

Detailed Meeting Program

Monday, February 23

Opening Lecture at LIN Ebbinghaus Lecture Hall – Public, German

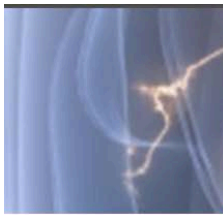
Chair: Eckart Gundelfinger

19:00

Martin Korte, Braunschweig

Wie lernt der Mensch heute? Anmerkungen eines Hirnforschers

Einladung zum Vortrag



**„Wie lernt der Mensch heute?
Anmerkungen eines
Hirnforschers“**



Learning and Memory
Cellular and Systemic Views

Der moderne Mensch lernt ein Leben lang. Doch was passiert in unserem Gehirn beim Lernen? Wie wirken sich Belohnungen auf Gedächtnisprozesse aus? Was kann man machen, damit Schülern das Lernen mehr Spaß macht? Wie verändert sich das Gedächtnis in den verschiedenen Lebensphasen? Warum fällt es älteren Menschen schwerer, sich neue Dinge zu merken? Welche Rolle spielt dabei die eigene Motivation und Neugier?

Auf diese und weitere spannende Fragen gibt Prof. Dr. Martin Korte von der Technischen Universität Braunschweig eine Antwort. Unter dem Titel **„Wie lernt der Mensch heute? Anmerkungen eines Hirnforschers“** hält der renommierte Neurobiologe und Buchautor am **23. Februar um 19 Uhr** einen Vortrag im **Leibniz-Institut für Neurobiologie** in der Brenneckestr. 6 in Magdeburg.



Dazu möchten wir Sie herzlich einladen.
Die Veranstaltung ist kostenfrei.



Leibniz-Institut für Neurobiologie (LIN) Magdeburg, Brenneckestr. 6

Tuesday, February 24

Morning Session 9 a.m.

Introductory Remarks

Frank Ohl, Coordinator of the Collaborative Research Center „Neurobiology of motivated behavior“

1. Circuits

Chairs: Daniela Dieterich & Volkmar Leßmann

- 9.10 – 9.40 **Albert Cardona, Janelia**
Neural circuits for learning and memory reconstructed from electron microscopy
- 9.45 – 10.15 **Jacky Schiller, Haifa**
Processing and plasticity in tuft dendrites of layer V pyramidal neurons in rat somatosensory cortex
- 10.20 – 10.50 **Pico Caroni, Basel**
Circuit mechanisms of memory consolidation and retrieval
- 10.55 – 11.25 Coffee and Posters
- 11.25 – 11.55 **Simon Rumpel, Mainz**
Dynamics of cortical circuits and the formation of memories
- 12.00 – 12.30 **Michele Migliore, Palermo**
Learning and memory of odors in the olfactory bulb system through the self-organization of the mitral-granule cells synaptic network: a large scale 3D model study
- 12.35 – 13.40 Lunch
- 13.40 – 14.30 Poster Presentation (even numbers)

Afternoon Session 2.30 p.m.

2. Working Memory & Attention

Chairs: Stefan Pollmann & Ariel Schönfeld

- 14.30 – 15.00 **Edward Awh, U Oregon**
Oscillatory building blocks of storage in visual working memory
- 15.05 – 15.35 **Ed Vogel, U Oregon**
The contribution of attentional lapses to individual differences in working memory capacity
- 15.40 – 16.10 **Barry Giesbrecht, UC Santa Barbara**
Both attention and long-term memory contribute to visual search cued by context
- 16.15 – 16.45 Coffee and Posters
- 16.45 – 17.15 **Max Hopf, Magdeburg**
Neural mechanisms of global feature-based attention
- 17.20 – 17.50 **Kia Nobre, Oxford, UK**
Dynamic modulation of visual short-term memory by attention

Hansjürgen Matthies Honorary Lecture

Chair: Klaus Reymann

- 18.30 – 19.30 **György Buzsáki, New York**
Emergence of cognition from action
- 19.30 Meeting Buffet at Herrenkrug

„It is now up to scientists to take up the extraordinary challenge and to explore the functional processes and rules in the networks of the brain, enabling the origin of information from the confluence of neuronal signals.“

*Hansjürgen Matthies
1925 - 2008*



Hansjürgen Matthies was the doyen of Neuroscience in Magdeburg and founding director of the ancestor institute of the LIN, the Institute for Neurobiology and Brain Research of the Academy of Sciences of the GDR.

He was also the initiator of the International Magdeburg Meetings on Learning & Memory, which took place for the first time in 1967.

Prof. Matthies was a great scientist to whom we owe gratitude especially for his anticipatory and conceptual work on cellular memory storage mechanisms.

The 2nd Hansjürgen Matthies Honorary Lecture will be given by György Buzsáki, Biggs Professor of Neural Sciences at New York University.

György Buzsáki is a renowned expert in neuronal circuits coding, transferring and storing information, with particular emphasis on how different brain oscillations serve these mechanisms. He proposed the two-stage model of memory, which was most influential for our understanding how neocortex and hippocampus interact in memory consolidation.

György attended his first Magdeburg Meeting in 1980.



Morning Session 9 a.m.

3. Hebbian vs. Homeostatic Plasticity

Chairs: Eckart Gundelfinger & Constanze Seidenbecher

- 9.00 – 9.30 **Alain Prochiantz, Paris**
The traveling transcription factor that regulates cerebral cortex plasticity
- 9.35 – 10.05 **Yukiko Goda, RIKEN, Japan**
Balancing synaptic strengths across the dendritic tree
- 10.10 – 10.40 **Nathalie Rouach, Paris**
Unraveling unconventional role for astroglial connexins in synaptic strength and memory
- 10.45 – 11.15 Coffee and Posters
- 11.15 – 11.45 **Antony Koleske, Yale, USA**
Adhesive and cytoskeletal control of dendrite and dendritic spine stability
- 11.50 – 12.20 **Anna Fejtova, Magdeburg**
Homeostatic regulation of neurotransmission by fast-acting antidepressant ketamine
- 12.25 – 12.55 **Sajikumar Sreedharan, Singapore**
Enhancing or erasing memory through synaptic co-operation and competition
- 13.00 – 14.30 Lunch

Afternoon Session 2.30 p.m.

4. Memory Dysfunction

Chairs: Hans-Jochen Heinze & Emrah Düzel

- 14.30 – 15.15 **Magdalena Sauvage, Bochum**
New evidence for segregated spatial and non-spatial hippocampal subnetworks
- 15.20 – 15.50 **Anne Maass, Magdeburg**
Ultra high field imaging of the functional organization of human long-term memory and its plasticity in old age
- 15.55 – 16.25 **Thomas Wolbers, Magdeburg**
Spatial computations in the aging brain – a unique window into age-related memory disorders
- 16.30 – 17.30 Coffee and Posters
- 17.30 – 18.00 **Masud Husain, Oxford, UK**
Forgetting over seconds
- 18.05 – 18.35 **William Jagust, Berkeley**
Protein aggregation and neural function in the aging brain
- 19.00 Speakers' Dinner at Café T'art in the medieval monastery "Unser lieben Frauen"
Bus transfer for speakers from Herrenkrug to the monastery: departure at 18.50
return from monastery to Herrenkrug: 22.30

Thursday, February 26

Morning Session 9 a.m.

5: Memory, motivation, dopamine

Chairs: Bertram Gerber & Frank Ohl

- 9.00 – 9.30 **Daniel Durstewitz, Mannheim**
Learning as active decision making and strategy selection
- 9.35 – 10.05 **Christopher Fiorillo, Daejeon**
The Role of Dopamine and Other Modulatory Signals in Learning Value
- 10.10 – 10.40 **Marta Zlatic, Janelia**
Towards a complete circuit for aversive conditioning from sensory inputs to motor outputs
- 10.45 – 11.15 Coffee and Posters
- 11.15 – 11.45 **Onur Güntürkün, Bochum**
The neural basis of extinction learning in birds
- 11.50 – 12.20 **Philippe Tobler**
The neural basis of social reinforcement learning in humans
- 12.30 – 13.30 Lunch
- 13.30 – 14.30 Poster presentation (odd numbers)

Afternoon Session 2.30 p.m.

6. Molecular Mechanisms of Memory Management

Chairs: Michael R. Kreutz & Oliver Stork

- 14.30 – 15.00 **Sheena Jocelyn, Toronto**
Making, breaking and linking fear memories
- 15.05 – 15.35 **Alexander Dityatev, Magdeburg**
New functions of extracellular matrix in neural plasticity
- 15.40 – 16.10 **Timothy Bredy, UC Irvine**
Epitranscriptomic mechanisms of memory stability
- 16.15 – 16.45 Coffee and Posters
- 16.45 – 17.15 **Andre Fischer, Göttingen**
Epigenetic Memory in health and disease: How much Lamarck is in our brain?
- 17.20 – 17.50 **Max Happel, Magdeburg**
Cognitive learning enhancement by controlled modulation of the extracellular matrix in cortical circuits

Concluding Remarks

Eckart Gundelfinger