

Brain Dynamics Graduate School



Newsletter – August '24

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Events

- **NeuroDoWo 2024**

20-23.08. Centre for Biotechnology and Biomedicine (BBZ), Deutscher Platz 5, 04103 Leipzig

Neurobiology Doctoral Students Workshop under the patronage of the German Zoological Society (Deutsche Zoologische Gesellschaft, DZG) and German Neuroscience Society (Neurowissenschaftliche Gesellschaft e.V.).

<https://neurodowo.nwg-info.de/>

- **Brain Dynamics Summer Symposium**

21.08. 15:00-18:00 Institute of Biology, „Kleiner Hörsaal“, Talstraße, 04103 Leipzig

Dr Shiqiang Gao, Department of Neurophysiology, Institute of Physiology, Julius Maximilians University of Würzburg

„Optogenetic tools for research and clinical trials: recent progress and considerations“.

Prof Dr Susanne Schoch, Institute of Neuropathology, Medical Faculty, University of Bonn

„Paroxysmal dystonia results from the loss of RIM4 in Purkinje cells“.

Dr Giorgio Gilestro, Department of Life Sciences, Imperial College London, UK

„What is the function of sleep? Insights from genetics & evolution“.

<https://www.uni-leipzig.de/en/event-detail/event/summer-symposium>

- **Mini-Symposium: "Exploring the gut-brain interplay"**

02.09. 09:00-11:30 Hybrid, online & MPI CBS, Wilhelm Wundt Room (A400), Stephanstraße 1A, 04103 Leipzig

Dr Mirjam Bloemendaal, Radboud University Medical Center, Donders Institute for Brain, Cognition and Behaviour, Nijmegen, the Netherlands

“The gut microbiome & anti-depressant treatment response”.

Dr Sharmili Edwin Thanarajah, Department for Psychiatry, Psychosomatic Medicine and Psychotherapy, University Hospital Frankfurt

“The impact of Western diet & peripheral metabolism on mental health”.

Dr Leonie Koban, Lyon Neuroscience Research Center (CRNL), CNRS, INSERM, University Claude Bernard Lyon 1, Bron, France

“Gut-brain interactions in human decision-making”.

Dr Rachel Lippert, German Institute of Human Nutrition Potsdam-Rehbruecke, Nuthetal

“The gut microbiome & anti-depressant treatment response”.

<https://www.cbs.mpg.de/events/38754/338738>

- **Cradle of Cognition Lecture**

11.09. 16:00 online

Prof Dr Manuela Piazza, Center for Mind/Brain Sciences, University of Trento, Italy

“Numerical learning in the developing brain”.

<https://www.cbs.mpg.de/events/36760/338738>

News

- **Save the date: 24.09. – 3rd Brain Dynamics Scientific Day**

The third Brain Dynamics Scientific Day will take place on Tuesday, September 24th, in the seminar room of the Centre for Biotechnology and Biomedicine (BBZ), Deutscher Platz 5, 04103 Leipzig. The Scientific Day will include a series of talks by doctoral students and postdocs, poster presentations and two keynote lectures by **Prof Dr Zoltan Nusser** from the Institute of Experimental Medicine HAS in Budapest, Hungary, and **Prof Dr Lucia Melloni** from the Max Planck Institute for Empirical Aesthetics in Frankfurt & the Department of Neurology, New York

University Grossman School of Medicine, NY, USA. More information and the detailed program will follow shortly.

- **Day tickets on offer for NeuroDoWo 2024**

The NeuroDoWo is a conference that is organized by and for PhD students working in the field of Neuroscience for over 30 years now under the patronage of the German Zoological Society (Deutsche Zoologische Gesellschaft e.V.) and German Neuroscience Society (Neurowissenschaftliche Gesellschaft e.V.). The conference will take place in Leipzig from the 20th to 23rd August 2024:

<https://neurodowo.nwg-info.de/>

- **Competence days for postdocs and junior professors 30.09-02.10.**

The annual series of workshops and seminars at the University of Leipzig is dedicated to the topics of career planning and career development as well as the development of one's own leadership skills:

<https://www.uni-leipzig.de/veranstaltungsdetail/termin/skillsnthrills>

New members

We welcome three new doctoral students to the Brain Dynamics family:

➤ **Jonas Jänig**

Research Group Müller, Wilhelm Wundt Institute of Psychology, Faculty of Life Sciences

Research project: “Temporal neuronal dynamics of amplification and suppression in feature-based attention”

<https://www.lw.uni-leipzig.de/en/wilhelm-wundt-institute-for-psychology/working-groups-1/experimental-psychology-and-methods>

➤ **Laura Knäfel**

Research Group Hirrlinger, Carl Ludwig Institute of Physiology, Faculty of Medicine

Research project: “Pathophysiology of ASNS mutations-induced microcephaly”

<https://physiologie.medizin.uni-leipzig.de/mobile.php?en,id86>

➤ **Freya Wilke**

Research Group Hallermann, Carl Ludwig Institute of Physiology, Faculty of Medicine

Research project: "Metabolic constraints of synaptic transmission"

<https://physiologie.medizin.uni-leipzig.de/mobile.php?en,id73>

Latest publications

- Brain Dynamics doctoral candidates **Marie-Elisabeth Burkart** and **Josephine Kurzke** and research groups **Lippmann / Eilers**

K_{ATP} channel mutation disrupts hippocampal network activity and nocturnal gamma shifts.

Burkart ME, Kurzke J, Jacobi R, Vera J, Ashcroft FM, Eilers J, Lippmann K.
Brain. 2024 May 15; awae157. doi: 10.1093/brain/awae157.

- Brain Dynamics doctoral candidate **Toni Kirmann**, postdocs **Torsten Bullmann**, **Thomas Kaas** and **Jana Nerlich** and research groups **Hallermann / Arendt / Kittel / Eilers / Holzer**

Human iPSC-derived neurons with reliable synapses and large presynaptic action potentials.

Bullmann T, Kaas T, Ritzau-Jost A, Wöhner A, Kirmann T, Rizalar FS, Holzer M, Nerlich J, Puchkov D, Geis C, Eilers J, Kittel RJ, Arendt T, Haucke V, Hallermann S.
J Neurosci. 2024 May 9; e0971232024. doi: 10.1523/JNEUROSCI.0971-23.2024.

- Brain Dynamics doctoral candidate **Valentina Tast** and research group **Schröger**

Suppression and omission effects in auditory predictive processing- Two of the same?

Tast V, Schröger E, Widmann A.
Eur J Neurosci. 2024 May 19. doi: 10.1111/ejn.16393.

- Research groups **Friederici / Weiskopf / Morawski / Kirilina**

Detailed mapping of the complex fiber structure and white matter pathways of the chimpanzee brain.

Eichner C, Paquette M, Müller-Axt C, Bock C, Budinger E, Gräßle T, Jäger C, Kirilina E, Lipp I; EBC Consortium; Morawski M, Rusch H, Wenk P, Weiskopf N, Wittig RM, Crockford C, Friederici AD, Anwender A.
Nat Methods. 2024 Jun; 21(6): 1122-1130. doi: 10.1038/s41592-024-02270-1.

- Research groups **Hartwigsen / Friederici**

Continuous Theta-Burst Stimulation on the Left Posterior Inferior Frontal Gyrus Perturbs Complex Syntactic Processing Stability in Mandarin Chinese.

Wu J, Cheng Y, Qu X, Kang T, Cai Y, Wang P, Zaccarella E, Friederici AD, Hartwigsen G, Chen L.
Neurobiol Lang (Camb). 2024 Jun 24; 5(2): 608-627. doi: 10.1162/nol_a_00140.

➤ Research groups **Roßner / Morawski**

Identification of isoaspartate-modified transthyretin as potential target for selective immunotherapy of transthyretin amyloidosis.

Köppen J, Kleinschmidt M, Morawski M, Rahfeld JU, Wermann M, Cynis H, Hegenbart U, Daniel C, Roßner S, Schilling S, Schulze A.
Amyloid. 2024 May 27: 1-11. doi: 10.1080/13506129.2024.2358121.

➤ Research groups **Rumpf / Strauß / Claßen**

No evidence of structural abnormality of the substantia nigra in adult attention-deficit/hyperactivity disorder: a pilot cross-sectional cohort study.

Friedrich I, von Kuenheim D, Wozniak D, Meyer P, Mauche N, Huang J, Classen J, Strauss M, Rumpf JJ.
Front Psychiatry. 2024 May 30; 15: 1395836. doi: 10.3389/fpsy.2024.1395836.

➤ Research groups **Schröter / Saur / Obrig / Claßen**

Neurofilaments and progranulin are related to atrophy in frontotemporal lobar degeneration - A transdiagnostic study cross-validating atrophy and fluid biomarkers.

Hüper L, Steinacker P, Polyakova M, Mueller K, Godulla J, Herzig S, Danek A, Engel A, Diehl-Schmid J, Classen J, Fassbender K, Fliessbach K, Jahn H, Kassubek J, Kornhuber J, Landwehrmeyer B, Lauer M, Obrig H, Oeckl P, Prudlo J, Saur D, Anderl-Straub S, Synofzik M, Wagner M, Wiltfang J, Winkelmann J, Volk AE; FTLN Consortium Germany; Huppertz HJ, Otto M, Schroeter ML.
Alzheimers Dement. 2024 Jun 12. doi: 10.1002/alz.13863.

➤ Research groups **Selcho / Pauls**

Photoreceptors for immediate effects of light on circadian behavior.

Bidell D, Feige ND, Triphan T, Müller C, Pauls D, Helfrich-Förster C, Selcho M.
iScience. 2024 Apr 26; 27(6): 109819. doi: 10.1016/j.isci.2024.109819.

➤ Research group **Selcho**

Octopamine in the mushroom body circuitry for learning and memory.

Selcho M.
Learn Mem. 2024 Jun 11; 31(5): a053839. doi: 10.1101/lm.053839.123.

➤ Research group **Tal**

New approach methods to assess developmental and adult neurotoxicity for regulatory use: a PARC work package 5 project.

Tal T, Myhre O, Fritsche E, Rüegg J, Craenen K, Aiello-Holden K, Agrillo C, Babin PJ, Escher BI, Dirven H, Hellsten K, Dolva K, Hessel E, Heusinkveld HJ, Hadzhiev Y, Hurem S, Jagiello K, Judzinska B, Klüver N, Knoll-Gellida A, Kühne BA, Leist M, Lislien M, Lyche JL, Müller F, Colbourne JK, Neuhaus W, Pallocca G, Seeger B, Scharkin I, Scholz S, Spjuth O, Torres-Ruiz M, Bartmann K.

Front Toxicol. 2024 Apr 26; 6: 1359507. doi: 10.3389/ftox.2024.1359507.

➤ Research group **Valk**

A shifting role of thalamocortical connectivity in the emergence of cortical functional organization.

Park S, Haak KV, Oldham S, Cho H, Byeon K, Park BY, Thomson P, Chen H, Gao W, Xu T, Valk S, Milham MP, Bernhardt B, Di Martino A, Hong SJ.

Nat Neurosci. 2024 Jun 10. doi: 10.1038/s41593-024-01679-3.

➤ Research group **Widdig**

Evidence of object permanence, short-term spatial memory, causality, understanding of object properties and gravity across five different ungulate species.

Schaffer A, Widdig A, Holland R, Amici F.

Sci Rep. 2024 Jun 14; 14(1): 13718. doi: 10.1038/s41598-024-64396-8.