlos Oyanedel

Bouldering Club - "Hangin' - in and around the walls!"

For: people both experienced and inexperienced in climbing who are ready to try something fun and new. During bouldering you get to solve problems together - for once not related to science. Contact us and we will put you on the mailing list where the dates are announced!

Time and place: 8 PM, changing days during week at B12 Boulderzentrum
Contact: Moni Schönaauer

Swimming Club - "Dive in and chill out!"

Aim: Cardio gain, stress relief, group motivation

For: Swimmers and beginners

Time and place: Swimming every Fr, 19:30:00, Spa once every 1-3 Month at Hallenbad Nord and nearby Spas

Contact: Freddy Webber

Friday Science Meetings

Aim: Keeping up with the growing literature, discussing own work and sharing ideas.

Time and Place: Every second Friday from 4 to 5 pm at meeting room at FIN or Alte HNO.

For: If you want to be up to date

with scientific articles in your or related fields, if you need help with your own work or if you want to contribute to lively discussions and share your ideas. *Contact:* Nico Lutz

Other clubs that the details may be announced later on, please contact the sponsors if you are interested in it:

Table Tennis Club: Andreas Ray

Basketball Club: Maartje Spetter

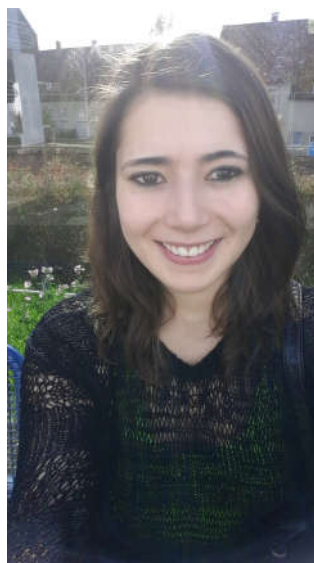
Mountain Bike Club: Niels Niethard

New people in the Institute

by MAARTJE SPETTER

The new academic year has started and so did some people at our institute. We are happy to welcome 8 new people from all around the world (Chile, Portugal, China and Germany) to our department here in Tübingen. Their work will vary from memory and sleep experiments in animals, human neuroimaging studies, brain-computer interface, to metabolic research. We hope to see them more often in the newsletter in the future, with some fascinating papers, wonderful work related activities or another delightful news item.

September 2015



who: **María Paz Contreras**, PhD-student, FIN Building.

Research focus: María Paz Contreras just started her PhD-project here in Tübingen and will work on the ELMO project, here she will investigate the episodic memory ontogeny and sleep. Jan Born and Marion Inostroza will be her main supervisors during her PhD. Before she came to Germany, María Paz worked on a research project related to the sleep effect in the operant extinction memory which was a collaboration project between the Institute of Medical Psychology and the Laboratorio de Sueño y Cronobiología of the Facultad de Medicina and Laboratorio de Aprendizaje of the Departamento de Psicología, at the Universidad de Chile (CL).



who: **Ernesto Durán**, PhD-student, FIN Building.

Research focus: Ernesto Durán is a PhD-student in neuroscience at the laboratory of Neural Circuits at the Centro de Neurociencia UC at the Pontificia Universidad Católica de Chile (CL). For his dissertation he is investigating the relationship between the thalamus and the ventral striatum. Part of his PhD research he will fulfil here at the Institute of Medical Psychology in collaboration with Jan Born and Marion Inostroza, focusing on the participation of the thalamus-striatum system during sleep. Hence he is involved in two different projects: the "ELMO project" which will investigate the episodic like memory during the ontogeny and a project focusing on single unit activity between hippocampus and prefrontal cortex during sleep. Previously Ernesto investigated the visual pathways of birds in the laboratory of

Neurobiology and Biology of Cognition at the Universidad de Chile (CL).



who: **Marius Nann**, PhD-student, Psychiatry, Calwerstr. 14.

Research focus: In Ulm and Erlangen, Marius Nann studied Medical Technologies focusing on Medical Electronics. During his Master Thesis he concentrated on biosignal acquisition techniques and data processing, especially on EMG/ECG signals. Subsequently, Marius worked at adidas AG in Herzogenaurach in the electronics department, participating in the development of heart rate monitors and devices for human movement detection. As a PhD-student his main research interest will be the field of neurorehabilitation focusing on motor recovery of patients with paralysis, e.g. after stroke disease, in cooperation with Surjo Soekadar at the department of Psychiatry.

October 2015



who: **Til Ole Bergmann**, Post-doc, FIN Building.

Research focus: Til Bergmann is mainly interested in the function of neuronal oscillations in cognition, in particular in the organization of information processing and the gating of synaptic plasticity in the wake and sleeping human brain. His methodological focus is on the simultaneous combination of electrophysiology with transcranial brain stimulation as well as neuroimaging techniques. Previously he mainly worked on slow oscillations, sleep spindle and ripples in the context of sleep-dependent memory consolidation, as well as alpha oscillations in visuospatial attention and their top-down modulation by prefrontal regions. Til previously worked in the Institute of Psychology in Kiel (DE) and in the Neuronal Oscillation group (Ole Jensen) at the Donders Institute in Nijmegen (NL). In Tübingen he will work together with Jan Born and Ulf Ziemann (Neurology).



who: **Jianfeng Liu**, PhD-student, FIN Building.

Research focus: The general aim of Jianfeng Liu's project is to determine the effect of pre-sleep intake of isocaloric meals rich in carbohydrates and in fat, respectively, as well as of food restriction on polysomnographic sleep parameters (sleep onset, sleep architecture, EEG power spectra etc.), on neuroendocrine as well as immunological correlates of sleep (e.g., parameters

of glucose metabolism). In addition, he will study the effect of eating-induced changes in sleep parameters on the sleep-associated consolidation of neutral memory and of memory for food intake. Jianfeng will mainly work together with Jan Born, Manfred Hallschmid and Stoyan Dimitrov. During his studies in China he focused on adaption of the brain of Yak (*Bos grunniens*) to extremely hypoxia environment of the Qinghai-Tibet Plateau, this included histological analysis and molecular biology on AQPs in brain of yak.



who: **Lea Himmer**, PhD-student, Alte HNO Building.

Research focus: Lea Himmer is mainly interested in sleep and memory consolidation. During her PhD here in Tübingen she will focus on systems consolidation as well as on memory trace reactivation in humans using neuroimaging techniques. Steffen Gais and Monika Schönauer will be Lea's supervisors on this project. During her MSc. Brain and Cognitive Sciences at the University of Amsterdam (NL) she worked as an intern focusing on segmented structural ultra-high resolution MRI data of the subthalamic nucleus to build a 4-dimensional atlas (including age) of this structure and to investigate structural changes over age, followed by an internship focusing on neural representation of associations in the brain using fMRI at the Memory and Space group (Christian Doeller) at the Donders Institute in Nijmegen (NL).



who: **Yvonne Ritze**, Post-doc, FIN Building.

Research focus: Worldwide the prevalence of obesity is rising, leading to an increase of diseases like diabetes, cardio vascular disease and metabolic syndrome. Steady weight gain is associated with a dysregulation of the energy metabolism, which can be detected in humans and animal models analyzing obesity associated markers. Therefore Yvonne Ritze's project will extensively characterize the beginning of the metabolic dysregulation on central neuronal level and within the periphery during the pathogenesis of obesity in mice and humans. Manfred Hallschmid will be the main collaborator on this project. Previously Yvonne worked at University of Hohenheim (DE), at the Institute of Medical Nutrition.



who: **João Santiago**, Study physician, PhD-student, FIN-Building.

Research focus: During his PhD Santiago will focus on the role of sleep in the regulation of metabolic function

in humans, with Manfred Hallschmid as his main supervisor. Previously he worked with animal models of diabetes and metabolic syndrome, at the Chronic Diseases Research Centre at the New University of Lisbon (PT). He is also generally interested in memory and language. Next to his PhD Santiago is the study physician of the institute, which means he will help out on all studies where a medical doctor is needed.

Dr. Marlieke van Kesteren visits our Institute

by CARLOS OYANEDEL

On Thursday the 10th and Friday the 11th of December, Dr. Marlieke van Kesteren will be visiting our Institute. Dr. van Kesteren is a postdoc at the Educational Neuroscience Department of the VU University Amsterdam. Her main research interests are focused on *"psychological, biological, and neuroscientific developments in cognitive processing, specifically learning and memory mechanisms that apply to educational situations"*. She has a BSc in Artificial Intelligence (University of Groningen, NL), and a MSc and PhD in Cognitive Neuroscience from Radboud University Nijmegen, NL. In her PhD project at the Donders Institute in Nijmegen (NL), she investigated the effects of prior knowledge on learning and memory mechanisms in the human brain, with an additional focus on educational applications. After her PhD she got a postdoctoral position at the Donders Institute additionally investigating embodied learning. After that, she moved to California (USA) to start a second postdoc at Stanford University working on a project entitled *"How schemas influence new learning: Different mechanisms, distinct memories?"*.



During this year, she moved back to the Netherlands, to start a new project in Amsterdam.

Beside her research, she occasionally writes popular scientific anecdotes about learning and the brain and science in society in printed and online media (e.g. on her Dutch blog, NeuWrite, and Sciencepalooza), as well as giving regular lectures about learning and memory brain research to help bring neuroscientific insights to (classroom) practice.

She will give a talk on **Thursday 10th of December at 15 hrs. At Sicherstr. Meeting Room**, entitled: **"How schemas affect mnemonic processing"**.

We hope to see you all there!!

The NEW: Newsletter and Communications Committee

by CARLOS OYANEDEL

As you might have realised, with this new issue of the Newsletter we are trying to give a new image to what it has been one of the Communication Media in the Institute. When we, as Communication Committee, created the first Newsletter in November 2013, our main goal was to bring the Institute together by showing, informing, communicating daily activities, new people, publications, etc. Now, we are in a further stage, where we do not see the Institute as two or three separated groups anymore, but just one, the Institute of Medical Psychology and Behavioural

Neurobiology. That's why with this new issue we want to invite you all to contribute to the Newsletter, to the communication of the Institute, by sending your suggestions, comments, articles, etc. to our email address, and feel that what we are building here is a result of all of us. We also

want to be more regular with the publication of the Newsletter, and we will publish it three times per year (March - July - November).

Also, we would like to welcome the new members of the Communication Committee: Andreas Ray, Maartje

Spetter, and Jingyi Wang. As well as acknowledge the great work done by all the previous members.

Let's keep building the Institute we want.



1. Pasqualotto E, Matuz T, Federici S, Ruf CA, Bartl M, Olivetti Belardinelli M, Birbaumer N, Halder S. Usability and workload of access technology for people with severe motor impairment: A comparison of brain-computer interfacing and eye tracking. *Neurorehabil Neural Repair*. Nov 2015.
2. Spenger A, Weber FD, Machner B, Talamo S, Scheffmeier S, Bethke J, Helmchen C, Gais S, Kimmig H, Born J. Deprivation and recovery of sleep in succession enhances reflexive motor behavior. *Cereb Cortex*. Nov 2015.
3. Feld GB, Wilhem I, Benedict C, Rüdell B, Klameth C, Born J, Hallschmid M. Central nervous insulin signaling in sleep-associated memory formation and neuroendocrine regulation. *Neuropsychopharmacology*. Oct 2015.
4. Dudai Y, Karni A, Born J. The consolidation and transformation of memory. *Neuron*. Oct 2015.
5. Curado MR, Cossio EG, Broetz D, Agostini M, Cho W, Brasil FL, Yilmaz O, Liberati G, Lepski G, Birbaumer N, Ramos-Murguialday A. Residual upper arm motor function primes innervation of paretic forearm muscles in chronic stroke after Brain-Machine Interface (BMI) training. *PLoS One*. Oct 2015.
6. Zaidi AD, Munk MH, Schmidt A, Risueno-Segovia C, Bernard R, Fetz E, Logothetis N, Birbaumer N, Sitaram R. Simultaneous epidural functional near-infrared spectroscopy and cortical electrophysiology as a tool for studying local neurovascular coupling in primates. *Neuroimage*. Oct 2015.
7. Witkowski M, Cossio EG, Chander BS, Braun C, Birbaumer N, Robinson SE, Soekadar SR. Mapping entrained brain oscillations during transcranial alternating current stimulation (tACS). *Neuroimage*. Oct 2015.
8. Garcia-Cossio E, Witkowski M, Robinson SE, Cohen LG, Birbaumer N, Soekadar SR. Simultaneous transcranial direct current stimulation (tDCS) and whole-head magnetoencephalography (MEG): assessing the impact of tDCS on slow cortical magnetic fields. *Neuroimage*. Oct 2015.
9. Westermann J, Lange T, Textor J, Born J. System consolidation during sleep - A common principle underlying psychological and immunological memory formation. *Trends Neurosci*. Oct 2015.
10. Besedovsky L, Born J. Sleep, don't sneeze: Longer sleep reduces the risk of catching a cold. *Sleep*. Sep 2015.
11. Soekadar SR, Witkowski M, Birbaumer N, Cohen LG. Enhancing Hebbian learning to control brain oscillatory activity. *Cereb Cortex*. Sep 2015.
12. Matuz T, Birbaumer N, Hautzinger M, Kübler A. Psychosocial adjustment to ALS: a longitudinal study. *Front Psychol*. Sep 2015.
13. Buyukurtkoglu K, Roettgers H, Sommer J, Rana M, Dietzsch L, Arian EB, Veit R, Malekshahi R, Kircher T, Birbaumer N, Sitaram R, Ruiz S. Self-regulation of anterior insula with real-time fMRI and its behavioral effects in obsessive-compulsive disorder: A feasibility study. *PLoS One*. Aug 2015.
14. Xia B, Maysam O, Veser S, Cao L, Li J, Jia J, Xie H, Birbaumer N. A combination strategy based brain-computer interface for two-dimensional movement control. *J Neural Eng*. Aug 2015.
15. Silvoni S, Konicar L, Prats-Sedano MA, Garcia-Cossio E, Genna C, Volpato C, Cavinato M, Paggiaro A, Veser S, De Massari D, Birbaumer N. Tactile event-related potentials in amyotrophic lateral sclerosis (ALS): Implications for brain-computer interface. *Clin Neurophysiol*. Jul 2015.
16. Schmidt EM, Linz B, Diekelmann S, Besedovsky L, Lange T, Born J. Effects of an interleukin-1 receptor antagonist on human sleep, sleep-associated memory consolidation, and blood monocytes. *Brain Behav Immun*. Jul 2015.
17. Campos-Bueno JJ, DeJuan-Ayala O, Montoya P, Birbaumer N. Emotional dimensions of music and painting and their interaction. *Span J Psychol*. Jul 2015.
18. Oyanedel CN, Kelemen E, Scheller J, Born J, Rose-John S. Peripheral and central blockade of interleukin-6 trans-signaling differentially affects sleep architecture. *Brain Behav Immun*. Jul 2015.
19. Ramos-Murguialday A, Birbaumer N. Brain oscillatory signatures of motor tasks. *J Neurophysiol*. Jun 2015.
20. Chaudhary U, Birbaumer N. Communication in locked-in state after brainstem stroke: a brain-computer-interface approach. *Ann Transl Med*. May 2015.
21. Thibault RT, Lifshitz M, Birbaumer N, Raz A. Neurofeedback, self-regulation, and brain imaging: Clinical science and fad in the service of mental disorders. *Psychother Psychosom*. May 2015.
22. Scharnowski F, Veit R, Zopf R, Studer P, Bock S, Diedrichsen J, Goebel R, Mathiak K, Birbaumer N, Weiskopf N. Manipulating motor performance and memory through real-time fMRI neurofeedback. *Biol Psychol*. May 2015.

!!!This list is not exhaustive. We will always miss some publications (or have to shorten because of available space). But everyone is welcome to send us their new publications whenever they come out so we can include them!!!