

PROGRAM

15<sup>th</sup>

**Göttingen Meeting  
of the German  
Neuroscience Society  
March 22–24, 2023**



NEUROWISSENSCHAFTLICHE  
GESELLSCHAFT

GERMAN NEUROSCIENCE SOCIETY



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# Program

15<sup>th</sup> GÖTTINGEN MEETING OF THE  
GERMAN NEUROSCIENCE SOCIETY

39<sup>th</sup> GÖTTINGEN NEUROBIOLOGY  
CONFERENCE

March 22 - 24, 2023



NEUROWISSENSCHAFTLICHE  
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## Welcome Address

Welcome to the 15<sup>th</sup> Göttingen Meeting of the German Neuroscience Society. With this meeting, we continue the long tradition of presenting and discussing the latest work in the broad field of neuroscience, ranging from basic neurobiology and to translational neuroscience.

As the president of the NWG and this year's chair of the programme committee, I am especially happy that we can meet again in person. The threat from COVID-19 is still not completely averted and some restrictions may apply to ensure everyone's safety and health. You may recall that in 2021, because of the COVID-19 pandemic, the Göttingen conference was held as an online-meeting, which was a really successful adventure at that time. Still, I am sure that you will agree with me that the personal contact and discussions in the lecture halls, during poster sessions, the commercial exhibitions and continuing later in one of the many nice bars and restaurants in town, cannot be replaced by any virtual environment.

And again, this meeting is an unusual one, as we had to shorten it by one day due to the defusing of unexploded bombs from 2<sup>nd</sup> World War in the city of Göttingen. As a result, the conference programme had to be completely changed at short notice. The Berlin office and the Göttingen organizers again mastered this challenge excellently and we are more than grateful and would like to thank them for their extra work and commitment. The removal of deadly remnants of the 2<sup>nd</sup> World War reminds us that peace and freedom cannot be taken for granted. The war of aggression against Ukraine shows how important it is to defend democracy and the freedom of expression and information. It moreover reminds us how privileged we are – also in our freedom to meet here and to discuss our work and scientific results.

I particularly welcome the many early-career neuroscientists presenting their thesis works or showing results from their postdoctoral projects. You are a driving, essential element in research and you are the future of neuroscience. While spinning your own network among your peers, I urge you to also approach, interact and challenge the established "late-career" researchers. Neuroscience can only profit from such interaction of young people with new ideas with more experienced researchers.

It is thus my great pleasure to invite you to life presenta-

tions of 7 internationally renowned plenary speakers, vivid debates in 36 symposia and to face-to-face discussions in front of poster boards. Be there to chat with good old friends and with interesting new colleagues at the buffet, and be part of the international neuroscience community. The core scientific programme will be flanked by satellite symposia and special interest workshops covering a broad range of topics. Moreover, different companies will showcase their latest products and developments. We are also delighted to award the second Loewi Medal to an outstanding scientist and dedicated member of the NWG. And last but not least, in 2023 we look back on 30 years of NWG, which was founded in 1993.

Get ready for a rich and exciting scientific programme that will give you the chance to present your own research in an inspiring atmosphere and to discover the latest scientific and technological developments in neuroscience! We are looking forward to your participation – and welcome your colleagues to join, too.

Finally, I would like to remind you that the Göttingen meeting is biannual and alternates with the FENS Forum. The next FENS Forum will be hosted by the Austrian Neuroscience Association and the Hungarian Neuroscience Society and will take place on 25-29 June 2024 in Vienna, Austria. The NWG, as a member of the FENS, would like to encourage you to contribute to this European neuroscience meeting as well. We also hope to see you in two years at the next meeting of the German Neuroscience Society, which will take place from 20-23 March 2025 in Göttingen.

Herzlich Willkommen (zurück) in Göttingen! Welcome (back) to Göttingen!

*Christine Rose*  
Prof. Christine R. Rose



Prof. Dr. Christine R. Rose  
*President of the German Neuroscience Society*

## Acknowledgements

The German Neuroscience Society (NWG) and the organizers of this meeting gratefully acknowledge the collaboration and the financial support of the following partners:

Bereich Zelluläre Neurobiologie  
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and Lena Bunatyan, Berlin,  
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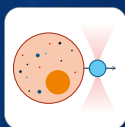


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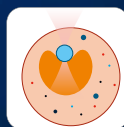
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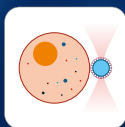
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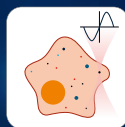
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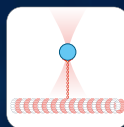
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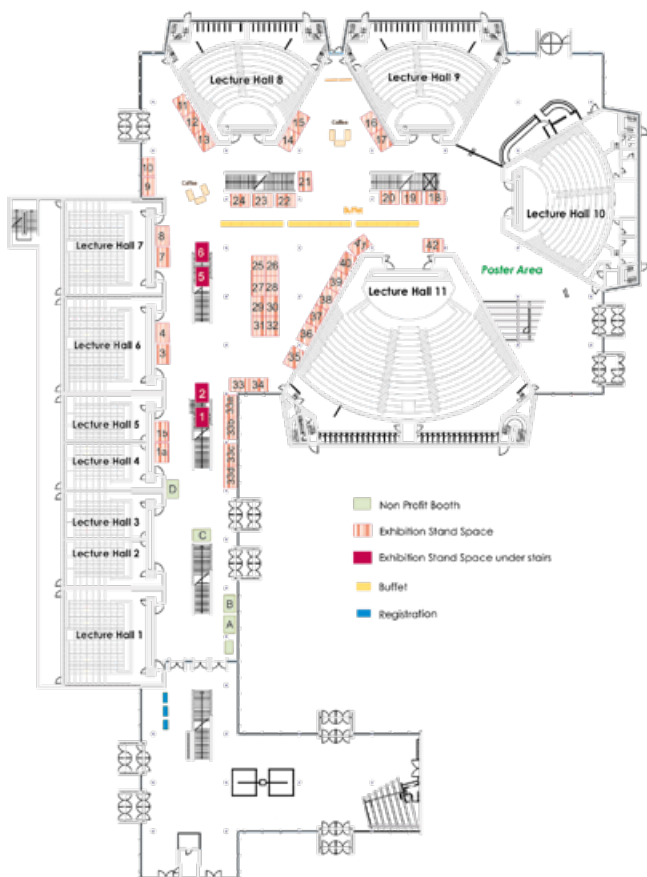
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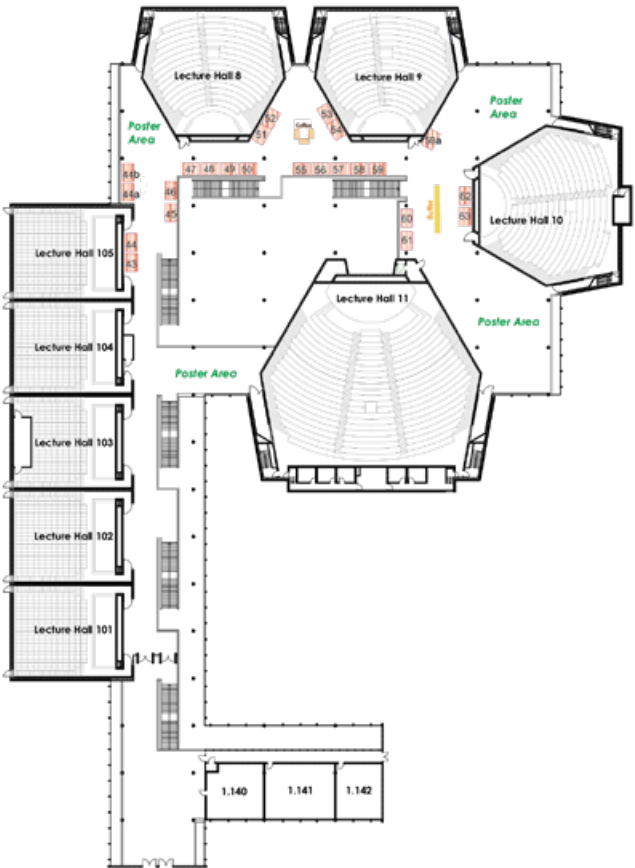
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The booth numbers behind the listed company's name on the pages before refer to the booth numbers on the floor plans.



# Exhibition Floor Plan First Floor



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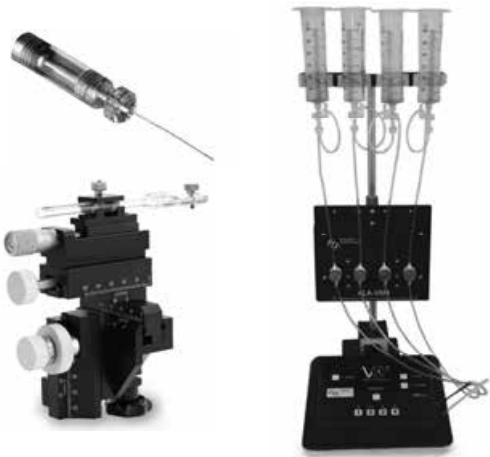
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This prize is awarded by the German Neuroscience Society for outstanding contributions in the field of brain research. The award supports young researchers up to 5 years after completion of their PhD or MD. The prize money amounts to 20.000 €. Qualified research is reflected in outstanding publications. The applicant can either work in a German laboratory or she/he is of German origin working abroad. The application can be submitted by the applicant her-/himself or the candidate can be nominated. Applications from all fields of neuroscience research are invited. Being a member of the German Neuroscience Society is not mandatory.

The prize was given for the first time in 2005 during the 6<sup>th</sup> conference of the German Neuroscience Society in Göttingen.

### Stifterverband für die Deutsche Wissenschaft

Postfach 164460  
45224 Essen  
[www.stifterverband.de](http://www.stifterverband.de)

*The prize winner 2023, Lukas Groschner (Martinsried) will present his work in a lecture on Wednesday March 22, between 14:30 and 15:00 h.*

### Otto Loewi Medal of the German Neuroscience Society 2023



With the Otto Loewi Medal the German Neuroscience Society pays tribute to members who have both committed themselves to the success of the GNS and whose scientific contribution made crucial impacts in their field. The prize consists of a medal plus a monetary prize of 10,000 Euro and is awarded approximately every four years.

The medal was awarded for the first time during a reception celebrating 25-years of the GNS, during the FENS Forum in July 2018 in Berlin.

The 2023 medal is bestowed upon Eckart Gundelfinger (Magdeburg) and will be awarded on Thursday, March 23, 2023 at the beginning of the Hertie Foundation lecture.

## Young Investigator Stipends

### Travel grants from the German Neuroscience Society

The following applicants were selected for a travel grant to attend the 15<sup>th</sup> Göttingen Meeting of the German Neuroscience Society (March 20 – 24, 2023) amounting to 300 Euros:

Brigid Chimoita Aliero (Magdeburg)  
Nicole Barheier (Freiburg im Breisgau)  
Ahmet Oguzhan Bicakci (Marburg)  
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Isa Wernersbach (Mainz)



## Young Investigator Orals in a Symposium

Each symposium has one slot reserved for a Young Investigator Presentations. This was selected from the submissions by the organizer(s) of the symposia:

The following students/young postdocs were selected to give a short communication:

- Taha Abdulla (Jena, Germany)** – Symposium S7  
**Zurna Ahmed (Goettingen, Germany)** – Symposium S11  
**Fatima Amin (Magdeburg, Germany)** – Symposium S6  
**Marcel Bausch (Bonn, Germany)** – Symposium S35  
**Rituja Bisen (Wuerzburg, Germany)** – Symposium S1  
**Marie-Luise Brehme (Hamburg, Germany)** – Symposium S18  
**Mingran Cao (London, UK)** – Symposium S34  
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**Abderazzaq El Khallouqi (Mainz, Germany)** – Symposium S8  
**Jonas Elpelt (Frankfurt/Main, Germany)** – Symposium S27  
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**Irina Pochinok (Hamburg, Germany)** – Symposium S21  
**Kristina Ponimaskine (Hamburg, Germany)** – Symposium S2

- Jakob Rentsch (Berlin, Germany) – Symposium S26  
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 Wenbin Yang (Basel, Switzerland) – Symposium S4  
 Tim Ziebarth (Bochum, Germany) – Symposium S29

## Young Investigator Orals in the Breaking News

- Alisa Bakhareva (Cologne, Germany) – Symposium S13  
 Alexandra Barayeu (Tuebingen, Germany) – Symposium S13  
 Andreas Franzelin (Hamburg, Germany) – Symposium S13  
 Fathima M. Iqbal (Wuerzburg, Germany) – Symposium S13  
 Hung Lo (Berlin, Germany) – Symposium S13  
 Petra Mocellin (Magdeburg, Germany) – Symposium S13  
 Francesco Monaca (London, UK) – Symposium S13  
 Lennart Roos (Goettingen, Germany) – Symposium S13  
 Berra Yildiz (Ulm, Germany) – Symposium S13  
 Florian Zirpel (Oxford, UK) – Symposium S13  
 Sielke Caestecker (Ghent, Belgium) – Symposium S15  
 Nina Feller (Luebeck, Germany) – Symposium S15  
 Yannick Günzel (Konstanz, Germany) – Symposium S15  
 Bettina Habelt (Dresden, Germany) – Symposium S15  
 Carmen Haider (Vienna, Austria) – Symposium S15  
 Inés Hojas García-Plaza (Goettingen, Germany) – Symposium S15  
 Yuebing Li (Bern, Switzerland) – Symposium S15  
 Zeeshan Mushtaq (Kaiserslautern, Germany) – Symposium S15  
 Bernát Nógrádi (Szeged, Hungary) – Symposium S15  
 Melanie Scharr (Tuebingen, Germany) – Symposium S15

## Committees and Organization

### Program Committee

Christine R. Rose  
(Chair)  
Mathias Bähr  
Tobias Böckers  
Ansgar Büschges  
Veronica Egger  
Martin Göpfert  
Sonja Grün  
Eckart Gundelfinger  
Ileana Hanganu-Opatz  
Frank Kirchhoff  
Heidrun Potschka  
Sophie Seidenbecher  
Christian Steinhäuser  
Christiane Thiel

### Scientific Organization

Christine R. Rose  
Institut für Neurobiologie  
Heinrich-Heine Universität Duesseldorf

### Local Organization

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### NWG Office

Geschäftsstelle der Neurowissenschaftlichen Gesellschaft e.V.  
Stefanie Korthals / Meino Alexandra Gibson  
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E-Mail: [korthals@mdc-berlin.de](mailto:korthals@mdc-berlin.de) / [gibson@mdc-berlin.de](mailto:gibson@mdc-berlin.de)

### Homepage

[www.nwg-goettingen.de](http://www.nwg-goettingen.de)



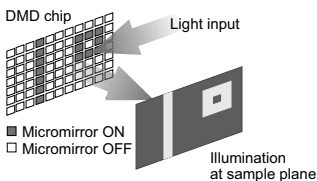
## Polygon

### DMD PATTERN ILLUMINATOR FOR TARGETED PHOTOSTIMULATION

Subcellular-Resolution Optogenetics and Photostimulation  
Simultaneous Multi-Region Illumination  
Compatible with any Microscope  
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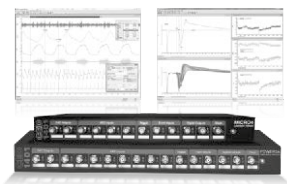
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### Patch-Clamp Amplifier Systems



### Data Acquisition Interfaces



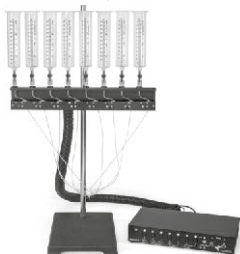
### Micropipette Pullers



### Micromanipulators



### Perfusion Systems



## General Information

### Venue

Central Lecture Hall Building (Zentrales Hörsaalgebäude, ZHG), Georg August University Göttingen, Platz der Göttinger Sieben 5, 37073 Göttingen

### Conference Office

During the meeting the conference office is open on Wednesday (March 22) from 8 a.m. to 8 p.m., on Thursday (March 23) from 7:30 a.m. to 8 p.m., and Friday (March 24) from 7:30 a.m. to 3:30 p.m.

Phone: +49 551 39 29595

E-Mail: [korthals@mdc-berlin.de](mailto:korthals@mdc-berlin.de)

### Exhibition

The exhibition is open on Wednesday, March 22 from 12 p.m. to 7 p.m., on Thursday, March 23 from 9 a.m. to 7 p.m. and on Friday, March 24 from 9 a.m. to 1.30 p.m.

### Public Transportation and Travel

The meeting site is only about ten minutes walk from the center of the city as well as from the central train station. Bus lines in front of the train station to the Campus are No. 21, 22, 23, 31, 32, 34, 180 and 185. The bus stops are called Platz der Göttinger Sieben.

Please be aware that the city of Göttingen has announced that an undetonated Second World War bomb will be rendered harmless on Saturday, March 25.

This requires an evacuation within a 1.000 meter radius, an area where the Central Göttingen trains station is located. Therefore, no trains will run starting from Saturday morning 6 a.m. until the end of the operation. Departure should thus possible be planned for Friday afternoon or evening.

### Registration

On site registration will be available. Please pay in cash or by Visa/Mastercard.

Students must show a copy of their student identity card!

# Map of Göttingen



Registration fee ALL days:

EUR 250	- GNS or FENS <b>members</b>
EUR 340	- <b>non-members</b>
EUR 135	- <b>student members</b> of GNS or FENS
EUR 180	- <b>student non-members</b>

Registration fee PER day (max. 2 days):

EUR 90	- GNS or FENS <b>members</b>
EUR 120	- <b>non-members</b>
EUR 45	- <b>student members</b> of GNS or FENS
EUR 60	- <b>student non-members</b>

The registration fee includes:

- free access to the scientific program
- congress folder
- proceedings as download
- buffet with food and drinks at the meeting site on Wednesday and Thursday evening
- coffee breaks

## Proceedings

The proceedings of the Göttingen Neuroscience Meeting 2023 are available as:

Supplement to Neuroforum 2023 VOLUME 29 ISSUE 1  
e-ISSN 2363-7013

## Food and Drinks

Lunch is available on the attendee's own expense from Wednesday to Friday in the Mensa in the same building. A buffet before the last lecture will be offered free of charge on Wednesday and Thursday.

Coffee, tea, water and other drinks will be available free of charge throughout the Göttingen Meeting. Since the GNS fosters the idea that an event should leave the minimum CO<sub>2</sub> footprint possible we strive to avoid the use of non-reusable cups as far as possible during the meeting. Thus, either bring along your own cup or buy a Göttingen Meeting Mug onsite (5 € for non-member, 3 € for members).

## Internet Access

The building is equipped with WLAN. However, as extensive use of wireless usually slows down the internet connection drastically, we strongly recommend to download the program and the abstracts prior to the meeting on your mobile device.

## Poster Presentations

Each poster will hang for one day. Posters with poster numbers containing A will hang on Wednesday, posters with poster numbers containing B will hang on Thursday, and posters with poster numbers containing C will hang on Friday (see also explanation on page 132).

The presenting author of each poster is requested to be present at her/his poster during the poster session. The poster sessions are divided into odd and even serial numbers. Each poster is presented in a session of 45 min.

### **Posters with numbers containing A**

Wednesday, March 22, 2023

(hanging of posters: before 13:00)

13:00 - 13:45 odd serial numbers (e.g. T20-1A)

13:45 - 14:30 even serial numbers (e.g. T20-2A)

(all posters must be removed before 8 p.m.)

### **Posters with numbers containing B**

Thursday, March 23, 2023

(hanging of posters: before 9:30)

09:30 - 10:15 odd serial numbers (e.g. T20-1B)

10:15 - 11:00 even serial numbers (e.g. T20-2B)

(all posters must be removed before 8 p.m.)

### **Posters with numbers containing C**

Friday, March 24, 2023

(hanging of posters: before 10:30)

10:30 - 11:15 odd serial numbers (e.g. T20-1C)

11:15 - 12:00 even serial numbers (e.g. T20-2C)

(all posters must be removed before 3 p.m.)

Please be aware that the registration number you received is NOT corresponding to your poster number.

You can easily find your poster using the online itinerary planner ([www.nwg-goettingen.de/2023](http://www.nwg-goettingen.de/2023)) or with the authors' index in this program booklet.

The optimal size of the poster is 1 x 1 m, posters DIN A0 portrait fit as well. Pins to hang your poster will be available.

### **Projection**

The standard equipment in all lecture rooms is ONE power point projector.

We therefore have to ask you to present your talk without double projection. Please be so kind and save your presentation in power point on a USB stick.

### **Language**

The official language of this meeting is English.

### **Insurance**

The organizers do not take responsibility for individual medical, travel or personal insurance. Participants are advised to carry out their own insurance policies.

### **Electricity Supply**

220 V - 50 Hz AC



**NWG**

NEUROWISSENSCHAFTLICHE  
GESELLSCHAFT

GERMAN NEUROSCIENCE SOCIETY

# Neuro-Party

## Thursday, March 23rd

Come together  
after the

scientific

program

at

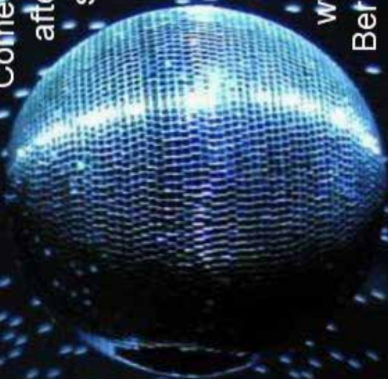
9:00 p.m.

Savoy Club

Göttingen

[www.club-savoy.de](http://www.club-savoy.de)

Befliner Str. 5



Free entrance for all participants of the congress with badge, all others 5€.  
Happy hour from 9-10 p.m.





# Scientific Program

## Tuesday, March 21, 2023

- 13:00 - 19:00     *Satellite Symposium (Sat1), Lecture hall, MPINAT City-Campus*  
**7<sup>th</sup> Schram Foundation Symposium**  
**„Building a functional nervous system: from different cellular players to epigenetic regulation“**  
*Chairs: Carmen Ruiz de Almodovar and Tran Tuoc, Bonn and Bochum*

## Wednesday, March 22, 2023

- 09:00 - 11:45     *Satellite Symposium (Sat2), ZHG, Georg-August-University Goettingen, Hall 11*  
**GBM e.V. Study Group 'Molecular Neurobiology' - „Protein aggregates in neurodegenerative diseases: cause or symptom?“**  
*Chairs: Jörg W. Bartsch and Stefan Kins, Marburg and Kaiserslautern*
- 12:00 - 13:00     **Plenary Lecture, Hall 11**  
 - Opening Lecture -  
**Nathalie Rouach, Paris (France)**  
**Astroglia: from stars to brain plasticity**  
*Chair: Christine R. Rose, Duesseldorf*
- 13:00 - 14:30     **Poster Session I: Posters A**  
 13:00 - 13:45     Odd serial numbers  
 13:45 - 14:30     Even serial numbers
- 14:30 - 15:00     **Awarding and Lecture, Hall 11**  
 - Schilling Award Lecture -  
**Lukas Groschner, Martinsried**  
**Neural arithmetic**  
*Chair: Ansgar Büschges, Cologne*
- 15:15 - 17:15     **Symposia I (S1 - S7)**  
 15:15 - 17:15     *Symposium 1, Hall 8*  
**Gut-brain signalling: from sensory cell biology to animal behaviour**  
*Chairs: Cordelia Imig and Benjamin Cooper, Copenhagen (Denmark) and Goettingen*

- 15:15 - 17:15 *Symposium 2, Hall 105*  
**Novel functions and regulatory mechanisms of the neuronal actin cytoskeleton**  
*Chair: Marco Rust, Marburg*
- 15:15 - 17:15 *Symposium 3, Hall 10*  
**Developmental mechanisms regulating functional cortical networks**  
*Chairs: Britta Eickholt and Zoltán Molnar, Berlin and Oxford (UK)*
- 15:15 - 17:15 *Symposium 4, Hall 9*  
**Changing Memories**  
*Chairs: Anni Richter and Christian Merz, Magdeburg and Bochum*
- 15:15 - 17:15 *Symposium 5, Hall 104*  
**How cellular clocks spanning multiple time scales orchestrate biological timing**  
*Chairs: Monika Stengl and Martin Garcia, Kassel*
- 15:15 - 17:15 *Symposium 6, Hall 102*  
**Cerebellum and mushroom body: common circuit motifs for learning and adaptive behaviour?**  
*Chairs: Dagmar Timmann, Johannes Felsenberg and Bertram Gerber, Essen, Basel (Switzerland) and Magdeburg*
- 15:15 - 17:15 *Symposium 7, Hall 101*  
**Disease-specific autoantibodies against neuronal surface antigens disrupt synaptic function**  
*Chairs: Christian Geis and Stefan Hallermann, Jena and Leipzig*
- 17:30 - 18:30 **Plenary Lecture, Hall 11**  
 - Ernst Florey Lecture -  
**Valentina Emiliani, Paris (France)**  
**Holographic manipulation of neuronal circuits: circuit optogenetics**  
*Chair: Christiane Thiel, Oldenburg*
- 18:30 - 19:30 **Buffet in the Foyer**  
*Reception partially hosted by Blackrock Neurotech*

- 19:30 - 20:30 **Plenary Lecture, Hall 11**  
 - Translational Neuroscience Lecture of the Gertrud Reemtsma Foundation -  
**Mathias Jucker**, Tuebingen  
**Proteopathic seeds in neurodegenerative diseases**  
 Chair: *Mathias Bähr, Goettingen*

## Thursday, March 23, 2023

- 08:30 - 09:30 **Plenary Lecture, Hall 11**  
 - Norbert Elsner Lecture -  
**Randolf Menzel**, Berlin  
**A neuroethological approach to the Honeybee brain**  
 Chair: *Sophie Seidenbecher, Nürnberg*
- 09:30 - 11:00 **Poster Session II: Posters B**  
 09:30 - 10:15 Odd serial numbers  
 10:15 - 11:00 Even serial numbers
- 11:00 - 13:00 **Symposia II (S8 - S14)**  
 11:00 - 13:00 *Symposium 8, Hall 8*  
**Molecular mechanisms of synaptic brain disorders**  
 Chairs: *Dilja Krueger-Burg and Noa Lipstein, Mainz and Berlin*
- 11:00 - 13:00 *Symposium 9, Hall 105*  
**New advances in the neuroscience underlying socio-emotional behaviour**  
 Chairs: *Oliver Bosch and Hanna Hömberg, Regensburg and Berlin*
- 11:00 - 13:00 *Symposium 10, Hall 104*  
**Membrane trafficking processes and presynaptic proteostasis**  
 Chairs: *Marijn Kuijpers and Anna Karpova, Nijmegen (Netherlands) and Magdeburg*
- 11:00 - 13:00 *Symposium 11, Hall 102*  
**Neuroscience of naturalistic navigation and foraging in non-human primates**  
 Chairs: *Irene Lacaal and Alexander Gail, Goettingen*
- 11:00 - 13:00 *Symposium 12, Hall 103*  
**Epileptogenesis in mouse models of genetic epilepsies**  
 Chair: *Holger Lerche, Tuebingen*

- 11:00 - 13:00 *Symposium 13, Hall 101*  
**Breaking News I**  
*Chair: Marc Spehr, Aachen*
- 11:00 - 13:00 *Symposium 14, Hall 9*  
**Plasticity in unexpected places: flexible circuits for instinctive behaviours**  
*Chairs: Johannes Kohl and Vanessa Stempel, London (UK) and Frankfurt/Main*
- 13:00 - 14:00 **Lunch Break**
- 13:00 - 14:00 **Annual General Meeting of the NWG Hall 11**
- 13:00 - 14:00 *Workshop I*  
**Workshop on communicating animal research, Hall 102**  
*Roman Stilling and Laura Berg, Münster*  
**Updates in Animal Research - Transparency, Communication and Hot Topics**
- 14:00 - 15:00 **Meet the Companies** and their latest products & developments at the booths or in workshops
- 14:00 - 14:30 *Workshop II*  
**Angelini Pharma, Hall 103**  
**Which ion channel? Precision medicine in treatment of epilepsy: from autoimmune encephalitis to Dravet**  
*Nico Melzer and Konstantin Makridis, Duesseldorf and Berlin*
- 14:00 - 15:00 *Workshop III*  
**LI-COR Biosciences, Hall 101**  
**The path to quantitative and reproducible Western Blots**  
*Stefanie Merfort and Maria Ercu, Bad Homburg*
- 14:00 - 15:00 *Workshop IV*  
**Bruker Nano, Hall 104**  
**Multi-Scale Imaging: from Molecules to Organisms using Bruker Super-Resolution and Light Sheet Microscopy**  
*Romina Macco and Jürgen Mayer, Milano (Italy) and Berlin*

- 14:00 - 15:00 Workshop V  
**Carl Zeiss Research Microscopy, Hall 105**  
**Introducing high-throughput serial section acquisition for ZEISS MultiSEM**  
 Anna Lena Eberle, Oberkochen
- 15:00 - 16:00 **Plenary Lecture, Hall 11**  
 - Otto Creutzfeldt Lecture -  
**Valentin Nägerl, Bordeaux (France)**  
**Mind the gap! Super-resolution imaging of the extracellular space in the brain**  
 Chair: Frank Kirchhoff, Homburg
- 16:15 - 18:15 **Symposia III (S15 - S21)**  
 16:15 - 18:15 *Symposium 15, Hall 101*  
**Breaking News II**  
 Chair: Ivan Manzini, Gießen
- 16:15 - 18:15 *Symposium 16, Hall 102*  
**A new look at neuronal circuits after CNS injury: mechanisms for vulnerability and repair**  
 Chairs: Francesco Roselli and Aya Takeoka, Ulm and Leuven (Belgium)
- 16:15 - 18:15 *Symposium 17, Hall 9*  
**Moving the body: communication, coordination and control in neuro-mechanical systems**  
 Jan M. Ache and Corinna Gebehart, Wuerzburg and Lisbon (Portugal)
- 16:15 - 18:15 *Symposium 18, Hall 8*  
**Astrocyte control of neural circuit function and animal behaviour**  
 Johannes Hirrlinger and Christian Henneberger, Leipzig and Bonn
- 16:15 - 18:15 *Symposium 19, Hall 104*  
**Impact of early traumatic stress on brain development, and mental and somatic health**  
 Christian Schmahl and Katja Seitz, Mannheim and Heidelberg
- 16:15 - 18:15 *Symposium 20, Hall 105*  
**Hidden senses**  
 Chairs: Kristina Corthals and Bart Geurten, Lund (Sweden) and Otago (New Zealand)

16:15 - 18:15 *Symposium 21, Hall 10*  
**Pushing and pulling: how the interplay of excitation and inhibition shapes network dynamics**  
*Chairs: Mattia Chini and Sebastian H. Bitzenhofer, Hamburg*

18:15 - 19:15 **Buffet in the Foyer**  
*Reception hosted by the Hertie Foundation*



19:15 - 20:30 **Plenary Lecture and Awarding of the Otto Loewi medal 2022 of the GNS**  
 - Hertie Foundation Lecture - Hall 11  
**Peter Falkai, Munich**  
**Translation in clinical neuroscience: a good story but not the end of the story**  
*Chair: Ileana Hanganu-Opatz, Hamburg*

## Friday, March 24, 2023

08:30 - 10:30 **Symposia IV (S22 - S28)**  
 08:30 - 10:30 *Symposium 22, Hall 10*  
**Illuminating the brain – current applications and future developments of next-generation biosensors**  
*Chairs: Olivia Masseck and Lutz Wallhorn, Bremen*

08:30 - 10:30 *Symposium 23, Hall 105*  
**Neuroepigenetics: Epigenomic adaptations in CNS development**  
*Tanja Vogel and Geraldine Zimmer-Bensch, Freiburg and Aachen*

08:30 - 10:30 *Symposium 24, Hall 104*  
**Inflammatory mechanisms of epileptogenesis**  
*Chairs: Felix Rosenow, Sven G. Meuth and Nico Melzer, Frankfurt/Main and Duesseldorf*

08:30 - 10:30 *Symposium 25, Hall 102*  
**A comparative perspective on social communication**  
*Chairs: Daniela Vallentin and Steffen Hage, Seewiesen and Tuebingen*

- 08:30 - 10:30 *Symposium 26, Hall 101*  
**Phase separation in neuronal (patho)physiology**  
*Chair: Dragomir Milovanovic, Christian Tetzlaff and Michael Fauth, Berlin and Goettingen*
- 08:30 - 10:30 *Symposium 27, Hall 9*  
**From imprecision to robustness in neural circuit assembly**  
*Chairs: Carsten Duch, Robin Hiesinger, Susanne Schreiber and Marion Silies, Berlin and Mainz*
- 08:30 - 10:30 *Symposium 28, Hall 103*  
**Translational science in pediatric neurology – what we can learn!**  
*Chairs: Florian Heinen, Munich*
- 10:30 - 12:00 **Poster Session III: Posters C**  
 10:30 - 11:15 Odd serial numbers  
 11:15 - 12:00 Even serial numbers
- 12:00 - 13:00 **Lunch Break and Workshops**
- 12:00 - 13:00 *Workshop VI*  
**DFG, Hall 102 and 1.141 (consultations)**  
**Starting your research career - DFG funding programs and application procedures**  
*Thomas Baumgarten, Andreas Görlich and Michael Müller, Bonn*
- 12:00 - 13:00 *Workshop VII*  
**IBRO, Hall 104**  
**How and why to publish in neuroscience society journals?**  
*Juan Lerma and Manfred Heckmann, Alicante, Spain and Wuerzburg*
- 13:00 - 15:00 **Symposia V (S29 - S36)**  
 13:00 - 15:00 *Symposium 29, Hall 105*  
**Brain dysfunction upon energy failure: new insights into the role of astrocytes**  
*Chair: Sara Eitelmann, Duesseldorf*
- 13:00 - 15:00 *Symposium 30, Hall 9*  
**Alternatives to living animal models**  
*Chairs: Kathrin Wicke and Akshay Kapadia, Hannover and Bonn*

- 13:00 - 15:00 *Symposium 31, Hall 8*  
**Magnetoreception – the sixth sense**  
*Chairs: Rabea Bartölke, Jingjing Xu and Henrik Mouritsen, Oldenburg*
- 13:00 - 15:00 *Symposium 32, Hall 10*  
**Presynaptic calcium channels: key players in synaptic transmission and plasticity**  
*Chairs: Tina Pangrsic Vilfan and Tobias Moser, Goettingen*
- 13:00 - 15:00 *Symposium 33, Hall 101*  
**Bridging brain function and microglia signaling**  
*Chairs: Anne Günther and Jastyn Anne Pöppelau, Hamburg*
- 13:00 - 15:00 *Symposium 34, Hall 102*  
**Novel insights into hypothalamic mechanisms for adaptive control of homeostasis**  
*Chairs: Jan Siemens and Henning Fenselau, Heidelberg and Cologne*
- 13:00 - 15:00 *Symposium 35, Hall 103*  
**Insights into the neural basis of cognition from human intracranial electrophysiology**  
*Chair: Caspar Schwiedrzik, Goettingen*
- 13:00 - 15:00 *Symposium 36, Hall 104*  
**Transformations of visual representation from the retina to the cortex**  
*Chairs: Norma Kühn and Helene Schreyer, Leuven (Belgium) and Basel (Switzerland)*
- 15:15 - 16:15 **Plenary Lecture, Hall 11**  
 - Armin Schram Lecture -  
**Michael Kreutz, Magdeburg**  
**Protein transport from NMDA receptors to the nucleus in health and disease**  
*Chair: Veronica Egger, Regensburg*
- 16:30 **Departure**



## ANGELINI SYMPOSIUM

**Which ion channel? Precision medicine in treatment for epilepsy:  
from autoimmune encephalitis to Dravet.**

March 23, 2023 | 14:00 – 15:00 | Hall 103

14:00 – 14:05: Welcome – PD Dr. Nico Melzer

**The importance of the persistent current in the treatment of epilepsy and  
inflammation**

14:05 – 14:25: Seizure and immunosuppressive spectrum of action of cenobamate  
in autoimmune encephalitis with focal seizures – PD Dr. Nico Melzer

14:25 – 14:45: The mechanism of action of cenobamate in LoF-Dravet variants –  
When are sodium channel blockers indicated or contraindicated? – Dr. Konstantin  
Makridis

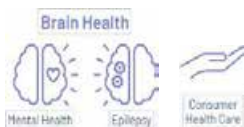
14:45 – 15:00: Questions and Discussion

Closing remarks – PD Dr. Nico Melzer



### ANGELINI PHARMA

Angelini Pharma is an international pharmaceutical company part of Angelini Industries. The company researches, develops and commercializes health solutions with a prevalent focus on the areas of **Central Nervous System (CNS)** and **Mental Health**, including pain, **Rare Diseases** and **Consumer Healthcare**, with highly successful self-medication drugs worldwide.



Following our commitment in **Brain Health**, our Discovery pipeline currently includes 2 projects, with particular focus on **epilepsy syndromes**, and several new projects are currently under review to start in the near future. We take advantage of the most recent advanced technologies, including computing and AI, for drug discovery and development projects. Currently, we are conducting **more than 20 clinical trials**, both interventional and observational, involving more than 2000 patients in more than a dozen countries. Most of them focus on **Brain Health (epilepsy and psychiatric disorders)**, while others involve some of our mature drugs such as **benzylamine**, **acetaminophen**, and **ThermaCare® heat wraps**, a medical device that was recently added to the Angelini non-pharma portfolio.

For further information, please visit [www.angelinipharma.de](http://www.angelinipharma.de) and [harmoniamentis.de](http://harmoniamentis.de)

## Neurowissenschaftliche Gesellschaft e.V. (NWG) German Neuroscience Society

The goal of the NWG is to support neuroscience in research and education and to represent neuroscience research within Germany and abroad. The society strives to create political awareness for the necessity of neuroscience research, keeps contact to national research programs and private foundations, supports the neuroscience programs in the European Community and is a partner for funding agencies and the industry. The NWG favors interdisciplinary educational concepts in neuroscience and aims to spreading knowledge of neuroscience to the general public.

### Training Courses

NWG members are entitled to attend the methodological courses organized by the NWG free of charge.

### Conferences

In the odd years the NWG organizes the Göttingen Meeting which is one of the largest national neuroscience meetings in Europe.

### FENS

NWG members are members FENS as well and take advantage from the FENS benefits, such as lower registration fee for the FENS Forum, FENS stipends, FENS training opportunities, and free online access to the European Journal of Neuroscience (EJN).

### Stipends

The GNS offers stipends for the Göttingen Meeting, the FENS Forum, the Leopoldina symposia and supports the NeuroDoWo.

### SfN Abstract slots

These abstract slots entitle NWG members to present a poster at the American Society for Neuroscience Meetings without being a SfN member, linked to a reduced registration fee.

### Awards

The GNS presents several awards which honor neuroscientists in different stages of their career.

### Email alerts

Members of the NWG receive an electronic newsletter announcing grants, calls for funding or awards and other news, and job ads monthly.

### Website

The members' area on the website offers services for members such as job market, the membership directory or the online access to EJN and Neuroforum.

### [www.dasGehirn.info](http://www.dasGehirn.info)

This website, sponsored by the Gemeinnützige Hertiestiftung, provides state of the art information on all major topics in neuroscience for the general public.

### Neuroforum

The journal is published online quarterly and offers review articles in English, book reviews, reports on research programs and on funding opportunities, and the GNS news. Members have free online access.

### Outreach

Educational courses for school teachers are offered throughout the year.

The German Neuroscience Society is the voice of neuroscientists working in Germany and of German neuroscientists working abroad. As a non-profit organization the GNS is a founding member of FENS and of the German Brain Council and represents German neuroscientists in the International Brain Research Organization (IBRO).

### Membership

The NWG has more than 2.200 members. Membership is available for everyone working in a field of neuroscience research or on related topics. Membership fee amounts to 40 Euro for students, 80 Euro for Postdocs and 100 Euro for seniors annually.

## Vorstand der Amtsperiode 2023 - 2025:

Präsident: **Prof. Dr. Frank Kirchhoff**  
Vizepräsident: **Prof. Dr. Ansgar Büschges**  
Generalsekretär: **Prof. Dr. Gary Lewin**  
Schatzmeisterin: **Prof. Dr. Veronica Egger**  
Ehrenpräsidentin: **Prof. Dr. Christine R. Rose**

### Sektionssprecher\*innen:

Computational Neuroscience:  
**Prof. Dr. Tatjana Tchumatchenko**  
Entwicklungsneurobiologie/Neurogenetik:  
**Prof. Dr. Constance Scharff**  
Junge NWG (jNWG):  
**Jonas Fisch**  
Klinische Neurowissenschaften:  
**Prof. Dr. Sven Meuth**  
Kognitive Neurowissenschaften:  
**Prof. Dr. Christiane Thiel**  
Molekulare Neurobiologie:  
**Prof. Dr. Tobias Böckers**  
Neuropharmakologie/-toxikologie:  
**Prof. Dr. Franziska Richter Assencio**  
Systemneurobiologie:  
**Prof. Dr. Andreas Nieder**  
Verhaltensneurowissenschaften:  
**Dr. Silke Sachse**  
Zelluläre Neurowissenschaften:  
**Prof. Dr. Jochen Röper**

### Geschäftsstelle:

Neurowissenschaftliche Gesellschaft e.V.  
Max-Delbrück-Center for Moleculare Medizin (MDC) Berlin-Buch  
Robert-Roessle-Str. 10 | 13092 Berlin-Buch | Germany  
Tel.: 030 9406 3336 | Fax: 030 9406 2813 | Email: [korthals@mdc-berlin.de](mailto:korthals@mdc-berlin.de)



## Plenary Lectures

**Nathalie Rouach** (Paris, France) - P1

- Opening Lecture -

**Astroglia: from stars to brain plasticity**

Wednesday, March 22, 2023, 12:00 - 13:00 h

**Lukas Groschner** (Martinsried, Germany) - P2

- Schilling Award Lecture -

**Neural arithmetic**

Wednesday, March 22, 2023, 14:30 - 15:00 h

**Valentina Emiliani** (Paris, France) - P3

- Ernst Florey Lecture -

**Holographic manipulation of neuronal circuits: circuit optogenetics**

Wednesday, March 22, 2023, 17:30 - 18:30 h

**Mathias Jucker** (Tuebingen, Germany) - P4

- Translational Neuroscience Lecture of the Gertrud Reemtsma Foundation -

**Proteopathic seeds in neurodegenerative diseases**

Wednesday, March 22, 2023, 19:30 - 20:30 h

**Randolf Menzel** (Berlin, Germany) - P5

- Norbert Elsner Lecture -

**A neuroethological approach to the Honeybee brain**

Thursday, March 23, 2023, 08:30 - 09:30 h

**Valentin Nägerl** (Bordeaux, France) - P6

- Otto Creutzfeldt Lecture -

**Mind the gap! Super-resolution imaging of the extra-cellular space in the brain**

Thursday, March 23, 2023, 15:00 - 16:00 h

**Peter Falkai** (Munich, Germany) - P7

- Hertie Foundation Lecture -

**Translation in clinical neuroscience: a good story but not the end of the story**

Thursday, March 23, 2023, 19:15 - 20:30 h

**Michael Kreutz** (Magdeburg, Germany) - P8

- Armin Schram Lecture -

**Protein transport from NMDA receptors to the nucleus in health and disease**

Friday, March 24, 2023, 15:15 - 16:15 h

- All plenary lectures take place in hall 11. -

## Otto Creutzfeldt Lecture

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### Who was Otto Creutzfeldt?

Otto Creutzfeldt was born in Berlin, Germany in 1927. He was the youngest son of Hans-Gerhard Creutzfeldt who described the Creutzfeldt-Jakob disease. He first studied humanities but soon switched to medicine and obtained his M.D. in the department of Richard Jung at Freiburg University in 1953. From 1953 and 1959 he was an assistant and trainee in physiology, neurophysiology, and neurology in Freiburg and in psychiatry in Bern, Switzerland. For two years he worked as a research anatomist at UCLA Medical School before he moved to the Max Planck Institute for Psychiatry in Munich in 1962, where he obtained his degree in clinical neurophysiology. In 1971 he became one of the nine directors of the Max Planck Institute for Biophysical Chemistry, as head of the Department of Neurobiology.

Otto Creutzfeldt was one of the pioneers of modern neurophysiology. He investigated the function of the visual cortex applying intracellular recording from cortical neurons and elucidated the neurophysiological principles of the EEG. He also made seminal contributions to the understanding of visual and speech cortices.

In 1973 he founded, together with Ernst Florey, the Göttingen "Neurobiologentagung". He was the mentor for a large number of neurobiologists: Nobel Prize winner Bert Sakmann, Henning Scheich, Wolf Singer, Heinz Wässle, to name a few, worked in his laboratory as doctoral students.



Otto Creutzfeldt (1927-1992)

## Norbert Elsner Lecture

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### Who was Norbert Elsner?

Norbert Elsner was born in Hermsdorf, Poland in 1940 during the Second World War and grew up in Freudenberg in Southern Westfalia. He studied biology in Münster, Munich and Tuebingen where he met the neuroethologist Franz Huber. He followed Franz Huber to Cologne and completed his PhD thesis on "The neuromuscular basis of courtship in the grasshopper *gomphocerippus rufus*". After research stays in Kampala (Uganda) with Hugh Rowel, at the University of Copenhagen with Axel Michelsen, and at the University of Oregon with Graham Hoyle he did his habilitation in zoology at the University of Cologne in 1974. In 1978 he was appointed professor of zoology at the University of Göttingen, where he continued his research as the head of the department of neurobiology until his retirement in 2009.

Norbert Elsner's research focused on the acoustic communication in insects, especially grasshoppers. He investigated the neuronal and sensory basis of acoustic communication using different techniques such as laser vibrometry or electrophysiology.

Besides research, Norbert Elsner had many other interests. He organized the "Göttinger Neurobiologentagung" from 1982 to 2003. Henceforth the Göttingen meetings were under the auspice of the German Neuroscience Society. Between 1999 and 2010 he organized a series of public lectures, linking neuroscience to other scientific disciplines. The subjects of these lectures were published in nicely illustrated books which he edited himself. Norbert Elsner was a true polymath and a connoisseur of literature, music and theater who loved to inspire.



Norbert Elsner (1940-2011)

## Armin Schram Lecture

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### Who was Armin Schram?

Armin Schram was born in 1929 in Prague, Czech Republic. He studied chemistry at the University of Vienna where he received his doctoral degree in chemistry in 1953. In the same year he joined the Deutsche Erdöl AG (from 1970 onwards "Deutsche Texaco AG"). Since 1968 he was a member of the managing board. During the seventies he was appointed as "General Manager International Refining" and spent two years in the US. Since 1979 he acted as CEO of the company. In 1988 the "Deutsche Texaco AG" was integrated into the RWE trust. Armin Schram became chair of the board of RWE Dea AG, a branch of the RWE responsible for the company's petrol and chemistry business. He also represented the company in the board of the "Stifterverband für die Deutsche Wissenschaft", a German Trust Foundation supporting science and research. Here he realized the importance of private commitment for basic research. All his life he had been interested in chemistry and biomedicine, and after his retirement in 1993 he finally found time to pursue his interests consequently. He was especially fascinated by brain research.

In 2000 he founded the Schram-Foundation with his private assets and with the goal to support research in basic neuroscience, especially in modern brain research. The aim of his foundation is to support research, which elucidates the molecular and cellular mechanisms of brain function, including information processing and learning & memory. The foundation capital amounts to 8.1 million Euro and the annual funding budget is about 400.000 Euro. In 2011 Armin Schram was elected as the first (and to date only) honorary member of the NWG.

Besides his interest for research and science Armin Schram was a passionate sailor and hunter and appreciated the company of people who shared his passion. He regularly participated in the NWG Göttingen Meetings and initiated the series of "Schram Symposia" as satellite events to the NWG biennial meetings. Aged 85, Armin Schram died in 2015 just a few weeks before the 4th Schram Symposium.



Armin Schram (1929-2015)

## Ernst Florey Lecture

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### Who was Ernst Florey?

Ernst Florey was born in Salzburg, Austria in 1927. He studied philosophy, botany and zoology in Salzburg and Vienna. In 1950 he completed his PhD in neuropharmacology in Graz. As a postdoc he was awarded a Fulbright scholarship to work with Cornelis A.G. Wiersma at the California Institute of Technology on isolated crayfish stretch receptor neurons. After research stays in Göttingen, Wuerzburg and Montreal he was appointed professor at the University of Washington in Seattle in 1956. In 1969 he returned to Germany to the newly founded University of Konstanz where he investigated the biochemical properties of synapses and the effects of drugs until he was retired in 1992. From 1971 to 1972 he was president of the German Society of Zoology. In 1973 he founded, together with Otto Creutzfeldt, the Göttingen "Neurobiologentagung". Since 1982 he organized the Lindau Nobel Laureate Meetings at Lake Constance.

Ernst Florey discovered factor I as an agent causing inhibition, characterized as GABA in 1957. In the beginning there was doubt that GABA is indeed the transmitter substance of inhibitory neurons until it was recognized as the major inhibitory neurotransmitter in the mammalian brain. Ernst Florey was also the co-founder of the concept of neuromodulation.

Besides research, Ernst Florey was interested in philosophy and published books and essays on the history of science.



Ernst Florey (1927-1997)



Translational Neuroscience Lecture  
of the  
Gertrud Reemtsma Foundation

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**What is the  
Gertrud Reemtsma Foundation?**

*The Gertrud Reemtsma Foundation was established in 1989 by Gertrud Reemtsma. Gertrud Reemtsma's intension was to combine basic brain research with potential applications for the benefit of patients suffering from neurological diseases. The main goal of the Gertrud Reemtsma Foundation is to recognizing and rewarding international excellence in translational neuroscience that impacts human health by awarding the »International Prize for Translational Neuroscience« to outstanding neuroscientists and clinicians. The Foundation also supports speakers at neuroscience meetings as well as events for the next generation of neuroscientists and clinicians. The Gertrud Reemtsma Foundation is administered by the Max Planck Society as a trust.*

## TVV Workshop

Thursday, March 23, 2023  
13:00 - 14:00, Lecture Hall 102

### Updates in Animal Research - Transparency, Communication and Hot Topics

*Roman Stilling and Laura Berg, Münster*

Recent developments in Germany and the EU increase the pressure on science to reduce animal use and contribute to growing uncertainty within the scientific community. The general discussion about animal research crucially depends on information from and visibility of all stakeholders to become a factual and meaningful debate. Thus, open and transparent communication about animal-based research from within the scientific community is becoming increasingly important.

In Europe, Transparency Agreements were launched in nine countries before 2023 with exactly this goal: Transparent communication about animal experiments to inform the public and to help shape the public discussion. The German "Initiative Transparente Tierversuche" was launched in July 2021. More than 90 scientific institutions support this agreement since and have significantly added to comprehensive experience on and many good examples of successful communication about animals in research.

In this workshop we will give background information and updates on the most topical and pressing national and international developments regarding animal research and highlight activities from European and German stakeholders to address these issues. Importantly, communication activities like the recent German Transparency Agreement contribute to a culture of openness and shape the public debate. We offer an outlook on future actions, challenges and opportunities for the neuroscience community.



**Tierversuche verstehen**  
Eine Informationsinitiative der Wissenschaft

## Angelini Pharma

Thursday, March 23, 2023  
14:00 - 15:00, Lecture Hall 103

### Which ion channel? Precision medicine in treatment of epilepsy: from autoimmune encephalitis to Dravet

Nico Melzer and Konstantin Makridis, Duesseldorf and Berlin

The bedrock of accurate management of any disease is precision medicine; tailoring the treatment to that of a specific individual taking into account the genes, environment, lifestyle and the presenting condition. In this symposium, we take a look at two subtypes of epilepsy known to be drug resistant: autoimmune-induced encephalitis/epilepsies, and specific variants of the Dravet syndrome. In terms of seizure suppression and autoimmune encephalitis management, is there a correlation between the mechanism of action for Cenobamate and anti-inflammatory properties at the pathogenetic level? Likewise, could there be exceptions to the longstanding guideline of ruling out sodium channel blockers (SCBs) in any case of Dravet syndrome? Are there variants of this syndrome where SCBs could be efficacious?

These questions will be discussed extensively at this symposium featuring two speakers: PD Dr. Nico Melzer, a Senior Neurologist at the University Clinic in Duesseldorf and a specialist in autoimmune encephalitis with several publications in this topic, and Dr. Konstantin Makridis, a neuropediatrician at the Charite University Clinic Berlin with special interests in epilepsy, genetics and novel treatments.

- 14:00 **Welcome - Nico Melzer, Duesseldorf**  
**The importance of the persistence current in the treatment of epilepsy and inflammation**
- 14:05 Nico Melzer, Duesseldorf  
**Seizure and immunosuppressive spectrum of action of cenobamate in autoimmune encephalitis with focal seizures**
- 14:25 Konstantin Makridis, Berlin  
**The mechanism of action of cenobamate in LoF-Dravet variants - When are sodium channel blockers indicated or contraindicated?**
- 14:45 **Questions | Discussion**
- 14:55 **Closing Remarks -**  
Nico Melzer, Duesseldorf



**Angelini**  
**Pharma**

## LI-COR Biosciences

Thursday, March 23, 2023  
14:00 - 14:30, Lecture Hall 101

### The path to quantitative and reproducible Western Blots

Stefanie Merfort and Maria Ercu

“Although originally a qualitative or at best a semi-quantitative method, with the rise of computational systems biology, Western blotting has become increasingly important for fully quantitative applications.” (Degasperi et al, *PLoS ONE*, 2014)

“The development of the immunoblot to detect and characterize a protein with an antisera, even in a crude mixture, was a breakthrough with wide-ranging and unpredictable applications across physiology and medicine.” (Mc Donough et al, *Am J Physiol Cell Physiol*, 2015)

#### **What is a quantitative Western Blot?**

A quantitative Western Blot makes relative comparisons between different treatments possible. The goal of a quantitative Western is to accurately measure changes in protein expression.

#### **Why do we need quantitative Western Blots?**

Life-altering therapeutics. Increased crop yields. All of us want to make a difference with our life's work. Quantitative Westerns can be a powerful tool to advance discovery and make the world a better place.

#### **The following topics regarding quantitative Western Blot requirements will be addressed in our workshop:**

- How to choose the best normalization strategy?
- How to find the combined linear range of detection for your proteins of interest?
- How to keep experimental variability as low as possible?

#### **What steps can you take today to improve your Western Blot results?**

LI-COR provides products, protocols, and support for Western blotting that help reduce variability and increase replicability.



Maria Ercu – Solutions and Support Scientist  
Stefanie Merfort – Sr. Technical Sales Consultant

## Bruker Nano

Thursday, March 23, 2023  
14:00 - 15:00, Lecture Hall 104

### Multi-Scale Imaging: from molecules to organisms using Bruker Super-Resolution and Light Sheet Microscopy

Romina Macco and Jürgen Mayer

*LCS SPIM – Light Sheet Microscopy for Large Cleared Samples*  
Light sheet microscopy has become the state of the art methodology to address a wide variety of biological questions. Key features of this technique are the extremely minimized photo bleaching, the high-speed image acquisition, and the large imaging depth. In parallel, more and more sophisticated techniques for tissue clearing have been developed over the last years. Tissue clearing renders biological samples transparent, a prerequisite for optical imaging in large (e.g. mesoscopic) samples.

The combination of cleared tissues with light sheet microscopy is an ideal synergy that allows addressing new questions in biology. In this workshop, participants will be familiarized with tissue clearing, and preparation of large samples. Different imaging strategies will be discussed and participants will learn how to mount the sample accordingly, adjust all necessary parameters to achieve the best quality, acquire a tiled acquisition, process (i.e. stitch) and visualize the data.

#### *Vutara VXL - Superresolution Microscopy*

Modern fluorescence microscopy applications need to be performed under conditions that resemble the natural environments of the structures of interests. This requires using large samples, like tissue slices or even whole model organisms, instead of the classical cell cultures. One of the main limitations of most super-resolution microscopes is their weak ability to image structures in great depth of the sample.

The Bruker Vutara VXL system is different in that sense, as it allows to resolve structures in 3D at 20 nm resolution in up to 30  $\mu\text{m}$  depth inside a neurobiological sample. This is ideal for studying the distribution of pre- and postsynaptic proteins or the cytoskeleton architecture of cells embedded in their native environment.

This part of the workshop will provide application examples from neurobiology and demonstrate the capabilities of the SRX software in data analysis and processing.



Romina Macco - European Application and Service Manager  
Jürgen Mayer - Product Manager and Sr. Application Specialist

## Carl Zeiss Research Microscopy

*Thursday, March 23, 2023  
14:00 - 15:00, Lecture Hall 105*

### **Introducing high-throughput serial section acquisition for ZEISS MultiSEM**

Anna Lena Eberle - Product Management  
Carl Zeiss Research Microscopy GmbH

Over the past several years, scanning electron microscopy has become a standard method for 3D tissue volume-imaging experiments. However, all scanning technologies are inherently slow, so for large-scale experiments a faster acquisition workflow is needed. The multibeam SEM from ZEISS utilizes up to 91 electron beams in parallel to scan the sample. Of the various approaches existing for the acquisition of 3D tissue data, a workflow in which ultra-thin serial sections are obtained and then imaged sequentially is the most established one for the multibeam SEM. Here, we want to give an overview of the high-throughput serial section acquisition workflow with the ZEISS MultiSEM.

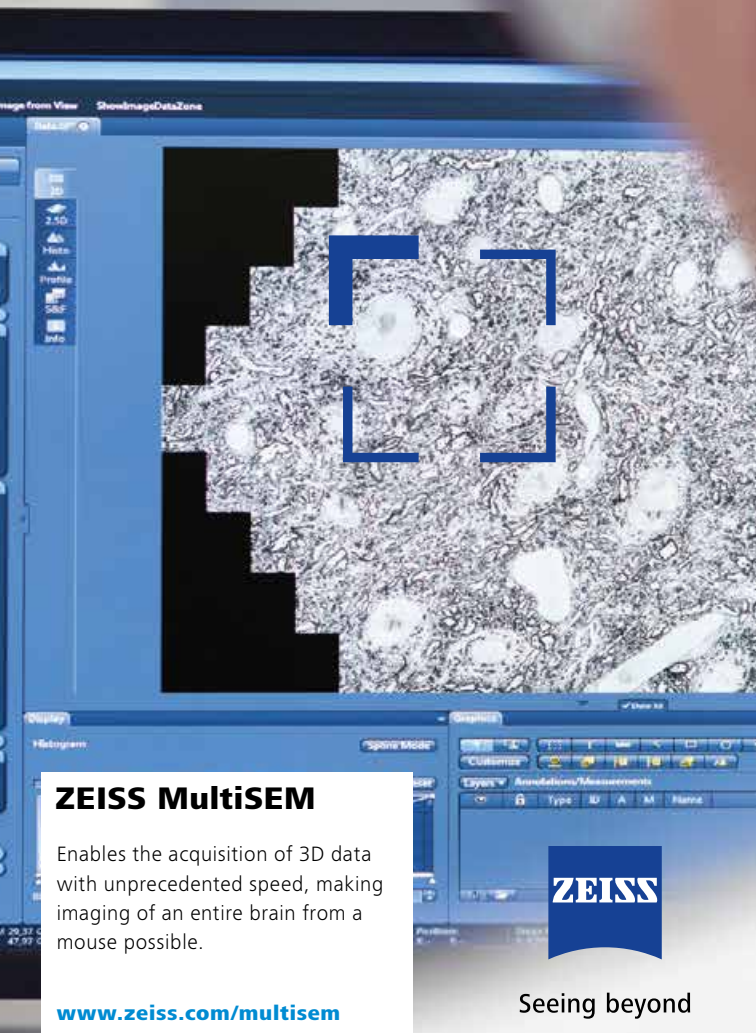
#### **Visit us at ZEISS booth on the ground floor!**

Our product and application specialists will introduce to you our new Artificial Intelligence (AI) powered Axiovert 5 digital as well as our latest software solutions for 3D imaging. In addition, do not hesitate to ask your questions about 3D tissue volume imaging.

*Looking forward to meeting you at the conference!*

# Ultrastructural details in large volumes.

The world's fastest scanning electron microscope.



## ZEISS MultiSEM

Enables the acquisition of 3D data with unprecedented speed, making imaging of an entire brain from a mouse possible.

[www.zeiss.com/multisem](http://www.zeiss.com/multisem)



Seeing beyond

## DFG Workshop

Friday, March 24, 2023

12:00 - 13:00, Lecture Hall 102 and 1.141 (consultations)

### Starting your research career - DFG funding programs and application procedures

Thomas Baumgarten, Andreas Görlich and  
Michael Müller  
DFG Head Office, Bonn

This workshop intends to introduce the German Research Foundation (DFG), its funding programs and the application and review procedures to researchers at an early stage of their scientific careers. Among others, we will cover research grants, the Emmy Noether- and the Heisenberg Program and will give valuable tips and tricks for a successful application, with a focus on grants in the neurosciences.

After the workshop, appointments for individual consultations are available. For further information on these, please refer to the announcements given on site.

#### Topics:

The DFG –  
Germany's largest research funding organization

DFG funding programs

Application and review procedures

News from the DFG

Discussion





## Publishing Workshop

Friday, March 24, 2023  
12:00 - 13:00, Lecture Hall 104

### How and why to publish in neuroscience society journals?

Juan Lerma and Manfred Heckmann,  
Alicante, Spain and Wuerzburg

Journals exist to disseminate new research findings and the latest new thinking to scholarly and professional communities worldwide. This is a rare opportunity for early career researchers and students to hear from the Editors of *Neuroscience* and ask them the questions they want answered in a friendly and collegiate environment. The aim is to train and inform early career researchers on various aspects of the scholarly research and communication process. One aspect of this is to help provide information on how to write and review for a scientific journal and give researchers an insight into how the publishing process works, taking as an example *Neuroscience*, the flagship journal of the International Brain Research Organization (IBRO). During this workshop, the following topics will be at least addressed:

**What happens to your paper once submitted to a journal:** what an editor looks for in a good paper, what makes a paper worthy of going into the peer-review process and, by extrapolation, what an editor considers a 'bad' paper or bad aspect of a paper.

**The peer-review process:** what Editors expect Reviewers to do. What editors expect from their reviewers and describe how we handle reviews once returned.

**Preparing your Manuscript:** it will outline the various important steps that, as an Author, you need to follow in preparing your manuscript for a successful publication.

#### **Structuring an Article:**

it will provide advice about how to properly structure your article. From the title and keywords, right through to the conclusion and references, all the essential criteria are covered to make sure it can be a success.



Juan Lerma is Editor-in-Chief and Manfred Heckman is Senior Editor of *Neuroscience* - the flagship journal of IBRO.

## Introductory Remarks to Satellite Symposium (Sat1)

### **7<sup>th</sup> Schram Foundation Symposium „Building a functional nervous system: from different cellular players to epigenetic regulation“**

Carmen Ruiz de Almodovar and Tran Tuoc, Bonn and Bochum

The Schram Foundation, launched by Dr. Armin Schram, supports basic brain research since more than 20 years. The 7th Schram Foundation Symposium, traditionally held as a satellite event of the biennial meeting of the German Neuroscience Society, will present a selection of recently funded projects. Three eminent keynote speakers will enrich the scientific program. Highlighting the interdisciplinary nature of modern neuroscience, the program will feature research of functional nervous system spanning from cellular players to epigenetic regulation.

The symposium will start with a keynote lecture by Klaus Armin Nave (Goettingen) about myelinating glial cells in brain development, functions and psychiatric diseases. This will be followed by contributions from four grant holders: Cordelia Imig (Copenhagen) presenting the signaling mechanisms in the gut-brain Axis; Benjamin Cooper (Goettingen) delineating the ultrastructural imaging of activity-induced synaptic states in cultured brain slices; Eugenio Fornasiero (Goettingen) discussing link between presynaptic protein turnover and synaptic vesicle recycling; Mareike Albert (Dresden) reporting on epigenetic regulation in cortical neurogenesis. The symposium will be concluded with two keynote lectures by Michael Wegner (Erlangen), a former Schram grantee, and Amparo Acker Palmer (Frankfurt), who will discuss about molecular mechanisms underlying gliogenesis and about the molecular pathways involved in the crosstalk between vessels and nerves, respectively.

Attendance of the symposium is complimentary.

## Satellite Symposium (Sat1)

Tuesday, March 21, 2023

13:00 - 19:00, Lecture Hall, MPINAT City-Campus  
(Hermann-Rein-Str. 3, Goettingen)

Chairs: Carmen Ruiz de Almodovar and Tran Tuoc,  
Bonn and Bochum

- 13:00 **Welcome and Opening Remarks**  
(Eckart D. Gundelfinger, Magdeburg)
- 13:10 Klaus Armin Nave, Goettingen  
POWERING AXONS: NOVEL FUNCTIONS OF  
MYELINATING OLIGODENDROCYTES
- 13:55 Cordelia Imig, Copenhagen, Denmark  
DISSECTING THE MECHANISMS MEDIATING  
NEUROTRANSMITTER AND PEPTIDE RELEASE  
FROM SENSORY CELLS IN THE GUT EPITHELIUM
- 14:25 Benjamin Cooper, Goettingen  
ULTRASTRUCTURAL PERSPECTIVES OF PRESY-  
NAPTIC FUNCTIONAL HETEROGENEITY AND  
ACTIVITY-DEPENDENT VESICLE POOL REMO-  
DELING
- 14:55 **Coffee Break and Poster Session**
- 15:50 Eugenio Fornasiero, Goettingen  
A NANOBODY TOOLSET FOR ASSESSING SY-  
NAPTIC VESICLE BIOGENESIS AND FUNCTION
- 16:20 Mareike Albert, Dresden  
EPIGENETIC REGULATION OF NEURAL PRO-  
GENITOR CELLS IN THE DEVELOPING NEO-  
CORTEX
- 16:50 Michael Wegner, Erlangen  
MULTIPLE LAYERS: THE REGULATORY CIR-  
CUITRY OF MYELINATION
- 17:35 **Coffee Break**
- 18:05 Amparo Acker Palmer, Frankfurt  
NEUROVASCULAR INTERACTIONS DURING  
CNS DEVELOPMENT
- 18:50 **Closing Remarks**  
(Dorothea Schulte, Frankfurt/Main)

## Introductory Remarks to Satellite Symposium (Sat2)

### GBM e.V. Study Group 'Molecular Neurobiology'

#### Protein aggregates in neurodegenerative diseases: cause or symptom?

*Jörg W. Bartsch and Stefan Kins, Marburg and Kaiserslautern*

Protein Aggregation is a common feature in neurodegenerative diseases including Parkinson's Disease, Alzheimer's Disease, or Prion diseases in humans. In this symposium, we will highlight the mechanistic knowledge on the correlation between protein aggregation and the pathological hallmarks. A scheduled Q&A session at the end of the symposium will allow you to ask questions and discuss with the speakers.

The satellite symposium is supported by the GBM (Gesellschaft für Biochemie und Molekularbiologie) and we invite everyone to join us!



## Satellite Symposium (Sat2)

Wednesday, March 22, 2023  
9:00 - 11:45, Hall 11

Chairs: Jörg W. Bartsch and Stefan Kins,  
Marburg and Kaiserslautern

- 09:00 **Welcome and Opening Remarks**  
(Jörg W. Bartsch/Stefan Kins)
- 09:15 Jan Pielage, Kaiserslautern  
AXONAL TRANSPORT DEFECTS AND NEURO-  
DEGENERATION: CAUSE OR CONSEQUENCE
- 09:45 Frederike Zunke, Erlangen  
 $\alpha$ -SYNUCLEIN AGGREGATION IN PARKIN-  
SON'S DISEASE: CHALLENGES AND CHANCES
- 10:15 Roland Brandt, Osnabrück  
TARGETING TAUOPATHIES: QUANTITATIVE  
LIVE CELL IMAGING TO IDENTIFY AGGREGA-  
TION INHIBITORS THAT RESTORE TAU'S PHY-  
SIOLOGICAL FUNCTION
- 10:45 Markus Glatzel, Hamburg  
PATHOLOGICAL PRION PROTEIN AND  
CREUTZFELDT JAKOB DISEASE: TOWARDS A  
MOLECULAR UNDERSTANDING OF NEURO-  
DEGENERATION
- 11:15 **Discussion and Closing Remarks**  
(All speakers and Organizers)

## Introductory Remarks to Symposium 1

# Gut-brain signalling: from sensory cell biology to animal behaviour

*Cordelia Imig and Benjamin Cooper, Copenhagen (Denmark) and Goettingen*

Gut-brain signalling is important for the regulation of physiology and behaviour. This is particularly relevant in the context of brain states, including appetite and satiety, and consequential feeding behaviour. Important cellular components of the gut-brain axis are enteroendocrine cells (EECs) of the intestinal epithelium. EECs secrete various peptide hormones and neurotransmitters in response to a range of sensory stimuli (i.e. nutrients, force, microbes and their metabolites, toxins and pathogens). In addition to endocrine signalling, EECs are thought to communicate via synapse-like connections with neurons signalling to the brain. Strikingly, we are only beginning to understand the fundamental biological processes that determine gut-to-brain signalling in different physiological and pathophysiological contexts.

In this symposium, the speakers will focus on how i) distinct subclasses of cells register different sensory modalities in the periphery, ii) this information is relayed to the body and the brain, and iii) gut-to-brain signalling in health and disease modulates physiology, behaviour, and metabolism. The speakers will highlight various state-of-the-art methodologies for the study of gut signalling in flies, mice, and humans. The talks will cover molecular and cellular mechanisms that determine how cells detect and process modalities such as mechanical stimulation or nutrients in the gut or hemolymph, and how gut-brain communication modulates appetite and feeding behaviour *in vivo*. Together, the speakers will discuss their respective views on how fundamental molecular, cellular, and functional properties underlying directed information flow along the gut-brain axis in different physiological and neurobiological contexts will help to treat disorders associated with defective gut-brain signalling.

This symposium will receive financial support from the Schram-Stiftung as part of a joint grant awarded to the chairs.

## Symposium 1

Wednesday, March 22, 2023

15:15 -17:15, Lecture Hall 8

Chairs: Cordelia Imig and Benjamin Cooper,  
Copenhagen (Denmark) and Goettingen

- 15:15    **Opening Remarks**
- 15:20    Constanza Alcaino, Cambridge, UK  
TRUST YOUR GUT: AN INTESTINAL SPECIA-  
LISED EPITHELIAL SENSORY CELL IS LOOKING  
OUT FOR YOU (S1-1)
- 15:45    Van Lu, London, Canada  
SIGNALLING CROSS-TALK BETWEEN GLUCA-  
GON-LIKE PEPTIDE-1 (GLP-1) RELEASING  
ENTEROENDOCRINE CELLS AND VAGAL AFFE-  
RENT NEURONS (S1-2)
- 16:10    Rituja Bisen, Wuerzburg  
EFFECTS OF DIET AND FOOD-RELATED OL-  
FACTORY CUES ON THE ACTIVITY OF INSULIN  
PRODUCING CELLS IN *DROSOPHILA* (S1-3)
- 16:25    Lisa Beutler, Chicago, USA  
OBESITY-MEDIATED DYSFUNCTION OF GUT-  
BRAIN DYNAMICS (S1-4)
- 16:50    Kim Rewitz, Copenhagen, Denmark  
GUT SIGNALING IN THE REGULATION OF  
ANIMAL BEHAVIOUR (S1-5)

## Introductory Remarks to Symposium 2

# Novel functions and regulatory mechanisms of the neuronal actin cytoskeleton

*Marco Rust, Marburg*

The actin cytoskeleton is a major determinant of neuron morphology and function. Actin filaments (F-actin) are enriched in subcellular structures such as growth cones and dendritic spines that are relevant for the formation and function of neuronal networks. Consequently, F-actin dysregulation contributes to the pathogenesis of human brain disorders including neuropsychiatric and neurodegenerative diseases. While numerous signaling cascades and actin-binding proteins have been implicated in the organization and dynamics of the neuronal actin cytoskeleton, our knowledge of actin regulatory mechanisms in neurons is still fragmented. Moreover, neuronal structures such as dendritic F-actin patches, longitudinal actin fibers or periodic actin rings have been discovered more recently, and their regulation and function largely remained unknown.

Our symposium 'Novel functions and regulatory mechanisms of the neuronal actin cytoskeleton' will highlight some important progress made over the past years in the field. Marina Mikhaylova (Berlin, Germany) will present her work on dendritic F-actin patches that control transport and localization of secretory trafficking organelles. She will introduce molecules that link these organelles to F-actin, which ultimately control the formation of dendritic shaft excitatory synapses. The talks of Elena Marcello (Milan, Italy) and Marco Rust (Marburg, Germany) will focus on cyclase-associated proteins (CAP) - proteins with hitherto unknown neuronal functions that have been implicated in actin dynamics only recently. Elena Marcello will present a synaptic mechanism governed by CAP2 that is disrupted in Alzheimer's disease and significantly contributes to the disease pathogenesis. Marco Rust will introduce CAP1 as a crucial actin regulator relevant for both neuron differentiation and synapse morphology, and he will provide insights into CAP1-dependent molecular mechanisms. Complementary to these talks, the young investigator Kristina Ponimaskine (Hamburg, Germany) will introduce a novel approach that allows to analyze interactions of neighboring dendritic spines with high temporal and spatial resolution.



## Symposium 2

Wednesday, March 22, 2023  
15:15 - 17:15, Lecture Hall 105

Chair: Marco Rust, Marburg

- 15:15 **Opening Remarks**
- 15:20 Marina Mikhaylova, Berlin  
CYTOSKELETAL MAKEUP OF THE SYNAPSE:  
SHAFT VERSUS SPINE (S2-1)
- 15:50 Elena Marcello, Milan, Italy  
CAP2 AT THE CROSSROADS OF ALZHEIMER'S  
DISEASE PATHOGENESIS PATHWAYS (S2-2)
- 16:20 Marco Rust, Marburg  
CAP1 AND COFILIN1: AN INTIMATE DUET  
THAT GOVERNS NEURONAL ACTIN DYNAMICS  
(S2-3)
- 16:50 Kristina Ponimaskine, Hamburg  
NOVEL APPROACH TO ANALYZE INTERAC-  
TIONS OF NEIGHBOURING SPINES (S2-4)
- 17:10 **Concluding Remarks**

## Introductory Remarks to Symposium 3

# Developmental mechanisms regulating functional cortical networks

*Britta Eickholt and Zoltán Molnar, Berlin and Oxford (UK)*

Many neurodevelopmental disorders characterized by abnormal behavioral or cognitive phenotypes originate in utero or during early postnatal life. Such disorders can be of diverse genetic and environmental origins, and manifest clinically as intellectual disability, epilepsy and/or autism. Whilst a number of genetic risk factors for neurodevelopmental disorders have been identified, the specific mechanisms engaged by these factors, which translate into temporal and cell type specific vulnerability and abnormal neuronal circuit development, remains largely unknown.

In this symposium, we aim to go further than basic principles of brain development, to focus on key neuronal processes that trigger neurodevelopmental disease. To explore these processes in detail, we will bring together experts in translational research, who employ a range of state-of-the-art genetic, cellular, and electrophysiological approaches applied to various model systems, including cellular and mouse models, and human induced-pluripotent stem cell-derived cultures to elucidate the etiology of complex neurodevelopmental diseases.

## Symposium 3

Wednesday, March 22, 2023  
15:15 -17:15, Lecture Hall 10

Chairs: Britta Eickholt and Zoltán Molnar,  
Berlin and Oxford (UK)

- 15:15    **Opening Remarks**
- 15:20    Zoltán Molnar, Oxford (UK)  
REPURPOSED CELLS OF DEVELOPMENT IN  
THE ADULT BRAIN (S3-1)
- 15:40    Simone Mayer, Tuebingen  
REVEALING MOLECULAR MECHANISMS OF  
ENVIRONMENTAL IMPACTS ON NEOCORTI-  
CAL DEVELOPMENT USING HUMAN BRAIN  
ORGANOIDS (S3-2)
- 16:00    Bryan Luikart, Hanover, USA  
DENTATE GRANULE NEURON DEVELOPMENT  
AS A MODEL FOR AUTISM SPECTRUM DISOR-  
DER DUE TO *Pten* LOSS (S3-3)
- 16:20    Ina Köhler, Bochum  
CHEMOGENETIC MODULATION OF ACTIVITY  
SHAPES DIFFERENTIATION OF CORTICAL  
NEURONS (S3-4)
- 16:30    Timothy Zolnik and Britta Eickholt, Berlin  
THE ELECTROPHYSIOLOGY OF *Pten*-LAYER 6B  
CONDITIONAL KNOCKOUT MICE (S3-5)
- 16:55    **Discussion / Concluding Remarks**



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## Introductory Remarks to Symposium 4

### Changing memories

Anni Richter and Christian Merz, Magdeburg and Bochum

After initial encoding, memories are stabilized during a process of consolidation. It has long been assumed that memory consolidation occurs only once, and that consolidated memories are stable and resistant to change - a view that has been challenged by findings suggesting that memories could be revised with each act of remembering. A memory may re-enter an unstable state after its reactivation, thus requiring another phase of stabilization, termed reconsolidation. Growing evidence suggests that the act of remembering could open a window of opportunity to change memory by pharmacological or behavioral manipulations. These manipulations have been used across memory domains, including emotional, episodic, and procedural memories. This line of research has significant implications for the adjustment of maladaptive thoughts and behaviors associated with memories in various mental disorders.

In this symposium, we will provide an overview on our current understanding of processes related to changing memories and present the most recent research in that field. We will furthermore report on the newest insights into the importance of such mechanisms for the treatment of mental disorders and discuss implications.

Wenbin Yang will highlight the importance of recovery effects of forgotten memories in the *Drosophila* model. Anni Richter will discuss how induced reconsolidation impairments can be rescued in instrumental learning tasks. Christian Merz will summarize how stress hormones can time-dependently change extinction memories, which is also critically relevant for extinction-based treatments such as exposure therapy. Daniela Schiller will show that focusing on the positive aspects after recall of negative events can lead to enhanced positive emotion and changes in memory content during recollection along with differences in brain activity. Bryan Strange will focus on pharmacological interventions following memory reactivation to selectively impair subsequent emotional episodic memory retrieval in a time-dependent manner, consistent with reconsolidation impairment.

## Symposium 4

Wednesday, March 22, 2023  
15:15 - 17:15, Lecture Hall 9

Chairs: Anni Richter and Christian Merz,  
Magdeburg and Bochum

- 15:15    **Opening Remarks**
- 15:20    Wenbin Yang, Basel, Switzerland  
RECOVERY OF A FORGOTTEN MEMORY IN  
*DROSOPHILA* (S4-1)
- 15:35    Anni Richter, Magdeburg  
RESCUE OF RELEARNING INDUCED RECON-  
SOLIDATION IMPAIRMENTS IN INSTRUMENTAL  
LEARNING TASKS (S4-2)
- 15:50    Christian J. Merz, Bochum  
CHANGING EXTINCTION MEMORIES WITH  
STRESS HORMONES (S4-3)
- 16:10    Daniela Schiller, New York, USA  
MEMORY RETRIEVAL FACILITATES SUPPRESSION  
AND RECONSOLIDATION UPDATE AT DIFFE-  
RENT TEMPORAL SCALES (S4-4)
- 16:40    Bryan Strange, Madrid, Spain  
TARGETING EMOTIONAL EPISODIC MEMORY  
RECONSOLIDATION IN HUMANS (S4-5)
- 17:10    **Concluding Remarks**



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## Introductory Remarks to Symposium 5

# How cellular clocks spanning multiple time scales orchestrate biological timing

*Monika Stengl and Martin Garcia, Kassel*

Geophysical rhythms like the dominant 24 h cycles of light and temperature or annual changes in the duration of light per day shaped organismic life on earth. Environmental oscillations selected for the evolution of endogenous biological clocks that allowed for survival-relevant predictions of environmental changes. An endogenous clock is an oscillator that generates rhythmic outputs like membrane potential oscillations and oscillations in gene transcription under constant conditions. The clock's receptors detect cycling external signals allowing the organisms to embed into environmental rhythms and to predict environmental changes. It is not resolved yet how an organism's biological clocks with different speeds interact to generate the organism's "presence – past – and future" as a common, continuous biological time axis robustly embedded into environmental oscillations. Best studied are circadian clocks in insects and mammals that orchestrate sleep wake rhythms entrained to the 24 h light dark cycles. Less understood are clocks in other species and it is unresolved whether and how multiscale clocks interact. Thus, it remains an important research question to determine how biological clocks across different time scales functionally interact to orchestrate a biological web of timing in physiology and behavior. To resolve this challenging research question of biological timing the concerted interdisciplinary efforts of experimentally and theoretically working scientists are required.

Therefore, in our symposium we will cover multiscale timing in different species, studied by experimental and theoretical scientists. We cover the mammalian circadian system orchestrating sleep-wake patterns across the year, learn about multiscale clocks in the central pattern generators of the stomatogastric ganglion in crustaceans, hear about neuropeptides as important multiscale coupling factors in insect brains, and are introduced to the various timescales in the phototactic behavior of larval zebrafish. Thus, in our symposium "multiscale clocks" interdisciplinary speakers will present their studies in search for evolutionary conserved principles of biological timing.

## Symposium 5

Wednesday, March 22, 2023  
15:15 - 17:15, Lecture Hall 104

Chairs: Monika Stengl and Martin Garcia, Kassel

- 15:15 **Welcome and Opening Remarks**  
Monika Stengl / Martin Garcia
- 15:20 Johanna Meijer, Leiden, The Netherlands  
NEURONAL NETWORK ORGANIZATION OF  
THE CENTRAL CIRCADIAN CLOCK (S5-1)
- 15:45 Wolfgang Stein, Illinois, USA  
ORCHESTRATING THE TIMING OF CHEWING  
AND DIGESTION - MECHANISMS, MODU-  
LATION, AND STABILITY OF NEURONAL COU-  
PLING BETWEEN FAST AND SLOW STOMATO-  
GASTRIC OSCILLATORS (S5-2)
- 16:10 Anna C. Schneider, Kassel  
MULTISCALE RHYTHMS IN THE EXCITABLE  
MEMBRANE OF HAWKMOTH OLFACTORY  
RECEPTOR NEURONS (S5-3)
- 16:35 Hans-Peter Herzel, Berlin  
ENTRAINMENT AND SYNCHRONIZATION IN  
COUPLED CIRCADIAN OSCILLATORS (S5-4)
- 17:00 Maxim Quirijn Capelle, Konstanz  
THE VARIOUS TIMESCALES IN LARVAL ZEBRA-  
FISH PHOTOTACTIC BEHAVIOR (S5-5)



**multiscale**  
clocks

Deutsche  
Forschungsgemeinschaft  
**DFG**

**CINSaT** Center for  
Interdisciplinary Nanostructure  
Science and Technology

## Introductory Remarks to Symposium 6

**Cerebellum and mushroom body:  
common circuit motifs for learning and  
adaptive behaviour?**

Dagmar Timmann, Johannes Felsenberg and Bertram Gerber,  
Essen, Basel (Switzerland) and Magdeburg

The symposium will discuss the role of the cerebellum in reinforcement learning in rodents and humans and how the proposed circuit principles relate to the function of circuit motifs uncovered from the full connectome of a cerebellum-like structure in insects, the mushroom body.

Many beliefs about how the cerebellum works have recently been challenged. In particular, new evidence from animal studies suggests that the cerebellum contributes to reinforcement learning. Here, the difference between actual and expected reinforcement is used to guide learned behavior. In the appetitive domain, the required error signals have been found in dopaminergic neurons in the substantia nigra pars compacta and the ventral tegmental area. Interestingly, recent work showed that the climbing fiber signals recorded from cerebellar Purkinje cells in mice during eyeblink conditioning also follow these learning rules in the aversive domain and that the cerebellum receives reward-related information (Ohmae et al Nat Neurosci 2015, Hull eLife 2020). This parallels recent insights from the memory center in insect brains, the mushroom body. The full chemical-synapse connectome and the genetic access to the key components of the mushroom body allowed detailed analysis of the circuits that establish aversive and appetitive reinforcement learning in *Drosophila*. Functional studies have revealed that olfactory memories are established as dopamine-driven changes at synapses between odor coding Kenyon cells and distinct output neurons that drive appetitive or aversive behavior (Aso et al eLife 2014, Oswald et al Neuron 2015, Eschbach et al eLife 2021). Notably, prominent feedback connections originate from these output pathways back towards the dopamine system, possibly underlying complex forms of learning including second order conditioning and extinction (Felsenberg et al Cell 2018, König et al Biol Lett 2019, Eschbach et al Nat Neurosci 2020). Despite the obvious differences in the morphology of cerebellum and mushroom body it is the specific aim of the symposium to explore whether and how far circuit and functional principles are shared.

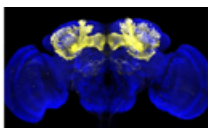


## Symposium 6

Wednesday, March 22, 2023  
15:15 - 17:15, Lecture Hall 102

Chairs: Dagmar Timmann, Johannes Felsenberg and Bertram Gerber, Essen, Basel (Switzerland) and Magdeburg

- 15:15    **Opening Remarks**
- 15:20    Dagmar Timmann, Essen  
CEREBELLUM AND REINFORCEMENT LEARNING IN HUMANS AND RODENTS (S6-1)
- 15:45    Johannes Felsenberg, Basel, Switzerland  
RECENT ADVANCES IN UNDERSTANDING THE NEURAL CIRCUITS OF ASSOCIATIVE LEARNING IN *DROSOPHILA MELANOGASTER* (S6-2)
- 16:10    Claire Eschbach, Saclay, France  
THE FUNCTIONAL ORGANIZATION OF MUSHROOM BODY OUTPUT PATHWAYS IN LARVAL *DROSOPHILA* (S6-3)
- 16:35    Daniela Popa, Paris, France  
THE FUNCTIONAL ORGANIZATION OF CEREBELLUM OUTPUT PATHWAYS IN RODENTS (S6-4)
- 17:00    Fatima Amin, Magdeburg  
ACTION, VALENCE, DOPAMINE- *DROSOPHILA* AS A STUDY CASE (S6-5)



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## Introductory Remarks to Symposium 7

# Disease-specific autoantibodies against neuronal surface antigens disrupt synaptic function

*Christian Geis and Stefan Hallermann, Jena and Leipzig*

The discovery of pathogenic autoantibodies against central nervous system (CNS) synaptic antigens in patients with severe neuropsychiatric disorders was a breakthrough in neurology. This novel entity and expanding spectrum of CNS disorders has been termed "autoimmune encephalitis".

This symposium, under the umbrella of the DFG Research Unit SYNABS (FOR3004), will address how disease-specific human antibodies impact neuronal and synaptic function leading to severe brain disease and prototypical disease symptoms.

Josep Dalmau will report the discovery of NMDA receptor antibodies in patients with previously unknown autoimmune brain disorder and delineate pathogenic mechanisms and recent advances of target-specific therapeutic approaches. Sabine Liebscher will demonstrate how human NMDAR antibodies compromise dynamics of structural plasticity in the CA1 region of the hippocampus and affect circuit mechanisms as a potential basis of memory and cognitive deficits in disease. Dietmar Schmitz will outline cloning of human monoclonal antibodies to the synaptic linker protein LGI1 and their effects on excitability and glutamatergic synaptic transmission. The neuropathology of autoimmune encephalitis with neuronal surface antibodies will be demonstrated by Romana Höftberger and implications for disease pathophysiology will be discussed. Our student speaker, Abdulla Taha, will share insights in his current research project on autoantibody-NMDAR molecular and structural interaction.

In summary, the symposium will bring together interdisciplinary experts to highlight our current knowledge on antibody-induced CNS disease and synaptic pathology determining neuropsychiatric disease.

## Symposium 7

Wednesday, March 22, 2023  
15:15 – 17:15, Lecture Hall 101

Chairs: Christian Geis and Stefan Hallermann,  
Jena and Leipzig

- 15:15    **Opening Remarks**
- 15:20    Josep Dalmau, Barcelona, Spain  
ANTI-NMDA RECEPTOR ENCEPHALITIS: FROM  
DISCOVERY TO NEW INSIGHTS (S7-1)
- 15:45    Sabine Liebscher, Martinsried  
ANTI-NMDAR AUTOANTIBODIES DISRUPT CA1  
PLACE CELL DYNAMICS (S7-2)
- 16:10    Dietmar Schmitz, Berlin  
HUMAN CEREBROSPINAL FLUID MONOCLONAL  
LGI1 AUTOANTIBODIES INCREASE NEU-  
RONAL EXCITABILITY (S7-3)
- 16:35    Romana Höftberger, Vienna, Austria  
NEUROPATHOLOGY OF ANTIBODY-ASSO-  
CIATED ENCEPHALITIS (S7-4)
- 17:00    Abdulla Taha, Jena  
HUMAN ANTI-GLuNR1 AUTOANTIBODIES  
INFLUENCE NMDAR CHANNEL FUNCTION  
(S7-5)
- 17:10    **Concluding Remarks**



## Introductory Remarks to Symposium 8

**Molecular mechanisms of synaptic brain disorders**

*Dilja Krueger-Burg and Noa Lipstein, Mainz and Berlin*

Synaptic dysfunction has long been known to result in human brain disorders, and in recent years the advent of genomic- and transcriptomic-based diagnostic methods has identified a plethora of potentially disease-causing variations in synaptic proteins. These findings raise urgent challenges that require novel scientific frameworks and technologies, particularly for faster diagnosis of pathogenicity, for incorporating aspects of synaptic diversity, and for closing the bench-to-bedside gap. Here, we invite the international synaptic community as well as scientists from clinical disciplines to discuss these issues and initiate new collaborations. The selected talks will highlight the strong involvement of synaptic function in neurological, neurodevelopmental, neuropsychiatric and neurodegenerative brain diseases, the diversity of molecules and mechanisms that contribute to disease, and the methodological advances that allow us to characterize and possibly combat such disorders.

Alexandros Pouloupoulos (University of Maryland School of Medicine) will discuss the use of *in vivo* CRISPR genome editing techniques to study mechanisms of abnormal brain circuit formation and potential therapeutic interventions in neurodevelopmental disorders. Pietro Fratta (University College London) will then present recent work on how failures in alternative splicing of mRNA transcripts encoding synaptic proteins contribute to the pathology of neurodegenerative diseases such as ALS and FTD. Dilja Krueger-Burg (Mainz University Medical Center) will discuss the molecular diversity of GABAergic synaptic complexes and their role in the development of novel therapeutic strategies for psychiatric disorders. Matthijs Verhage (VU University Medical Center) will speak about human pluripotent stem cells as models for synaptic disease, with a focus on Munc18-1 (STXBP1) mutations in early infantile epileptic encephalopathy. Finally, Abderazzaq El Khallouqi (Mainz University) will present his PhD work on Cav2.1 channels in short-term hippocampal plasticity.

This session is supported by SFB1286: Quantitative Synaptology.

## Symposium 8

Thursday, March 23, 2023  
11:00 - 13:00, Lecture Hall 8

Chairs: Dilja Krueger-Burg and Noa Lipstein,  
Mainz and Berlin

11:00 **Opening Remarks**

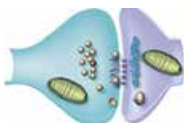
11:05 Alexandros Pouloupoulos, Baltimore, USA  
PERSONALIZED MEDICINE OF BRAIN WI-  
RING? IN UTERO CRISPR TECHNOLOGIES  
FOR RAPID MODELING OF INDIVIDUAL  
PATIENTS (S8-1)

11:30 Pietro Fratta, London, UK  
AMYOTROPHIC LATERAL SCLEROSIS: LOSS OF  
TDP-43 FROM THE NUCLEUS AND CONSE-  
QUENCES AT THE SYNAPSE (S8-2)

11:55 Dilja Krueger-Burg, Mainz  
GABAERGIC SYNAPSE DIVERSITY AS A MEANS  
TO DEVELOPING NOVEL THERAPEUTIC STRA-  
TEGIES FOR PSYCHIATRIC DISORDERS (S8-3)

12:20 Matthijs Verhage, Amsterdam, The Netherlands  
DISEASE MECHANISMS AND INTERVENTION  
STRATEGIES FOR SNAREOPATHIES, SYNDROMES  
CAUSED BY MUTATIONS IN PRESYNAPTIC  
GENES (S8-4)

12:45 Abderazzaq El Khallouqi, Mainz  
ORGANIZATION AND DYNAMICS OF CAV2.1  
CHANNELS SHAPE THE SHORT-TERM PLASTI-  
CITY IN HIPPOCAMPAL SYNAPSES (S8-5)



SFB 1286 Quantitative Synaptology

## Introductory Remarks to Symposium 9

### New advances in the neuroscience underlying socio-emotional behaviour

*Chairs: Oliver Bosch and Hanna Hörnberg, Regensburg and Berlin*

Social behaviour is vital to the survival of all vertebrates, from reproduction to living in groups. Hence, socially living species are broadly influenced by interactions with conspecifics. There is a remarkable diversity of social interactions, including affiliative and co-operative behaviors as well as aggressive interactions. While most social encounters are pro-social with a positive influence, others might rather have a negative valence. In both cases, the emotional impact on the social output - and vice versa - are key to physiological and psychological well-being. Thus, it is important to understand the neurobiological basis of socio-emotional behaviour from molecular-cellular to behavioural levels, thereby applying classical behavioural observations to state-of-the-art methods. Using model systems such as mice and rats, the translational aspect of their socio-emotional behaviour is vital for further advances in the field.

In this joint symposium of the NWG and the European Brain and Behaviour Society (EBBS), the oldest society in the world focusing on the interrelationship between brain and behaviour, our speakers will present new developments in the fascinating neuroscience underlying socio-emotional behaviour. The symposium will begin with the latest findings on molecular mechanisms in the brain that affects social behaviours in rodents (Hanna Hörnberg). We will then move on to social learning in rodents and advance our knowledge of the underlying neural correlates with a special focus on rewards (Ewelina Knapka). As negative social experiences can cause social avoidance, we will learn from studies in mice how central neuropeptide systems in the lateral septum are involved in the manifestation of social fear (Rohit Menon). These findings will be complemented by a selected talk further demonstrating the involvement of septal somatostatin- and neurotensin-expressing cells in social as well as feeding-related behaviours (Francisco Javier de los Santos Bernal). Our final presentation will focus on social behaviour in humans, where a link between the body and the brain will be drawn based on current findings (Soyoung Park).

## Symposium 9

Thursday, March 23, 2023  
11:00 - 13:00, Lecture Hall 105

Chairs: Oliver Bosch and Hanna Hörnberg,  
Regensburg and Berlin

- 11:00    **Opening Remarks**
- 11:05    Hanna Hörnberg, Berlin  
MOLECULAR MECHANISMS OF SOCIAL  
BEHAVIOURS (S9-1)
- 11:25    Ewelina Knapska, Warsaw, Poland  
NEURAL CORRELATES OF SOCIAL LEARNING  
ABOUT REWARDS (S9-2)
- 11:45    Rohit Menon, Regensburg  
SEPTAL MECHANISMS REGULATING SOCIAL  
FEAR EXTINCTION: A ROLE FOR NEUROPEPTIDE  
SIGNALING (S9-3)
- 12:05    Francisco Javier de los Santos Bernal, Cologne  
REGULATION OF SOCIAL BEHAVIOURS BY  
THE LATERAL SEPTUM (S9-4)
- 12:25    Soyoung Q. Park, Nuthetal  
THE LINK BETWEEN BODY-BRAIN INTERACTION  
AND SOCIAL BEHAVIOUR (S9-5)
- 12:45    **Discussion / Concluding Remarks**



## Introductory Remarks to Symposium 10

# Membrane trafficking processes and presynaptic proteostasis

*Marijn Kuijpers and Anna Karpova, Nijmegen (Netherlands) and Magdeburg*

The molecular makeup of synapses is extraordinarily complex, and their distance from the cell body, where most protein synthesis occurs, can be enormous. Because neurons are both postmitotic and long-lived, maintaining the integrity of their proteome is of particular importance. Several hundred different proteins can be found in fore-brain synapses and this complex proteome creates a unique situation with respect to the molecular dynamics of protein exchange, in particular at the presynapse. How protein turnover is regulated in axons and axon terminals, and whether this occurs locally (i.e. at the synapse) or in the soma is a key cell biological question. Currently there is a surprising paucity of data on necessities for, and mechanisms of protein replacement at presynapses. Gaps in our knowledge concern: which degradative pathways are involved, how different pathways contribute to the presynaptic proteome, which signals direct proteins into a given pathway, how proteins are sorted for certain degradative mechanisms, how synaptic activity affects degradation, how cross-talk is regulated, and which presynaptic sensor mechanisms identify protein 'damage'.

In this symposium we will look at the specific contribution of autophagy and axonal trafficking to axonal and presynaptic proteostasis and discuss how presynaptic function and plasticity is regulated by autophagy. Mechanisms that couple autophagosome biogenesis to synaptic activity will be presented (Daniel Colon-Ramos). We will discuss how non-canonical functions of autophagosomes (e.g. signaling) impact presynaptic development, maintenance and function (Natalia Kononenko). Autophagosomes fuse with late endosomes to undergo robust retrograde transport and the resulting amphisomes serve as signaling and sorting platforms while trafficking in a retrograde direction to the cell soma (Anna Karpova). We will also address defects in anterograde axonal transport in the neurodegenerative disorder Hereditary Spastic Paraplegia (Vranda Garg). Finally, loss of neuronal autophagy causes the selective accumulation of tubular Endoplasmic Reticulum (ER) in axons under physiological conditions, resulting in increased excitatory neurotransmission as a consequence of elevated calcium release from ER stores (Marijn Kuijpers). The symposium is thematically linked to and financially supported by the DFG-funded Research Unit (FOR 5228) 'Syntophagy' ([www.syntophagy.de](http://www.syntophagy.de))



## Symposium 10

Thursday, March 23, 2023  
11:00 - 13:00, Lecture Hall 104

Chairs: Marijn Kuijpers and Anna Karpova,  
Nijmegen (Netherlands) and Magdeburg

- 11:00    **Opening Remarks**
- 11:05    Daniel Colon-Ramos, New Haven, USA  
MECHANISMS OF LOCAL SYNAPTIC AUTO-  
PHAGY VIA TRAFFICKING OF ATG-9 (S10-1)
- 11:30    Natalia Kononenko, Cologne  
SURVIVAL-INDEPENDENT ROLES OF NEURONAL  
AUTOPHAGY (S10-2)
- 11:55    Anna Karpova, Magdeburg  
AMPHISOME BIOGENESIS, TRAFFICKING AND  
SIGNALING AT PRESYNAPTIC BOUTONS (S10-3)
- 12:20    Vranda Garg, Goettingen  
DEFECTIVE AXONAL TRANSPORTATION OF A  
CONTACT SITE PROTEIN CAUSING NEURO-  
DEGENERATION IN ZEBRAFISH (S10-4)
- 12:35    Marijn Kuijpers, Nijmegen, The Netherlands  
AUTOPHAGY CONTROLS ER CALCIUM  
STORES TO REGULATE NEUROTRANSMISSION  
(S10-5)



## Introductory Remarks to Symposium 11

# Neuroscience of naturalistic navigation and foraging in non-human primates

*Irene Lacaal and Alexander Gail, Goettingen*

A main aim of system neuroscience research in primates is to understand the neural underpinnings of goal directed behavior. With the advance in wireless technologies for neural recordings, video-based motion tracking and powerful tools for full-body behavior quantification, unprecedented opportunities arise for studying brain networks during naturalistic behaviours. In particular, ecologically highly relevant behaviors such as multi-source foraging, free exploration in complex environments and social interactions have become accessible for neurophysiological studies.

This symposium brings together international researchers pioneering the field of neurophysiology in non-human primates during unrestrained behaviors in complex environments.

Daniel Huber will present the latest development of Etho-Loop, a novel tracking system able to follow movements and analyze complex behaviors of unrestrained mouse lemurs in real time in combination with wireless neural recordings. Dora E. Angelaki will show how hippocampal and cortical activity in unrestrained rhesus monkeys relate to foraging behavior both in freely moving and virtual reality environments. Zurna Ahmed will introduce the Exploration Room, a novel modular experimental setting encouraging unrestrained, yet repetitive full-body behaviors beyond walking in rhesus macaques while recording from the frontoparietal reach network. Irene Lacaal and Neda Shahidi will highlight novel paradigms in the Exploration Room for studying spatial cognition during naturalistic solo or dyadic foraging and the frontoparietal representations of dynamic evaluation of choices. Jan Zimmermann will present how unconstrained behavior is organized across multiple spatial and temporal scales in rhesus monkeys and how electrophysiology experiments can give us a unique insight into these processes.

## Symposium 11

Thursday, March 23, 2023  
11:00 - 13:00, Lecture Hall 102

Chairs: Irene Lacaal and Alexander Gail, Goettingen

- 11:00    **Opening Remarks**
- 11:05    Daniel Huber, Geneva, Switzerland  
CLOSED-LOOP NEUROETHOLOGY IN FREELY  
RANGING MOUSE LEMURS (S11-1)
- 11:25    Dora E. Angelaki, New York, USA  
ACTIVE SENSING AND FLEXIBLE NEURAL CO-  
DING DURING VISUALLY GUIDED VIRTUAL  
NAVIGATION (S11-2)
- 11:45    Zurna Ahmed, Goettingen  
THE EXPLORATION ROOM (EXR) – A NOVEL  
ENVIRONMENT FOR NEUROPHYSIOLOGICAL  
RECORDINGS IN FREELY MOVING RHESUS  
MACAQUES EXHIBITING ECOLOGICALLY  
RELEVANT BEHAVIOURS (S11-3)
- 11:55    Irene Lacaal & Neda Shahidi, Goettingen  
NEW APPROACHES TO THE STUDY OF SEN-  
SORIMOTOR BASIS OF FORAGING BEHA-  
VIOUR IN NON-HUMAN PRIMATES (S11-4)
- 12:15    Jan Zimmermann, Minneapolis, USA  
TIMESCALES OF BEHAVIOUR AND NEURAL  
PROCESSING IN UNCONSTRAINED  
MACAQUES (S11-5)
- 12:35    **Discussion and concluding Remarks**



## Introductory Remarks to Symposium 12

# Epileptogenesis in mouse models of genetic epilepsies

*Holger Lerche, Tuebingen*

Epilepsy is a common and disabling disorder that represents a significant disease burden worldwide. Gene discovery and functional analysis of genetic defects have been instrumental in deciphering disease mechanisms and developing first personalized treatments. However, most of the genetic alterations underlying epilepsy remain to be elucidated. Genetic epilepsies exhibit a typical age-dependency, the cause of which is largely unknown. It is therefore likely that developmental factors play a central role in the epileptogenesis of genetic epilepsies. In addition, specific seizure phenotypes are frequently accompanied by comorbid neurodevelopmental phenotypes with potentially overlapping vulnerable periods that include motor and language delays, intellectual disability, attention-deficit/hyperactivity disorder, and autism spectrum disorder. Mouse models can be used to investigate whether and how genetic mutations trigger epileptogenic processes and how these interact with developmental processes that likely contribute to the age-dependent manifestation of seizure phenotypes in genetic epilepsies. The developing brain is particularly vulnerable to disruption and insults, but its plasticity also offers significant preventive and therapeutic potential. Using genetic mouse models, treatment of channel variants identified in humans has been shown to prevent epileptogenesis and neurodegeneration early in development (e.g., inducible KCNQ2 model of developmental and epileptic encephalopathy). Several other genes such as SCN2A or KCNA2 have been identified to be involved in severe genetic epilepsies accompanied by developmental delays. However, to develop targeted treatment options for these syndromes, it is important to know when and how to use them most effectively.

In this symposium, we will address the general concept of vulnerable periods in genetic mouse models and will show that brain-region specific vulnerability, miswiring in developing neural networks, and altered dendritic integration are involved in epileptogenesis and specific seizure types in genetic epilepsies. Possible treatment options targeting the disease cause and clinical data will be discussed.

## Symposium 12

Thursday, March 23, 2023  
11:00 - 13:00, Lecture Hall 103

Chair: Holger Lerche, Tuebingen

- 11:00    **Opening Remarks**
- 11:05    Andrea Merseburg, Cologne  
DEVELOPMENTAL WINDOWS OF OPPORTUNITY  
IN MOUSE MODELS OF GENETIC EPILEPSIES  
(S12-1)
- 11:25    Thomas Wuttke, Tuebingen  
BRAIN-REGION SPECIFIC EPILEPTOGENESIS IN  
DRAVET SYNDROME (S12-2)
- 11:45    Tony Kelly, Bonn  
ABERRANT DENDRITIC HYPEREXCITABILITY  
AND DENDRITIC MATURATION OF CA3 PYRA-  
MIDAL CELLS IN THE SCN2A<sup>A263V</sup> GENETIC  
EPILEPSY MODEL (S12-3)
- 12:05    Ulrike Hedrich, Tuebingen  
KCNA2-ENCEPHALOPATHY: FROM BENCH TO  
BEDSIDE (S12-4)
- 12:25    Eleonora Anna Loi, Jena  
NMDA-RECEPTOR-FC-FUSION CONSTRUCTS  
NEUTRALIZE ANTI-NMDA RECEPTOR ANTI-  
BODIES (S12-5)
- 12:35    **Discussion and Concluding Remarks**

## Introductory Remarks to Symposium 13

### Breaking News I

Marc Spehr, Aachen

Students had the choice to either register with a poster presentation or apply for an oral communication. The program committee has selected the young investigator presentations from these submissions and assigned them either to a symposium or to the Breaking News symposia.

For the third time, the NWG will award three prizes (500, 300, 200 €) for student participants at the Göttingen Meeting 2023 - the **Breaking News' Best Paper Awards**.

The prizes will be given to three young scientists who present the best talks in the Breaking News Symposia. Criteria for selection are the novelty of the findings which are presented and their potential impact on future research and the quality of the presentation, both the speech and the slides. A jury will pick the awardees, and the awards will be announced and bestowed during the conference after the last lecture on Friday.

The following students were selected to give a short communication in Symposium 13 – Breaking News I:

- 11:00    **Opening Remarks**
- 11:05    Francesco Monaca, London, UK  
HORMONE-MEDIATED NEURAL REMODELLING ORCHESTRATES PARENTING ONSET DURING PREGNANCY (S13-1)
- 11:15    Fathima Mukthar Iqbal, Wuerzburg  
CHARACTERIZATION OF DESCENDING AND MODULATORY NEURONS ENABLING ADAPTIVE WALKING IN *DROSOPHILA* (S13-2)
- 11:25    Lennart Roos, Goettingen  
*IN VIVO* INVESTIGATION OF NOVEL CHANNELRHODOPSIN VARIANTS FOR OPTOGENETIC ACTIVATION OF THE AUDITORY PATHWAY BY BLUE LIGHT (S13-3)

## Symposium 13

*Thursday, March 23, 2023*  
*11:00 - 13:00, Lecture Hall 101*

Chair: Marc Spehr, Aachen

- 11:35 Berra Yildiz, Ulm  
MOLECULAR ALTERATIONS UNDERLYING  
HYPOTONIA IN SHANK3 DEFICIENCY (S13-4)
- 11:45 Hung Lo, Berlin  
BINGE EATING SUPPRESSES FLAVOR REPRESENTATIONS IN THE MOUSE OLFACTORY CORTEX (S13-5)
- 11:55 **Break**
- 12:05 Florian Zirpel, Oxford, UK  
CIRCADIAN REGULATION OF TRIGEMINAL PAIN CIRCUITS (S13-6)
- 12:15 Alisa Bakhareva, Cologne  
REGULATION OF SOCIAL BEHAVIOUR AND ANXIETY BY CORTICAL INPUTS TO LATERAL HYPOTHALAMUS (S13-7)
- 12:25 Andreas Franzelin, Hamburg  
LIMITING FACTORS AND REGULATORY CONSEQUENCES OF cFos EXPRESSION (S13-8)
- 12:35 Alexandra Barayeu, Tuebingen  
AN ELECTROSENSORY COCKTAIL PARTY PROBLEM (S13-9)
- 12:45 Petra Mocellin, Magdeburg  
A SEPTAL-VTA CIRCUIT DRIVES EXPLORATORY BEHAVIOR (S13-10)
- 12:55 **Concluding Remarks**

## Introductory Remarks to Symposium 14

### **Plasticity in unexpected places: flexible circuits for instinctive behaviours**

*Johannes Kohl and Vanessa Stempel, London (UK) and Frankfurt/Main*

Instinctive behaviours such as mating, parenting and aggression can be performed without prior learning and likely rely on circuits that are pre-wired during development. However, these behaviours are not merely stereotyped fixed-action patterns. Rather, they can be highly flexible to accommodate external (environmental) and internal (physiological) changes and are profoundly modulated by experience. Recent advances in behavioural and circuit neuroscience now permit us to identify behaviour-specific cell types and circuits, and to interrogate their form and function with unprecedented resolution in the behaving animal.

This symposium will bring together researchers studying plasticity in circuits subserving behaviours ranging from parenting (Adi Mizrahi, ELSC Jerusalem), mating (Dhananjay Bambah-Mukku, UCSD) and social avoidance (Takuya Osakada, NYU) to hunger-driven social behaviour (Rebecca Figge-Schlenzok, Cologne) and escape (Vanessa Stempel, MPI Frankfurt). Our goal is to identify plasticity mechanisms in instinctive behaviour circuits, to explore how they enable both behavioural robustness and flexibility, and to highlight an unexpected degree of malleability in neural systems often regarded as hardwired and static.



## Symposium 14

*Thursday, March 23, 2023*  
*11:00 - 13:00, Lecture Hall 9*

Chairs: Johannes Kohl and Vanessa Stempel,  
London (UK) and Frankfurt/Main

- 11:00    **Opening Remarks**
- 11:05    Adi Mizrahi, Jerusalem, Israel  
CORTICAL PLASTICITY OF INNATE BEHAVIOUR  
(S14-1)
- 11:25    Takuya Osakada, New York, USA  
A DEDICATED HYPOTHALAMIC OXYTOCIN  
CIRCUIT CONTROLS SOCIAL AVOIDANCE  
LEARNING (S14-2)
- 11:45    Rebecca Figge-Schlensock, Cologne  
DISTINCT LATERAL HYPOTHALAMIC CELL  
POPULATIONS RESIST HUNGER PRESSURE TO  
BALANCE NUTRITIONAL AND SOCIAL NEEDS  
(S14-3)
- 11:55    Dhananjay Bambah-Mukku, La Jolla, USA  
IDENTIFICATION OF A HYPOTHALAMIC LOCUS  
GATING BEHAVIOURAL SEX-SPECIFICITY (S14-4)
- 12:15    Vanessa Stempel, Frankfurt/Main  
MIDBRAIN CIRCUITS FOR FLEXIBLE INSTINCTIVE  
BEHAVIOURS (S14-5)
- 12:35    **Discussion and Concluding Remarks**

## Introductory Remarks to Symposium 15

### Breaking News II

*Ivan Manzini, Gießen*

Students had the choice to either register with a poster presentation or apply for an oral communication. The program committee has selected the young investigator presentations from these submissions and assigned them either to a symposium or to the Breaking News symposia.

For the third time, the NWG will award three prizes (500, 300, 200 €) for student participants at the Göttingen Meeting 2023 - the **Breaking News' Best Paper Awards**.

The prizes will be given to three young scientists who present the best talks in the Breaking News Symposia. Criteria for selection are the novelty of the findings which are presented and their potential impact on future research and the quality of the presentation, both the speech and the slides. A jury will pick the awardees, and the awards will be announced and bestowed during the conference after the last lecture on Friday.

The following students were selected to give a short communication in Symposium 15 – Breaking News II:

- 16:15    **Opening Remarks**
- 16:20    Melanie Scharr, Tuebingen  
DKK1 – AN AMBIVALENT REGULATOR OF  
CELLULAR HOMEOSTASIS IN ENTERIC NER-  
VOUS SYSTEM SIGNALLING (S15-1)
- 16:30    Sielke Caestecker, Ghent, Belgium  
CHEMOGENETIC ACTIVATION OF THE LO-  
CUS COERULEUS INCREASES NORADRENA-  
LINE LEVELS IN THE HIPPOCAMPUS AND  
MODULATES ITS HIPPOCAMPAL EXCITABILITY  
(S15-2)
- 16:40    Inés Hojas García-Plaza, Goettingen  
INVESTIGATING ULTRASTRUCTURAL AND  
MOLECULAR CORRELATES OF SHORT-TERM  
FACILITATION AT HIPPOCAMPAL MOSSY FIBRE  
SYNAPSES (S15-3)

## Symposium 15

*Thursday, March 23, 2023*  
*16:15 - 18:15, Lecture Hall 101*

Chair: Ivan Manzini, Gießen

- 16:50 Nina Feller, Luebeck  
CHARACTERIZATION OF TANYCYTES IN AN ALZHEIMER'S DISEASE MOUSE MODEL (S15-4)
- 17:00 Zeeshan Mushtaq, Kaiserslautern  
MOLECULAR CHARACTERIZATION OF THE SEQUENTIAL PROCESSES UNDERLYING SYNAPTIC DEGENERATION (S15-5)
- 17:10 **Break**
- 17:20 Carmen Haider, Vienna, Austria  
DE NOVO IMMUNOREACTIVITY AGAINST CENTRAL NERVOUS SYSTEM ANTIGENS AFTER HUMAN SPINAL CORD INJURY (S15-6)
- 17:30 Bernát Nógrádi, Szeged, Hungary  
MOTONEURONAL INFLAMMASOME ACTIVATION TRIGGERS NEUROINFLAMMATION AND IMPEDES REGENERATION FOLLOWING SCIATIC NERVE INJURY (S15-7)
- 17:40 Bettina Habelt, Dresden  
EVALUATION OF NEUROPHYSIOLOGICAL EFFECTS OF PSILOCYBIN IN CHRONIC ALCOHOLISM USING EPICORTICAL NEUROPROSTHETICS (S15-8)
- 17:50 Yannick Günzel, Konstanz  
HOPPER BY NAME, HOPPER BY NATURE. DECISION-MAKING PROCESSES UNDERLYING THE LOCUST STARTLE RESPONSE (S15-9)
- 18:00 Yuebing Li, Bern, Switzerland  
RHO-KINASE INVOLVEMENT IN SUBRETINAL FIBROSIS (S15-10)
- 18:10 **Concluding Remarks**

## Introductory Remarks to Symposium 16

### **A new look at neuronal circuits after CNS injury: mechanisms for vulnerability and repair**

*Francesco Roselli and Aya Takeoka, Ulm and Leuven  
(Belgium)*

Recovery, repair, and regeneration of circuits are critical steps toward the restoration of the brain and spinal cord functions after injury. Yet, patients with traumatic brain or spinal cord injury experience only limited recovery, incomplete repair, and often no regeneration. The present symposium reports i) on the mechanisms which drive vulnerability of neuronal or synaptic subpopulations upon trauma, ii) on the mechanisms enhancing or preventing effective re-growth of axons, iii) on the re-establishment of functional short- and long-range circuits, and iv) how to overcome obstacles toward the restoration of functions.

The symposium brings together investigators studying the optic nerve, cortical, and spinal cord injuries, providing both a unified view of the injury and repair processes and discussing the peculiarities of each site.

The speakers will introduce the cutting-edge biochemical, viral, and biotechnological tools they deploy to address recovery and regeneration in these settings, highlighting advantages and perspectives for their tools. Prof. Nawabi will show how proteomics and translaticomics of the injured optic nerve reveal how to modulate regenerative axons path to form functional circuits. Prof. Roselli will show how chemogenetic manipulations of microcircuit activity produce beneficial or detrimental changes in neuronal vulnerability and neuroinflammation. Prof. Takeoka will introduce cell type specificity regulating spinal circuit remodeling after spinal cord injury and a viral approach to facilitate recovery. Dr. Puttagunta will introduce the use of engineered biomaterials and cell transplantation to foster repair and regrowth of neuronal circuits after spinal cord injury. Dr. Georgiev will introduce shared concepts related to the remodeling of neuronal extracellular matrix, a component of neuronal regeneration and regrowth that is growingly recognized as a major player in determining neuronal responses to injury.

## Symposium 16

*Thursday, March 23, 2023  
16:15 - 18:15, Lecture Hall 102*

*Chairs: Francesco Roselli and Aya Takeoka,  
Ulm and Leuven (Belgium)*

- 16:15 Homaira Nawabi, La Tronche, France  
ADULT AXON GUIDANCE TO REFORM A  
FUNCTIONAL NEURONAL CIRCUIT IN THE  
VISUAL SYSTEM (S16-1)
- 16:40 Francesco Roselli, Ulm  
CHEMOGENETIC CONTROL OF CIRCUIT  
VULNERABILITY AND NEUROINFLAMMATION  
IN TBI (S16-2)
- 17:05 Aya Takeoka, Leuven, Belgium  
AGE OF INJURY-DEPENDENT LOCOMOTOR  
CIRCUIT PLASTICITY AFTER A SPINAL CORD  
INJURY (S16-3)
- 17:30 Radhika Puttagunta, Heidelberg  
BRIDGING THE GAP AFTER SCI (S16-4)
- 17:55 Svilen Veselinov Georgiev, Goettingen  
REMODELING OF THE NEURONAL EXTRACEL-  
LULAR MATRIX (S16-5)

## Introductory Remarks to Symposium 17

**Moving the body: communication, coordination and control in neuromechanical systems**

Jan M. Ache and Corinna Gebehart, Wuerzburg and Lisbon (Portugal)

Taking a walk in the park is much more challenging than personal experience might suggest: moving through the world is demanding on multiple levels, and how nervous systems control adaptive locomotion is an area of intense research efforts. Many unanswered questions in motor control are found at systems interfaces, for example between the body and the environment, or between regions of the nervous system. Which sensory cues are needed for adaptive locomotion, and how are they integrated? Motor networks in the spinal or ventral nerve cord can maintain locomotor rhythms independent of the brain, but how is their activity modulated by descending commands to achieve adaptive locomotion? And how does the brain, in turn, integrate ascending feedback about body posture and internal states? The international NeuroNex consortium 'Communication, Coordination and Control in Neuromechanical Systems' (C<sup>3</sup>NS) aims to tackle these questions by comparing motor control strategies across species.

Our symposium features five speakers, four of whom are associated with 'C<sup>3</sup>NS'. Starting in the sensory periphery, Gesa F. Dinges will address how force feedback from leg mechanoreceptors is fed into the nervous system of *Drosophila*. Another key interface that has received little attention in the context of motor control and action-selection is that between neurons and glia, which will be discussed by Amber A. Krebs. Finally, three talks will cover interactions between the brain and motor networks. First, Jan M. Ache will discuss how sensory cues and internal states are integrated by descending neurons to drive adaptive locomotion in *Drosophila*. Second, Nicholas S. Szczecinski will discuss how motor circuits integrate descending commands and local mechanosensory feedback to control movements in synthetic nervous systems. Finally, Marie-Claude Perreault will speak about influences of descending systems on sensory processing in the mouse spinal cord.

## Symposium 17

Thursday, March 23, 2023  
16:15 - 18:15, Lecture Hall 9

Chairs: Jan M. Ache and Corinna Gebehart,  
Wuerzburg and Lisbon (Portugal)

- 16:15    **Opening Remarks**
- 16:20    Gesa F. Dinges, Cologne  
          *DROSOPHILA* STRAIN SENSORS: FROM  
          MORPHOLOGY AND BIOMECHANICS TO  
          FUNCTION (S17-1)
- 16:45    Amber A. Krebs, Münster  
          CONTRIBUTION OF GLIAL CELLS DURING  
          ACTION SELECTION IN *DROSOPHILA* LARVAE  
          (S17-2)
- 17:00    Jan M. Ache, Wuerzburg  
          NEURONAL MECHANISMS FOR SENSORIMO-  
          TOR FLEXIBILITY IN *DROSOPHILA* (S17-3)
- 17:25    Nicholas S. Szczecinski, Morgantown, USA  
          BIOMIMETIC ROBOTS AS TOOLS FOR UNDER-  
          STANDING HOW THE NERVOUS SYSTEM  
          MOVES THE BODY (S17-4)
- 17:50    Marie-Claude Perreault, Atlanta, USA  
          INTEGRATION OF DESCENDING AND PERI-  
          PHERAL SENSORY SIGNALS BY SPINAL CORD  
          INTERNEURONS (S17-5)

## Introductory Remarks to Symposium 18

**Astrocyte control of neural circuit function and animal behaviour**

*Johannes Hirrlinger and Christian Henneberger, Leipzig and Bonn*

Over the past few decades, fascinating new insights into astrocyte biology have solidified the idea that these cells are also indispensable for neural circuit development, operation, and adaptation throughout life. Astrocytes and other glial cells like microglia and oligodendroglial lineage cells together with neurons form neuron-glia assemblies in which all cell types work in unison to jointly fulfil the function of the brain or a specific brain region. These assemblies do not just increase the dimensionality of the potential cellular interactions, they also fundamentally change the properties of neural circuits, because glial cells and their networks have vastly different structural and functional properties. Consequently, accumulating evidence shows that astrocytes crucially contribute to controlling animal behavior on various time scales. Despite this progress and such exciting novel insights, many longstanding questions remain: How do astrocytes integrate and respond to diverse neuronal signals at the cellular and population levels? How do they convert this task- and animal state-dependent information into functional outputs that modulate neural circuit dynamics and animal behavior? How does this astrocytic influence on neurons augment/complement neural circuit properties? How does impairment of these functions contribute to disease? How can beneficial functions of astrocytes be boosted in disease to protect CNS cells from damage and promote regeneration? How do other glial cells like microglial cells affect neural circuit dynamics and animal behavior?

With this symposium, we aim at providing an up-to-date snapshot of astrocytes' role in regulating neural network function and animal behavior, and extend this view on the contribution of microglial cells. We will discuss that glial cells are an essential element in controlling animal behavior, and lay down the concept of neuron-glia assemblies as the fundamental computational units underlying brain function. This symposium will be a primer and inspiration for developing and/or refining new concepts that take a comprehensive view at brain function and animal behavior.



## Symposium 18

Thursday, March 23, 2023  
16:15 - 18:15, Lecture Hall 8

Chairs: Johannes Hirrlinger and Christian Henneberger,  
Leipzig and Bonn

16:15    **Opening Remarks**

- 16:20    Hajime Hirase, Copenhagen, Denmark  
OPTOGENETIC ACTIVATION OF TRANSIENT  
ASTROCYTIC G<sub>q</sub> SIGNALING IN FRONTAL  
CORTEX (S18-1)
- 16:45    Marie-Luise Brehme, Hamburg  
CHEMOGENETIC ACTIVATION OF G<sub>q</sub> IN  
MICROGLIA LEADS TO DEFICITS IN SYNAPTIC  
PLASTICITY AND REMOTE MEMORY (S18-2)
- 17:00    Christian Henneberger, Bonn  
AN ASTROCYTIC SIGNALING LOOP FOR  
FREQUENCY-DEPENDENT CONTROL OF DEN-  
DRITIC INTEGRATION AND SPATIAL LEARNING  
(S18-3)
- 17:25    Stefanie Schirmeier, Dresden  
THE ROLE OF GLIAL CELLS IN POST-INGESTIVE  
NUTRIENT SENSING AND FOOD CHOICE  
BEHAVIOR (S18-4)
- 17:50    Amit Agarwal, Heidelberg  
STRUCTURAL AND FUNCTIONAL DYNAMICS  
OF MITOCHONDRIA IN ASTROCYTES *IN VIVO*  
(S18-5)

**Introductory Remarks to Symposium 19****Impact of early traumatic stress on  
brain development,  
and mental and somatic health**

*Christian Schmahl and Katja Seitz, Mannheim and Heidelberg*

The Research Training Group (GRK2350) investigates psychosocial, neurobiological, and somatic sequelae of adverse childhood experiences (ACE). ACE such as sexual and physical abuse or neglect constitute a massive stressor with long-lasting consequences for mental and somatic health. Despite their obvious relatedness, neither the causal relation nor the mechanisms involved are clear. Traumatic experiences are diverse, differing in type, timing, and intensity with social support and other protective factors contributing to this. ACE-related manifestations range from psychosocial to somatic problems such as heightened stress sensitivity, interpersonal problems, substance dependence, chronic pain, or inflammatory and metabolic diseases. Therefore, the central aims of the GRK are (1) investigation of the role of type, timing and intensity of ACE in the emergence of ACE-related disorders; (2) elucidation of the psychosocial, neurobiological and epigenetic mechanisms underlying ACE-related disorders; (3) development of novel treatment possibilities for ACE-related conditions.

In the first presentation (Schmahl) of this symposium, an overview of the research questions and methods of the GRK will be given. In addition, findings on critical periods in human and rodent brain development and brain function will be demonstrated. A second presentation (Krause-Utz) focuses on the association between heart rate variability (HRV) and working memory during emotional distraction in individuals with ACE. Severity of ACE predicted worse performance in this task, mediated by altered HRV. The third presentation (Seitz) reports on findings from an emotional face perception paradigm in humans with early traumatic experience. The fourth presentation (Atanasova) focusses on the impact of traumatic stress in patients with inflammatory bowel disease, demonstrating how disturbances in interoceptive processes contribute to alterations in emotion and cognition in individuals with ACE. In a student presentation (Schulze), a network analysis on ACE, Borderline Personality Disorder, attachment and social support will be presented.

## Symposium 19

Thursday, March 23, 2023  
16:15 - 18:15, Lecture Hall 104

Chairs: Christian Schmahl and Katja Seitz,  
Mannheim and Heidelberg

- 16:15 Christian Schmahl, Mannheim  
INFLUENCE OF TYPE AND TIMING OF TRAUMATIC STRESS ON BRAIN STRUCTURE AND FUNCTION (S19-1)
- 16:35 Annegret Krause-Utz, Leiden, The Netherlands  
SEVERITY OF CHILDHOOD MALTREATMENT PREDICTS REACTION TIMES AND HEART RATE VARIABILITY DURING AN EMOTIONAL WORKING MEMORY TASK IN BORDERLINE PERSONALITY DISORDER (S19-2)
- 16:55 Katja Seitz, Heidelberg  
ASSOCIATION BETWEEN ADVERSE CHILDHOOD EXPERIENCES AND EMOTIONAL FACE PERCEPTION IN A TRANSDIAGNOSTIC SAMPLE (S19-3)
- 17:15 Konstantina Atanasova, Mannheim  
BODY MATTERS IN EMOTION: INTEROCEPTIVE PROCESSING IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE (S19-4)
- 17:35 Anna Schulze, Mannheim  
ON THE INTERPLAY BETWEEN BORDERLINE PERSONALITY FEATURES, CHILDHOOD TRAUMA SEVERITY, ATTACHMENT TYPES, AND SOCIAL SUPPORT (S19-5)
- 17:55 **Discussion**



## Introductory Remarks to Symposium 20

### Hidden senses

*Kristina Corthals and Bart Geurten, Lund (Sweden) and Otago (New Zealand)*

The human sensory percept encompasses many sensory modalities, but we are most keenly aware of the Aristotelian senses: vision, audition, taste, olfaction, and touch. Consequently, these senses are also in focus of neurosciences, thereby occluding the role of other senses crucial for the individual fitness in many species.

Fitness is directly dependent on functional navigation in all none-sessile organisms. Depending on the attributes of the habitat different modalities become essential. In cattered visual terrain, snakes enhance their prey detection by using their infrared sense to detect the heat profiles of their warm-blooded prey. In the flat desert panes visual cues are scarce and ants augment their sensory percept using magneto-reception. To cross large distances in the absence of wings, spiders employ their elector receptors to initialize their wingless flight.

Even in more moderate habitats an unfavorable combination of temperature and humidity levels bear the danger of desiccation to small poikilothermic animals. Therefore hygrosensation is of utmost importance to many species and particularly to insects. Insects use hygro- and thermosensation not only to avoid adverse circumstance, but also to detect hosts. These sensory feats become even more important regarding global warming. Global warming threatens insect species with desiccation and loss of habitats, which extends the home ranges of known insect disease vectors to northern latitudes and higher altitudes.

In this symposium we want to shine light on a range of these occluded, "hidden senses" and discuss their neuronal mechanisms and the parallels uniting them. We have selected a range of scientists working on modalities outside of the Aristotelian senses. Their work illustrates the relevance of the sense to the organism's survival and characterizes the neuronal underpinnings of these rare modalities. The talks will cover hygro-sensation, lectroreception, magneto-reception and infrared sensing.

## Symposium 20

Thursday, March 23, 2023  
16:15 - 18:15, Lecture Hall 105

Chairs: Kristina Corthals and Bart Geurten,  
Lund (Sweden) and Otago (New Zealand)

16:15    **Opening Remarks**

16:20    Maximilian Bothe, Graz, Austria  
THERMORECEPTION IN RATTLESNAKES –  
HINDBRAIN PROCESSING AND SENSORY  
PERIPHERY (S20-1)

16:45    Kristina Corthals, Lund, Sweden  
CHARACTERIZATION OF THE HUMIDITY  
RECEPTOR NEURONS IN *DROSOPHILA MELA-*  
*NOGASTER* (S20-2)

17:10    Ganesh Giri, Malmö, Sweden  
UNDERSTANDING THE MECHANISM OF  
HYGROSENSATION (S20-3)

17:20    Pauline Fleischmann, Wuerzburg  
HIDDEN SENSES: THE MAGNETIC COMPASS  
IN CATAGLYPHIS DESERT ANTS (S20-4)

17:45    Daniel Robert, Bristol, UK  
ELECTRORECEPTION IN BEES AND OTHER  
ARTHROPODS (S20-5)

18:10    **Concluding Remarks**

## Introductory Remarks to Symposium 21

# Pushing and pulling: how the interplay of excitation and inhibition shapes network dynamics

*Mattia Chini and Sebastian H. Bitzenhofer, Hamburg*

Synaptic excitation and inhibition are temporally and spatially tightly coupled in neuronal networks. Even simple stimuli lead to the concomitant occurrence of excitation and inhibition, controlled by the interplay between pyramidal neurons and interneurons. This ultimately results in a delicate dynamic balance between the amount of excitatory and inhibitory postsynaptic currents (excitation-inhibition ratio). Theoretical work suggests that a balanced excitation-inhibition ratio stabilizes cortical networks and enables flexible processing of information. How the balance of excitation-inhibition ratio emerges during development and how it coordinates network functions are questions of open investigation.

The proposed symposium aims at providing a comprehensive overview of recent key findings on how excitation-inhibition ratio affects information processing and neuronal network dynamics by bringing together theoretical perspectives and experimental data from humans and animal models.

Anna Levina will address how self-organization of synaptic connections in neuronal cultures stabilizes the excitation-inhibition ratio to maintain stable and robust dynamics in neuronal networks. Julijana Gjorgjieva will discuss how spontaneous activity and the organization of synaptic inputs on the dendrites of cortical neurons affect excitation-inhibition balance and neuronal network dynamics in the developing mouse brain. Irina Pochinok will describe experimental and computational work highlighting how the developmental emergence of hippocampal ripples is promoted by a relative increase of inhibition. Richard Gao will present data on model-based inference of excitation-inhibition ratio and other physiological variables from multiscale neural data. Thomas Pfeffer will leverage multi-scale computational modeling and human EEG/MEG data to show how different neuromodulatory systems modulate the balance between excitation and inhibition in cortical circuits.

## Symposium 21

*Thursday, March 23, 2023*  
*16:15 - 18:15, Lecture Hall 10*

Chairs: Mattia Chini and Sebastian H. Bitzenhofer,  
Hamburg

- 16:15 Anna Levina, Tuebingen  
NEURONAL CIRCUITS OVERCOME IMBALANCE IN EXCITATION AND INHIBITION BY ADJUSTING CONNECTION NUMBERS (S21-1)
- 16:40 Julijana Gjorgjieva, Munich  
STABILITY AND LEARNING IN EXCITATORY SYNAPSES BY NONLINEAR INHIBITORY PLASTICITY (S21-2)
- 17:05 Irina Pochinok, Hamburg  
A DEVELOPMENTAL INCREASE OF INHIBITION PROMOTES THE EMERGENCE OF HIPPOCAMPAL RIPPLES (S21-3)
- 17:20 Richard Gao, Tuebingen  
MECHANISTIC MODEL INFERENCE FROM OBSERVED NEURODYNAMICS (S21-4)
- 17:45 Thomas Pfeffer, Barcelona, Spain  
NEUROMODULATORY REGULATION OF LARGE-SCALE CORTICAL DYNAMICS AND BEHAVIORAL VARIABILITY IN HEALTHY HUMANS (S21-5)
- 18:10 **Concluding Remarks**

## Introductory Remarks to Symposium 22

# Illuminating the brain – current applications and future developments of next-generation biosensors

*Olivia Masseck and Lutz Wallhorn, Bremen*

Inferring correlations between the activity of neurons within a neuronal ensemble and the behavioral state of the animal is one of the key goals of systems neuroscience. Optical approaches have the necessary spatial resolution to record activity from hundreds of neurons simultaneously. With the development of genetically encoded calcium indicators (GECIs), it was possible to record  $\text{Ca}^{2+}$  influx (as a proxy for neuronal activity) with high spatial and temporal resolution. This advancement in neuroscience paved the way for a new line of research: Development of new genetically encoded biosensors.

In the last years, genetically encoded fluorescent sensors have emerged as versatile tools for imaging neurochemical release with high specificity and sensitivity. Most of the genetically encoded sensors use a specific G-Protein coupled receptor as sensing moiety fused to a circularly permuted fluorescent protein. Other biosensors are based on periplasmic binding proteins (PBP) from bacteria that have been modified to measure neurotransmitters.

Additionally, genetically encoded voltage indicators (GEVIs) can directly detect voltage changes across the membrane during spiking activity as well as during synaptic transmission. So far voltage imaging has remained demanding because of the fast nature of action potentials (i.e. typical length of 1 ms). However, protein engineering together with high-throughput screening as led to compelling improvements of currently available GEVIs.

As a complement to optical sensors for neural activity, molecules that permit optical control of selected aspects of neuronal signaling permit causal investigations in neuroscience. Photo-switchable tethered ligands have been established in this context as powerful tools to control various receptors with high precision or to obtain information on their activation state. Furthermore, modifying existing optogenetic tools, like ChRmine has potential for clinical use, for example in hearing restoration.

This symposium will cover different aspects of biosensor neurotechnology: from ultrafast neuromodulator and neurotransmitter imaging to all-optical assays and state-of-the-art voltage imaging.



## Symposium 22

Friday, March 24, 2023  
08:30 - 10:30, Lecture Hall 10

Chairs: Olivia Masseck and Lutz Wallhorn, Bremen

- 08:30    **Opening Remarks**
- 08:35    Tommaso Patriarchi, Zurich, Switzerland  
NEW OPTICAL TOOLS FOR MONITORING  
AND CONTROLLING NEUROMODULATOR  
SIGNALING (S22-1)
- 09:00    Victoria Hunniford, Goettingen  
*IN VITRO* AND *IN VIVO* CHARACTERIZATION  
OF IMPROVED CHANNELRHODOPSIN  
ChRmine VARIANTS FOR OPTOGENETIC  
ACTIVATION OF THE AUDITORY PATHWAY  
(S22-2)
- 09:15    Olivia Masseck, Bremen  
NEXT GENERATION GENETICALLY ENCODED  
FLUORESCENT SENSORS FOR SEROTONIN  
AND BEYOND (S22-3)
- 09:40    Andreas Reiner, Bochum  
OPTOCHEMICAL APPROACHES TO CON-  
TROL AND SENSE GLUTAMATE RECEPTOR  
SIGNALING (S22-4)
- 10:05    Daan Brinks, Delft, The Netherlands  
VOLTAGE IMAGING WITH GENETICALLY EN-  
CODED VOLTAGE INDICATORS: DEVELOP-  
MENT AND APPLICATIONS (S22-5)

## Introductory Remarks to Symposium 23

# Neuroepigenetics: Epigenomic adaptations in CNS development

*Tanja Vogel and Geraldine Zimmer-Bensch, Freiburg and Aachen*

Brain development and adult neuronal functions depend on properly executed transcriptional programs that include adaptive spatio-temporal adjustment of gene regulation integrating external information. This involves chemical modifications of DNA and chromatin, which all cells contributing to the CNS exploit for their proper development, function and adaptation, and which is termed neuroepigenetics, a recently emerging field of research.

Dissecting the impact of neuroepigenetic mechanisms on cellular processes will help to understand functional principles of the most complex organ system of the human body in health and disease.

Notably, the plasticity of epigenetic processes allows for the flexibility required for the developing and adult CNS to constantly adapt to a continuously changing environment. Communication with either the local microenvironment or signals from the periphery elicits adaptations in gene transcription that subsequently orchestrate cell physiological processes. Thus, epigenetic modifications are promising candidates for how environmental signals leave traces at the chromatin level that mediate adaptive short-term but also long-lasting changes in gene expression in CNS cells.

This symposium will discuss up- and downstream mechanisms of adaptive epigenomic remodeling in neurodevelopment, ranging from DNA methylation, histone modifications to adaptation of the 3D genomic architecture. We feature the most relevant and recent molecular mechanisms that control the development from neural stem cells to mature neuronal networks. Deepening our knowledge in this particular area is of major importance, as numerous neurodevelopmental and neuropsychiatric diseases have an environmental and epigenetic contribution in addition to genetic predisposition. As such, this symposium covers not only important questions of the basic neurosciences, but also has implications for arising potential for treating CNS diseases.

## Symposium 23

Friday, March 24, 2023  
08:30 - 10:30, Lecture Hall 105

Chairs: Tanja Vogel and Geraldine Zimmer-Bensch,  
Freiburg and Aachen

- 08:30 **Opening Remarks**  
Tanja Vogel
- 08:35 Annalisa Izzo, Freiburg  
EPIGENETIC MECHANISMS INVOLVED IN  
CEREBRAL CORTEX DEVELOPMENT (S23-1)
- 09:00 Geraldine Zimmer-Bensch, Aachen  
CELL TYPE - SPECIFIC FUNCTIONS OF THE  
DNA METHYLTRANSFERASE 1 IN CORTICAL  
INTERNEURON DEVELOPMENT (S23-2)
- 09:25 Boyan Bonev, Munich  
JOINT EPIGENOME PROFILING REVEALS CELL  
TYPE-SPECIFIC GENE REGULATORY PROGRAMS  
IN HUMAN CORTICAL ORGANOID (S23-3)
- 09:50 Tran Tuoc, Bochum  
EPIGENOME REGULATION IN NEOCORTEX  
EXPANSION AND GENERATION OF NEURONAL  
SUBTYPES (S23-4)
- 10:15 Camilla Fullio, Freiburg  
SPATIO-TEMPORAL DOT1L-MEDIATED REGU-  
LATION OF BASAL PROGENITOR CELLS DU-  
RING MOUSE CORTICAL DEVELOPMENT (S23-5)
- 10:25 **Concluding Remarks**



## Introductory Remarks to Symposium 24

# Inflammatory mechanisms of epileptogenesis

*Felix Rosenow, Sven G. Meuth and Nico Melzer, Frankfurt/Main and Duesseldorf*

Epilepsy is one of the most frequent chronic neurological diseases affecting more than 50 million people worldwide. It strikes people of all ages and is associated with a 2-3 fold increase in mortality, a high number of years lived with disability and life years lost. The burden of epilepsy is not only based on recurrent seizures but also on cognitive dysfunction and psychobehavioral comorbidities.

Currently, targeting epileptic seizures is the main focus of therapeutic efforts, underlined by the fact that nearly all of the >30 approved antiepileptic drugs act on neurons to suppress seizures without affecting the underlying brain pathology, and about one third of patients continue to have seizures while frequently also experiencing adverse effects. For decades, epilepsy research had a strong focus on neuronal pathomechanisms. However, causes and consequences of epilepsy extend well beyond neurons and seizures and involve adjacent biological systems. Recently, immune mechanisms and dysfunction of the neurovascular unit emerged as novel mechanisms contributing to epileptogenesis and thus promote initiation, perpetuation and progression of epilepsy. Likewise, these mechanisms appear to be involved in cognitive and psychobehavioral dysfunction.

The proposed symposium brings together international experts in translational investigation of epileptogenesis: Prof. Walker, London, will give a conceptual definition and overview on classical neuronal mechanisms of epileptogenesis in focal epilepsies. Prof. Aronica, Amsterdam, will give a talk on the precipitation of innate and adaptive immune responses through focal epileptic activity and their contribution to epileptogenesis. Vice versa, Prof. Vezzani, Milano, will provide an overview on the precipitation of epileptic activity and its perpetuation by focal innate and adaptive immune responses. Prof. Friedman, Halifax & Beer-Sheva, will report on the role of the neurovascular unit as master regulator of seizure-induced inflammation and inflammation-induced seizures. Completed by a short students talk of Josefine Sell, Jena, the proposed symposium will provide the audience with a timely overview of this expanding field.

## Symposium 24

Friday, March 24, 2023  
08:30 - 10:30, Lecture Hall 104

Chairs: *Felix Rosenow and Sven G. Meuth,  
Frankfurt/Main and Duesseldorf*  
Organisation: *Nico Melzer, Duesseldorf*

- 08:30 **Opening Remarks**  
Felix Rosenow, Sven G. Meuth
- 08:35 Mathew C. Walker, London, UK  
CONCEPTUAL DEFINITION AND NEURONAL  
MECHANISMS OF EPILEPTOGENESIS IN FOCAL  
EPILEPSIES (S24-1)
- 09:00 Eleonora Aronica, Amsterdam, The Netherlands  
NEUROINFLAMMATION IN HUMAN FOCAL  
EPILEPSIES (S24-2)
- 09:25 Annamaria Vezzani, Milano, Italy  
NEUROINFLAMMATION INDUCED SEIZURES  
AND EPILEPSY: EXPERIMENTAL MODELS AND  
TARGETED PHARMACOLOGICAL TREATMENTS  
(S24-3)
- 09:50 Alon Friedman, Halifax, Canada  
NEURO-GLIA-VASCULAR INTERACTIONS IN  
BRAIN DISORDERS: FROM BENCH TO BED  
(S24-4)
- 10:15 Josefine Sell, Jena  
PATHOGENIC EFFECTS OF GABAB RECEPTOR  
ANTIBODIES FROM PATIENTS WITH AUTOIM-  
MUNE ENCEPHALITIS ON NEURONAL SIGNA-  
LING AND MEMORY CONSOLIDATION (S24-5)
- 10:25 **Concluding Remarks**  
Felix Rosenow, Sven G. Meuth

## Introductory Remarks to Symposium 25

### A comparative perspective on social communication

*Daniela Vallentin and Steffen Hage, Seewiesen and Tuebingen*

Many animals, as well as humans, are able to modify their vocal output depending on the behavioral context. Some examples of these context-dependent vocalizations include the song of the zebra finch, which is more stereotyped when directed toward a female; calls of vervet monkeys, which can either serve as alarm or rivalry calls; and echolocation calls in bats, which are used for both hunting prey and intra-specific communication. Hereby, the capability to modulate vocal onset and patterns is not always dependent on whether animals produce learned or innate vocalizations. The underlying brain mechanisms that are controlling context-dependent changes in vocal output are still largely not well understood and it is a matter of debate, whether neural circuits underlying vocal pattern generation in vocal learners and non-learners share common neural coding properties.

The symposium will present different speakers that approach this issue in different animal models such as songbirds, bats, and monkeys, by using a wide range of behavioral observation, psychophysical approaches, and neurophysiological techniques. The goal is to uncover commonalities and disparities in behavioral strategies involved in initiating a context-dependent vocal modification. Our symposium will provide a new perspective on the behavioral and neural control of vocalizations produced within different contexts. It will give new and important insights into common mechanisms that might be shared across species. Furthermore, the symposium will provide new insight into different neural computations underlying contextual changes across a diverse subset of avian and mammalian species and will give an overview of recent advances in the study of context-dependent vocalizations.

## Symposium 25

Friday, March 24, 2023  
08:30 - 10:30, Lecture Hall 102

Chairs: Daniela Vallentin and Steffen Hage,  
Seewiesen and Tuebingen

08:30 **Opening Remarks**

08:35 Lena Veit, Tuebingen  
FLEXIBLE CONTEXTUAL CONTROL OVER  
BIRDSONG SEQUENCING AND STRUCTURE  
(S25-1)

09:00 Mirjam Knörnschild, Berlin  
A COMPARATIVE PERSPECTIVE ON VOCAL  
PRODUCTION LEARNING IN BATS (S25-2)

09:25 Julio Hechavarría, Frankfurt/Main  
A TOUR THROUGH THE BRAIN OF VOCALIZING  
BATS (S25-3)

09:50 Julia Löschner, Tuebingen  
AUDIO-VOCAL INTEGRATION MECHANISMS  
IN MARMOSET MONKEYS (S25-4)

10:05 Andreas Nieder, Tuebingen  
NEUROBIOLOGY OF COGNITIVE VOCAL  
CONTROL IN MACAQUES AND CROWS  
(S25-5)

## Introductory Remarks to Symposium 26

# Phase separation in neuronal (patho)physiology

*Dragomir Milovanovic, Christian Tetzlaff and Michael Fauth, Berlin and Goettingen*

In the context of cell biology, liquid-liquid phase separation (LLPS) is a process where two or more molecules demix from the surrounding medium, forming so-called biomolecular condensates. During the last several years, a surge of papers suggests that LLPS underlies the organization and dynamics of synaptic vesicle clusters, presynaptic active zones, postsynaptic densities (of both excitatory and inhibitory synapses), endocytic sites, RNA granules, to name a few. Failure to regulate these condensates results in the formation of insoluble aggregates, a hallmark of many neurodegenerative diseases. As an emerging field, LLPS in neurons poses several critical challenges and opportunities. For instance, new methods are required to characterize and quantify the functional impact of these condensates in living cells. Furthermore, theoretical models and frameworks are needed to provide insights into how these condensates corroborate with neuronal depolarization and synaptic activity.

In this symposium, we plan to host five speakers addressing: (i) mechanisms how LLPS drives the synaptic architecture; (ii) the potential of LLPS to provide new insights into disease mechanisms and therapeutic interventions in neurodegeneration; (iii) theoretical frameworks for modeling LLPS and coupling LLPS to synaptic plasticity; (iv) methods development required to characterize the LLPS in living neurons. Our invited speakers are leaders in a range of fields spanning from molecular biology, to genetics, to single-molecule imaging, and modeling.



## Symposium 26

Friday, March 24, 2023  
08:30 - 10:30, Lecture Hall 101

Chairs: Dragomir Milovanovic, Christian Tetzlaff and  
Michael Fauth, Berlin and Goettingen

08:30 **Opening Remarks**

08:35 Akihiro Kusumi, Okinawa, Japan  
SINGLE-MOLECULE IMAGING STUDIES OF  
POSTSYNAPTIC RECEPTOR TURNOVER ON  
THE PSD PROTEIN CONDENSATES (S26-1)

08:55 Antoine Triller, Paris, France  
A NANOSCALE DYNAMIC VIEW OF POST-  
SYNAPTIC RECEPTORS (S26-2)

09:15 Pietro Vittorio De Camilli, New Haven, USA  
THE ENIGMATIC SPINE APPARATUS OF NEU-  
RONAL DENDRITIC SPINES (S26-3)

09:35 Jakob Rentsch, Berlin  
SINGLE MOLECULE IMAGING FOR INVESTI-  
GATING PHASE SEPARATION OF SYNAPTIC  
VESICLES IN NEURONS (S26-4)

09:50 Jovica Ninkovic, Munich  
TDP-43 CONDENSATES AND LIPID DROPLETS  
REGULATE THE REACTIVITY OF MICROGLIA  
AND REGENERATION AFTER TRAUMATIC  
BRAIN INJURY (S26-5)

10:10 **Joint Discussion**

10:25 **Concluding Remarks**



## Introductory Remarks to Symposium 27

# From imprecision to robustness in neural circuit assembly

*Carsten Duch, Robin Hiesinger, Susanne Schreiber and Marion Silies, Berlin and Mainz*

Why imprecision and robustness? The specificity of synaptic connections is of central importance to the study of brain development and function. In contrast, terms like 'imprecision' and 'noise' are more commonly used in association with faulty development and reduced function. In most studies of neuronal circuits, imprecision only features as error bars and in the hope for significance between control and experimental averages. Yet, the development of neural circuits is in many aspects imprecise, and mature circuitry is often highly flexible and error-tolerant, i.e. robust. To understand how genetically encoded imprecisions can render neural circuit development and function robust is the stated goal of the DFG-funded research consortium RobustCircuit (FOR5289, [robustcircuit.org](http://robustcircuit.org)). The core hypothesis of this research consortium is that imprecisions of distinct processes at lower scales (from molecules to cells) enable robustness of circuit assembly and function at higher scales (from cells to behavior).

The five speakers in this symposium will cover a wide range of neurobiological systems and questions, yet conceptually all presentations showcase robust systems that are based on noise in neural circuit development or function as an integral and necessary component. The goal is to identify the actual mechanisms and shared principles, across systems and across scales, for the utilization of noise as part of the genetically encoded programs that ensure the robustness of neural circuit development and function.

## Symposium 27

Friday, March 24, 2023  
08:30 - 10:30, Lecture Hall 9

Chairs: Carsten Duch, Robin Hiesinger,  
Susanne Schreiber and Marion Silies,  
Berlin and Mainz

08:30 **Opening Remarks**

08:35 Bassem Hassan, Paris, France  
ROBUSTNESS FROM NOISE: TEMPORAL REGU-  
LATION OF NEURAL CIRCUIT DEVELOPMENT  
(S27-1)

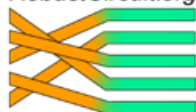
09:00 Carlotta Martelli, Mainz  
INTER-INDIVIDUAL WIRING VARIABILITY AND  
ITS FUNCTION IN THE *DROSOPHILA* OLFAC-  
TORY PATHWAY (S27-2)

09:25 Mathias Wernet, Berlin  
PROCESSING OF NAVIGATIONAL CUES FROM  
THE FLY OPTIC LOBES TOWARDS THE CEN-  
TRAL COMPLEX (S27-3)

09:50 Marion Silies, Mainz  
A VISUAL PATHWAY WITH VARIABLE RECEPTIVE  
FIELD PROPERTIES IS A KEY CONSTITUENT OF  
ROBUST MOTION COMPUTATION (S27-4)

10:15 Jonas Elpelt, Frankfurt  
UNIVERSALITY OF MODULAR CORRELATED  
NETWORKS ACROSS THE DEVELOPING NEO-  
CORTEX (S27-5)

**RobustCircuit.org**



Research Unit FOR5289

**Introductory Remarks to Symposium 28****Translational science in pediatric neurology – what we can learn!**

*Florian Heinen, Munich*

In pediatric neurology there is a growing knowledge about molecular mechanisms and pathophysiology in known diseases leading to new therapeutic options. Additionally, in the last years new phenotypes or diseases could be identified coming from clinical characterization and identification of new genes. Using this knowledge more individually addressed therapies are and will be developed so that in patients with neuropediatric, even lethal disorders life expectancy and quality of life dramatically improved and will be improved. Following aspects will be addressed in this symposium:

Katharina Vill, (AG Vill, LMU, Munich) will describe the journey for the autosomal recessive spinal muscular atrophy from new molecular findings to gene therapy leading to a change in treatment and an implementation in the newborn screening program, which causes a completely new situation for these patients and families: "Molecular neuroscience in neuropaediatrics - from Screening to intervention". Julia Wallmeier (AG Omras, Uniklinik, Münster) will present new genetic aspects in hydrocephalus, a symptom often caused by other different underlying disorders, but new are the genetic aspects, especially for the diagnostic-work-up and treatment in these patient group: Genetic mechanisms involved in hydrocephalus. Markus Schülke (Charité Berlin) will present a translational project, in which a pharmacological therapy was developed using iPSC-derived neuronal precursor cells of a patient with Leigh syndrome to identify a compound, which was already on the market for another purpose. Repurposing of EMA-approved drugs for rare neurogenetic disorders will greatly accelerate the journey from molecular diagnosis to custom tailored therapies. Niccolò Milani (AG Bader, MDC, Berlin) will present the project (EU Horizon 2020) with the aim to evaluate the contribution of extraembryonic sources of serotonin – via placenta – for embryonic brain development.

## Symposium 28

*Friday, March 24, 2023*  
08:30 -10:30, Lecture Hall 103

Chair: Florian Heinen, Munich

08:30 **Opening Remarks**

08:35 Katharina Vill, Munich  
MOLECULAR NEUROSCIENCE IN NEURO-  
PAEDIATRICS - FROM INTERVENTION TO  
SCREENING (S28-1)

09:00 Julia Wallmeier, Münster  
GENETIC MECHANISMS INVOLVED IN  
HYDROCEPHALUS FORMATION (S28-2)

09:25 Markus Schülke, Berlin  
REPURPOSING FDA APPROVED DRUGS FOR  
MATERNALLY INHERITED LEIGH SYNDROME  
USING HUMAN IPSC DERIVED DISEASE MO-  
DELS (S28-3)

09:50 Niccolò Milani, Berlin  
EXTRAEMBRYONIC SOURCE OF SEROTONIN  
INVOLVED IN NEURODEVELOPMENT (S28-4)

10:05 **Discussion / Concluding Remarks**

## Introductory Remarks to Symposium 29

# Brain dysfunction upon energy failure: new insights into the role of astrocytes

Sara Eitelmann, Duesseldorf

Ischemic stroke is one of the leading causes of death and disability. In this condition, the brain's energy demands vastly surpass its availability, causing cells to suffer a high level of metabolic stress. Ultimately, this can lead to permanent brain damage, and the main mechanisms of the underlying cell death are well described. Nonetheless, the initial implications of energy deprivation on neuronal and glial function and on the interaction between the two cell types are poorly understood.

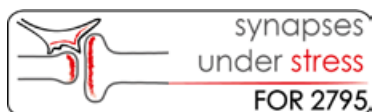
In this symposium, researchers of the DFG-funded Research Unit "Synapses under stress" (FOR2975), supported by an international expert, will provide new insights into these early events upon metabolic stress at murine glutamatergic synapses, with a special focus on astrocytic function. Stefan Passlick will open the symposium by introducing how extracellular dynamics and spread of synaptically released glutamate are altered during acute metabolic stress in the mouse hippocampus. Thereby, he will present results obtained by combining multiphoton imaging of extracellular glutamate with electrophysiology. Tim Ziebarth will proceed by reporting on glutamate events with "plume-like" characteristics in organotypic slices, which appear to drive extracellular glutamate accumulation during chemical ischemia. To complement this, Hil Meijer will present a computational model for ion fluxes at the tripartite synapse. The modelling allows him to relate experimental data of glutamate signals to changes in permeability strengths. His model simulations further suggest some critical factors for energy deprivation to cause pathological cell swelling. Next, Sara Eitelmann will focus on the dynamics of astrocytic gap junctional coupling upon acute energy failure in the mouse neocortex. Using an electrophysiological technique, she uncovered unexpected, rapid changes in astrocytic coupling strength following changes in ion homeostasis. Finally, Ákos Menyhárt will highlight the mechanisms underlying ischemia-induced brain edema formation *in vitro* and *in vivo*. Thereby, he will discuss the correlation between pathophysiological astrocyte swelling and lesion growth upon acute ischemic stroke.

## Symposium 29

Friday, March 24, 2023  
13:00 -15:00, Lecture Hall 105

Chair: Sara Eitelmann, Duesseldorf

- 13:00 **Opening Remarks**
- 13:05 Stefan Passlick, Bonn  
SYNAPTIC AND PERISYNAPTIC GLUTAMATE SIGNALING DURING THE ONSET OF METABOLIC STRESS (S29-1)
- 13:30 Tim Ziebarth, Bochum  
SF-IGLUSNFR IMAGING REVEALS "PLUME-LIKE" GLUTAMATE EVENTS DURING CHEMICAL ISCHEMIA IN MOUSE CORTICAL BRAIN SLICES (S29-2)
- 13:45 Hil Meijer, Enschede, The Netherlands  
BIOPHYSICAL MODELLING OF ION DYNAMICS AT THE ENERGY-DEPRIVED TRIPARTITE SYNAPSE (S29-3)
- 14:10 Sara Eitelmann, Duesseldorf  
RAPID CHANGES OF ASTROCYTIC GAP JUNCTIONAL COUPLING DURING ENERGY DEPRIVATION (S29-4)
- 14:35 Ákos Menyhárt, Szeged, Hungary  
NEUROTOXIC ASTROCYTE SWELLING AND DYSFUNCTION UPON THE ACUTE PHASE OF ISCHEMIC STROKE (S29-5)



## Introductory Remarks to Symposium 30

### Alternatives to living animal models

*Kathrin Wicke and Akshay Kapadia, Hannover and Bonn*

The concept of replacement of animals in research was first discussed in 1957 by Charles Hume and William Russell at the Universities Federation for animal welfares (Balls, M., 1994). A strategy of 3Rs is being applied which stands for reduction, refinement and replacement of laboratory use of animals (Ranganatha, N. and Kuppast, I., 2012). *In vitro* 2D and 3D cell culture models, theoretical computational techniques, as well as artificial tissue engineering techniques (Balls, M., 2002); are proposed to reduce/refine/replace the animal experimentation. In this regard, this symposium aims to touch upon four different aspects of using alternative methods in the field of neuroscience research.

Dr. Berg will present different human neural cell systems generated via transcription factor overexpression from somatic cells or induced pluripotent stem cells, that are suitable for disease modeling. Ms. Catarina Costa will touch upon the subject of using induced pluripotent stem cells and therefrom generated organoids to uncover the mechanisms of agenesis in the corpus callosum and neuronal defects. Dr. Chansoria will present their pilot data which demonstrates striking similarities within the micro-architecture of acellular grafts and fascicular arrangement of axons within the nerves, wherein the hydrogel grafts feature longitudinal microfilaments along fascicles. Their innovative technology represents a significant advance towards reducing the cost and increasing the effectiveness of nerve grafts for peripheral nerve injury repair. Dr. Zierenberg will discuss the use of computer model systems and theoretical understanding of occurrences, development and circumventing pathological bursts in neuronal cultures. They aim to direct succeeding phases to evade such pathological behaviour in neuronal cultures. Dr. Yiu will talk about their model that offers a mechanistic explanation of theta sequences which combines extrinsic and intrinsic origins, providing insights into the role of internal hippocampal connectivity in spatial representation.

Combination and integration of these approaches offer multiple avenues to tackle a neuroscientific research question in a holistic manner.



## Symposium 30

Friday, March 24, 2023  
13:00 - 15:00, Lecture Hall 9

Chairs: Kathrin Wicke and Akshay Kapadia,  
Hannover and Bonn

- 13:00    **Opening Remarks**
- 13:05    Lea Berg, Bonn  
FROM ANIMAL STUDIES TO *IN VITRO* MODELS: PROSPECTS OF DIRECTLY CONVERTED AND FORWARD PROGRAMMED HUMAN NEURAL CELL TYPES (S30-1)
- 13:20    Catarina Martins Costa, Vienna, Austria  
ARID1B MUTATIONS IMPAIR THE MATURATION OF PROJECTION NEURONS AND BRAIN WIRING (S30-2)
- 13:35    Parth Chansoria, Zurich, Switzerland  
FILAMENTED LIGHT (FLIGHT) PROJECTION FOR THE RAPID FABRICATION OF NERVE GRAFTS (S30-3)
- 13:50    **Break**
- 14:00    Johannes Zierenberg, Goettingen  
USING COMPUTER MODELS TO UNDERSTAND PATHOLOGICAL BURSTS IN NEURONAL CULTURES (S30-4)
- 14:15    Yuk Hoi Yiu, Freiburg  
A NETWORK MODEL FOR TWO-DIMENSIONAL HIPPOCAMPAL THETA SEQUENCES OF EXTRINSIC AND INTRINSIC NATURES (S30-5)
- 14:30    **Panel Discussion**
- 14:55    **Concluding Remarks**

## Introductory Remarks to Symposium 31

### Magnetoreception – the sixth sense

*Rabea Bartölke, Jingjing Xu and Henrik Mouritsen, Oldenburg*

Migratory birds sense the Earth's magnetic field for navigating precisely over thousands of kilometers each year. In contrast to other sensory systems, we are still at the beginning of understanding how the magnetic sense works. However, thanks in part to a strongly multidisciplinary approach ranging from biophysics and biochemistry to neuroscience, genetics and behavior pushed forward by SFB 1372, a lot of new scientific evidence related to this long-standing problem has been published in recent years. The leading hypothesis suggests that a spin-correlated radical pair in a protein called cryptochrome located in the retina is sensitive to Earth-strength magnetic fields. This sensory mechanism would be the first to rely on coherent quantum phenomena that indirectly allow magnetic interactions a million times smaller than the thermal energy barrier to affect a biological sensory system.

This symposium will present an overview of our current understanding of the magnetic sense from world-leading, established scientists and young researchers alike, all working at the forefront of their fields ranging from genetics, biophysics, biochemistry, neurobiology to behaviour. Peter Hore will explain the quantum physical effects on which the birds' magnetic compass sense seems to be based and how to measure these effects. We will then discuss the first protein from a night-migratory songbird that can create such a magnetically sensitive radical pair: cryptochrome 4 (Jingjing Xu) and recent findings of how this signal could then be further transduced within the cell (Rabea Bartölke). Corinna Langebrake will illustrate the potential involvement of cryptochromes in magnetoreception from a phylogenetic viewpoint. We will then zoom out to look at the retinal circuitry of birds (Karin Dedek) as well as the neuronal circuitry in the bird brain (Henrik Mouritsen) to understand how magnetic information is processed. Finally, we will present how quantum chemistry can predict the disruption of the magnetic compass by broadband electromagnetic noise in behavioural experiments (Bo Leberecht) and whether electrosmog affects free-flying migratory birds in the wild (Thiemo Karwinkel).

## Symposium 31

Friday, March 24, 2023  
13:00 - 15:00, Lecture Hall 8

Chairs: Rabea Bartölke, Jingjing Xu and  
Henrik Mouritsen, Oldenburg

- 13:00    **Opening Remarks**
- 13:05    Peter Hore, Jingjing Xu and Rabea Bartölke,  
Oxford, UK and Oldenburg  
CRYPTOCHROMES AS PRIMARY MAGNETIC  
SENSORS IN MIGRATORY BIRDS (S31-1)
- 13:55    Corinna Langebrake, Wilhelmshaven  
LOSS OF A POTENTIAL MAGNETORECEPTOR  
IN NIGHT MIGRATORY PASSERINES – A PHYLO-  
GENETIC ANALYSIS OF CRYPTOCHROMES IN  
BIRDS (S31-2)
- 14:05    Henrik Mouritsen and Karin Dedek, Oldenburg  
THE NEUROBIOLOGY OF LIGHT-DEPENDENT  
MAGNETORECEPTION IN MIGRATORY BIRDS  
(S31-3)
- 14:30    Bo Leberrecht and Thiemo Karwinkel, Oldenburg  
and Helgoland  
RADIOFREQUENCY EFFECTS ON MAGNETIC  
ORIENTATION BEHAVIOR IN BIRDS (S31-4)
- 14:55    **Concluding Remarks**



**SFB 1372**

Magnetoreception and Navigation  
in Vertebrates



## Introductory Remarks to Symposium 32

# Presynaptic calcium channels: key players in synaptic transmission and plasticity

*Tina Pangrsic Vilfan and Tobias Moser, Goettingen*

Voltage-gated calcium channels play a critical role in neuronal excitability, synaptic transmission, and excitation-contraction coupling. To support proper calcium signalling in different tissues, their biophysical properties are tailored to the cell-specific requirements via alternative splicing, RNA editing, as well as interaction with distinct auxiliary subunits and further channel modulators that exert their functions on one or the other calcium channel subtype. Channel interaction partners further determine the channel arrangement within the target membranes. At synapses, channels typically cluster in the presynaptic active zones where synaptic vesicles are released. The probability of vesicle release that is triggered by calcium entry through these channels is heterogeneous among synapses of different cells and even within the same cell. Furthermore, at least at some synapses, it may change dynamically over time and as a function of synapse' past activity. The research of the past years has revealed that the positioning of a channel in relation to other channels and synaptic vesicles is instructed via scaffolding proteins and further interaction proteins, including the proteins that directly link the channels to synaptic vesicles or presynaptic organelles. It however remains to be clarified how exactly these various factors regulate channel biophysical properties, abundance, topography, and mobility in distinct synapses to control and adjust the strength of synaptic function and tune it to the specific requirements of the particular synapse.

The symposium will address recent advances in our understanding of the underlying mechanisms revealed by various approaches including single active zone and synaptic bouton calcium imaging, and single channel imaging. The speakers will address the structural determinants of calcium channels and their interaction partners that critically influence their function, for example in sensory encoding. They will further discuss topographical arrangements of channels in different types of synapses, present scaffolding proteins that are involved in regulation of channel mobility and abundance upon homeostatic synaptic potentiation, and shed light on our current understanding of the possibly common mechanisms underlying the functional heterogeneity across synapses in different systems.

## Symposium 32

Friday, March 24, 2023  
13:00 - 15:00, Lecture Hall 10

Chairs: Tina Pangrsic Vilfan and Tobias Moser,  
Goettingen

- 13:00    **Opening Remarks**
- 13:05    Tina Pangrsic Vilfan, Goettingen  
MODULATION OF CAV1.3 CHANNELS BY  
CALCIUM BINDING PROTEINS (S32-1)
- 13:30    Stephan Sigrist, Berlin  
AN ACTIVE ZONE STATE SWITCH CONCEN-  
TRATES AND IMMOBILIZES VOLTAGE-GATED  
CA<sup>2+</sup> CHANNELS TO BOOST VESICLE RELEASE  
(S32-2)
- 13:55    David A. DiGregorio, Paris, France  
FUNCTIONAL SYNAPTIC DIVERSITY: FROM  
MOLECULES TO COMPUTATIONS (S32-3)
- 14:20    Tobias Moser, Goettingen  
CAV1.3 CA<sup>2+</sup> CHANNELS: KEY PLAYERS IN  
WIDE DYNAMIC RANGE SOUND ENCODING  
(S32-4)
- 14:45    Nare Karagulyan, Goettingen  
UNDERSTANDING SYNAPTIC MECHANISMS  
OF SOUND INTENSITY CODING IN MICE  
WITH ALTERED CAV1.3 GATING (S32-5)

## Introductory Remarks to Symposium 33

# Bridging brain function and microglia signaling

*Anne Günther and Jastyn Anne Pöppelau, Hamburg*

The complex mechanisms underlying neuronal processing were long thought to rely solely on neurons as the central units of brain function. Consequently, glial cells were thought to mainly serve as metabolic and structural support of neuronal processes. However, in more recent years, far more diverse roles have been attributed to glial cells, identifying them as crucial modulators of neuronal communication within local circuits as well as across brain regions.

Microglia, the resident macrophages of the central nervous system, exemplify this functional diversity. They are able to actively monitor their environment and, based on their high sensitivity to signaling molecules, they can rapidly respond to changes in a temporally and spatially restricted manner. Due to their crucial role in fine-tuning synaptic connections, microglia are essential for neuronal circuits, especially during development. Immature microglia populate the brain already at early perinatal stages, where they are primed by their surroundings in a lasting and subpopulation-specific manner. Throughout development and even into late adulthood, microglia maintain their role as surveyors of neuronal health and connectivity.

However, on the downside, insults during development can result in permanently altered priming of microglia, which in turn might promote excessive pruning, apparent in neurodevelopmental disorders or in neurodegenerative diseases. Thus, a detailed understanding of microglia is key for a comprehensive picture of normal as well as pathological brain function.

This symposium will present recent insights into the manifold phenotypes and roles of microglia, addressing their functions in the context of small signaling molecules, all the way to brain-wide network interactions. Moreover, novel techniques for specific manipulation of microglia in the intact brain will be highlighted.

Overall, this symposium will enrich the current understanding of microglia and their diverse roles in shaping brain function, not only across lifespan and species, but also in health and disease.

## Symposium 33

Friday, March 24, 2023  
13:00 - 15:00, Lecture Hall 101

Chairs: Anne Günther and Jastyn Anne Pöpplau,  
Hamburg

- 13:00    **Opening Remarks**
- 13:05    Thomas Oertner, Hamburg  
PHANTOM INFLAMMATION: A NEW PARADIGM TO INVESTIGATE MICROGLIA-TO-NEURON SIGNALING (S33-1)
- 13:30    Dimitrios Kleidonas, Freiburg  
MICROGLIA ACTIVATION DETERMINES THE EFFECT OF TNF $\alpha$  ON SYNAPTIC PLASTICITY (S33-2)
- 13:45    Marco Prinz, Freiburg  
THE MYELOID SIDE OF THE BRAIN (S33-3)
- 14:10    Marcus Semtner, Berlin  
MICROGLIA SENSE NEURONAL ACTIVITY VIA GABA IN THE EARLY POSTNATAL HIPPOCAMPUS (S33-4)
- 14:35    Mikael Simons, Munich  
ROLE OF MICROGLIA IN WHITE MATTER AGING (S33-5)

## Introductory Remarks to Symposium 34

# Novel insights into hypothalamic mechanisms for adaptive control of homeostasis

*Jan Siemens and Henning Fenselau, Heidelberg and Cologne*

Mammalian organisms possess the remarkable ability to maintain a stable energy- and temperature-homeostatic landscape. This highly integrative neuro-regulatory feature is all the more impressive given that energy demand and supply as well as environmental temperatures and internal heat generating processes are constantly changing. The hypothalamus is the core region for homeostatic regulation. It senses caloric and thermal disturbances, integrates peripheral sensory and interoceptive information, and orchestrates in turn motivated behaviors and diverse physiological processes to maintain or re-establish homeostasis. Over the past years, research employing new neurobiological tools for cell type-specific manipulations, mapping, and monitoring has significantly advanced our understanding of the circuit and cellular mechanisms underlying hypothalamic control systems. Moreover, recent research has demonstrated that plastic changes—spanning glia, neuronal and synaptic levels—within these pathways are linked to both beneficial and pathological alterations in processing of energy- and temperature signals.

The symposium brings together experts, who have contributed to our current understanding of pathways mediating energy balance and body temperature. (1) Cristina Garcia Caceres will present her recent findings on hypothalamic astrocytes in food intake regulation. (2) Denis Burdakov will describe newly identified orexinergic pathways required for dietary homeostasis. (3) Mingran Cao will present her work on neuronal pathways that state-dependently connect hunger and parental behavior. (4) Silvana Valtcheva will show how rapid integration of hypothalamic oxytocin pathways coordinate behaviors and physiology. Finally, (5) Kazuhiro Nakamura, a renowned scientist from Japan, who has contributed on many levels to our understanding of body temperature regulation, will join our symposium. This symposium will stimulate a vivid exchange of ideas and future directions on the hypothalamic origins of homeostatic adaptations.



## Symposium 34

Friday, March 24, 2023  
13:00 - 15:00, Lecture Hall 102

Chairs: Jan Siemens and Henning Fenselau,  
Heidelberg and Cologne

- 13:00 **Opening Remarks**
- 13:05 Cristina Garcia Caceres, Neuherberg  
HYPOTHALAMIC ASTROCYTES IN THE NEUROENDOCRINE CONTROL OF METABOLISM (S34-1)
- 13:30 Paulius Viskaitis, Schwerzenbach, Switzerland  
SENSING AND CONTROL OF INGESTION BY OREXIN NEURONS (S34-2)
- 13:55 Mingran Cao, London, UK  
NEURAL CIRCUIT BASIS UNDERLYING A HUNGER-GATED, HORMONE-PRIMED PARENTAL SWITCH (S34-3)
- 14:10 Silvana Valtcheva, Cologne  
HYPOTHALAMIC CIRCUITS FOR OXYTOCIN RELEASE AND MATERNAL BEHAVIOR (S34-4)
- 14:35 Kazuhiro Nakamura, Nagoya, Japan  
A CENTRAL PIVOTAL CONTROLLER FOR THERMAL HOMEOSTASIS AND FEVER (S34-5)

The symposium is supported by the ERC grants Acclimatize (to JS) and GuMeCo (to HF).



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## Introductory Remarks to Symposium 35

**Insights into the neural basis of cognition from human intracranial electrophysiology***Caspar Schwiedrzik, Goettingen*

The human brain produces complex cognitive operations and behaviors, some of which are arguably uniquely human. The primary means to investigate their neural basis have been noninvasive techniques. However, the limited spatiotemporal resolution of noninvasive imaging hampers progress in understanding health and disease.

Human intracranial electrophysiology has emerged as a key technology in overcoming these difficulties. In particular, the high spatiotemporal resolution of intracranial EEG (iEEG) in epilepsy patients undergoing presurgical evaluation enables studying (sub)cortical dynamics underlying human cognition. With specialized research electrodes, it has become possible to extend these investigations across spatial scales, to the level of cortical layers and single cells. This allows unraveling the neural basis of complex behavior directly in the human brain in unprecedented detail.

This symposium aims to elucidate neural mechanisms underlying human cognitive processes using intracranial recordings. We will address different facets of cognition, taking complimentary perspectives from different recording and analysis techniques; as well as providing insight into ethical aspects and technical challenges when working with patients. H. Zhang will demonstrate how the reinstatement and transformation of stimulus-specific memories can be studied using multivariate analyses to identify meso- and macroscale networks. L. Melloni will show how continuous input is segmented into episodic memories using tasks involving sequences and visual narratives using electrocortigraphy. R. Helfrich will talk about how population dynamics of human prefrontal cortex integrate contextual cues and prior evidence to guide human goal-directed behavior. C. Schwiedrzik will present recordings with laminar resolution investigating neural computations underlying predictive processing in perception. M. Bausch will address the question how content and context are combined to process relevant memories using single neuron recordings in the medial temporal lobe. Together, these talks will provide an exciting overview of the burgeoning field of human intracranial electrophysiology.

## Symposium 35

Friday, March 24, 2023  
13:00 - 15:00, Lecture Hall 103

Chair: Caspar Schwiedrzik, Goettingen

- 13:00    **Opening Remarks**
- 13:05    Hui Zhang, Bochum  
TRACKING MEMORY REPRESENTATIONS WITH IEEG (S35-1)
- 13:30    Lucia Melloni, Frankfurt/Main  
FROM CONTINUOUS STREAMS TO SEGMENTED UNITS: UNDERSTANDING HOW EVENTS STRUCTURE COGNITION & MEMORY (S35-2)
- 13:55    Randolph Helfrich, Tuebingen  
POPULATION CODING AND OSCILLATORY SUBSPACE SYNCHRONIZATION INTEGRATE CONTEXT INTO ACTIONS (S35-3)
- 14:20    Caspar M. Schwiedrzik, Goettingen  
DISSOCIABLE MECHANISMS FOR "WHAT" AND "WHEN" PREDICTIONS IN THE HUMAN BRAIN (S35-4)
- 14:45    Marcel Bausch, Bonn  
DISTINCT POPULATIONS IN HUMAN MTL COMBINE ITEMS AND CONTEXTS ACROSS TEMPORAL GAPS (S35-5)
- 14:55    **Concluding Remarks**



## Introductory Remarks to Symposium 36

# Transformations of visual representation from the retina to the cortex

*Norma Kühn and Helene Schreyer, Leuven (Belgium) and Basel (Switzerland)*

Vision is one of the most studied senses. Yet, we are still working to solve the intricate transformations that lead from the light-triggered signals in our photoreceptors to a neural representation of complex scenes in the cortex. In early visual processing, retina, primary visual thalamus and cortex were often studied in isolation, with very different concepts of cell types and visual representation. Anecdotal evidence about their connectedness led to misconceptions of their respective roles. However, recent technological advances allow the simultaneous recording of large populations of neurons and their inputs in the respective areas. Together with sequencing techniques these provide a more complete picture of how information is transformed along this major visual pathway. To embed these results into a coherent framework, dialogue between experts from these areas is essential.

In this symposium, we aim to explore the distinct perspectives and their intersection on cell types, circuits, and visual feature representation to build a coherent model of visual processing in the brain. Questions we aim to address: How are the features extracted by the retina used in the visual thalamus and cortex? How do the representations of visual information change? What are the underlying mechanisms? How are cell types and visual features defined in the respective areas? And what is the significance of a single neuron firing compared to a population when representing visual information?

We will start in the retina, looking at the retinal ganglion cell types and their distinctive projection patterns (G. Schwartz). From there, we turn to efficient coding theories as a tool to understand encoding and transfer of visual information (W. Młynarski). Next, we learn how visual inputs from the retina and colliculus are coordinated in the primary visual thalamus (L. Liang). We will end with exploring the feedforward mechanisms of the emergence of pattern selectivity in the visual cortex (L. Glickfeld) and the role of visual experience in the development of cortical orientation selectivity (S. Trägenap).

With these unique perspectives from the retina, primary visual thalamus, cortex and theory, we hope to stimulate new experimental ideas and analysis for hypothesis testing along this major visual pathway.

## Symposium 36

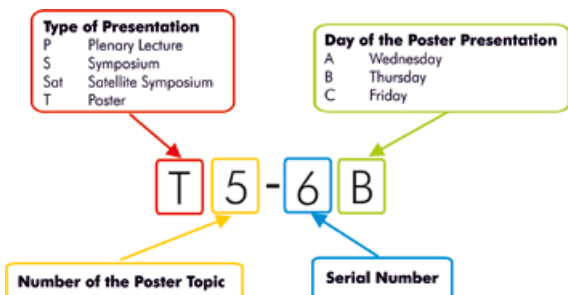
*Friday, March 24, 2023*

*13:00 - 15:00, Lecture Hall 104*

Chairs: Norma Kühn and Helene Schreyer,  
Leuven (Belgium) and Basel (Switzerland)

- 13:00 Gregory Schwartz, Chicago, USA  
RETINAL GANGLION CELL TYPOLOGY AND  
PROJECTION PATTERNS IN THE BRAIN (S36-1)
- 13:25 Wiktor Młynarski, Klosterneuburg, Austria  
NUANCES AND REFINEMENTS OF EFFICIENT  
CODING THEORIES (S36-2)
- 13:50 Liang Liang, New Haven, USA  
CONVERGENCE OF DISTINCT VISUAL  
STREAMS IN THE MOUSE PRIMARY VISUAL  
THALAMUS (S36-3)
- 14:15 Lindsey Glickfeld, Durham, USA  
FEEDFORWARD MECHANISMS OF CROSS-  
ORIENTATION INTERACTIONS (S36-4)
- 14:40 Sigrid Trägenap, Frankfurt/Main  
EXPERIENCE DRIVES THE DEVELOPMENT OF  
NOVEL, RELIABLE CORTICAL SENSORY REPRE-  
SENTATIONS FROM ENDOGENOUSLY STRUC-  
TURED NETWORKS (S36-5)
- 14:50 **Concluding Remarks**

## Explanation of Abstract Numbers



There is one poster session on each day, i.e. on Wednesday, Thursday and Friday. The posters will hang all day long. Posters with poster numbers ending with an A are displayed on Wednesday, posters with a poster number ending with a B are displayed on Thursday and posters with a poster number ending with a C are displayed on Friday.

Each poster session (90 min) is divided into two parts (each 45 min): odd and even serial numbers. In the first part of the session posters with odd serial numbers will be discussed.

In the second 45 min of the session posters with even serial numbers will be discussed. During this time slots it is mandatory that the author is present at the poster.

Poster session A Wednesday, March 22: 13.00 – 14.30 h  
 Poster session B Thursday, March 23: 09.30 – 11.00 h  
 Poster session C Friday, March 24: 10.30 – 12.00 h

### Example

#### T21-2B

- T** = poster to a poster topic
- 21** = the poster topic is No. 21, i.e. "Motor Systems"
- 2** = serial number (even number, i.e. 45 min of the second part of the session)
- B** = indicates the day, i.e. Thursday

This means:

Poster T21-2B is a poster belonging to the topic "Motor Systems" and is presented on:

Thursday, March 23, 2023  
 10:15 -11:00 h in the poster area for Topic 21.

## Poster Topics

Poster Topic	Wednesday	Thursday	Friday
T1: Stem cells, neurogenesis and gliogenesis	T1-1A – T1-7A	T1-1B – T1-6B	T1-1C – T1-6C
T2: Axon and dendrite development, synaptogenesis	T2-1A – T2-6A	T2-1B – T2-5B	T2-1C – T2-5C
T3: Developmental cell death, regeneration and transplantation	T3-1A – T3-2A	T3-1B – T3-2B	T3-1C – T3-1C
T4: Neurotransmitters, retrograde messengers and cytokines	T4-1A – T4-2A	T4-1B – T4-2B	T4-1C – T4-3C
T5: G Protein-linked and other receptors	T5-1A – T5-2A	T5-1B – T5-2B	T5-1C – T5-2C
T6: Ligand-gated, voltage-dependent ion channels and transporters	T6-1A – T6-5A	T6-1B – T6-4B	T6-1C – T6-5C

Poster Topic	Wednesday	Thursday	Friday
T7: Synaptic transmission, pre- and postsynaptic organization	T7-1A – T7-16A	T7-1B – T7-16B	T7-1C – T7-17C
T8: Synaptic plasticity, LTP, LTD	T8-1A – T8-8A	T8-1B – T8-7B	T8-1C – T8-7C
T9: Glia, glia-neuron interactions	T9-1A – T9-8A	T9-1B – T9-8B	T9-1C – T9-8C
T10: Aging and developmental disorders	T10-1A – T10-5A	T10-1B – T10-6B	T10-1C – T10-5C
T11: Alzheimer's, Parkinson's and other neuro-degenerative diseases	T11-1A – T11-11A	T11-1B – T11-12B	T11-1C – T11-11C
T12: Neuroimmunology, inflammation and neuro-protection	T12-1A – T12-10A	T12-1B – T12-9B	T12-1C – T12-9C
T13: Cognitive, emotional, behavioral state disorders and addiction	T13-1A – T13-7A	T13-1B – T13-6B	T13-1C – T13-6C



Poster Topic	Wednesday	Thursday	Friday
T14: Vision: invertebrates	T14-1A – T14-5A	T14-1B – T14-5B	T14-1C – T14-5C
T15: Vision: retina and subcortical pathways	T15-1A – T15-5A	T15-1B – T15-6B	T15-1C – T15-6C
T16: Vision: striate and extrastriate cortex, eye movement and visuomotor processing	T16-1A – T16-4A	T16-1B – T16-3B	T16-1C – T16-3C
T17: Auditory mechanoreceptors, vestibular, cochlea, lateral line and active sensing	T17-1A – T17-6A	T17-1B – T17-6B	T17-1C – T17-6C
T18: Auditory system: subcortical and cortical processing	T18-1A – T18-9A	T18-1B – T18-8B	T18-1C – T18-8C
T19: Chemical senses: olfaction, taste, others	T19-1A – T19-11A	T19-1B – T19-11B	T19-1C – T19-11C
T20: Somatosensation: touch, temperature, proprioception, nociception	T20-1A – T20-4A	T20-1B – T20-5B	T20-1C – T20-4C

Poster Topic	Wednesday	Thursday	Friday
T21: Motor systems	T21-1A – T21-9A	T21-1B – T21-8B	T21-1C – T21-9C
T22: Homeostatic and neuroendocrine systems, stress response	T22-1A – T22-7A	T22-1B – T22-8B	T22-1C – T22-10C
T23: Neural networks and rhythm generators	T23-1A – T23-10A	T23-1B – T23-10B	T23-1C – T23-10C
T24: Attention, motivation, emotion and cognition	T24-1A – T24-7A	T24-1B – T24-7B	T24-1C – T24-6C
T25: Learning and memory	T25-1A – T25-19A	T25-1B – T25-19B	T25-1C – T25-18C
T26: Computational neuroscience	T26-1A – T26-7A	T26-1B – T26-7B	T26-1C – T26-7C
T27: Techniques and demonstrations	T27-1A – T27-8A	T27-1B – T27-8B	T27-1C – T27-9C

## T1: Stem cells, neurogenesis and gliogenesis-

### Wednesday

- T1-1A** ANALYSIS OF THE ROLE OF THE HUMAN-SPECIFIC GENE *ZNF492* DURING NEOCORTEX DEVELOPMENT AND EVOLUTION BY GENETIC MODIFICATION OF HUMAN AND CHIMPANZEE CEREBRAL ORGANOIDs  
*Lidiia Tynianskaia, Neringa Liutikaite, Wieland B. Huttner, Michael Heide, Goettingen*
- T1-2A** ASSESSING THE FUNCTIONAL ROLE OF NICHE ASTROCYTES IN REGULATION OF ADULT HIPPOCAMPAL NEUROGENESIS  
*Evangelia Masouti, Felix Beyer, Ruth Beckervordersandforth, Erlangen*
- T1-3A** CHROMATIN REMODELING BAF COMPLEX DEPENDENT MECHANISMS IN DEVELOPMENT OF CORTICAL INTERNEURONS  
*Xiaoyi Mao, Pauline Antonie Ulmke, Jochen F. Staiger, Tran Tuoc, Goettingen*
- T1-4A** DEVELOPMENT OF MYELIN IN FETAL AND POSTNATAL NEOCORTEX OF THE EUROPEAN WILD BOAR, *SUS SCROFA*  
*Eric Sobierajski, German Lauer, Katrin Czubay, Hannah Grabietz, Christa Beemelmans, Christoph Beemelmans, Gundela Meyer, Petra Wahle, Bochum*
- T1-5A** *DOT1L* CONFERS CELL-AUTONOMOUS EFFECTS ON DEVELOPING CORTICAL INTERNEURONS.  
*Marta Garcia Miralles, Arquimedes Cheffer, Ipek Akol, Tanja Vogel, Freiburg*
- T1-6A** *DOT1L* DELETION IN CORTICAL GLUTAMATERGIC PROGENITORS IMPACTS THE PROPER DEVELOPMENT OF MOUSE GABAERGIC INTERNEURONS  
*Arquimedes Cheffer, Marta Garcia-Miralles, Camila Fullio, Tanja Vogel, Freiburg im Breisgau*
- T1-7A** USING STEM CELLS TO MODEL HUMAN CORTICOGENESIS IN VIVO  
*Omer Revah, Felicity Gore, Kevin W. Kelley, Jimena Andersen, Noriaki Sakai, Xiaoyu Chen, Min-Yin Li, Fikri Birey, Xiao Yang, Nay L. Saw, Samuel W. Baker, Neal D. Amin, Shrivanti Kulkarni, Rachana Mudipalli, Bianxiao Cui, Seiji Nishino, Gerald A. Grant, Juliet K. Knowles, Mehrdad Shamloo, John R. Huguenard, Karl Deisseroth, Sergiu P. Pascal, Rehovot, Israel*

### Thursday

- T1-1B** IDENTIFICATION OF CANCER-ASSOCIATED FIBROBLAST-LIKE CELLS IN A RAT MODEL OF GLIOBLASTOMA  
*Thibault Lootens, Christophe Mangodt, Bart Roman, Christian Stevens, Robrecht Raedt, Ghent, Belgium*

- T1-2B** INDIVIDUAL AND COMBINED FUNCTIONS OF THE HUMAN-SPECIFIC GENES *NBPF14* AND *NOTCH2NLB* DURING NEOCORTICAL DEVELOPMENT  
*Nesil Esiyok, Christiane Haffner, Wieland B. Huttner, Michael Heide, Goettingen*
- T1-3B** INNER-NUCLEAR RELOCATION OF GENE LOCI LINKED TO DEVELOPMENTAL NEURAL STEM CELL COMPETENCE OF *DROSOPHILA* IS DEPENDENT ON NUCLEAR  $\beta$ -ACTIN ACTIVITY  
*Joachim Urban, Prasad Chikte, Mainz*
- T1-4B** INVESTIGATING THE EFFECTS OF CNVS IN THE ADHD RISK GENE *PARK2* ON TRANSCRIPT AND PROTEIN EXPRESSION IN IPSC-DERIVED NEURAL CELLS  
*Carolin Kurth, Rhiannon McNeill, Zora Schickardt, Sarah Kittel-Schneider, Wuerzburg*
- T1-5B** LABEL-FREE FUNCTIONAL CHARACTERIZATION OF HUMAN BRAIN ORGANIDS AT SINGLE-CELL RESOLUTION  
*Wei Gong, Zurich, Switzerland*
- T1-6B** MODELLING TUBULINOPATHIES WITH HUMAN STEM CELLS  
*Thomas David Cushion, Romina Romaniello, David Anthony Keays, Cambridge, UK*

**Friday**

- T1-1C** MOLECULAR DETERMINANTS OF NEOCORTICAL DEVELOPMENT  
*Elisa Pedersen, Ekaterina Epifanova, Paul Moritz Willecke, Marta Rosário, Berlin*
- T1-2C** NOVEL SHH MODULATORS AND CANDIDATE MODIFIER GENES FOR CONGENITAL BRAIN DISORDERS – FUNCTIONAL STUDIES IN MOUSE AND HUMAN NEURONAL PRECURSORS  
*Gökce Nihan Yildirim, Tamrat Meshka Mamo, Izabela Kowalczyk, Annette Hammes, Berlin*
- T1-3C** ROLE OF DNA TOPOISOMERASE IIB IN THE DIFFERENTIATION OF NEURAL STEM CELLS  
*Nina Trautwein, Melanie Grotz, Bodo Laube, Darmstadt*
- T1-4C** SUGGESTION OF GENERAL MECHANISMS AND RELATIONSHIPS BETWEEN BRAIN, PANCREAS AND MYOCARDIUM BY APPLICATION OF DIFFERENT METHODS FOR ASSAY IN EXPERIMENTAL MODELS  
*Iskra Sainova, Sofia, Bulgaria*
- T1-5C** STUDYING THE PROPERTIES OF HUMAN NEURAL CELLS AND NETWORKS USING CULTURED BRAIN ORGANOID SLICES (CBOS)  
*Laura Petersilie, Stephanie Le, Karl W. Kafitz, Alessandro Prigione, Christine R. Rose, Duesseldorf*
- T1-6C** THE ROLE OF *SOX9* IN REGULATING THE NEURON/GLIAL SWITCH OF ADULT HIPPOCAMPAL NEURAL STEM CELLS  
*Felix Beyer, Anne Peter, Michael Wegner, Ruth Beckervordersandforth, Erlangen*

## T2: Axon and dendrite development, synaptogenesis

### Wednesday

- T2-1A** CYTOSKELETON BASED LOCAL TRANSPORT VIA MYOSINS DURING SYNAPSE FORMATION  
*Sophie Marie Walter, Astrid Petzoldt, Berlin*
- T2-2A** DEVELOPMENT OF DISTINCT DESCENDING CORTICAL PATHWAYS  
*Philipp Abe, Adrien Lavalley, Ilaria Morassut, Esther Klingler, Antonio Santinha, Randall Platt, Denis Jabaudon, Dresden*
- T2-3A** DEVELOPMENT OF GABAERGIC SYNAPSES IN THE SENSORY CORTEX OF EARLY POSTNATAL MICE  
*Ahd Abusaada, Prof. Dr. Werner Kilb, Prof. Dr. Heiko Luhmann, Mainz*
- T2-4A** DEVELOPMENTAL COMPETITION ENSURES CORRECT SYNAPSE NUMBERS FOR MOTOR CIRCUIT ASSEMBLY AND FUNCTION  
*Lion Huthmacher, Selina Hilgert, Silvan Hürkey, Stefanie Ryglewski, Carsten Duch, Mainz*
- T2-5A** EMERGENCE OF CORTEX-WIDE CALCIUM DYNAMICS DURING POSTNATAL MOUSE DEVELOPMENT  
*Davide Warm, Mainz*
- T2-6A** FLIES IN A CENTRIFUGE: REWIRING THE BRAIN WITH HYPER-GRAVITY  
*Felix Graf, P. Robin Hiesinger, Berlin*

### Thursday

- T2-1B** INFLUENCE OF DEVELOPMENTAL TEMPERATURE ON THE WIRING AND VARIABILITY OF THE *DROSOPHILA* OLFACTORY PATHWAY  
*Pascal Züfle, Leticia Batista, Carlotta Martelli, Mainz*
- T2-2B** PHARMACOLOGICAL MODULATION OF THE GLUN2C/2D NMDA RECEPTOR SUBUNIT DOES NOT INFLUENCE INTERNEURON AND PYRAMIDAL CELL MATURATION IN VISUAL CORTEX OTC 'S  
*Lisa Marie Rennau, Leon Hoffmann, Ina Köhler, Petra Wahle, Bochum*
- T2-3B** ROBUSTNESS OF EARLY PATTERN FORMATION IN THE *DROSOPHILA* VISUAL MAP  
*Berna Melinda Nabavi, Charlotte B. Wit, Egemen Agi, P. Robin Hiesinger, Berlin*
- T2-4B** SYSTEMATIC FUNCTIONAL ANALYSIS OF RAB GTPASES IN NEURONAL DEVELOPMENT AND MAINTENANCE  
*Ilisa-Maria Daumann, Friederike E. Kohrs, Hanna Stiedenroth, P. Robin Hiesinger, Berlin*
- T2-5B** THE CELL SURFACE PROTEIN ROUGHEST MEDIATES NEURITE BRANCH COMPETITION DURING BRAIN WIRING  
*Abhishek Jayant Kulkarni, Thanh Thanh Tu Tran, Berlin*

## Friday

- T2-1C** THE DEVELOPMENT OF MC3R NEURONS, AGRP AND POMC NEURONAL PROJECTIONS AND THE MAINTENANCE OF INTRA-HYPOTHALAMIC NEURONAL CIRCUITS.  
*Selma Yagoub, Potsdam*
- T2-2C** THE ROLE OF MAST2 IN NEURODEVELOPMENT AND DISEASE  
*Alexandra Catalina Vilceanu, Maria Sergaki, Fernanda Martinez-Reza, Florian Walter, David Keays, Munich*
- T2-3C** VISUAL MAP FORMATION WITHOUT TARGET-DEPENDENT GUIDANCE IN *DROSOPHILA*  
*Egemen Agi, Eric Reifenstein, Charlotte Wit, Monika Kauer, Teresa Schneider, Max von Kleist, Peter Robin Hiesinger, Berlin*
- T2-4C** CHRONO-ANATOMICAL DESCRIPTION OF DOPAMINERGIC NEURONS DURING METAMORPHOSIS IN *DROSOPHILA MELANOGASTER*  
*Anne Sophie Oepen, Jiajun Zhang, Oren Schuldiner, Kei Ito, Thomas Riemensperger, Cologne*
- T2-5C** CYCLASE-ASSOCIATED PROTEIN 1 (CAP1) INHIBITS MRTF-SRF-DEPENDENT GENE EXPRESSION IN THE MOUSE BRAIN  
*Sharof Khudayberdiev, Anika Heinze, Uwe Linne, Marco B Rust, Marburg*

## T3: Developmental cell death, regeneration and transplantation

### Wednesday

- T3-1A** ACTIVITY-DEPENDENT REGULATION OF THE BAX/BCL-2 PATHWAY PROTECTS CORTICAL NEURONS FROM APOPTOTIC DEATH DURING EARLY DEVELOPMENT  
*Jonas Schroer, Davide Warm, Heiko J. Luhmann, Anne Sinning, Mainz*
- T3-2A** AN ANALYSIS OF TEMPERATURE DEPENDENCE DISCLOSES TWO DISTINCT PROCESSES IN AXON REGENERATION  
*Céline Rehrl, Alexander Hecker, Stefan Schuster, Bayreuth*

### Thursday

- T3-1B** CHROMATIN COMPACTION PRECEDES APOPTOSIS IN DEVELOPING NEURONS  
*Elena Nigi, Renata Rose, Nicolas Peschke, Márton Gelléri, Sandra Ritz, Christoph Cremer, Heiko J. Luhmann, Anne Sinning, Mainz*

- T3-2B** PATTERNED ELECTRICAL ACTIVITY REGULATES NEURONAL APOPTOSIS IN IMMATURE CORTICAL NEURONS AND NETWORKS  
*Anne Sinning, Davide Warm, I. Emeline Wong Fong Sang, Jonas Schoer, Werner Kilb, Heiko J. Luhmann, Mainz*

### Friday

- T3-1C** RESTORATION OF MOTOR FUNCTION THROUGH INTRASPINAL DELIVERY OF HUMAN IL-10-ENCODING NUCLEOSIDE-MODIFIED MRNA AFTER SPINAL CORD INJURY  
*Antal Nógrádi, László Gál, Annamária Marton, Zoltán Fekécs, Drew Weissmann, Dénes Török, Rachana Biju, Csaba Vizler, Paolo Lin, Ying Tam, Norbert Pardi, Krisztián Pajér, Szeged, Hungary*

## T4: Neurotransmitters, retrograde messengers and cytokines

### Wednesday

- T4-1A** AUTOPHAGOSOME TRANSPORT IN NORADRENERGIC AXONS IN-VIVO  
*Ahmed A. Aly, Micheal Kreutz, Matthias Prigge, Anna Karpova, Magdeburg*
- T4-2A** DISSECTING FUNCTIONAL VESICLE POOLS AND SEROTONIN-RELEASE KINETICS FROM MOUSE ENTEROCHROMAFFIN CELLS  
*Ahmed Shaaban, Jaden Quale, Benjamin Cooper, Cordelia Imig, Copenhagen, Denmark*

### Thursday

- T4-1B** HISTAMINE IN THE *DROSOPHILA MELANOGASTER* LARVA - A COMPREHENSIVE OVERVIEW OF ITS ANATOMY  
*Astrid Rohwedder, Andreas S. Thum, Leipzig*
- T4-2B** HUNTING OF POTENTIAL COUPLING FACTORS CONTROLLING CIRCADIAN AND ULTRADIAN RHYTHMS OF FEEDING BY NEUROPEPTIDOMICS AND MASS SPECTROMETRY IMAGING OF NEUROPEPTIDES FROM THE *DROSOPHILA* BRAIN  
*Deepika Bais, Susanne Neupert, Kassel*

### Friday

- T4-1C** NITRIC OXIDE SYNTHASE IN THE CNS AND IMMUNE SYSTEM OF MOSQUITOES  
*Stella Bergmann, Anne Schmitz, Celina Möller, Stefanie Becker, Michael Stern, Hannover*

- T4-2C** ANALYSIS OF PARP INHIBITORS IN NMDAR-MEDIATED RADIO-RESISTANCE IN BREAST CANCER CELLS  
*Jannik Wempe, Raffaella van Heeck, Bodo Laube, Darmstadt*
- T4-3C** SDARKEN – NEXT GENERATION GENETICALLY ENCODED SENSORS FOR SEROTONIN  
*Martin Claus Maria Kubitschke, Monika Müller, Lutz Wallhorn, Mauro Pulin, Manuel Mittag, Stefan Pollok, Tim Ziebarth, Svenja Bremshey, Jill Gerdey, Kristin Carolin Claussen, Kim Renken, Pascal Gneisse, Juliana Groß, Niklas Meyer, Simon Wiegert, Andreas Reiner, Martin Fuhrmann, Olivia Andrea Maseck, Bremen*

## T5: G Protein-linked and other receptors

### Wednesday

- T5-1A** HETERODIMERIZATION AND INTERACTION OF THE SEROTONIN-RECEPTORS 5-HT1A AND 5-HT2C  
*Imandra Laura Kempe, Dr. Michael Koch, Dr. Olivia A. Maseck, Bremen*
- T5-2A** LOVE ON A CELLULAR LEVEL: THE "LOVE-HORMONE" OXYTOCIN ACCELERATES TIGHT JUNCTION FORMATION IN 3D SPHEROIDS  
*Benjamin Jurek, Lucia Denk, Nicole Schäfer, Saied Salehi, Sareh Pandamooz, Silke Haerteis, Munich*

### Thursday

- T5-1B** MODULATION OF EMOTIONAL BEHAVIOR BY HCA2 RECEPTOR DEFICIENCY IN CHRONIC SKIN INFLAMMATION  
*Hagen Lange, Evelyn Gaffal, Magdeburg*
- T5-2B** THE HYALURONAN RECEPTOR CD44 MODULATES SEROTONIN RECEPTOR 7 SIGNALING  
*Saskia Borsdorf, Josephine Labus, Andre Zeug, Evgeni Ponimaskin, Hannover*

### Friday

- T5-1C** THE ROLE OF BRAIN ENDOTHELIAL  $G_{\alpha Q/11}$  SIGNALING IN THE COGNITIVE FUNCTION OF MICE  
*Dimitrios Spyropoulos, Dorothea Ziemens, Anne-Sophie Gutt, Sonja Binder, Markus Schwaninger, Jan Wenzel, Luebeck*
- T5-2C** USING PLURIPOTENT STEM CELLS AS A MODEL TO DETERMINING EXPRESSION, FUNCTION AND PHARMACOLOGY OF GLP-1 RECEPTOR IN HUMAN HYPOTHALAMIC POMC NEURONS  
*Simone Mazzaferro, Hsiao-jou Cortina Chen, Andrian Yang, Iman Mali, Matthew Livesey, Peter Kirwan, Sanya Aggarwal, Venkat Pisupati, Matthew Livesey, Florian Merkle, Cambridge, UK*



## T6: Ligand-gated, voltage-dependent ion channels and transporters

### Wednesday

- T6-1A** CHARACTERIZATION OF A KCNA2 LOSS OF FUNCTION MOUSE MODEL  
*Peter Müller, Nikolas Layer, Ahmed Elthoki, Thomas Ott, Holger Lerche, Thomas Wuttke, Ulrike B. S. Hedrich, Tuebingen*
- T6-2A** CHARACTERIZATION OF THE INTERACTION BETWEEN GEPHYRIN AND THE FULL-LENGTH GLYCINE RECEPTOR  
*Nele Marie Burdina, Theresa Schneider, Elmar Behrmann, Günter Schwarz, Cologne*
- T6-3A** EFFECTS OF INCREASED  $Ca_v1.3$   $Ca^{2+}$  CURRENTS IN INNER HAIR CELLS OF  $Ca_v1.3$ -DCRD<sup>HA/HA</sup> MICE ON PRE- AND POSTSYNAPSES, HEARING, AND THE CONSEQUENCES OF AN ACOUSTIC TRAUMA  
*Philipp Maximilian Fischer, Kerstin Blum, Fahmi Nasri, Simone Kurt, Jutta Engel, Mühlacker*
- T6-4A** PUTATIVE ROLES OF NBCE1-KCC2 INTERACTION ON KCC2 ACTIVITY IN DISTINCT NEURONAL MATURATION STAGES  
*Abhishek Pethe, Anna-Maria Hartmann, Bernd Heimrich, Eleni Roussa, Freiburg*
- T6-5A** INVESTIGATING PUTATIVE PACEMAKER CURRENTS IN THE *DROSOPHILA MELANOGASTER* CENTRAL NERVOUS SYSTEM  
*Anatoli Ender, Davide Raccuglia, David Oswald, Berlin*

### Thursday

- T6-1B** LEPTIN DEFICIENCY LEADS TO FUNCTIONAL DYSREGULATION OF PACEMAKER CURRENTS IN THE SOMATOSENSORY THALAMUS OF THE MOUSE  
*Paula Patricia Perissinotti, Florencia Correa, Francisco Urbano, Buenos Aires, Argentina*
- T6-2B** LOCALIZATION AND FUNCTION OF MUTUALLY EXCLUSIVE EXONS OF THE CAV2 CHANNEL CACOPHONY IN THE *DROSOPHILA* VISUAL SYSTEM  
*Veronica Pampanin, Tobias Rinas, Lukas Kilo, Carsten Duch, Stefanie Ryglewski, Mainz*
- T6-3B** PROBING THE ROLE OF ION CHANNEL DEGENERACY FOR ROBUST NEURONAL EXCITABILITY  
*Selina Hilgert, Lion Huthmacher, Silvan Hürkey, Carsten Duch, Stefanie Ryglewski, Mainz*
- T6-4B** RESURRECTED FROM OBSCURITY: THE FORGOTTEN GOLDMAN-HODGKIN-KATZ (GHK) CURRENT EQUATION: STABLE SPIKE FIRING IN ULTRATHIN AXONS  
*Oron David Kotler, Michael Gutnick, Ilya Fleidervish, Be'er Sheva, Israel*

## Friday

- T6-1C** REELIN-INDUCED MODULATION OF CHOLINERGIC SIGNAL TRANSMISSION AND POSTTRANSCRIPTIONAL PROTEIN MODIFICATION  
*Marie-Luise Kümmel, Eckart Förster, Bochum*
- T6-2C** REGULATION OF THE ELECTROGENIC  $\text{Na}^+/\text{HCO}_3^-$  COTRANSPORTER 1 (NBCE1) AND THE VACUOLAR  $\text{H}^+$ -ATPASE (V-ATPASE) BY HYPOXIA AND ACIDOSIS IN GLIOBLASTOMA  
*Marina Giannaki, Katharina Everaerts, Christine R. Rose, Eleni Roussa, Freiburg*
- T6-3C** SIMULATED ION CHANNEL VARIANTS EXPLAIN CONFLICTING EFFECTS ON FIRING RATES DEPENDING ON NEURON TYPE  
*Lukas Sonnenberg, Jan Benda, Tuebingen*
- T6-4C** TGF- $\beta$ 2 REGULATES EXPRESSION AND THR1007 PHOSPHORYLATION OF THE  $\text{K}^+/\text{Cl}^-$  COTRANSPORTER 2 IN A NEURONAL MATURATION-DEPENDENT MANNER  
*Anastasia Rigkou, Eleni Roussa, Freiburg im Breisgau*
- T6-5C** EXON SPECIFIC PROPERTIES OF VOLTAGE GATED CALCIUM CHANNELS  
*Lukas Kilo, Christopher Bell, Veronica Pampanin, Stefanie Ryglewski, Bonn*

## T7: Synaptic transmission, pre- and postsynaptic organization

### Wednesday

- T7-1A** A NOVEL PLAYER IN SHAPING SYNAPSES, THE COXSACKIEVIRUS AND ADENOVIRUS RECEPTOR  
*Jacobo López Carballo, Rene Jüttner, Michael Göthhardt, Berlin*
- T7-2A** ALTERNATIVE SPLICING OF A VOLTAGE-GATED CALCIUM CHANNEL INCREASES SYNAPTIC FUNCTION IN *DROSOPHILA MELANOGASTER*  
*Christopher Bell, Lukas Kilo, Jashar Arian, Carsten Duch, Stefanie Ryglewski, Mainz*
- T7-3A** ASTROCYTES REGULATE NETWORK ACTIVITY IN THE DEVELOPING SOMATOSENSORY CORTEX OF THE GLUTAMIC ACID DECARBOXYLASE 67 (GAD67)-GFP MOUSE  
*Timo Ueberbach, Clara Simacek, Sergei Kirischuk, Thomas Mittmann, Mainz*

- T7-4A** CHARACTERIZING THE ROLE OF THE PRESYNAPTIC PROTEIN CAPS IN SEROTONIN RELEASE FROM ENTEROCHROMAFFIN CELLS  
*Sudeeksha Tyagi, Ahmed Shaaban, Sabine Beuermann, Frederike Maaß, Benjamin H. Cooper, Cordelia Imig, København N, Denmark*
- T7-5A** COOPERATIVE PRESYNAPTIC FUNCTIONS OF SYNAPTOTAGMIN 7 AND CAV1 CHANNELS AT THE DROSOPHILA NEUROMUSCULAR JUNCTION  
*Jashar Arian, Selina Hilgert, Carsten Duch, Mainz*
- T7-6A** DETERMINING THE NUMBER AND ORGANIZATION OF ACTIVE ZONE PROTEINS AT THE ROD RIBBON SYNAPSE WITH 3D-MINFLUX  
*Chad Grabner, Isabella Jansen, Christian Wurm, Tobias Moser, Goettingen*
- T7-7A** DEVELOPMENTAL CHANGES IN FUNCTION OF VASOACTIVE INTESTINAL PEPTIDE (VIP)-POSITIVE GABAERGIC INTERNEURONS OF THE SOMATOSENSORY CORTEX IN MICE  
*Clara Anna Simacek, Thomas Mittmann, Mainz*
- T7-8A** DIFFERENTIAL CONTRIBUTION OF MEC AND DCA1 TO SPATIAL AND VELOCITY CODING OF SUBICULAR PYRAMIDAL NEURONS  
*Hiroshi Kaneko, Dennis Dalügge, Stefan Remy, Magdeburg*
- T7-9A** DISEASE-RELATED VARIATIONS IN THE UNC13A GENE CAUSE PRESYNAPTIC DYSFUNCTION  
*Siqi Sun, Aisha Ahmad, Mareike Lohse, Jonas D. Sommer, Judith J. Jans, Mišo Mitkovski, Holger Taschenberger, Nils Brose, Anita Rauch, Reza Asadollahi, Jeremy S. Dittman, Noa Lipstein, Berlin*
- T7-10A** DYNAMIC INTERPLAY BETWEEN CAV2 CHANNELS AND THE PRESYNAPTIC CYTOMATRIX IN MECHANISMS OF NEUROTRANSMISSION  
*Michela Borghi, Stephan Weissbach, Anna Fejtova, Martin Heine, Mainz*
- T7-11A** EFFECTS OF ACTIVIN A AND ENRICHED ENVIRONMENT ON GABAERGIC INHIBITION IN DORSAL VS. VENTRAL HIPPOCAMPUS  
*Maria Jesus Valero Aracama, Fang Zheng, Christian Alzheimer, Erlangen*
- T7-12A** EFFECTS OF ACTIVIN ON INTRINSIC EXCITABILITY AND SYNAPTIC PLASTICITY OF CA1 PYRAMIDAL CELLS DIFFER BETWEEN DORSAL AND VENTRAL HIPPOCAMPUS  
*Marc Dahlmanns, Maria Jesus Valero-Aracama, Fang Zheng, Christian Alzheimer, Erlangen*
- T7-13A** EXPLORATION OF MECHANISMS GOVERNING FORMATION OF POSTSYNAPTIC DENSITY USING THE PYRID SIMULATOR  
*Nahid Safari, Christian Tetzlaff, Goettingen*

- T7-14A** GUT-TO-BRAIN SIGNALING - ENTEROCHROMAFFIN CELL COMMUNICATION WITH VAGAL SENSORY NEURONS  
*Esmira Mamedova, Ahmed Shaaban, Cordelia Imig, Copenhagen, Denmark*
- T7-15A** HCN-CHANNEL MEDIATED FUNCTIONAL CHANGES IN PARVALBUMIN-POSITIVE INTERNEURONS IN THE SOMATOSENSORY CORTEX OF MICE FOLLOWING TRAUMATIC BRAIN INJURY  
*Qiang Wang, Thomas Mittmann, Mainz*
- T7-16A** INVESTIGATING NANOSCALE MOLECULAR ORGANISATION AT CEREBELLAR SYNAPSES WITH SUPERRESOLUTION MICROSCOPY  
*Maureen McFadden, Gael Moneron, David DiGregorio, David DiGregorio, Paris, France*

## Thursday

- T7-1B** INVESTIGATING PRESYNAPTIC NANOARCHITECTURE USING PROXIMITY LABELING APPROACHES  
*Mareike Lohse, Siqi Sun, Sofia Elizarova, Olaf Jahn, Nils Brose, Noa Lipstein, Goettingen*
- T7-2B** L-TYPE  $Ca^{2+}$  CHANNELS MEDIATE REGULATION OF GLUTAMATE RELEASE BY SUBTHRESHOLD POTENTIAL CHANGES  
*Byoung Ju Lee, Seung Yeon Lee, Suk-Ho Lee, Won-Kyung Ho, Seoul, Korea (South)*
- T7-3B** MAPPING THE ORIENTATION OF SYNAPTIC PROTEINS IN MAMMALIAN SYNAPSES AND *DROSOPHILA* NMJS BY TWO-PHOTON POLARIZATION MICROSCOPY  
*Maksim Galkov, Komal Patil, Gaia Tavanoanis, Martin Fuhrmann, Dirk Dietrich, Susanne Schoch, Bonn*
- T7-4B** MATURATION OF ACTIVITY-DEPENDENT ENDOCYTOSIS DURING TERMINAL DIFFERENTIATION OF COCHLEAR INNER HAIR CELLS  
*Guobin Huang, Stefan Münkner, Jutta Engel, Stephanie Eckrich, Homburg/Saar*
- T7-5B** MOLECULAR MECHANISMS OF SYNAPTIC VESICLE RELEASE IN DORSAL ROOT GANGLION NEURONS  
*Lucia Rojas, Chungku Lee, JeonSeop Rhee, Goettingen*
- T7-6B** MOLECULAR SUBGROUPS OF MOUSE CORTICAL VIP NEURONS – LAMINAR DISTRIBUTION, FIRING PATTERN AND OPTICAL STIMULATION  
*Mirko Witte, Flore Schork, Felicita Fischer, Philipp Kolligs, Jenifer Rachel, Felix Preuss, Sandra Heinzl, Martin Möck, Jochen Staiger, Goettingen*
- T7-7B** NANOSCALE ARCHITECTURE OF THE SYNAPTIC RELEASE SITE  
*Sofia Elizarova, Siqi Sun, Noa Lipstein, Berlin*

- T7-8B** NEURONAL ALTERNATIVE SPLICING OF GEPHYRIN C4 CASSETTES MODULATES CONDENSATE FORMATION *IN VITRO* AND SYNAPTIC SCAFFOLDING IN CULTURED NEURONS  
*Filip Liebsch, Anne Bodenhausen, Fynn Eggersmann, Anna Lütz, Peter Kloppenburg, Günter Schwarz, Cologne*
- T7-9B** NOVEL MECHANISMS UNDERLYING SYNGAP SYNDROME AND NEW STRATEGIES TOWARD THERAPEUTIC INTERVENTION  
*Judith von Sivers, Benno Kuroпка, Dietmar Schmitz, Sarah Shoichet, Nils Rademacher, Berlin*
- T7-10B** N-TYPE CALCIUM CHANNELS SUSTAIN VESICLE RECRUITMENT AT A MATURE GLUTAMATERGIC SYNAPSE  
*Magdalena Wender, Grit Bornschein, Simone Brachtendorf, Stefan Hallermann, Jens Eilers, Hartmut Schmidt, Leipzig*
- T7-11B** PENTAMERIC ASSEMBLY OF GLYCINE RECEPTOR INTRACELLULAR DOMAINS PROVIDES INSIGHTS INTO GEPHYRIN CLUSTERING  
*Günter Schwarz, Cologne*
- T7-12B** PRESYNAPTIC PRECURSOR VESICLES ORIGINATE FROM THE TRANS-GOLGI, PROMOTED BY THE SMALL GTPASE RAB2  
*Astrid G. Petzoldt, Torsten W. B. Götz, Dmytro Puchkov, Veronika Lysiuk, Stephan J. Sigrist, Berlin*
- T7-13B** QUANTIFYING THE SYNAPTIC  $Ca^{2+}$ -BINDING KINETICS OF SYNAPTOTAGMIN-1, THE  $Ca^{2+}$  SENSOR FOR TRANSMITTER RELEASE IN THE FOREBRAIN  
*Grit Bornschein, Simone Brachtendorf, Abdelmoneim Eshra, Jens Eilers, Stefan Hallermann, Hartmut Schmidt, Leipzig*
- T7-14B** RECEPTOR DIVERSITY IN CHOLINERGIC AND GABAERGIC SYNAPSES IN *DROSOPHILA*  
*Eleni Samara, Alexander Borst, Planegg*
- T7-15B** REGULATION OF PRESYNAPTIC MEMBRANE HOMEOSTASIS BY BAR DOMAIN PROTEINS  
*Agata Witkowska, Tim Berneiser, Volker Haucke, Berlin*
- T7-16B** REGULATORY FUNCTIONS OF EXTRACELLULAR-SIGNAL REGULATED KINASES (ERK) IN THE CONTRALATERAL HEMISPHERE OF THE MOUSE SOMATOSENSORY CORTEX ONE-WEEK AFTER TRAUMATIC BRAIN INJURY  
*Celine Gallagher, Natascha Ihbe, Thomas Mittmann, Mainz*

## Friday

- T7-1C** RELAXIN' CORTICAL CIRCUITS: UNDERSTANDING THE EFFECT OF RELAXIN ON SYNAPTIC TRANSMISSION WITHIN CORTICAL CIRCUITS  
*Sadat Hodzic, Therese Riedemann, Planegg-Martinsried*

- T7-2C**      ROLE OF ACTIVIN SIGNALING IN GABAERGIC INHIBITION IN HIPPOCAMPAL GRANULE CELLS AND ITS IMPLICATIONS IN DEPRESSION  
*Sriity Melley Sadanandan, Fang Zheng, Liubov S. Kalinichenko, Christian P. Müller, Christian Alzheimer, Erlangen*
- T7-3C**      ROLE OF SYNAPTIC VESICLE REFILLING ON ROBUST SYNAPTIC TRANSMISSION IN THE AUDITORY SYSTEM  
*Erika Pizzi, Jennifer Winkelhoff, Eckhard Friauf, Kaiserslautern*
- T7-4C**      SEX-DEPENDENT BDNF-MEDIATED EFFECTS OF FINGOLIMOD ON THE ARCHITECTURE OF MOUSE HIPPOCAMPAL NEURONS  
*Aiswaria Lekshmi Kannan, Martin Korte, Marta Zagrebelsky, Braunschweig*
- T7-5C**      SHORT-TERM PLASTICITY OF NON-CALYCEAL INPUTS IN THE MEDIAL NUCLEUS OF THE TRAPEZOID BODY  
*Laura Console-Meyer, Felix Felmy, Hannover*
- T7-6C**      SINGLE-MOLECULE IMAGING OF SYNAPTIC VESICLE CONDENSATES  
*Christian Hoffmann, Jakob Rentsch, Taka Tsunoyama, Akshita Chhabra, Gerard Aguilar Perez, Franziska Trnka, Marcelo Ganzella, Akihiro Kusumi, Helge Ewers, Dragomir Milovanovic, Berlin*
- T7-7C**      SPECIES-SPECIFIC ADAPTATION FOR ONGOING HIGH-FREQUENCY ACTION POTENTIAL GENERATION IN MNTB NEURONS  
*Nikolaos Kladisios, Kathrin D. Wicke, Christina Pätz, Felix Felmy, Hannover*
- T7-8C**      S-SCAM/MAG12 IS ESSENTIAL FOR SYNAPSE FORMATION  
*Nina Wittenmayer, Sebastian Kügler, Jeong Seop Rhee, Julio S. Viotti, Thomas Dresbach, Hamburg*
- T7-9C**      HUMAN IPSC-DERIVED NEURONS HAVE LARGE PRESYNAPTIC ACTION POTENTIALS  
*Torsten Bullmann, Andreas Ritzau-Jost, Thomas Kaas, Anne Wöhner, Toni Kirmann, Sila Rizalar, Max Holzer, Jana Nerlich, Christian Geis, Jens-Karl Eilers, Robert Joahannes Kittel, Thomas Arendt, Volker Hauke, Stefan Hallermann, Leipzig*
- T7-10C**      SYNAPTIC CLEFT PROTEINS FORM AN OUTER ENCLOSURE OF THE TRANS-SYNAPTIC NANOCOLUMN  
*Paulina Nemcova, Hannes Beckert, Julia Wolf, Susanne Schoch, Dirk Dietrich, Bonn*
- T7-11C**      SYNAPTIC TRANSMISSION IS AFFECTED BY THE LACK OF PLASMALOGENS  
*Bárbara Catarina Correia, Jaqueline Zortéa, Pedro Brites, Porto, Portugal*
- T7-12C**      THE ALANINE-SERINE-CYSTEINE-TRANSPORTER 1 PROVIDES GLYCINE FOR INHIBITORY GLYCINERGIC TRANSMISSION IN AN AUDITORY BRAINSTEM SYNAPSE  
*Lina Hofmann, Eckhard Friauf, Kaiserslautern*

- T7-13C** THE ALTERNATIVE SPLICING OF P/Q-TYPE CALCIUM CHANNELS FINE TUNES PRESYNAPTIC PROPERTIES AND NEUROTRANSMITTER RELEASE  
*Ana Carolina Palmeira do Amaral, Abderazzaq El Khalouqi, Jennifer Heck, Arthur Bikbaev, Melanie Mark, Stefan Herlitze, Martin Heine, Mainz*
- T7-14C** THE REGULATION AND IMPACT OF MICROTUBULE ABUNDANCE AT THE *DROSOPHILA* EUROMUSCULAR JUNCTION  
*Dario Andrea Lasser, Hannes Euler, Zeeshan Mushtaq, Jan Pielage, Kaiserslautern*
- T7-15C** THE SECRETORY PATHWAY PROTEIN SEC31 CONTROLS COMPOSITION AND FUNCTION OF THE PRESYNAPTIC ACTIVE ZONE  
*Marius A. Lamberty, Kerstin Reim, Jutta Meyer, Olaf Jahn, Robert J. Kittel, Leipzig*
- T7-16C** TRANSCRIPTIONAL PROFILING OF TWO NUCLEI IN THE MOUSE AUDITORY BRAINSTEM REVEALS GENE SETS IMPORTANT FOR AUDITORY PROCESSING  
*Mirjam Montag, Ayse Maraslioglu-Sperber, Kathrin Kattler, Eckhard Friauf, Kaiserslautern*
- T7-17C** UNDERSTANDING THE SYNAPTIC BASIS OF DYSTONIA PATHOGENESIS TRIGGERED BY RIMBP1 MUTATIONS  
*Chiara Olmeo, Joaquin Campos, Niccolò Mencacci, Claudio Acuna, Heidelberg*

## T8: Synaptic plasticity, LTP, LTD

### Wednesday

- T8-1A** A BIOPHYSICAL MODEL FOR SYNAPTIC TAGGING  
*Michael Fauth, Francesco Negri, Christian Tetzlaff, Goettingen*
- T8-2A** ACTIVITY-DEPENDENT CHANGES OF THE SYNAPTIC NANOARCHITECTURE REVEALED BY STED MICROSCOPY  
*Katrin Ina Willig, Valérie Clavet-Fournier, Waja Wegner, Goettingen*
- T8-3A** ALL-OPTICAL INTERROGATION OF SCHAFFER COLLATERALS SYNAPSES *IN VIVO*  
*Cynthia Rais, J. Simon Wiegert, Hamburg*
- T8-4A** ALL-OPTICAL INVESTIGATION OF LONG-TERM PLASTICITY IN THE HIPPOCAMPUS  
*Rui Wang, Margarita Anisimova, Michaela Schweizer, Thomas G Oertner, Christine E Gee, Hamburg*
- T8-5A** ANALYSING THE SYNAPTIC PLASTICITY IN THE PROGRESSIVE PHENOTYPE OF MURINE TAUOPATHY  
*Jennifer Just, S. Ludewig, C. Bold, D. Baltissen, U. Müller, M. Korte, Braunschweig*

**T8-6A**      CALCIUM MEDIATED PRESYNAPTIC HOMEOSTATIC PLASTICITY AT THE *DROSOPHILA* NMJ  
*Lea Deneke, Jashar Arian, Niklas Krick, Carsten Duch, Mainz*

**T8-7A**      CELL-AUTONOMOUS CAMP SIGNALING IS NOT A PLASTICITY AND IMMEDIATE EARLY GENE EXPRESSION TRIGGER AT SCHAFFER COLLATERAL SYNAPSES  
*Oana-Maria Constantin, Daniel Udvari, Paul Lamothe-Molina, Lennart Beck, Christine Gee, Thomas Oertner, Hamburg*

**T8-8A**      C-TERMINAL BINDING PROTEIN 1 (CTBP1) REGULATES SYNAPTIC PLASTICITY AND ENERGY METABOLISM IN HIPPOCAMPUS  
*Enes Yagiz Akdas, Erlangen*

## Thursday

**T8-1B**      GABAERGIC REGULATION OF TIMING-DEPENDENT LTP IN MOUSE CA1 PYRAMIDAL NEURONS ALONG THE LONGITUDINAL AXIS OF THE HIPPOCAMPUS  
*Babak Khodaie, Elke Edelmann, Volkmar Leßmann, Magdeburg*

**T8-2B**      *DROSOPHILA* RAB3 MEDIATES CYCLIC AMP-DEPENDENT PRESYNAPTIC PLASTICITY  
*Divya Sachidanandan, Aishwarya Aravamudhan, Isabella Maiellaro, Stefan Hallermann, Robert J. Kittel, Leipzig*

**T8-3B**      ELUCIDATING THE ROLE OF STIM PROTEINS IN MEDIATING PM-ER CONTACTS AND THEIR ROLE IN SYNAPTIC PLASTICITY AND SYNAPTIC ARCHITECTURE  
*Arun Chhikara, Filip Maciag, Karin Ruban, Martin Heine, Kay Grünwald, Mainz*

**T8-4B**      ENVIRONMENTAL ENRICHMENT INCREASES SPARSE CODING IN ADULT HIPPOCAMPUS  
*Ekaterina Verdiyana, Meredith Lodge, Jan Michael Schulz, Josef Bischofberger, Basel, Switzerland*

**T8-5B**      FULLY-PRIMED SLOWLY-RECOVERING VESICLES MEDIATE LTP AT NEOCORTICAL NEURONS  
*Jana Nerlich, Iron Weichard, Holger Taschenberger, Grit Bornschein, Andreas Ritzau-Jost, Hartmut Schmidt, Robert J. Kittel, Jens Eilers, Stefan Hallermann, Leipzig*

**T8-6B**      HOMEOSTATIC SYNAPTIC PLASTICITY RECRUITS COORDINATED STRUCTURAL AND FUNCTIONAL CHANGES IN SUPERFICIAL PYRAMIDAL NEURONS OF THE HUMAN NEOCORTEX  
*Maximilian Lenz, Pia Kruse, Amelie Eichler, Phyllis Stöhr, Jakob Straehle, Paul Turko, Imre Vida, Jürgen Beck, Andreas Vlachos, Freiburg im Breisgau*

**T8-7B**      HOMEOSTATIC SYNAPTIC PLASTICITY RESCUES NEURAL CODING RELIABILITY  
*Nadine Ehmman, Eyal Rozenfeld, Julia E. Maniom, Robert J. Kittel, Moshe Parnas, Leipzig*



## Friday

- T8-1C** INACTIVITY INDUCED HOMEOSTATIC SYNAPTIC PLASTICITY REQUIRES ECM REMODELING  
*Bartomeu Perello Amoros, Fabian Zmiskol, Rahul Kaushik, Constanze Seidenbecher, Alexander Dityatev, Renato Frischknecht, Erlangen*
- T8-2C** INTERMITTENT THETA BURST REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION (RTMS) INDUCES EXCITATORY SYNAPTIC PLASTICITY IN HUMAN NEOCORTICAL SLICES  
*Christos Galanis, Jakob Straehle, Elli Anna Balta, Dieter Henrik Heiland, Jürgen Beck, Andreas Vlachos, Freiburg*
- T8-3C** LIGHT-INDUCED ULTRASTRUCTURAL SYNAPTIC PLASTICITY IN THE MUSHROOM BODY CALYCES OF HONEYBEES USING STEM TOMOGRAPHY  
*Nadine Kraft, Christian Stigloher, Wolfgang Rössler, Claudia Groh, Wuerzburg*
- T8-4C** LONGITUDINAL IMAGING OF INDIVIDUAL HIPPOCAMPAL SYNAPTIC SUB-GROUPS  
*Alessandro Francesco Ulivi, Hannah Klimmt, Bhargavi K.B. Murthy, Rosa Eva Huettl, Jinhyun Kim, Alon Chen, Stefan Remy, Alessio Attardo, Magdeburg*
- T8-5C** LTP-INDUCED DYNAMICS OF ACTIN AND SPINE GEOMETRY  
*Mitha Thomas, Michael Fauth, Goettingen*
- T8-6C** OPTOGENETIC ACTIVATION OF MGLUR1 SIGNALING INDUCES SYNAPTIC PLASTICITY IN PURKINJE CELLS  
*Lennard Rohr, Tatjana Surdin, Bianca Preissing, Bochum*
- T8-7C** THE MOLECULAR COMMUNICATION BETWEEN SYNAPSES INFLUENCES SYNAPTIC PLASTICITY  
*Shirin Shafiee, Christian Tetzlaff, Goettingen*

## T9: Glia, glia-neuron interactions

## Wednesday

- T9-1A** A SUBSET OF OPCs DO NOT EXPRESS OLIG2 DURING DEVELOPMENT WHICH CAN BE INCREASED IN THE ADULT BY BRAIN INJURIES AND COMPLEX MOTOR LEARNING  
*Xianshu Bai, Lipao Fang, Qing Liu, Erika Meyer, Anna Welle, Wenhui Huang, Anja Scheller, Frank Kirchhoff, Homburg*
- T9-2A** BUFFERING CALCIUM SIGNALS IN GLIA AND NEURONS: A NEW CONDITIONAL MOUSE LINE  
*Anne-Sophie Brauer, Julia Wolf, Ulrich Boehm, Dirk Dietrich, Susanne Schoch, Bonn*

- T9-3A** CAMP SIGNALING EVOKED BY ADENOSINE AND DOPAMINE IN MOUSE OLFACTORY BULB ASTROCYTES  
*Marina Wendlandt, Levi von Kalben, Kristina Schulz, Daniela Hirnet, Christine Gee, Christian Lohr, Hamburg*
- T9-4A** CHARACTERIZATION OF MACROGLIA RESPONSE DURING WOUND HEALING IN LASER-INDUCED MODELS OF RETINAL DEGENERATION  
*Laura Jahnke, Souska Zandi, Ahmed Elhelbawi, Nadia Mercader Huber, Federica Maria Conedera, Volker Enzmann, Bern, Switzerland*
- T9-5A** DECIPHERING THE ROLE OF A NON-NEURONAL LNCRNA IN AGE-ASSOCIATED COGNITIVE DISEASES  
*Sophie Schröder, M. Sadman Sakib, André Fischer, Goettingen*
- T9-6A** FROM INDICATOR TO BIOSENSOR: GCAMP FOR DECIPHERING THE COMPLEX  $CA^{2+}$  ACTIVITY OF ASTROCYTES  
*Andre Zeug, Franziska E. Müller, Evgeni Ponimaskin, Hannover*
- T9-7A** FUNCTIONAL CHARACTERIZATION OF A NOVEL LNCRNA IN THE AGING BRAIN  
*Ranjit Pradhan, M. Sadman Sakib, Lalit Kaurani, Deborah Kronenberg-Versteeg, Dennis M. Krüger, Sophie Schröder, Andre Fischer, Goettingen*
- T9-8A** ROLE OF GLIAL GAP JUNCTIONS IN THE DEVELOPMENT AND PROGRESSION OF TEMPORAL LOBE EPILEPSY  
*Oussama Kherbouche, Lukas Henning, Gerald Seifert, Pia Niemann, Bernd Fleischmann, Peter Bedner, Christian Steinhäuser, Bonn*

## Thursday

- T9-1B** GABAERGIC CALCIUM-SIGNALS IN ASTROCYTES OF THE MOUSE MEDIAL PREFRONTAL CORTEX  
*Alina Kürten, Jennifer Bostel, Antonia Beiersdorfer, Hamburg*
- T9-2B** GLIOMA AND NATIVE CNS CELLS IN 3D ULTRAWEAK HYDROGELS: CELL-CELL AND CELL-MATRIX INTERACTIONS  
*Mateo Sebastian Andrade Mier, Carmen Villmann, Torsten Blunk, Wuerzburg*
- T9-3B** IMPACT OF 5-HT<sub>4</sub>R SIGNALING ON MORPHOLOGY AND FUNCTION OF HIPPOCAMPAL ASTROCYTES  
*Franziska E. Müller, Evgeni Ponimaskin, Andre Zeug, Hannover*
- T9-4B** IMPACT OF AMPA RECEPTORS IN NG2 GLIA ON SIGNAL TRANSMISSION IN THE HIPPOCAMPUS AND CEREBELLUM  
*Dario Tascio, Gerald Seifert, Nehal Gebiril, Frank Kirchoff, Ronald Jabs, Christian Henneberger, Christian Steinhäuser, Bonn*

- T9-5B** MULTISCALE CORRELATIONAL IMAGING OF SEX-SPECIFIC STRUCTURAL BRAIN CHANGES DURING CHRONIC PAIN  
*Tabea Susanna Kampen, Amrita Das Gupta, Jennifer John, Claudia Falfán-Melgoza, Carlo A. Beretta, Wolfgang Weber-Fahr, Thomas Kuner, Johannes Knabbe, Heidelberg*
- T9-6B** NG2 GLIA-SPECIFIC KIR4.1 KNOCKOUT AS A TOOL TO UNDERSTAND THE IMPACT OF NEURON-GLIA SYNAPTIC SIGNALING  
*Gerald Seifert, Dario Tascio, Ronald Jabs, Aline Timmermann, Anne Boehlen, Magdalena Skubal, Catia Domingos, Wenhui Huang, Frank Kirchhoff, Christian Henneberger, Andras Bilkei-Gorzo, Christian Steinhäuser, Bonn*
- T9-7B** OPCS SHAPE THE MEDIAL PREFRONTAL CORTICAL INHIBITION BY REGULATING INTERNEURON APOPTOSIS AND MYELINATION EMPLOYING GABAB RECEPTOR  
*Lipao Fang, Na Zhao, Laura C Caudal, Renping Zhao, Ching-Hsin Lin, Hsin-Fang Chang, Nadine Heinz, Carola Meier, Wenhui Huang, Anja Scheller, Frank Kirchhoff, Xianshu Bai, Homburg*
- T9-8B** QUANTIFICATION OF CELLULAR  $Na^+$  EMPLOYING RAPIDFLIM IN THE MOUSE HIPPOCAMPUS  
*Jan Meyer, Karl W. Kafitz, Christine R. Rose, Duesseldorf*

## Friday

- T9-1C** MOVED TO T9-8A
- T9-2C** ROLE OF HEVIN IN DRUG ADDICTION  
*Vincent Vialou, Paris, France*
- T9-3C** SEROTONIN<sub>1A</sub>-RECEPTOR MEDIATED SIGNALING IN ASTROCYTES AND ITS INFLUENCE ON DEPRESSION-LIKE BEHAVIOR  
*Svenja Bremshey, Dr. Michael Koch, Dr. Olivia A. Masseck, Bremen*
- T9-4C** THE AXONAL VESICLE RELEASE MACHINERY AND MYELINATION  
*Julia Wolf, Silvia Cases-Cunillera, Susanne Schoch, Dirk Dietrich, Bonn*
- T9-5C** THE IMPACT OF SYNAPTIC SIGNALING ACTIVITY ON HIPPOCAMPAL MICROGLIA  
*Frederieke Sophie Moschref, Nils Brose, Benjamin H. Cooper, Goettingen*
- T9-6C** THE SYNAPTIC VESICLE PROTEIN MOVER/TPRG1L IS ASSOCIATED WITH LIPID DROPLETS IN ASTROCYTES  
*Jeremy Krohn, Florelle Domart, Thanh Thao Do, Thomas Dresbach, Berlin*
- T9-7C** VIRAL APPROACHES TO ELUCIDATE THE FUNCTION OF DIFFERENT TANYCYTIC SUBPOPULATIONS  
*Vanessa Neve, Helge Müller-Fielitz, Frauke Spiecker, Anke Fähnrich, Ruben Nogueiras, Vincent Prevot, Markus Schwaninger, Luebeck*

- T9-8C** WRAPPING GLIA INFLUENCE ON LARVAL REORIENTATION  
 Marit Praetz, Christian Klämbt, Muenster

## T10: Aging and developmental disorders

### Wednesday

- T10-1A** CHARACTERISATION OF MURINE L6B AND ITS ROLE IN MANIFESTATION OF ASD ASSOCIATED BEHAVIOUR  
 Aasha Meenakshisundaram, Timothy Zolnik, Britta Eickholt, Zoltán Molnár, Berlin
- T10-2A** COGNITIVE FLEXIBILITY AND FRONTAL THETA: EFFECTS OF AGEING  
 Margarita Darna, Christopher Stolz, Constanze I. Seidenbecher, Björn H. Schott, Anni Richter, Magdeburg
- T10-3A** MOVED TO T10-6B
- T10-4A** DIETARY SPERMIDINE PROTECTS FROM AGE-RELATED SYNAPTIC ALTERATIONS WHILE INDUCING NEURONAL AUTOPHAGY AND NPY IN THE AGING BRAIN  
 Marta Maglione, Gaga Kochlamazashvili, David Toppe, Giovanna Cazzolla, Volker Haucke, Stephan Sigrist, Berlin
- T10-5A** EPHRINA5 REGULATES NEURONAL MIGRATION BY REPRESSING THE LONG NON-CODING RNA SNHG15 AND PERTURBING ITS INTERACTIONS WITH DNA METHYLTRANSFERASE 1  
 Can Bora Yildiz, Jannis Koesling, Julia Reichard, Philip Wolff, Julia Gehrmann, Ivan G. Costa, Mira Jakovcevski, Daniel Pensold, Geraldine Zimmer-Bensch, Aachen

### Thursday

- T10-1B** GENE THERAPY TARGETING BRAIN ENDOTHELIAL CELLS IMPROVES NEUROLOGICAL SYMPTOMS IN A MODEL OF GENETIC MCT8 DEFICIENCY  
 Adriana Arrulo Pereira, Sivaraj M. Sundaram, Helge Müller-Fielitz, Hannes Köpke, Meri De Angelis, Timo D. Müller, Heike Heuer, Jakob Körbelin, Markus Krohn, Jens Mittag, Ruben Nogueiras, Vincent Prevot, Markus Schwaninger, Luebeck
- T10-2B** IN VIVO OPTOGENETIC INHIBITION OF STRIATAL PARVALBUMIN-REACTIVE INTERNEURONS INDUCED GENOTYPE-SPECIFIC CHANGES IN NEURONAL ACTIVITY WITHOUT DYSTONIC SIGNS IN DYT1 KNOCK-IN MICE  
 Anja Schulz, Franziska Richter, Angelika Richter, Leipzig

- T10-3B** INCREASE IN VASCULAR BAG NUMBERS IN THE WHITE MATTER OF THE HUMAN BRAIN WITH AGING BUT NOT IN ALZHEIMER'S DISEASE  
*Deniz Yilmazer-Hanke, Kameliya S. Georgieva, Najwa Ouali Alami, Ulm*
- T10-4B** INHIBITORY TEMPORO-PARIETAL EFFECTIVE CONNECTIVITY IS ASSOCIATED WITH EXPLICIT MEMORY PERFORMANCE IN OLDER ADULTS  
*Björn Hendrik Schott, Joram Soch, Jasmin Kizilirmak, Anni Richter, Goettingen*
- T10-5B** IS RETT SYNDROME ASSOCIATED WITH BRAIN REGIONAL ALTERATIONS IN MITOCHONDRIAL DENSITY AND NEURONAL REDOX STATUS?  
*Laura van Agen, Michael Müller, Goettingen*
- T10-6B** DEVELOPMENTAL CHANGES IN THE ELECTROPHYSIOLOGICAL PROPERTIES OF PYRAMIDAL NEURONS IN THE AUDITORY CORTEX OF THE CNTNAP2 KO RAT MODEL OF AUTISM SPECTRUM DISORDER  
*Rajkamalpreet S. Mann, Brian L. Allman, Susanne Schmid, London, Canada*

## Friday

- T10-1C** MULTI-MODAL EPIGENETIC CHANGES AND ALTERED NEUROD1 CHROMATIN BINDING IN THE MOUSE HIPPOCAMPUS UNDERLIE FOXG1 SYNDROME  
*Ipek Akol, Annalisa Izzo, Thomas Manke, Tanja Vogel, Freiburg im Breisgau*
- T10-2C** MULTIPLE FACETS OF HETEROZYGOUS FOXG1 LOSS ON NEURAL DEVELOPMENT AND FOXG1 SYNDROME OUTCOME IN DIFFERENT PATIENT-SPECIFIC BACKGROUNDS  
*Fabian Gather, Ipek Akol, Analia Rojas Caballero, Christos Galanis, Andreas Vlachos, Tanja Vogel, Freiburg im Breisgau*
- T10-3C** PATHOPHYSIOLOGICAL AND STRUCTURAL CONSEQUENCES OF NOVEL MUTATIONS IN THE ASPARAGINE SYNTHETASE GENE (ASNS) ASSOCIATED WITH MICROCEPHALY  
*Dorit John, Ulrike Winkler, Tabea Junge, Maximilian Liebmann, Anja Reinert, Susanne Köhler, Johannes Hirrlinger, Leipzig*
- T10-4C** TOGARAM1 MUTATION IN SPINA BIFIDA HIGHLIGHTS ALTERNATIVE MECHANISMS IN NEURAL TUBE CLOSURE DEFECTS  
*YanYan Wang, Nadine Krämer, Olaf Ninnemann, Joanna Schneider, Li Na, Hao Hu, Shyamala Mani, Angela Kaindl, Berlin*
- T10-5C** TYPE-DEPENDENT DYSREGULATION OF MYELINATION IN FOCAL CORTICAL DYSPLASIA IN EXTRATEMPORAL LOBE REGIONS OF THE HUMAN NEOCORTEX  
*Catharina Donkels, Julia M. Nakagawa, Susanne Huber, Andreas Vlachos, Christian Scheiwe, Mukesh J. Shah, Andreas Schulze-Bonhage, Marco Prinz, Jürgen Beck, Carola A. Haas, Freiburg*

## T11: Alzheimer's, Parkinson's and other neurodegenerative diseases

### Wednesday

- T11-1A** A MULTIMODAL PERSPECTIVE ON THE DOPAMINE HYPOTHESIS IN SCHIZOPHRENIA SPECTRUM DISORDERS – PRELIMINARY DATA  
*Sophie Pauline Fromm, Lara Wieland, Florian Schlagenhaut, Jakob Kaminski, Berlin*
- T11-2A** ALZHEIMER'S DISEASE MIGHT BE ALSO A FAILURE OF INHIBITORY SYNAPSES AT EARLY AND LATE STAGES OF PATHOGENESIS THAT CAN BE RESCUED BY ARTEMISININS  
*Jochen Kuhse, Stefan Kins, Femke Groeneweg, Karin Gorgas, Joachim Kirsch, Eva Kiss, Targu Mures, Romania*
- T11-3A** ANALYSIS OF THE INFLUENCE OF THE GLUTAMATE SIGNALING PATHWAY ON REPAIR OF RADIATION-INDUCED DNA DAMAGE IN TUMOR-INITIATING NEURONAL CANCER CELLS  
*Dario Macarron Palacios, Henrik Lutz, Bodo Laube, Darmstadt*
- T11-4A** ANTIBODIES TO THE LOW-DENSITY LIPOPROTEIN-RECEPTOR-ASSOCIATED-PROTEIN LRPAP-1 ARE FOUND NOT IN CEREBROSPINAL FLUID OR BLOOD SERUM OF ALZHEIMER'S DISEASE PATIENTS, BUT IN SERUM OF HEALTHY CONTROLS  
*Bernhard Reuss, Niels Hansen, Jens Wiltfang, Goettingen*
- T11-5A** APPS $\alpha$  RESCUES KINASE DYSREGULATIONS IN TAU TRANSGENIC MICE  
*Danny Baltissen, Charlotte Bold, Lena Rehra, Justus Fricke, Jennifer Just, Christian Buchholz, Martin Korte, Ulrike Müller, Heidelberg*
- T11-6A** BIMODAL POTENTIATION OF CHOLINERGIC NEUROTRANSMISSION IN RATS TRANSGENIC FOR FAMILIAR ALZHEIMER'S MUTATIONS  
*Johanna Habermeyer, Fabio Canneva, Stephan von Hörsten, Erlangen*
- T11-7A** CEREBELLAR NETWORK IN A MODEL OF PAROXYSMAL DYSTONIA  
*Fabiana Santana Kragelund, Denise Franz, Marco Heerdegen, Anika Lüttig, Stefanie Perl, Angelika Richter, Rüdiger Köhling, Rostock*
- T11-8A** CHANGES IN INHIBITORY GLYCINE RECEPTORS FUNCTION IN THE NUCLEUS ACCUMBENS IN AN ALZHEIMER'S DISEASE ANIMAL MODEL  
*Luis Aguayo, Scarlet Gallegos, Anibal Araya, Alejandra Guzmán, Macarena Konar-Nie, Eduardo Fernandez-Perez, Lorena Armijo-Weingart, Concepcion, Chile*
- T11-9A** DEVELOPMENTAL STAGE-SPECIFIC ANALYSIS OF MOLECULAR DISEASE MECHANISMS IN GENETIC EPILEPTIC ENCEPHALOPATHIES LINKED TO HCN1 CHANNELS  
*Jacquelin Kasemir, Andrea Merseburg, Bina Santoro, Dirk Isbrandt, Cologne*

- T11-10A** DISTRIBUTION OF THE EFFECT OF BOTULINUM NEUROTOXIN-A IN THE RAT BRAIN AFTER ITS EXPERIMENTAL UNILATERAL INJECTION INTO THE STRIATUM FOR EXPERIMENTAL PARKINSON'S DISEASE TREATMENT  
*Alexander Hawlitschka, Oliver Schmitt, Andreas Wee, Friederike Schümann, Rostock*
- T11-11A** EFFECTS OF THE MEDIAL SEPTUM ELECTRICAL STIMULATION ON OKADAIC ACID INDUCED SPATIAL LONG-TERM MEMORY IMPAIRMENT: A BEHAVIORAL AND HISTOLOGICAL EVALUATION  
*Mariam Chighladze, Maia Burjanadze, Manana Dashniani, Nino Chkhikvishvili, Lali Kruashvili, Tbilisi, Georgia*

## Thursday

- T11-1B** ELUCIDATING EARLY MOLECULAR EVENTS OF HUMAN CORTICAL ALS PATHOPHYSIOLOGY AT SINGLE CELL RESOLUTION  
*Zeynep Irem Gunes, Klara Magdalena Eglseer, Charlene-Annett Hurler, Sarah Jaekel, Eduardo Beltran, Thomas Arzberger, Sabine Liebscher, Martinsried*
- T11-2B** EXITABILITY CHANGES IN HIPPOCAMPAL NEURONS IN THE RODENT MODELS OF ALZHEIMER'S DISEASE AND A WAY TO PREVENT IT  
*Liudmila Sosulina, Hiroshi Kaneko, Anja M. Oelschlegel, Katarzyna M. Grochowska, Guilherme M. Gomes, Carsten Reissner, Manuel Mittag, Martin Fuhrmann, Anna Karpova, Michael R. Kreutz, Stefan Remy, Magdeburg*
- T11-3B** EXPRESSION PROFILING AND FUNCTIONAL CHARACTERIZATION OF CANDIDATE MICRORNA ASSOCIATED WITH FRONTOTEMPORAL DEMENTIA  
*Lalit Kaurani, Jiayin Zhou, Ranjit Pradhan, Aditi Methi, Susanne Burkhardt, Raquel Pinto, MD Rezaul Islam, Sophie Schröder, Peter Heutink, Farahnaz Sananbenesi, Andre Fischer, Goettingen*
- T11-4B** EXTRACELLULAR MATRIX CHANGES IN SUBCELLULAR BRAIN FRACTIONS AND BIOFLUID OF ALZHEIMER'S DISEASE PATIENTS  
*Lukas Höhn, Wilhelm Hußler, Anni Richter, Karl-Heinz Smalla, Anna-Maria Birkel-Töglhofer, Christoph Birkel, Stefan Vielhaber, Stefan L. Leber, Eckart D. Gundelfinger, Stefanie Schreiber, Johannes Haybäck, Constanze I. Seidenbecher, Magdeburg*
- T11-5B** HIPPOCAMPAL LOW-FREQUENCY STIMULATION SUPPRESSES EPILEPTIC ACTIVITY WITHOUT AFFECTING LEARNING AND MEMORY IN A MOUSE MODEL OF EPILEPSY  
*Enya Paschen, Piret Kleis, Jessica Link, Diego M Vieira, Katharina Heining, Ute Häussler, Carola A. Haas, Freiburg*
- T11-6B** IDENTIFICATION OF OPTIMAL STIMULATION TARGETS AND PARAMETERS TO SUPPRESS SEIZURES IN A MOUSE MODEL OF MESIAL TEMPORAL LOBE EPILEPSY  
*Piret Kleis, Enya Paschen, Jessica Link, Diego M. Vieira, Katharina Heining, Ute Häussler, Carola A. Haas, Freiburg*

- T11-7B** IMPACT OF FTY720 ON MEMORY PERFORMANCE AND HIPPOCAMPAL SPINES OF AGED APP/PS1 MICE  
*Lukas Schönwolf, Thomas Endres, Volkmar Leßmann, Magdeburg*
- T11-8B** IMPACT OF TDP-43 PATHOLOGY AND ER STRESS ON CORTICAL NEURONAL HEALTH IN VIVO  
*Shenyi Jiang, Riddhi Sandeep Petkar, Monica Liliana Ziegler, Smita Saxena, Sabine Liebscher, Martinsried*
- T11-9B** INVESTIGATION OF MITOCHONDRIAL PROTEIN-IMPORT STRESS INDUCED NEURONAL DEGENERATION  
*Johannes Ebding, Marlene Barth, Maximilian Goy, Adrian Gackstatter, Martin Simon, Johannes Herrmann, Jan Pielage, Kaiserslautern*
- T11-10B** LOSS OF INTERNEURONS IN THE SUBICULUM IN A MOUSE MODEL FOR MESIAL TEMPORAL LOBE EPILEPSY  
*Nicole Barheier, Julia Franz, Henrike Wilms, Susanne Tulke, Carola A. Haas, Ute Häussler, Freiburg im Breisgau*
- T11-11B** METABOLIC AND CELLULAR FACTORS DETERMINING THE THERAPEUTIC EFFECT OF DIMETHYL FUMARATE  
*Joanna Maria Kosinska, Julian Assmann, Julica Folberth, Markus Schwaninger, Luebeck*
- T11-12B** PHOSPHORYLATION-STATE DEPENDENT INTRANEURONAL SORTING OF A $\beta$  DIFFERENTIALLY IMPAIRS AUTOPHAGY-ENDO-LYSOSOMAL SYSTEM AND UBIQUITIN PROTEASOMAL MACHINERY  
*Akshay Kapadia, Sandra Theil, Sabine Opitz, Nàdia Villacampa, Susanne Schoch-McGovern, Michael. T. Heneka, Sathish Kumar, Jochen Walter, Bonn*

## Friday

- T11-1C** MODULATION OF PERIAQUEDUCTAL GREY DEFENSE CIRCUITRY BY LOCUS COERULEUS IN CONTEXT OF PARKINSON'S DISEASE  
*Alexia Lantheaume, Konstantin Kobel, Michael Schellenberger, Dennis Segebarth, Philip Tovote, Wuerzburg*
- T11-2C** PHARMACOLOGICAL MODULATION OF SEROTONIN RECEPTOR 7 AS A POTENTIAL TREATMENT FOR TAU-ASSOCIATED NEURODEGENERATIVE DISEASES  
*Alina Brüge, Kathrin Jahreis, Sungsu Lim, Yun Kyung Kim, Marcello Leopoldo, Evgeni Ponimaskin, Josephine Labus Labus, Hannover*
- T11-3C** PROBING ASTROGLIAL DYSFUNCTION IN MOTOR CORTEX OF BEHAVING ALS TRANSGENIC MICE  
*XiaoQian Ye, Zeynep Gunes, Sabine Liebscher, Planegg-Martinsried, Munich*
- T11-4C** REGULATORY IMBALANCE BETWEEN LRRK2 KINASE, PPM1H PHOSPHATASE, AND ARF6 GTPASE DISRUPTS THE AXONAL TRANSPORT OF AUTOPHAGOSOMES  
*C. Alexander Boecker, Dan Dou, Erika L.F. Holzbaur, Goettingen*



- T11-5C**      ROLE OF BASSOON IN THE REGULATION OF PRESYNAPTIC PROTEOSTASIS  
*Carolina Montenegro Venegas, Anil Annamneedi, Armand Blondiaux, Judit Ozvár, Yi Lien, Thorsten Trimbuch, Christian Rosenmund, Craig Craig Curtis Garner, Eckart D Gundelfinger, Magdeburg*
- T11-6C**      SEROTONIN RECEPTORS CONTRIBUTE TO TDP-43 AGGREGATION IN NEURODEGENERATIVE DISEASES  
*Josephine Labus, Anna-Lena Vollbrecht, Julia Kleiner, Tilman Tiss, Sungsu Lim, Yun Kyung Kim, Thomas Gschwendtberger, Susanne Petri, Evgeni Ponimaskin, Hannover*
- T11-7C**      SYNAPTIC TRANSMISSION DEFECTS AT AN EARLY STAGE IN JUVENILE BATTENS DISEASE MOUSE MODEL  
*Masood Ahmad Wani, Benedikt Grünwald, Jakob von Engelhardt, Mainz*
- T11-8C**      THE PALLIDAL INHIBITORY TONE ON VENTROLATERAL THALAMIC NEURONS IN DYSTONIC DT<sup>SZ</sup> MUTANT HAMSTER AFTER LONG-TERM DEEP BRAIN STIMULATION  
*Denise Franz, Marco Heerddegen, Fabiana Santana Kragelund, Anika Lüttig, Angelika Richter, Rüdiger Köhling, Rostock*
- T11-9C**      THE USE OF HUMAN GASTROINTESTINAL ORGANOIDS TO STUDY INTERACTIONS WITH THE NERVE SYSTEM AND THE INDUCTION OF NEUROINFLAMMATION BY PATHOGENS INCLUDING HELICOBACTER PYLORI  
*Marzieh Ehsani, Zeyang Sun, Huo Peng, David Holthaus, Saskia F. Erttmann, Thomas F. Meyer, Kiel*
- T11-10C**     TIME LAPSE IMAGING OF SINGLE GRANULE CELLS IN THE MOUSE DENTATE GYRUS AFTER ENTORHINAL DENERVATION *IN VITRO* – IDENTIFICATION OF DIFFERENT RESPONSE TYPES TO DENERVATION  
*Davide Greco, Alexander Drakew, Thomas Deller, Frankfurt/Main*
- T11-11C**     TWO-PHOTON IMAGING IDENTIFIES BLOOD-BRAIN BARRIER ALTERATIONS IN A MURINE ALZHEIMER'S DISEASE MODEL  
*Amira S. Hanafy, Isabelle Paulußen, Alf Lamprecht, Dirk Dietrich, Bonn*

## T12: Neuroimmunology, inflammation and neuroprotection

### Wednesday

- T12-1A** ACUTE EFFECTS OF HUMAN MONOCLONAL ANTI-GLUN1 AUTOANTIBODY ON NMDA RECEPTOR CHANNEL FUNCTION  
*Johanna Rosa Heckmann, Shang Yang, Jing Yu-Strzelczyk, Shiqiang Gao, Christian Geis, Manfred Heckmann, Jena*
- T12-2A** ANTI-NMDAR AUTOANTIBODIES ALTER STRUCTURAL PLASTICITY AND IMPAIR PLACE CELL DYNAMICS  
*Steffan Pettengell Jones, Pavel Svelha, Sabine Liebscher, Munich*
- T12-3A** ASTROCYTES, MICROGLIA AND BLOOD BRAIN BARRIER IN AN ANIMAL MODEL OF CEREBRAL MALARIA  
*Hanna-Marie Altjohann, Bastian Bennühr, Alexandros Hadjilaou, Thomas Jacobs, Daniela Hirnet, Christian Lohr, Hamburg*
- T12-4A** ATTENUATION OF MICROGLIOSIS IS NOT SUFFICIENT TO ACHIEVE SUBSTANTIAL NEUROPROTECTION DURING THE EARLY PHASE OF TBI  
*Isa Wernersbach, Yong Wang, Michael K. E. Schäfer, Mainz*
- T12-5A** ESTABLISHING INDUCED PLURIPOTENT STEM CELLS (IPSCS)-DERIVED SENSORY NEURONS FROM MIGRAINE PATIENTS TO INVESTIGATE SEX-SPECIFIC DIFFERENCES IN TRESK-TRPV1 SIGNALING  
*Beatrice A. Windmüller, Oliver Dräger, Wilfried Witte, Erhard Wischmeyer, Bielefeld*
- T12-6A** FROM RARE DISEASES TO PANDEMICS: THE ROLE OF THE NF-KAPPA-B ESSENTIAL MODULATOR FOR BRAIN ENDOTHELIAL FUNCTIONS  
*Josephine Lampe, Jan Wenzel, Helge Müller-Fielitz, Ümit Özorhan, Markus Schwaninger, Luebeck*
- T12-7A** HYPOXIC MICROGLIAL EXTRACELLULAR VESICLES CAN ABROGATE AQP4 DYSFUNCTION, ASTROGLIOSIS, AND NEUROINFLAMMATION AFTER STROKE  
*Wenqiang Xin, Yongli Pan, Wei Wei, Lars Tatenhorst, Irina Graf, Mathias Bähr, Thorsten R. Doeppner, Goettingen*
- T12-8A** INCREASED NEURONAL RESISTANCE TO EXCITOTOXIC INSULTS DUE TO THE AMPA RECEPTOR AUXILIARY SUBUNIT CKAMP44  
*Benedikt Grünewald, Matthias Venyi, Jonas Schroer, Masood Ahmad Wani, Anne Sinning, Heiko Luhmann, Jakob von Engelhardt, Mainz*
- T12-9A** INVESTIGATING ADAPTIVE RESPONSE MECHANISMS IN AUTOIMMUNE ENCEPHALITIS WITH AUTOANTIBODIES TO THE AMPA RECEPTOR  
*Tanvi Bhagwat, Holger Haselmann, Michael Kessels, Britta Qualmann, Christian Geis, Jena*

- T12-10A** KNOCKDOWN OF NEAT1 PREVENTS LIPID DROPLET ACCUMULATION IN PRIMARY MICROGLIA AFTER ISCHEMIC STROKE VIA AUTOPHAGY PATHWAY  
*Yongli Pan, Wenqiang Xin, Wei Wei, Lars Tatenhorst, Irina Graf, Mathias Bähr, Thorsten R Doemann, Goettingen*

## Thursday

- T12-1B** MECHANISTIC SINGLE-CELL INVESTIGATION OF NEUROINFLAMMATION INDUCED BY INFLUENZA A VIRUS INFECTION  
*Lea Gabele, Shirin Hosseini, Kristin Michaelsen-Preusse, Nele Rieke, Christian Sieben, Martin Korte, Braunschweig*
- T12-2B** IAV REPLICATION KINETICS AND CELL TROPISM IN MOUSE PRIMARY HIPPOCAMPAL CULTURES  
*Nele Rieke, Lea Gabele, Shirin Hosseini, Martin Korte, Christian Sieben, Braunschweig*
- T12-3B** MICROGLIA MEDIATE NEUROCOGNITIVE DEFICITS BY ELIMINATING C1Q TAGGED SYNAPSES IN SEPSIS-ASSOCIATED ENCEPHALOPATHY  
*Jonathan Wickel, Ha-Yeun Chung, Nina Hahn, Nils Mein, Meike Schwarzbrunn, Philipp Koch, Mihai Ceanga, Holger Haselmann, Carolin Baade-Büttner, Nikolai von Stackelberg, Nina Hempel, Lars Schmidl, Marco Groth, Nico Andreas, Juliane Götze, Sina M. Coldewey, Michael Bauer, Christian Mawrin, Justina Dargvainiene, Frank Leyboldt, Stephan Steinke, Zhao-Qi Wang, Michael Hust, Christian Geis, Jena*
- T12-4B** NETWORK PHARMACOLOGY AS A NOVEL STRATEGY FOR TREATING ACUTE BRAIN ISCHEMIA  
*Sebastian Erik Vonhof, Rebecca Steubing, Sepideh Sadegh, Jan Baumbach, Svenja Christina Rohde, Anna Hamker, Harald Schmidt, Christoph Kleinschnitz, Ana Isabel Casas, Essen*
- T12-5B** NEUROPROTECTION IN HUMAN CELLS: FUNCTIONS OF AN EVOLUTIONARY ANCIENT CYTOKINE RECEPTOR  
*Debbra Yasemin Knorr, Ignacio Rodriguez Polo, Hanna Sopia Pies, Nicola Schwedhel-Domeyer, Stephanie Pauls, Rüdiger Behr, Ralf Heinrich, Goettingen*
- T12-6B** NEW INSIGHTS IN NEUROPATHOLOGY AND PATHOGENESIS OF AUTOIMMUNE GLIAL FIBRILLARY ACIDIC PROTEIN MENINGO-ENCEPHALOMYELITIS  
*Verena Endmayr, Frank Leyboldt, Katharina Hess, Christoph Röcken, Desiree De Simoni, Stefan Oberndorfer, Ellen Gelpi, Simon Robinson, Chad Guthrie, Simon Hametner, Romana Hoeffberger, Vienna, Austria*
- T12-7B** NOVEL TARGETS OF GLYCINE RECEPTOR AUTOANTIBODIES IN STIFF PERSON SYNDROME  
*Anna-Lena Eckes, Inken Piro, Erdem Tüzün, Christian Werner, Claudia Sommer, Carmen Villmann, Wuerzburg*
- T12-8B** PATHOLOGY OF CASPR2 AUTOANTIBODIES – INVESTIGATION OF PROTEIN EXPRESSION LEVEL AND PROTEIN-PROTEIN INTERACTIONS WITHIN THE VGKC  
*Patrik Greguletz, Maria Plötz, Michele Niesner, Carmen Villmann, Kathrin Doppler, Wuerzburg*

- T12-9B** POSTSTROKE LIPID DROPLET ACCUMULATION IN RESIDING MICROGLIA AND ITS INFLUENCE ON INFLAMMATION AND PHAGOCYTOSIS  
*Wei Wei, Dirk Fitzner, Wenqiang Xin, Yongli Pan, Irina Graf, Lars Tatenhorst, Mathias Bähr, Thorsten R. Doeppner, Goettingen*

## Friday

- T12-1C** PRE-TRAUMATIC ANTIBIOTIC-INDUCED DEPLETION OF THE GUT MICROBIOME REDUCES NEUROINFLAMMATORY RESPONSE IN ACUTE MURINE TRAUMATIC BRAIN INJURY  
*Katharina Ritter, Diana Vetter, Michael KE Schaefer, Mainz*
- T12-2C** ROLE OF BDNF/TRKB AND PRO-BDNF/P75<sup>NTR</sup> SIGNALING IN MODULATING THE MICROGLIA FUNCTIONAL STATE IN THE AGING BRAIN  
*Yesheng Sun, Marta Zagrebelsky, Martin Korte, Braunschweig*
- T12-3C** SERUM ANTI-AGO1 ANTIBODIES IDENTIFY A PATIENT SUBGROUP OF SENSORY NEURONOPATHY RESPONDING BETTER TO IMMUNOMODULATORY TREATMENT  
*Christian Moritz, Yannick Tholance, Pierre-Baptiste Vallayer, Le-Duy Do, Sergio Muñoz-Castrillo, Véronique Rogemond, Karine Ferraud, Coralie La Marca, Jérôme Honnorat, Martin Killian, Stéphane Paul, Jean-Philippe Camdessanché, Jean-Christophe Antoine, Saint-Étienne (Saint-Priest-en-Jarez), France*
- T12-4C** SPATIAL TRANSCRIPTOMICS IDENTIFIES LOCAL AND CELL TYPE-SPECIFIC PATHOPHYSIOLOGICAL CHANGES IN A MOUSE MODEL OF SEPSIS-ASSOCIATED ENCEPHALOPATHY  
*Nina Hahn, Martin Bens, Marco Groth, Christian Geis, Jena*
- T12-5C** SYNAPTIC NETWORK DYSFUNCTION AND INCREASED INTRINSIC NEURONAL EXCITABILITY IN GLUA2 AUTOIMMUNE ENCEPHALITIS  
*Yang Yuan, Christian Geis, Holger Haselmann, Jena*
- T12-6C** TAUROURSODEOXYCHOLIC ACID AS A TREATMENT OF SPINAL CORD INJURY  
*Jörg Mey, Lorenzo Romero-Ramírez, Concepción García-Rama, Siyu Wu, Boris W. Kramer, Toledo, Spain*
- T12-7C** THE ASTROCYTIC-MICROGLIAL CROSSTALK LEADS TO A HIF-1 $\alpha$ -NITRIC OXIDE POSITIVE FEEDBACK LOOP DURING HYPOTHALAMIC INFLAMMATION  
*Francesco Arioli, Olaf Jöhren, Luebeck*
- T12-8C** THE POTENTIAL THERAPEUTIC ROLE OF ITACONATE AND MESACONATE ON THE DETRIMENTAL EFFECTS OF NEUROINFLAMMATORY PROCESSES IN THE BRAIN  
*Melanie Ohm, Shirin Hosseini, Karsten Hiller, Martin Korte, Braunschweig*

- T12-9C** THE ROLE OF POLYINOSINIC:POLYCYTIDYLIC ACID (POLY I:C) AS A VIRAL MIMETIC ON GLUTAMATE CLEARANCE BY ASTROCYTES AND MICROGLIA  
*Xizi Shi, Shirin Hosseini, Kristin Michaelsen-Preusse, Martin Korte, Braunschweig*

## T13: Cognitive, emotional, behavioral state disorders and addiction

### Wednesday

- T13-1A** ADOLESCENT SOCIAL STRESS: NEUROIMMUNOLOGICAL SIGNATURES OF STRESS SUSCEPTIBILITY  
*Tobias Tilmann Pohl, Hanna Hörnberg, Berlin*
- T13-2A** AN INTEROCEPTIVE ROLE FOR GLYCINERGIC PERIAQUEDUCTAL GREY NEURONS DURING DEFENSIVE STATES  
*Sara Cristina Lourenço dos Reis, Jérémy Signoret-Genest, Philipt Tovote, Wuerzburg*
- T13-3A** ANALYSIS AND COMPARISON OF DENDRITIC SPINE DENSITY OF PYRAMIDAL NEURONS IN NEX-CRE AND C57BL/6J MICE  
*Kim Laura Renken, Olivia Andrea Masseck, Bremen*
- T13-4A** ASSESSING SEX DIFFERENCES AND EFFECTS OF REPETITIVE ACUTE STRESS ON AN ANIMAL MODEL OF DEPRESSION  
*Lisa Ratz, Volker Arnd Coenen, Máté Daniel Döbrössy, Freiburg im Breisgau*
- T13-5A** BOTANICALS CAN INDUCE RESILIENCE TO A DEPRESSION-LIKE STATE IN *DROSOPHILA MELANOGASTER*  
*Helen Holvoet, Burkhard Poeck, Doris Kretzschmar, Amala Soumyanath, Roland Strauss, Mainz*
- T13-6A** DOES CHRONIC STRESS ALTER THE HIPPOCAMPAL STRESS ENGRAM?  
*Jonas Cornelius, Kristin Michaelsen-Preusse, Martin Korte, Braunschweig*
- T13-7A** ENHANCED AMYGDALA ACTIVITY BY SOCIAL FEAR CONDITIONING BUT NOT OBJECT FEAR CONDITIONING  
*Sukwon Lee, Juno Yeon, Daegu, Korea (South)*

### Thursday

- T13-1B** HEAVY ALCOHOL DRINKING DURING ADOLESCENCE COMPROMISES GABAERGIC INHIBITION IN ADULT MOUSE DENTATE GYRUS GRANULE CELLS  
*Fang Zheng, Christian Alzheimer, Erlangen*

- T13-2B** IMPACT OF BRAIN SEROTONIN DEFICIENCY IN DEVELOPMENT AND BEHAVIOUR IN POSTNATAL LIFE  
*Laura Boreggio, Niccolò Milani, Berlin*
- T13-3B** IN VIVO NORADRENALINE RELEASE FOLLOWING MEDIAL FOREBRAIN BUNDLE DEEP BRAIN STIMULATION IN RODENTS: THE IMPACT OF DIFFERENT STIMULATION PARAMETERS  
*Zhuo Duan, Lidia MiguelTelega, Yixin Tong, Volker Arnd Coenen, Máté Dániel Döbrössy, Freiburg*
- T13-4B** ITBS CHANGES IN FRONTOPARIETAL FUNCTIONAL AND STRUCTURAL CONNECTIVITY CORRELATED WITH CLINICAL IMPROVEMENT IN DEPRESSION  
*Asude Tura, Roberto Goya-Maldonado, Goettingen*
- T13-5B** NEUROFEEDBACK BASED INTERVENTIONS FOR EMOTIONAL STATES REGULATION  
*César Redondo, Jérémy Signoret-Genest, Philip Tovote, Wuerzburg*
- T13-6B** PSYCHOSTIMULANT-INDUCED NEUROINFLAMMATION: CLARIFYING ASTROCYTE-MICROGLIA CROSSTALK UNDER IL-10  
*Carolina Pinto, Ana Isabel Silva, Margarida Saraiva, Teresa Summavielle, Hamburg*

## Friday

- T13-1C** QUANTIFYING SOCIAL BEHAVIORS IN JUVENILE SHANK3 MICE USING ANIMAL POSE ESTIMATION TOOLS  
*Rosalba Olga Proce, Madhu Nagathihalli Kantharaju, Hanna Hörnberg, Berlin*
- T13-2C** RETRACTED  
REPEATED ADMINISTRATION OF N-ACETYLCYSTEINE COULD REDUCE THE EXTINCTION RESPONDING AND REINSTATEMENT IN THE MORPHINE-CONDITIONED RATS  
*Seyedeh-Najmeh Katebi, Abbas Haghparsat, Anahita Torkaman-Boutorabi, Tehran, Iran*
- T13-3C** SOCIAL STRESS AS A DEPRESSION INDUCED FACTOR IN SUBMISSIVE RATS  
*Tamar Domianidze, Tamar Matitaishvili, Keso Kozmava, Tbilisi, Georgia*
- T13-4C** THE INPUT-OUTPUT RELATIONSHIP OF VENTRAL TEGMENTAL AREA IN A RODENT MODEL OF DEPRESSION  
*Yixin Tong, Seonghee Cho, Volker Arnd Coenen, Mate Daniel Döbrössy, Freiburg*
- T13-5C** TRAINING AND PHARMACOLOGICAL MODULATION ENHANCE LEARNING IN RATS OVEREXPRESSING THE DOPAMINE TRANSPORTER  
*Nadine Bernhardt, Henriette Edemann-Callesen, Maximilian Glienke, Esther Olubukola Akinola, Maike Kristin Lieser, Christine Winter, Dresden*

- T13-6C** UTILIZING CHEMOGENETIC STRATEGIES IN NONHUMAN PRIMATES TO ASSESS THE ROLE OF AMYGDALA ACTIVATION IN THE EXPRESSION OF ANXIETY-RELATED BEHAVIORS  
*Sascha Mueller, Jonathan A. Oler, Nakul Aggarwal, Patrick H. Roseboom, Marissa K. Riedel, Victoria R. Elam, Miles E. Olsen, Alexandra H. DiFilippo, Bradley T. Christian, Xing Hu, Adriana Galvan, Matthew A. Boehm, Michael Michaelides, Ned Kalin, Madison, Wisconsin, USA*

## T14: Vision: invertebrates

### Wednesday

- T14-1A** A VERSATILE MULTI-COLOUR SPATIAL VISUAL STIMULUS PROJECTOR FOR *IN VIVO* TWO-PHOTON IMAGING  
*Christopher Schnaitmann, Mainz*
- T14-2A** BEHAVIORAL EXPLORATION OF LUMINANCE INVARIANCE IN *DROSOPHILA*  
*Annika Celine Bast, Madhura D Ketkar, Marion Silies, Mainz*
- T14-3A** DISTINCT CELLULAR AND CIRCUIT PROPERTIES DRIVE DIFFERENTIAL FEATURE EXTRACTION IN FIRST ORDER VISUAL INTERNEURONS  
*Neel Wagh, Katja Sporar, Junaid Akhtar, Marion Silies, Mainz*
- T14-4A** EXPLORING DENSITY-DEPENDENT DESERT LOCUST MARCHING WITH IMMERSIVE VIRTUAL REALITY  
*Sercan Sayin, Konstanz*

### Thursday

- T14-1B** HETEROGENEITY OF SYNAPTIC CONNECTIVITY IN THE FLY VISUAL SYSTEM  
*Jacqueline Cornean, Sebastian M. Molina Obando, Jonas Chojetzki, Lena Heike Lörsch, Marion Silies, Mainz*
- T14-2B** IMPLEMENTATION OF STABLE CONTRAST COMPUTATION IN THE VISUAL CIRCUITS  
*Burak Gür, Marion Silies, Mainz*
- T14-3B** NO DIRECTION HOME: HOW ANTS PERFORM SYSTEMATIC SEARCHES  
*Patrick Schultheiss, Wuerzburg*
- T14-4B** PERSISTENT IDIOSYNCRATIC BEHAVIORAL TRAITS IN *DROSOPHILA MELANOGASTER* DEPEND ON INDIVIDUAL VARIABILITY AND BEHAVIORAL CONTEXT  
*Gerit Arne Linneweber, Thomas Mathejczyk, Cara Knief, Muhammad Haidar, Mathias Wernet, Berlin*

- T14-5B**      RESPONSES OF CENTRAL-COMPLEX NEURONS OF THE DESERT LOCUST TO NATURAL SKY PRESENTATION  
*Erich M. Staudacher, Keram Pfeiffer, Uwe Homberg, Marburg*

## Friday

- T14-1C**      SIX POPULATIONS OF LOCAL MOTION DETECTORS REPRESENT OPTIC FLOW GENERATED DURING FLIGHT  
*Miriam Henning, Azize Karakut, Burak Gür, Joachim Urban, Marion Silies, Mainz*
- T14-2C**      TEMPERATURE EFFECTS ON WIDE-FIELD MOTION SENSITIVE NEURONS IN THE CENTRAL BRAIN OF BUMBLEBEES  
*Bianca Jaske, Keram Pfeiffer, Wuerzburg*
- T14-3C**      THE COCKROACH CENTRAL COMPLEX: PHYSIOLOGY AND MORPHOLOGY OF SINGLE NEURONS IN THE BRAIN OF *RHYPAROBIA MADERAE*  
*Stefanie Jahn, Vanessa Althaus, Naomi Takahashi, Juliana Schott, Mona Janning, Uwe Homberg, Marburg*
- T14-4C**      THE DYNAMIC PROPERTIES OF SKY-COMPASS NEURONS IN BUMBLEBEES DURING NATURALISTIC STIMULATION  
*Lisa Rother, Keram Pfeiffer, Wuerzburg*
- T14-5C**      WALKING BUMBLEBEES SEE FASTER  
*Keram Pfeiffer, Robin Müller, Erwin Kirschenmann, Markus Thamm, Lisa Rother, Wuerzburg*

## T15: Vision: retina and subcortical pathways

### Wednesday

- T15-1A**      ANALYSIS OF THE RECEPTIVE FIELD SUBSTRUCTURE OF RETINAL GANGLION CELLS WITH ARTIFICIAL NEURAL NETWORKS  
*Margaret Young, Tim Gollisch, Goettingen*
- T15-2A**      COMPLEXIN 3 AND 4 PLAY A MAJOR ROLE IN RETINAL DARK AND LIGHT ADAPTATION IN MICE: AN ELECTRORETINOGRAPHIC STUDY  
*Nina Martina Stallwitz, Anneka Joachimsthaler, Jan Kremers, Erlangen*
- T15-3A**      CONNECTIVITY OF PHOTORECEPTORS AND BIPOlar CELLS IN TWO AVIAN RETINAS  
*Anja Günther, Paul Watkins, Karin Dedek, Silke Haverkamp, Stephan Irsen, Henrik Mouritsen, Kevin Briggman, Bonn*



- T15-4A** DOES BASSOON MAINTAIN CONE PHOTORECEPTOR SURVIVAL BY REGULATING RETINAL HOMEOSTASIS?  
*Miriam Ryl, Enes Yagiz Akdas, Sophia Bayer, Kaspar Gierke, Julia von Wittgenstein, Anna Fejtová, Johann Helmut Brandstätter, Erlangen*
- T15-5A** FEATURE SELECTIVITY OF COLLICULAR WIDE-FIELD NEURONS IS GENERATED BY STRATIFIED INPUTS AND NONLINEAR DENDRITIC FILTERING  
*Norma Kühn, Chen Li, Bram Nuttin, Natalia Baimacheva, Arnau Sans Dublanc, Katja Reinhard, Vincent Bonin, Karl Farrow, Leuven, Belgium*

## Thursday

- T15-1B** HORIZONTAL CELLS IN DIFFERENT AVIAN SPECIES  
*Vaishnavi Balaji, Henrik Mouritsen, Karin Dedek, Oldenburg*
- T15-2B** INDIVIDUAL INHIBITORY INTERNEURONS IN THE THALAMUS ARE FUNCTIONALLY SPECIALIZED TOWARDS DISTINCT VISUAL FEATURES  
*Fiona Elisabeth Müllner, Botond Roska, Basel, Switzerland*
- T15-3B** INFERENCE OF FUNCTIONAL NETWORK STRUCTURE USING MATRIX FACTORIZATION  
*Sören J. Zapp, Tim Gollisch, Goettingen*
- T15-4B** INFERRING MECHANISMS OF VISUAL SIGNAL PROCESSING IN THE VERTEBRATE RETINA USING BIOLOGICALLY INSPIRED CNNs  
*Shashwat Sridhar, Michaela Vystrcilová, Alexander Ecker, Tim Gollisch, Goettingen*
- T15-5B** INTERROGATING A PUTATIVE CIRCUIT IN THE INNER RETINA  
*Juan Diego Prieto, Tim Gollisch, Goettingen*
- T15-6B** MODEL-BASED ANALYSIS OF TEMPORAL ADAPTATION IN RESPONSES OF RETINAL GANGLION CELLS TO SPATIOTEMPORAL STIMULATION  
*Robert Mihai Haret, Tim Gollisch, Goettingen*

## Friday

- T15-1C** NEURAL BASIS OF VISUAL INFORMATION INTEGRATION AND DECISION-MAKING  
*Katja Slangewal, Max Capelle, Florian Kämpf, Armin Bahl, Konstanz*
- T15-2C** PROTEIN INTERACTION NETWORK OF THE COMPLEXIN 4 - SNARE COMPLEX IN THE RETINA  
*Jutta Meyer, Uwe Lux, Olaf Jahn, Nils Brose, Johann Helmut Brandstätter, Kerstin Reim, Goettingen*
- T15-3C** RESPONSE PROPERTIES OF SUPPRESSED-BY-CONTRAST CELLS IN THE EARLY MOUSE VISUAL SYSTEM  
*Florentyna Debinski, Simon Renner, Emma Müller-Seydlitz, Yuyang Huang, Timm Schubert, Laura Busse, Thomas Euler, Tuebingen*

- T15-4C** SUPER-RESOLUTION IMAGING IN THE MOUSE RETINA  
*Timm Schubert, Kseniia Sarieva, Leon Kremers, Thomas Euler, Tuebingen*
- T15-5C** TOWARDS A LIGHT-MEDIATED GENE THERAPY FOR THE EYE - RETINAL TRANSGENE EXPRESSION THROUGH PHOTOACTIVATION OF CAGED TAMOXIFEN AND THE INDUCIBLE CRE/LOX SYSTEM  
*Sidney Cambridge, Frankfurt/Main*
- T15-6C** VISUAL ENCODING BY RETINAL GANGLION CELLS IN OPTOGENETIC MODELS FOR VISION RESTORATION  
*Varsha Ramakrishna, Tim Gollisch, Sonja Kleinlogel, Goettingen*

## T16: Vision: striate and extrastriate cortex, eye movement and visuomotor processing

### Wednesday

- T16-1A** A SYNAPTIC COROLLARY DISCHARGE SIGNAL IN THE OPTIC TECTUM INHIBITS VISUAL PROCESSING DURING SELF-MOTION  
*Johann H. Bollmann, Mir Ahsan Ali, Katharina Lischka, Chintan A. Trivedi, Stephanie J. Preuss, Freiburg*
- T16-2A** COMPROMISED BINOCULAR INTEGRATION AND REDUCED DIRECTION SELECTIVITY IN THE VISUAL CORTEX OF POSTSYNAPTIC DENSITY PROTEIN 95 (PSD-95) KNOCK-OUT MICE  
*Masoud Kargar, Nikolaos Aggelopoulos, Susanne Dehmel, Oliver M. Schlüter, Cornelia Schöne, Siegrid Löwel, Goettingen*
- T16-3A** CONTEXT-DEPENDENT INTERAREAL SYNCHRONIZATION IN MOUSE VISUAL CORTEX  
*Chockalingam Ramanathan, David Eriksson, Julia Veit, Freiburg*
- T16-4A** CORTICO-CORTICAL NEURONS PROVIDE DIRECT INTERHEMISPHERIC COMMUNICATION BETWEEN LAYER 6 OF THE MONOCULAR PRIMARY VISUAL CORTICES  
*Simon Weiler, Mateo Velez-Fort, Troy W. Margrie, London, UK*

### Thursday

- T16-1B** EXPERIENCE-DEPENDENT CHANGES IN VISUOSPATIAL SELECTIVITY IN VISUAL CORTEX AND HIPPOCAMPUS  
*Tom Flossmann, Nathalie Rochefort, Edinburgh, UK*

- T16-2B** ISOLATING THE ONGOING IMPACT OF SPECIFIC CELL-TYPES ONTO RECURRENT CIRCUITS IN-VIVO  
*David Henning Eriksson, Chockalingam Ramanathan, Julia Veit, Freiburg*
- T16-3B** LOSS OF POSTSYNAPTIC DENSITY-95 (PSD-95) LEADS TO IMPAIRED PREY CAPTURE BEHAVIOUR IN MICE  
*Subhodeep Bhattacharya, Susanne Dehmel, Cornelia Schöne, Oliver M. Schlüter, Siegrid Löwel, Goettingen*

### Friday

- T16-1C** NEURONAL REPRESENTATION OF COLOR IN THE PIGEON VISUAL WULST  
*Simon Nimpf, Harris Kaplan, Gregory Charles Nordmann, Laura Busse, David Anthony Keays, Planegg-Martinsried*
- T16-2C** OREXIN KNOCK-OUT DISRUPTS JUVENILE OCULAR DOMINANCE PLASTICITY IN THE MOUSE VISUAL CORTEX  
*Jaya Sowkyadha Sathiyamani, Tejas Shaji Nair, Siegrid Löwel, Cornelia Schöne, Goettingen*
- T16-3C** ORIGINS OF FEATURE MAPS IN THE VISUAL CORTEX  
*Young Jun Jung, Michael Ibbotson, Carlton, Australia*

## T17: Auditory mechanoreceptors, vestibular, cochlea, lateral line and active sensing

### Wednesday

- T17-1A** ANALYZING THE TRP CHANNEL INTERACTOMES IN THE *DROSOPHILA* HEARING ORGAN  
*Majid Bahader, Martin Göpfert, Goettingen*
- T17-2A** AUTOSOMAL DOMINANT AUDITORY NEUROPATHY TYPE 2 IS CAUSED BY LOSS OF SPIRAL GANGLION NEURONS DUE TO A MUTATION IN ATP11A  
*Nicola Strenzke, Shashank Chepurwar, Sarah von Loh, Daniela Wigger, Jakob Neef, Dirk Beutner, Ruth Lang-Roth, Christian Kubisch, Alexander E. Volk, Goettingen*
- T17-3A** CABP2 AND 1 TOGETHER PREVENT INACTIVATION OF CAV1.3 CHANNELS AT THE IHC RIBBON SYNAPSES AND ENABLE SUSTAINED NEUROTRANSMISSION  
*Shashank Sharad Chepurwar, David Oestreicher, Tatjana Pallinger, Kathrin Kusch, Vladan Rankovic, Sangyong Jung, Nicola Strenzke, Tina Pangrsic, Goettingen*
- T17-4A** CHARACTERIZATION OF PROMOTER EXPRESSION IN SPIRAL GANGLION NEURONS AND HAIR CELLS *IN VITRO*  
*Mara Uhl, Dominik Simon Botermann, Tabea Quilitz, Burak Bali, Lennart Roos, Lena Lindner, Alica Blenkle, Tobias Moser, Christian Wrobel, Kathrin Kusch, Goettingen*

- T17-5A** CHOLESTEROL METABOLISM AND TRAFFICKING IN THE ORGAN OF CORTI  
*Yuna Werchner, Roos Voorn, Christian Vogl, Tobias Moser, Lina Maria Jaime Tobon, Goettingen*
- T17-6A** DEVELOPMENT OF EARPHONE-TYPE NONINVASIVE AUDITORY PROSTHESES WITH INFRARED LASER-BASED TECHNOLOGY  
*Yuta Tamai, Miku Uenaka, Aya Okamoto, Keito Hosokawa, Shizuko Hiryu, Kohta I. Kobayasi, Tuebingen*

## Thursday

- T17-1B** IMAGING AUDITORY PROCESSING IN CRICKETS USING EXTRACELLULAR LOADING OF  $Ca^{2+}$  TRACERS  
*Berthold Hedwig, Xinyang Zhang, Darron Cullen, Fernando Montealegre-Z, Cambridge, UK*
- T17-2B** IMPACT OF CONVENTIONAL NEONICOTINOID INSECTICIDES AND A NOVEL ALTERNATIVE ON AUDITORY PROCESSING IN THE DESERT LOCUST *SCHISTOCERCA GREGARIA*  
*Marcelo Christian, Michelle Kraft, Paul Wilknitz, Manuela Nowotny, Stefan Schöneich, Jena*
- T17-3B** THE POTASSIUM CHANNEL EAG CONTRIBUTES TO VARIANCE ADAPTATION IN PRIMARY AUDITORY NEURONS OF *DROSOPHILA MELANOGASTER*  
*Julian Rafael Rottschäfer, Jan Clemens, Goettingen*
- T17-4B** OPTOGENETIC STIMULATION REDUCES SPECTRAL SPREAD OF COCHLEAR IMPLANTS – A MODELING STUDY  
*Lakshay Khurana, Daniel Keppeler, Lukasz Jablonski, Tobias Moser, Goettingen*
- T17-5B** PARALEMMIN-3 – AN ESSENTIAL CONSTITUENT OF THE PLASMA MEMBRANE OF AUDITORY HAIR CELLS  
*Victoria Christine Halim, Iman Bahader, Thomas Effertz, Kathrin Kusch, Nicola Strenzke, Manfred Kilimann, Christian Vogl, Goettingen*
- T17-6B** QUANTIFICATION OF COCHLEAR NEURONS BASED ON LIGHT SHEET MICROSCOPY  
*Anupriya Thirumalai, Tabea Quilitz, Antoine Huet, Tobias Moser, Goettingen*

## Friday

- T17-1C** RECONSTITUTION OF SYNTHETIC RIBBON-TYPE ACTIVE ZONES IN A HETEROLOGOUS SYSTEM: IN PURSUIT OF DISSECTING THE MOLECULAR ORGANIZATION AND DYNAMICS OF PRESYNAPTIC  $Ca^{2+}$  CHANNELS  
*Rohan Kapoor, Niko Schwenzler, Thomas Dresbach, Tobias Kohl, Stefan Lehnart, Tobias Moser, Goettingen*
- T17-2C** SENSITIVITY TUNING OF *DROSOPHILA* HEARING  
*Philip Hehlert, Thomas Effertz, Ruo-Xu Gu, Bert De-Groot, Dirk Beutner, Martin C. Göpfert, Goettingen*

- T17-3C** SOUND PROCESSOR AND DRIVER FOR OPTICAL COCHLEAR IMPLANTS ENABLING BEHAVIOURAL EXPERIMENTS IN FREELY MOVING ANIMALS  
*Lukasz Jablonski, Tamas Harczos, Gerhard Hoch, Tobias Moser, Goettingen*
- T17-4C** THE ROLE OF VISION FOR FREQUENCY DISCRIMINATION AND PATH INTEGRATION IN AN ACTIVE LISTENING PARADIGM  
*Annalena Malzacher, Tobias Hilbig, Michael Pecka, Dardo N. Ferreira, Planegg-Martinsried*
- T17-5C** TOWARDS BEHAVIORAL EVALUATION OF A MULTICHANNEL OPTOGENETIC COCHLEAR IMPLANT  
*Bettina Julia Wolf, Lukasz Jablonski, Tamas Harczos, Alexander Dieter, Christian Dullin, Patrick Ruther, Tobias Moser, Goettingen*
- T17-6C** VGLUT3-DEPENDENT GLUTAMATERGIC QUANTAL TRANSMISSION IN PERIPHERAL VESTIBULAR FUNCTION  
*Mohona Mukhopadhyay, Aizhen Yang-Hood, Kevin K. Ohlemiller, Maolei Xiao, Mark Warchol, Mark Rutherford, Tina Pangrsic, Goettingen*

## T18: Auditory system: subcortical and cortical processing

### Wednesday

- T18-1A** AGE-RELATED SYNAPTOPATHY ALTERS CENTRAL AUDITORY RESPONSES TO SPEECH-LIKE STIMULI IN THE RAT  
*Lukas Rüttiger, Anna Melchers, Konrad Dapper, Etienne Gaudrain, Deniz Baskent, Marjoleen Wouters, Sarah Verhulst, Matthias H.J. Munk, Marlies Knipper, Tuebingen*
- T18-2A** DISTINCT NEURAL POPULATIONS PROCESS AUDITORY AND NON-AUDITORY ACTIVITY IN SHELL INFERIOR COLLICULUS  
*Gunnar Lennart Quass, Meike Marie Rogalla, Alexander Nicholas Ford, Kaiwen Shi, Pierre François Apostolides, Ann Arbor, USA*
- T18-3A** DOPAMINE DEPENDENT POTENTIATION OF AUDITORY EVOKED POTENTIALS IN THE STRIATUM  
*Andreas L. Schulz, Michael T. Lippert, Frank W. Ohl, Magdeburg*
- T18-4A** EVEN SMALL CHANGES IN ACOUSTIC BACKGROUND CAN INDUCE PREPULSE INHIBITION OF THE STARTLE RESPONSE DEPENDING ON SIZE AND DIRECTION OF CHANGE  
*Lisa Koch, Eva Dunkel, Markus M. Middeke, Bernhard H. Gaese, Frankfurt/Main*

- T18-5A** GABAB RECEPTORS MODULATE THE MEMBRANE POTENTIAL OF NEURONS IN THE DORSAL NUCLEUS OF THE LATERAL LEMNISCUS  
*Amina Javadova, Felix Felmy, Hannover*
- T18-6A** HEBBIAN LEARNING UNDERLYING ANTICIPATED ITD CUE RELIABILITY IN THE BARN OWL AUDITORY SYSTEM  
*Roland Feger, Keanu Shadron, Brian J. Fischer, José L. Peña, New York, USA*
- T18-7A** HOW THE BRAIN DETECTS IMPORTANT SOUNDS: DEVIANCE DETECTION IN AUDITORY BRAINSTEM RESPONSES  
*Johannes Wetekam, Julio Hechavarria, Luciana Lopez-Jury, Manfred Koessl, Frankfurt/Main*
- T18-8A** IMPLICATIONS OF SYNAPTIC NOISE ON EXCITATION-INHIBITION INTEGRATION IN AUDITORY BRAINSTEM NEURONS  
*Jonas Martin Fisch, Eckhard Friauf, Kaiserslautern*
- T18-9A** FREQUENCY INTEGRATION IN THE INTERMEDIATE NUCLEUS OF THE LATERAL LEMNISCUS IS BASED ON A BIOPHYSICALLY HETEROGENEOUS CELL POPULATION  
*Kathrin Deborah Wicke, Nikolaos Kladisios, Felix Felmy, Hannover*

## Thursday

- T18-1B** MORPHOLOGY AND PHYSIOLOGY OF THE MONGOLIAN GERBIL ANTEROVENTRAL COCHLEAR NUCLEUS NEURONS  
*Sabina Nowakowska, Jana Henseler, Antoine Tarquin Huet, Goettingen*
- T18-2B** NEUROMODULATION OF THE ENDBULB OF HELD TO BUSHY CELL SYNAPSE IN THE ANTEROVENTRAL COCHLEAR NUCLEUS BY SEROTONIN AND NOREPINEPHRINE  
*Theocharis Alvanos, Maria Groshkova, Tobias Moser, Goettingen*
- T18-3B** NEURONAL INTEGRATION OF ACOUSTIC SIGNALS IN AN INSECT AUDITORY SYSTEM  
*Annette Stange-Marten, Jan Scherberich, Stefan Schöneich, Melisa Merdan-Desik, Manuela Nowotny, Jena*
- T18-4B** PHASE COUPLING IS CRUCIAL FOR POSITIVE THRESHOLD EFFECT IN TINNITUS PATIENTS  
*Konstantin Tziridis, Holger Schulze, Erlangen*
- T18-5B** *PHYLLOSTOMUS DISCOLOR* RETAIN A CONSISTENT BEAM SIZE IN SEEKING TARGETS  
*Ravi Umadi, Lasse Jakobsen, Lutz Wiegrebe, Uwe Firzlaff, Freising*
- T18-6B** POTENTIAL FUNCTIONS OF LOCAL AND DESCENDING AUDITORY NEURONS IN A BUSH CRICKET  
*Ali Cillov, Andreas Stumpner, Goettingen*

- T18-7B** REPRESENTATION OF AUDITORY SPACE IN THE SHELL OF THE INFERIOR COLLICULUS  
*Meike Marie Rogalla, Gunnar L. Quass, Deepak Dileepkumar, Alexander N. Ford, Günseli Wallace, Harry Yardley, Pierre F. Apostolides, Ann Arbor, USA*
- T18-8B** ROBUST FRONTAL SPATIAL REPRESENTATIONS APPEAR IN THE AUDITORY CORTEX OF AWAKE MICE  
*Michael Hideki Myoga, Matthias Gumbert, Benedikt Grothe, Planegg-Martinsried*

## Friday

- T18-1C** SPECIES-SPECIFIC MORPHOMETRY OF STRUCTURAL COMPARTMENTS OF MNTB PRINCIPAL NEURONS  
*Christina Pätz-Warncke, Tjard Bergmann, Sönke von den Berg, Felix Felmy, Hannover*
- T18-2C** STIMULUS-SPECIFIC ADAPTATION IN THE BAT'S FRONTAL AND AUDITORY CORTEX  
*Eugenia Gonzalez-Palomares, Julio C. Hechavarría, Frankfurt/Main*
- T18-3C** TARGET RESOLUTION OF SINGLE NEURONS IN THE COMPUTATIONAL TARGET DISTANCE MAP OF BATS  
*Ali Roustazadeh, Uwe Firzlaff, Freising*
- T18-4C** THE ROLE OF OTOFERLIN AT THE INNER HAIR CELL SYNAPSE: AN *IN VITRO* INVESTIGATION  
*Mehar Monga, Julia Preobraschenski, Goettingen*
- T18-5C** THE TSC – MTORC1 AXIS IN THE DEVELOPMENT OF THE AUDITORY BRAINSTEM  
*Lena Ebbers, Jan Bobrowski, Enno Davide Wendlandt, Lisa Borowsky, Kathrin Thedieck, Hans Gerd Nothwang, Oldenburg*
- T18-6C** THE TWO-PORE POTASSIUM CHANNEL SUBUNIT TASK5 REGULATES CENTRAL AUDITORY PROCESSING  
*Christoph Körber, Mahshid Helia Saber, Michaela Kaiser, Lukas Rüttiger, Heidelberg*
- T18-7C** WEAK TOPOGRAPHIC ORGANIZATION OF AUDITORY CORTICOCOLLICULAR NEURONS  
*Kira Maria Anna Andrea, Tatjana T. X. Schmitt, Simon L. Wadle, Jan J. Hirtz, Kaiserslautern*
- T18-8C** WHAT FACTORS INFLUENCE THE SPEED OF TASK LEARNING IN A FREELY MOVING GO/NO-GO PARADIGM?  
*Gökçe Dogu, Valentin Winhart, Paula Gundi, Andrey Sobolev, Miguel Bengala, Dardo N. Ferreira, Michael Pecka, Munich*

## T19: Chemical senses: olfaction, taste, others

### Wednesday

- T19-1A** ANATOMICAL BASIS OF OLFACTORY PROCESSING IN THE BRAIN OF IXODES TICKS  
*Carola Städele, Goettingen*
- T19-2A** ANATOMY OF CENTRAL GUSTATORY CIRCUITS IN THE HONEY BEE BRAIN  
*Melissa Pitzalis, Virginie Larcher, Louise Bestea, Gabriela de Brito Sanchez, Martin Giurfa, Julie Carcaud, Jean-Christophe Sandoz, Gif-sur-Yvette, France*
- T19-3A** AXONAL PROJECTIONS OF MAIN AND ACCESSORY OLFACTORY BULB PRINCIPAL NEURONS IN MICE  
*Moritz Nesseler, Marc Spehr, Aachen*
- T19-4A** CHALLENGES AND APPROACHES FOR MEASURING WHOLE-BRAIN ACTIVITY IN NON-MODEL INSECTS  
*Yvonne Hertenberger, Sercan Sayin, Einat Couzin-Fuchs, Armin Bahl, Konstanz*
- T19-5A** CHARACTERIZATION OF INNATE ODOR DRIVEN EXPLORATORY BEHAVIOR  
*Christian Daniel, Giovanni D'uva, Maria Ioannidou, Leticia Batista, Carlotta Martelli, Mainz*
- T19-6A** CHEMOSENSORY PROCESSING OF SICKNESS RELATED CUES VIA THE MOUSE ACCESSORY OLFACTORY SYSTEM  
*Friederike Donata Seifert, Marco Niestroj, Maciej Winiarski, Anna Bryska, Lydia Kopplin, Pavel Stopka, Alicja Puscian, Oliver Pabst, Minghong Ma, Marc Spehr, Aachen*
- T19-7A** CIRCUIT MECHANISMS CONTROLLING STATE-DEPENDENT FOOD INTAKE IN *DROSOPHILA*  
*Lara Lederle, Anna-Lena Eckes, Janina Brückner, Xinyu Liu, Rouven Lukas Ziegler, Jan Pielage, Kaiserslautern*
- T19-8A** EARLY OLFACTORY PROCESSING IN ANTENNAL LOBE NEURONS IN THE STICK INSECT *CARAUSIUS MOROSUS*  
*Andrea Gonsek, Volker Dürr, Martin Strube-Bloss, Bielefeld*
- T19-9A** EFFECT OF ENVIRONMENT AND INTERNAL STATE ON *DROSOPHILA* LARVAL GROUP BEHAVIOUR  
*Akhila Mudunuri, Katrin Vogt, Konstanz*
- T19-10A** ELECTROPHYSIOLOGICAL AND MORPHOLOGICAL CHARACTERIZATION OF PERIGLOMERULAR CELLS IN THE MOUSE ACCESSORY OLFACTORY BULB  
*Hannah-Lena Tröger, Marc Spehr, Aachen*
- T19-11A** EVOLUTION OF AN OLFACTORY SUBSYSTEM AND ITS LINK WITH THE MULTIPLE EMERGENCES OF EUSOCIALITY IN HYMENOPTERA  
*Simon Marty, Antoine Couto, Patrizia d'Ettorre, Stephen Montgomery, Jean-Christophe Sandoz, Gif-sur-Yvette, France*



## Thursday

- T19-1B** EVOLUTION OF CHEMOSENSORY RECEPTOR REPERTOIRES  
*Sigrun I. Korsching, Daniel Kowatschew, Milan Dieris, Cologne*
- T19-2B** EXAMINATION OF MEMBRANE PROPERTIES THAT CONTROL PLASTICITY OF KINETICS AND SENSITIVITY IN HAWKMOTH OLFACTORY RECEPTOR NEURONS  
*Aditi Vijayan, Anna Schneider, Mauro Forlino, Katrin Schröder, Yajun Chang, Martin Garcia, Monika Stengl, Kassel*
- T19-3B** EXAMINATION OF SPONTANEOUS ACTIVITY OF PHEROMONE-SENSITIVE OLFACTORY RECEPTOR NEURONS IN THE HAWKMOTH *MANDUCA SEXTA* AND THE ROLE OF ORCO  
*Monika Stengl, Katrin Schroeder, Kassel*
- T19-4B** HOMEOSTASIS OF MITOCHONDRIAL  $Ca^{2+}$  STORES IS CRITICAL FOR SIGNAL AMPLIFICATION IN *DROSOPHILA MELANOGASTER* OLFACTORY SENSORY NEURONS  
*Eric Wiesel, Sabine Kaltofen, Bill S. Hansson, Dieter Wicher, Jena*
- T19-5B** INTERINDIVIDUAL VARIATION OF SYNAPTIC PARTNERS: A STUDY ON THE OLFACTORY PATHWAY OF *DROSOPHILA MELANOGASTER*  
*Leticia Leandro Batista, Pascal Züfle, Carlotta Martelli, Mainz*
- T19-6B** INVESTIGATION OF DOSE-DEPENDENT MODULATORY MECHANISMS IN MOUSE OLFACTORY TRANSDUCTION  
*Victoria K. Switacz, Daniela R. Drose, Marc Spehr, Aachen*
- T19-7B** LINEAR INTEGRATION OF TASTE AND COURTSHIP SONG DRIVE SOCIAL INTERACTIONS IN *DROSOPHILA* MALES  
*Adrián Palacios-Muñoz, Jan Clemens, Goettingen*
- T19-8B** MULTISITE IMAGING OF NEURAL ACTIVITY USING A GENETICALLY ENCODED CALCIUM SENSOR IN THE HONEY BEE *APIS MELLIFERA*  
*Jean-Christophe Sandoz, Julie Carcaud, Marianne Otte, Bernd Grünwald, Albrecht Haase, Martin Beye, Gif-sur-Yvette, France*
- T19-9B** OBTAINING NUMERICAL VALUES OF AN OLFACTORY SYSTEM: FIRST STEPS TO CHARACTERIZE THE OLFACTORY PATHWAY IN THE CRUSTACEAN *PARHYALE HAWAIIENSIS*  
*Katja Dorina Kümmerlen, Sophie Raspe, Steffen Harzsch, Greifswald*
- T19-10B** SNMP1 IS CRITICAL FOR SENSITIVE PHEROMONE DETECTION AND PHEROMONE-CONTROLLED BEHAVIORS IN THE DESERT LOCUST *SCHISTOCERCA GREGARIA*  
*Joris Lehmann, Johanna Libnow, Maryam Khosravian, Hetan Chang, Markus Knaden, Bill S. Hansson, Jürgen Krieger, Jörg Fleischer, Halle (Saale)*

- T19-11B** SOCIAL FLEXIBILITY AND OLFACTORY PROCESSING IN THE DESERT LOCUST  
*Inga Petelski, Yannick Guenzel, Sercan Sayin, Einat Couzin-Fuchs, Konstanz*

**Friday**

- T19-1C** SPIKE FREQUENCY MODULATION OF CENTRAL NEURONS IN THE PRIMARY OLFACTORY PATHWAY OF INSECTS  
*Jan Erik Radermacher, Debora Fusca, Svenja Comeliussen, Jonas M. Klußmann, Peter Kloppenburg, Cologne*
- T19-2C** STATE-DEPENDENT MODULATION OF ODOR VALENCE AND SOCIAL BEHAVIOR VIA THE MAIN OLFACTORY PATHWAY  
*Annika Cichy, Adam Dewan, Jingji Zhang, Sarah Kaye, Tiffany Teng, Cassandra Blanchard, Paul Feinstein, Thomas Bozza, Bonn*
- T19-3C** SYNAPTIC MECHANISMS AND THEIR FUNCTIONS FOR STIMULUS ADAPTATION IN THE *DROSOPHILA* OLFACTORY PATHWAY  
*Sofia C. Brandão, Carlotta Martelli, Mainz*
- T19-4C** THE LARVAL SENSORY SYSTEM: FROM STRUCTURE TO FUNCTION  
*Vincent Richter, Anna Rist, Anton Miroshchnikow, Michael J. Pankratz, Albert Cardona, Michael Laumann, Andreas S. Thum, Leipzig*
- T19-5C** THE MUSHROOM BODY OUTPUT ENCODES BEHAVIORAL DECISION DURING SENSORY-MOTOR TRANSFORMATION  
*Cansu Arican, Felix Johannes Schmitt, Wolfgang Rössler, Martin Fritz Strube-Bloss, Martin Paul Nawrot, Cologne*
- T19-6C** THE NEURONAL LOGIC OF HOW INTERNAL STATES CONTROL FOOD CHOICE  
*Daniel Münch, Dennis Goldschmidt, Carlos Ribeiro, Lisboa, Portugal*
- T19-7C** THE ROLE OF SNMP2 IN THE OLFACTORY PROCESSES OF MOTHS  
*Sina Cassau, Jürgen Krieger, Halle (Saale)*
- T19-8C** THE SEARCH FOR OLFACTORY RECEPTORS TUNED TO PHEROMONES IN THE HONEY BEE  
*Benjamin Andreu, Nicolas Montagné, Thomas Chertemps, Emmanuelle Jacquin-Joly, David Touboul, Amandine Huebert, Gif-sur-Yvette, France*
- T19-9C** THE SENSILLA-SPECIFIC EXPRESSION AND SUBCELLULAR LOCALIZATION OF SNMP1 AND SNMP2 REVEAL NOVEL INSIGHTS INTO THEIR ROLES IN THE ANTENNA OF THE DESERT LOCUST *SCHISTOCERCA GREGARIA*  
*Jürgen Krieger, Doreen Sander, Angelina Degen, Thomas Karcher, Stephanie Krüger, Michael Laue, Gerd Hause, Heinz Breer, Sina Cassau, Halle (Saale)*

- T19-10C** WHOLE BRAIN REPRESENTATION OF ODOR AND TASTE AND THEIR INTEGRATION IN THE ADULT FLY  
*Paul Bandow, Sophie Aimon, Ilona C. Grunwald Kadow, Bonn*
- T19-11C** BINGE EATING SUPPRESSES FLAVOR REPRESENTATIONS IN THE MOUSE OLFACTORY CORTEX  
*Hung Lo, Berlin*

## T20: Somatosensation: touch, temperature, proprioception, nociception

### Wednesday

- T20-1A** ALTERED THERMOREGULATION IN ADRA2B-NULL MICE LINKS TO METABOLIC ALTERATIONS  
*Xinnan Song, Katharina Zimmermann, Pragyanshu Khare, Erlangen*
- T20-2A** ANATOMICAL CHARACTERIZATION OF *DROSOPHILA MELANOGASTER* ASCENDING NEURONS CONVEYING SOMATOSENSORY INFORMATION FROM THE ADULT VENTRAL NERVE CORD TO THE BRAIN  
*Massimo Thiel, Erica Ehrhardt, Kei Ito, Cologne*
- T20-3A** CERAMIDE SYNTHASES: NEW PLAYERS IN PAIN SIGNALING?  
*Oliver Dräger, Marie Bergmeier, Wing-Kee Lee, Erhard Wischmeyer, Bielefeld*
- T20-4A** INVESTIGATING THE ROLE OF MAGNETIC CUES IN THE NEURAL REPRESENTATION OF SPACE IN THE SUBTERRANEAN MOLE-RAT *FUKOMYS ANSELLI*  
*Runita Shirdhankar, Georgina Fenton, Pascal Malkemper, Bonn*

### Thursday

- T20-1B** LEG CAMPANIFORM SENSILLA PROJECTION PATTERNS IN THE FRUIT FLY VENTRAL NERVE CORD  
*Anna Pierzchlinska, Gesa F. Dinges, Erica Ehrhardt, Till Bockemühl, Kai Feng, Kei Ito, Ansgar Büschges, Cologne*
- T20-2B** FPR2 ACTIVATION INITIATES PAIN RESOLUTION AND FIBRINOGEN CLEARANCE AFTER SCIATIC NERVE INJURY  
*Adel Ben Kraiem, Beate Hartmannsberger, Marco Sisignano, Andres. J. Garcia, Alexander Brack, Heike Rittner, Alexander Brack, Heike Rittner, Wuerzburg*
- T20-3B** ROLE OF LEG-CAMPANIFORM SENSILLA IN FRUIT FLY CURVE WALKING  
*Ricardo Duarte Custódio, Axel Gorostiza, Till Bockemühl, Ansgar Büschges, Cologne*

- T20-4B**      ROLE OF THE MOLECULAR MEDIATOR LRG1 IN PERSISTENT INFLAMMATORY PAIN  
*Ann-Kristin Kenkel, José Ricardo Vieira, Christian Litke, Andromachi Karakatsani, Carmen Ruiz de Almodóvar, Daniela Mauceri, Heidelberg*
- T20-5B**      MAGNETORECEPTION IN LABORATORY MICE  
*Li Zhang, Brittany Hamauei, Georgina Fenton, Runita Narendra Shirdhankar, Martha Daniel, Pascal Malkemper, Bonn*

## Friday

- T20-1C**      STRESS DURING ADOLESCENCE AS A PREDISPOSING FACTOR FOR LOW BACK PAIN IN ADULTHOOD  
*Deepika Singhal, Rolf-Detlef Treede, Mannheim*
- T20-2C**      THE EFFECTS OF DEVELOPMENTAL TEMPERATURE ON ADULT BEHAVIOR IN FLIES AND ANTS  
*Jana Mach, P. Robin Hiesinger, Berlin*
- T20-3C**      VIP-TO-SST CIRCUIT MOTIF SHOWS DIFFERENTIAL SHORT-TERM PLASTICITY ACROSS SENSORY AREAS OF MOUSE CORTEX  
*Jenifer Rachel, Martin Möck, Mirko Witte, Jochen F. Staiger, Goettingen*
- T20-4C**      VOLUNTARY PASSIVE MOVEMENT – DO FLIES PLAY?  
*Wolf Huetteroth, Tilman Triphan, Leipzig*

## T21: Motor systems

### Wednesday

- T21-1A**      (SUB-) CORTICAL RECORDINGS IN ZEBRA FINCHES DURING VOCAL INTERACTIONS  
*Carlos Manuel Gomez Guzman, Daniela Vallentin, Starnberg*
- T21-2A**      A DETAILED CHARACTERISATION OF ACOUSTIC MOTIFS IN CALLING SONGS OF THE DUETTING BUSHCRICKET *PHANEROPTERA SPARSA*  
*Charlotte Mudter, Manuela Nowotny, Stefan Schöneich, Jena*
- T21-3A**      CORTICAL NUCLEUS MMAN CONTRIBUTES TO SYLLABLE SEQUENCING IN ADULT BENGALISE FINCHES (*LONCHURA STRIATA DOMESTICA*)  
*Avani Prasad Koparkar, Sooyoon Shin, Timothy L. Warren, Michael Brainard, Lena Veit, Tuebingen*
- T21-4A**      DECODING NETWORK ARCHITECTURE AND FUNCTION OF THE CENTRAL PATTERN GENERATOR FOR ASYNCHRONOUS FLIGHT REVEALS A NOVEL MECHANISM FOR NETWORK DESYNCHRONIZATION THROUGH ELECTRICAL SYNAPSES  
*Silvan Hürkey, Stefanie Ryglewski, Nelson Niemeyer, Jan-Hendrik Schleimer, Susanne Schreiber, Carsten Duch, Mainz*

- T21-5A** DECOMPOSITION OF 3D JOINT KINEMATICS OF FORWARD WALKING FRUIT FLIES, *DROSOPHILA MELANOGASTER*  
*Moritz Haustein, Ansgar Büschges, Till Bockemühl, Cologne*
- T21-6A** DESCENDING CONTROL OF BACKWARD WALKING - MORE THAN JUST A SWITCH  
*Stefan Dahlhoff, Aleya Meric, Jan M. Ache, Wuerzburg*
- T21-7A** EFFECTS OF DEEP BRAIN STIMULATION (DBS) IN THE ENTOPEDUNCULAR NUCLEUS (EPN) IN DYSTONIC *DT<sup>SZ</sup>* HAMSTERS  
*Anika Lüttig, Stefanie Perl, Maria Paap, Denise Franz, Marco Heerden, Rüdiger Köhling, Angelika Richter, Leipzig*
- T21-8A** EVIDENCE FOR DISTRIBUTED TEMPORAL REPRESENTATIONS AT THE INPUT LAYER OF THE CEREBELLUM  
*Franziska Bender, Berat Semihcan Sermet, Giovanni Diana, Maria Miruna Costreie, Florian Ruckerl, Gael Moneron, Paris Cedex 15, France, France*
- T21-9A** GABA-ERGIC NEURONS OF THE STICK INSECT WITH A FOCUS ON INTERSEGMENTAL CONNECTIVITY  
*Matthias Gruhn, Giulia DiCristina, Sherylane Seeliger, Sima Syed-Nejadi, Ansgar Büschges, Koeln*

## Thursday

- T21-1B** INFERRING CHOICES FROM FULL-BODY MOVEMENTS DURING GO-BEFORE-YOU-KNOW DECISION MAKING IN FREELY MOVING RHESUS MONKEYS  
*Irene Laca, Zurna Ahmed, Neda Shahidi, Alexander Gail, Goettingen*
- T21-2B** INTEGRATION OF VISUAL AND MECHANOSENSORY CUES BY DESCENDING NEURONS CONTROLLING BACKWARD WALKING IN *DROSOPHILA*  
*Aleya M. Meric, Stefan Dahlhoff, Jan M. Ache, Wuerzburg*
- T21-3B** INTEGRATION OF VISUAL AND VIBROTACTILE CUES FOR ESTIMATING REACH GOAL DIRECTION IN HUMANS  
*Lukas Amann, Virginia Casasnovas, Enrico Ferrea, Alexander Gail, Goettingen*
- T21-4B** INVESTIGATION OF MOTOR DEVELOPMENT IN AN ION CHANNELOPATHY MODEL  
*Grusha Primal Mathias, Dirk Isbrandt, Stephan Marguet, Andrea Merseburg, Cologne*
- T21-5B** OPTOGENETIC INHIBITION REVEALS CAUSAL MODULATION OF PARIETAL MOTOR GOAL ENCODING VIA FRONTAL-TO-PARIETAL PROJECTIONS IN RHESUS MONKEYS  
*Hao Guo, Michal Fortuna, Janina Hüer, Stefan Treue, Alexander Gail, Goettingen*
- T21-6B** REGULAR PHYSICAL ACTIVITY AND MOTOR LEARNING INDUCE WHITE MATTER MYELINATION: A LONGITUDINAL, MULTI-SHELL DIFFUSION MRI STUDY IN RAT  
*Lisa-Marie Goncalves, Nico Lehmann, Patricia Wenk, Marco Taubert, Eike Budinger, Magdeburg*

**T21-7B** SINGLE CELL TYPE ANALYSIS OF WING AND HALTERE PREMOTOR CIRCUITS IN THE VENTRAL NERVE CORD OF *DROSOPHILA MELANOGASTER*  
*Erica Ehrhardt, Samuel C. Whitehead, Shigehiro Namiki, Ryo Minegishi, Igor Siwanowicz, Kai Feng, Hideo Otsuna, FlyLight Project Team, David Stern, Jim Truman, David Shepherd, Michael Dickinson, Kei Ito, Barry J Dickson, Itai Cohen, Wyatt Korff, Gwyneth M. Card, Cologne*

**T21-8B** TASK-DEPENDENT MODIFICATIONS OF PREMOTOR INTERNEURON ACTIVITY AND LOAD PROCESSING IN AN INSECT LEG-MUSCLE CONTROL SYSTEM  
*Angelina Ruthe, Philipp Rosenbaum, Alkan Özyer, Ansgar Büschges, Cologne*

**Friday**

**T21-1C** TEMPERATURE RESPONSES OF STOMATOGASTRIC NEURONS IN THE BRUSH-CLAWED SHORE CRAB, *HEMIGRAPUS TAKANOI*  
*Wolfgang Stein, Steffen Harzsch, Normal, USA*

**T21-2C** THALAMUS DRIVES VOCAL ONSETS IN THE ZEBRA FINCH SONG SEQUENCE  
*Felix W. Moll, Devorah Kranz, Ariadna Corredera Asensio, Margot Elmaleh, Lyn A. Ackert-Smith, Michael A. Long, Tuebingen*

**T21-3C** THE EFFECT OF CONTINUOUS VISUAL FEEDBACK UNCERTAINTY ON MOTOR ADAPTATION  
*Virginia Casasnovas, Lukas Amann, Enrico Ferrea, Alexander Gail, Goettingen*

**T21-4C** THE INTERPLAY OF BEHAVIORAL RULES AND FEEDBACK DURING SOCIAL BEHAVIOR  
*Sarath Ravindran Nair, Jan Clemens, Goettingen*

**T21-5C** UNRAVELING *DROSOPHILA* CURVE WALKING BEHAVIOR  
*Ezequiel Axel Gorostiza, Till Bockemühl, Kei Ito, Ansgar Büschges, Cologne*

**T21-6C** UNRAVELING THE FREQUENCY- AND LAYER-SPECIFIC EFFECTS OF HIGH-FREQUENCY STN STIMULATION IN MICE *IN VIVO*  
*Svenja Kreis, Heiko J. Luhmann, Sergiu Groppa, Daniela Mirzac, Muthuraman Muthuraman, Mainz*

**T21-7C** USING A MULTI-NETWORK APPROACH WITH DEEPLABCUT TO IMPROVE AUTOMATIC POSE ESTIMATION  
*Terrence Michael Wright, Till Bockemühl, Ansgar Büschges, Cologne*

**T21-8C** USING NEUROPIXELS RECORDINGS TO PROBE THE STABILITY OF LATENT VARIABLES OF THE CORTICAL GRASPING NETWORK IN PRIMATES  
*Roberta Nocerino, Jan Churan, Hansjörg Scherberger, Goettingen*

**T21-9C** WALKING SPEED AFFECTS SPATIAL AND TEMPORAL VARIABILITY OF LEG MOVEMENTS IN FREELY WALKING *DROSOPHILA MELANOGASTER*  
*Vincent Godesberg, Ansgar Büschges, Till Bockemühl, Cologne*

## T22: Homeostatic and neuroendocrine systems, stress response

### Wednesday

- T22-1A** „SATIETY VS. STARVATION “ – NEUROPEPTIDOMICS OF THE CENTRAL NERVOUS SYSTEM OF *DROSOPHILA MELANOGASTER* L3-LARVAE  
*Anna-Sophie Kügler, Susanne Neupert, Kassel*
- T22-2A** CALCIUM DEPENDENT MECHANISMS TO ESTABLISH NEURONAL HOMEOSTATIC SETPOINTS  
*Niklas Krick, Richard Baines, Matthias Landgraf, Cambridge, UK*
- T22-3A** CELL-SPECIFIC FUNCTION OF THE THYROID HORMONE TRANSPORTERS MCT8 AND OATP1C1 IN MOUSE BLOOD-BRAIN BARRIER CELLS  
*Androniki Alevyzaki, Boyka Markova, Steffen Mayerl, Heike Heuer, Essen*
- T22-4A** moved to T22-9C
- T22-5A** CONNECTION OF MC3R NEURONS AND THEIR ROLE IN STRESS RESPONSES  
*Jiajie Zhu, Rachel Lippert, Selma Yagoub, Lidia Cantacorps, Katrin Ritter, Robert Chesters, Nuthetal*
- T22-6A** DOPAMINERGIC SIGNALING IN THE ARCUATE NUCLEUS OF THE HYPOTHALAMUS  
*Svenja Corneliussen, Isabella Gaziano, Nasim Biglari, René Neuhaus, Linyan Shen, Tamara Sotelo Hitschfeld, Paul Klemm, Lukas Steuernagel, Alain de Solis, Weiyi Chen, F. Thomas Wunderlich, Jens C. Brüning, Peter Kloppenburg, Cologne*
- T22-7A** ENERGY HOMEOSTASIS AND MELANOCORTIN RECEPTORS OF THE PARAVENTRICULAR THALAMUS  
*Robert Chesters, Bethany Coull, Lydia Palm, Katrin Ritter, Rachel Lippert, Nuthetal*

### Thursday

- T22-1B** HOMEOSTATIC SIGNALING HELPS COOLED FISH LARVAE ESCAPE FROM BALLISTIC PREDATORS  
*Alexander Hecker, Stefan Schuster, Bayreuth*
- T22-2B** IMPACT OF THYROID HORMONE TRANSPORTER MCT8/OATP1C1 DEFICIENCY ON HIPPOCAMPAL GABAERGIC AND GLUTAMATERGIC SYSTEMS IN THE MOUSE CNS  
*Andrea Alcaide Martin, Heike Heuer, Steffen Mayerl, Essen*
- T22-3B** INSULIN-LIKE SIGNALLING TOGETHER WITH THE SEROTONIN TRANSPORTER REGULATE APPETITE IN *DROSOPHILA MELANOGASTER*  
*Magdalena Gompert, Katharina Dom, JianZheng He, Henrike Scholz, Cologne*
- T22-4B** INTEGRATED CARDIO-BEHAVIOURAL DEFENSIVE STATES  
*Jérémy Signoret-Genest, Nina Schukraft, Sara L. Reis, Dennis Segebarth, Philip Tovote, Wuerzburg*

- T22-5B** MATERNAL DIABETES AND METFORMIN EXPOSURE AFFECT OFFSPRING BRAIN DEVELOPMENT IN A SEX-DEPENDENT MANNER  
*Lidia Cantacorps, Jijie Zhu, Selma Yagoub, Lea-Sophie Kasch, Maya Paterson, Miguel Serrano-Lope, Rachel Lippert, Nuthetal*
- T22-6B** SEPSIS-LIKE BACTERIAL INFECTION MODULATES INNATE BEHAVIOUR IN *DROSOPHILA MELANOGASTER*  
*Thomas Riemensperger, Fabienne Reh, Kei Ito, Cologne*
- T22-7B** IMPAIRED CEREBROVASCULAR REACTIVITY AND ELEVATED LEVELS OF CARBON DIOXIDE – CENTRAL REGULATION OF COMBINED PERIPHERAL EFFECTS  
*Dorothea Ziemens, Marius Richter, Ákos Menyhárt, Eszter Farkas, Markus Schwaninger, Jan Wenzel, Luebeck*
- T22-8B** STIMULATION OF AUTOPHAGY IN HIPPOCAMPAL NEURONS BY NEUROPEPTIDE Y  
*Ines Erdmann, Gina Marie Krause, Elisa Redavide, Anke Müller, Daniela C. Dieterich, Oliver Stork, Anne Albrecht, Magdeburg*

## Friday

- T22-1C** TANYCYTIC THYROID HORMONE (TH) SIGNALLING IN THE REGULATION OF HYPOTHALAMIC FUNCTIONS AND HORMONE UPTAKE  
*Akila Chandrasekar, Sebastain Abele, Anke Fähnrich, Frauke Spiecker, Jens Mittag, Markus Schwaninger, Helge Müller-Fielitz, Luebeck*
- T22-2C** TEMPERATURE-DEPENDENT VARIABILITY OF DETECTABLE NEUROPEPTIDE TITERS IN INDIVIDUAL *DROSOPHILA* NEURONS BY QUANTITATIVE IMMUNO-LABELLING  
*Inga Schirmer, Susanne Neupert, Kassel*
- T22-3C** THE ROLE OF BDNF<sup>LH</sup> NEURONS IN THE REGULATION OF FEEDING BEHAVIOUR  
*Carolin Schumacher, Anne Petzold, Tatiana Korotkova, Cologne*
- T22-4C** THE ROLE OF OREXIN RECEPTORS 1 AND 2 IN SEROTONERGIC NEURONS OF RAPHE NUCLEI  
*Gagik Yeghiazaryan, Xing Xiao, Simon Hess, Paul Klemm, Anna Sieben, André Kleinriders, Donald Morgan, Thomas Wunderlich, Kamal Rahmouni, Dong Kong, Thomas Scammell, Bradford Lowell, Jens Brüning, Christine Hausen, Peter Kloppenburg, Cologne*
- T22-5C** THE ROLE OF TRH NEURONS IN ENERGY HOMEOSTASIS AND REGULATION OF BROWN ADIPOSE TISSUE  
*Andreea Constantinescu, Luka Höhne, Jens Mittag, Helge Müller-Fielitz, Markus Schwaninger, Luebeck*
- T22-6C** 3-D STED IMAGING OF TANYCYTES  
*Surya Prakash Rai, Helge Müller-Fielitz, Markus Schwaninger, Luebeck*
- T22-7C** SLEEP DEPRIVATION INCREASES PERFORMANCE IN LARVAL ZEBRAFISH DECISION MAKING  
*Hanna Zwaka, Paula Pflitsch, Will Joo, Kumaresh Krishnan, Nadine Oury, Armin Bahl, Declan Lyons, Jason Rihel, Florian Engert, Cambridge, USA*



- T22-8C** TRANSGENERATIONAL EFFECTS OF EARLY LIFE STRESS ON DNA METHYLATION OF THE OXYTOCIN RECEPTOR PROMOTER (OXTR) IN MOUSE BRAIN AND PERIPHERAL TISSUES.  
*Brigid Chimoita Aliero, Nicole Gröger, Alexandra Lesse, Kathrina Braun, Jörg Bock, Magdeburg*
- T22-9C** COMPLEMENTARY LATERAL HYPOTHALAMIC POPULATIONS RESIST HUNGER PRESSURE TO BALANCE NUTRITIONAL AND SOCIAL NEEDS  
*Anne Petzold, Hanna Elin van den Munkhof, Rebecca Figge-Schlensook, Tatiana Korotkova, Cologne*
- T22-10C** A ROLE OF THE OXYTOCIN SIGNALING IN THE HYPOTHALAMUS FOR SOCIAL FEAR LEARNING  
*Takuya Osakada, Yiwen Jiang, Rongzhen Yan, Rina Tabuchi, Dayu Lin, New York, USA*

## T23: Neural networks and rhythm generators

### Wednesday

- T23-1A** A GALANIN-POSITIVE POPULATION OF LUMBAR SPINAL CORD NEURONS MODULATES SEXUAL BEHAVIOR AND AROUSAL  
*Constanze Lenschow, Ana Rita P. Mendes, Liliana Ferreira, Bertrand Lacoste, Camille Quilgars, Sandrine S. Bertrand, Susana Q. Lima, Magdeburg*
- T23-2A** A SYSTEMATIC CLASSIFICATION OF NEURONS FORMING THE CLAMP REGION IN THE ADULT *DROSOPHILA* BRAIN  
*Jonas Mario Klußmann, Jens Goldammer, Kei Ito, Cologne*
- T23-3A** ANATOMICAL CONNECTIONS OF THE CROW BRAIN'S COGNITIVE CONTROL CENTER NIDOPALLIUM CAUDOLATERALE (NCL)  
*Saskia Erdle, Ylva Kersten, Felix W. Moll, Andreas Nieder, Tuebingen*
- T23-4A** BALANCED RING NETWORK OF SPIKING NEURONS AS A MODEL OF VISUAL CORTEX HYPERCOLUMN  
*Mohammadreza Soltanipour, Fred Wolf, Goettingen*
- T23-5A** BEHAVIORAL STATE-DEPENDENT MODULATION OF INSULIN-PRODUCING CELLS IN *DROSOPHILA*  
*Sander Liessem, Martina Held, Rituja Bisen, Hannah Haberkern, Haluk Lacin, Till Bockemühl, Jan M. Ache, Wuerzburg*
- T23-6A** BIOLOGICAL VALIDATION OF A MICRONEEDLE 3D HIGH-DENSITY CMOS MULTI-ELECTRODE ARRAY FOR BRAIN TISSUE AND SPHEROIDS  
*Elisa Monz, Lisa Mapelli, Olivier Dubochet, Mariateresa Tedesco, Giacomo Sciacca, Alessandra Ottaviani, Anita Monteverdi, Chiara Battaglia, Simona Tritto, Francis Cardot, Patrick Surbled, Jan Schildknecht, Chiara Cervetto, Manuela Marcoli, Egidio D'Angelo, Pfäffikon SZ, Switzerland*

- T23-7A** CHARACTERIZATION OF CIRCADIAN MODULATORS IN RELAY STATIONS OF PREFRONTAL-TO-HIPPOCAMPAL CIRCUITS VIA VIRAL TRACING AND LASER MICRODISSECTION  
*Lara Mariel Chirich Barreira, Julia U. Henschke, Janelle M.P. Pakan, Anne Albrecht, Magdeburg*
- T23-8A** CONNECTIVITY ANALYSIS OF THE MONOAMINERGIC SYSTEMS OF *DROSOPHILA* BRAIN  
*Jiajun Zhang, Nikolaj Rieger, Kei Ito, Thomas Riemensperger, Cologne*
- T23-9A** CONSEQUENCES OF AXONAL DYSFUNCTIONS FOR NETWORK OSCILLATIONS IN A MOUSE MODEL OF DRAVET SYNDROME  
*Raquel Lascorz Massanet, Fabian C. Roth, Oslo, Norway*
- T23-10A** DEND MUTATION DISRUPTS HIPPOCAMPAL NETWORK ACTIVITY AND NOCTURNAL  $\gamma$  SHIFTS  
*Kristina Lippmann, Marie-Elisabeth Burkart, Josephine Kurzke, Jorge Vera, Frances Ashcroft, Jens Eilers, Leipzig*

## Thursday

- T23-1B** DENDRITIC AXON ORIGIN ENABLES SELECTIVE INFORMATION GATING BY PERISOMATIC INHIBITION IN PYRAMIDAL NEURONS  
*Martin Both, Alexander Hodapp, Martin E Kaiser, Christian Thome, Lingjun Ding, Andrei Rozov, Matthias Klumpp, Nikolas Stevens, Tina Sackmann, Nadja Lehmann, Andreas Draguhn, Andrea Burgalossi, Maren Engelhardt, Heidelberg*
- T23-2B** DEVELOPMENTAL NETWORK EMBEDDING OF PV INTERNEURONS IN RELATION TO THE EMERGENCE OF GAMMA RHYTHMS IN THE PREFRONTAL CORTEX  
*Anton Offermanns, Jastyn A. Pöppel, Ileana Hanganu-Opitz, Hamburg*
- T23-3B** DIFFERENT INVOLVEMENT OF AXON-CARRYING DENDRITE VERSUS CANONICAL NEURONS DURING LEARNING PROCESSES  
*Nadja Sharkov, Matthias Klumpp, Nikolas Stevens, Christian Thome, Janina Kupke, Andreas Draguhn, Ana M. M. Oliveira, Martin Both, Heidelberg*
- T23-4B** DISINHIBITORY CIRCUIT MOTIFS IN MOUSE PRIMARY SOMATOSENSORY (BARREL) CORTEX  
*Felix Preuß, Martin Möck, Mirko Witte, Jochen F. Staiger, Goettingen*
- T23-5B** DYNAMICS IN TIMING OF THE SOUNDS OF *MECOPODA ELONGATA*  
*Reinhard Lakes-Harlan, Giessen*
- T23-6B** ELECTROPHYSIOLOGICAL CHARACTERIZATION AND COMPUTATIONAL MODELING OF INSULIN-PRODUCING CELLS IN *DROSOPHILA*  
*Federico Cascino-Milani, Lorenzo Fontolan, Sabine Fischer, Jan M. Ache, Wuerzburg*
- T23-7B** FUNCTIONAL ANALYSIS OF NEUROPEPTIDES IN THE ACCESSORY MEDULLA OF THE MADEIRA COCKROACH *RHYPAROBIA MADERAE*  
*Sohail H. Shoaib, Susanne Neupert, Monika Stengl, Kassel*

- T23-8B** FUNCTIONAL CHARACTERIZATION OF LONG-RANGE GABAERGIC PROJECTIONS FROM THE MEDIAL SEPTUM TO THE LATERAL ENTORHINAL CORTEX  
*Viktoria B. Pfennig, Yu-Chao Liu, Elke C. Fuchs, Hannah Monyer, Heidelberg*
- T23-9B** HIGHER-ORDER ANATOMICAL CONNECTIVITY EXPLAINS FUNCTIONAL PROPERTIES OF VISUAL CIRCUITRY  
*Juan Felipe Vargas Fique, Sebastian Molina-Obando, Marion Silies, Mainz*
- T23-10B** INVESTIGATING THE COUPLING BETWEEN SURPLUS SPIKE SYNCHRONY AND SLOW OSCILLATIONS IN THE DORSAL HIPPOCAMPUS  
*Regimantas Jurkus, Julien Fiorilli, Thijs R. Ruikes, Sonja Grün, Cyriel M. A. Pennartz, Michael Denker, Juelich*

## Friday

- T23-1C** INVESTIGATION OF THE INVOLVEMENT OF PIGMENT-DISPERSING FACTOR (PDF) AND OTHER NEUROPEPTIDES IN SEASONAL ADAPTATION TO THE CHANGING PHOTOPERIOD IN THE COCKROACH *RHYPAROBIA MADERAE*  
*Huleg Zolmon, Susanne Jaguttis, Monika Stengl, Kassel*
- T23-2C** IONIC CURRENTS IN INSECT CIRCADIAN CLOCK NEURONS  
*Anna C. Schneider, Monika Stengl, Kassel*
- T23-3C** LATE DEVELOPMENTAL DYNAMICS OF ACTIVITY PATTERNS WITHIN PREFRONTAL-HIPPOCAMPAL NETWORKS IN HEALTH AND A GENETIC RISK MODEL FOR SCHIZOPHRENIA  
*Mariena Hnida, Jastyn A. Pöpplau, Ileana L. Hanganu-Opatz, Hamburg*
- T23-4C** NEAR-OPTIMAL ENCODING OF MINIMAL STIMULI IN THE CORTICAL GATEWAY FOR SOMATOSENSATION  
*Andreas Neef, Fred Wolf, Michael J. Gutnick, Omer Revah, Goettingen*
- T23-5C** NETWORK SYNCHRONY CREATES NEURAL FILTERS THAT SWITCH BRAIN STATE FROM NAVIGATION TO SLEEP IN *DROSOPHILA*  
*Raquel Suárez Grimalt, Davide Raccuglia, Laura Krumm, Cedric C. Brodersen, Anatoli Ender, Sridhar Jagannathan, York Winter, Genevieve Yvon-Durocher, Richard Kempster, Jörg R.P. Geiger, David Oswald, Berlin*
- T23-6C** NEURAL INTEGRATION OF SENSORY INPUT AND SLEEP NEED IN *DROSOPHILA*  
*Cedric Beat Brodersen, Raquel Suárez-Grimalt, Jörg RP Geiger, David Oswald, Davide Raccuglia, Berlin*
- T23-7C** OLFATORY DYSFUNCTION CONTRIBUTES TO IMPAIRED DEVELOPMENTAL HIPPOCAMPAL-PREFRONTAL ACTIVITY IN A MOUSE MODEL OF NEUROPSYCHIATRIC DISORDERS  
*Fiona Parbst, Sebastian H. Bitzenhofer, Ileana L. Hanganu-Opatz, Hamburg*

- T23-8C** PEPTIDERGIC AND AMINERGIC MODULATION OF INSULIN-PRODUCING CELLS IN *DROSOPHILA*  
*Martina Held, Isabella Balles, Rituja Bisen, Selina Hilpert, Alexander S. Chockley, Federico Cascino-Milani, Sander Liessem, Meet Zandawala, Jan M. Ache, Wuerzburg*
- T23-9C** SYNTALOS: A SOFTWARE FOR SIMULTANEOUS ACQUISITION OF HETEROGENEOUS NEUROPHYSIOLOGICAL DATA AND FOR CLOSED-LOOP INTERVENTION PROTOCOLS  
*Matthias Klumpp, Lee Embray, Justus Simon, Andreas Draguhn, Martin Both, Heidelberg*
- T23-10C** THE ANATOMY OF AUDITORY BRAINSTEM NUCLEI IN THE ETRUSCAN SHREW  
*Alina C. Zacher, Felix Felmy, Hannover*

## T24: Attention, motivation, emotion and cognition

### Wednesday

- T24-1A** COMPUTATIONAL ARCHAEOLOGY OF THE HUMAN COGNITIVE PAST  
*Wulf Haubensak, Joanna Kaczanowska, Florian Ganglberger, Olga Chemomor, Dominic Kargl, Andreas Hess, Yoshan Moodley, Arndt von Haeseler, Katja Bühler, Lukasz Piszczek, Vienna, Austria*
- T24-2A** DECISION-MAKING BASED ON VISUAL MOTION PERCEPTION IN THE CROW  
*Philipp Schmidbauer, Andreas Nieder, Tuebingen*
- T24-3A** DEVELOPMENTAL DYNAMICS OF COGNITIVE FLEXIBILITY IN MICE  
*Mariia Dorofeikova, Jastyn A. Pöplau, Ann M. Thies, Ileana L. Hanganu-Opatz, Hamburg*
- T24-4A** EFFECTS OF ALTERED RIBOSOMAL S6 KINASE (RSK/S6KII) EXPRESSION ON EMOTION-RELEVANT OPEN-FIELD BEHAVIOR OF *DROSOPHILA MELANOGASTER*  
*Yi Wang, Maria Steigmeier, Yasmine Zöller, Thomas Raabe, Christian Wegener, Wuerzburg*
- T24-5A** EXOGENOUS AND ENDOGENOUS SPATIAL ATTENTION IN CROWS  
*Linus Hahner, Malte Quest, Paul Rinnert, Andreas Nieder, Tuebingen*
- T24-6A** FRONTOPOLAR MECHANISMS FOR DRIVING SOCIAL AND ECONOMIC DECISIONS IN PRIMATE GROUPS  
*Raymundo Báez Mendoza, Emma P. Mastrobattista, Amy J. Wang, Ziv M. Williams, Goettingen*
- T24-7A** HETEROGENEITY OF EXCITATORY NEURONS OF THE BASOLATERAL AMYGDALA: FROM TRANSCRIPTOME TO CALCIUM IMAGING AND BEHAVIOR  
*Hansol Lim, Christian Peters, Ruediger Klein, Planegg*

## Thursday

- T24-1B** HUNGER STATE-DEPENDENT MODULATION OF NEURAL PROCESSING AND BEHAVIOR IN *DROSOPHILA* LARVAE  
*Katrin Vogt, Konstanz*
- T24-2B** MAPPING OF THE CARRION CROW'S BRAIN  
*Ylva Kersten, Felix Moll, Saskia Erdle, Bettina Friedrich-Mueller, Andreas Nieder, Tuebingen*
- T24-3B** MODALITY-SPECIFIC ACCUMULATION OF EVIDENCE IN MICE PERFORMING A MULTISENSORY DISCRIMINATION TASK  
*Gerion Nabbefeld, Emma Cravo, Irene Lenzi, Sacha Abou Rachid, Severin Graff, Simon Musall, Björn Kampa, Aachen*
- T24-4B** NEGATIVE AND POSITIVE STIMULI IN THE OPEN-FIELD TEST BEHAVIOUR OF *DROSOPHILA MELANOGASTER*  
*Emilia Derksen, Yi Wang, Christian Wegener, Wuerzburg*
- T24-5B** NEURAL MECHANISMS OF NUMERICAL SELECTION IN THE FRONTO-PARIETAL CORTICES OF THE MACAQUE  
*Tobias Machts, Julia Grüb, Andreas Nieder, Stuttgart*
- T24-6B** NUMBER PRODUCTION IN RHESUS MACAQUES  
*Laura Elisa Seidler, Stephanie Westendorff, Andreas Nieder, Tuebingen*
- T24-7B** ORTHOGONAL CODING OF FOOD AND VOLUNTARY EXERCISE BY VTA DOPAMINE NEURONS  
*Hanna Elin van den Munkhof, Vasy Mykytiuk, Tatiana Korotkova, Cologne*

## Friday

- T24-1C** PREFRONTAL CORTEX TRACKS ELAPSED TIME DURING SELF-PACED ACTION SELECTION  
*Ole Christian Sylte, Hannah Muysers, Hung-Ling Chen, Marlene Bartos, Jonas-Frederic Sauer, Freiburg*
- T24-2C** REAL-TIME WHISTLE PITCH-MATCHING IN WILD NIGHTINGALES  
*Giacomo Costalunga, Daniela Vallentin, Seewiesen*
- T24-3C** SELECTIVE ATTENTION IN THE HIGHSPEED DECISIONS OF HUNTING ARCHERFISH  
*Sophie Yvonne Schödel, Martin Krause, Wolfram Schulze, Stefan Schuster, Bayreuth*
- T24-4C** SOCIAL ODOUR ACTIVATES THE HIPPOCAMPAL FORMATION IN ZEBRA FINCHES (*TAENIOPYGIA GUTTATA*)  
*Uwe Mayer, Rovereto (TN), Italy*
- T24-5C** SPATIAL CODING BY SOMATOSTATIN AND NEUROTENSIN NEURONS IN THE LATERAL SEPTUM  
*Robson Scheffer Teixeira, Francisco Javier de los Santos Bernal, Letizia Moscato, Tatiana Korotkova, Cologne*

- T24-6C** THE REVERSE COCKTAIL PARTY PROBLEM: DYNAMIC TIME-DOMAIN JAMMING AVOIDANCE IN FREELY SOCIALIZING BATS  
*Ava Kiai, Manfred Koessl, David Poeppel, Julio Hechavarría, Frankfurt/Main*

## T25: Learning and memory

### Wednesday

- T25-1A** "WHAT A PLEASURE WHEN THE PAIN SUBSIDES" TOWARDS A MOLECULAR ARCHITECTURE OF LEARNING FROM PAIN RELIEF  
*Christian König, Thomas Niewalda, Melissa Comstock, Svea Königsmann, Juliane Thoener, Bertram Gerber, Magdeburg*
- T25-2A** A DEDICATED, NON-OLFACTORY MUSHROOM BODY SUB-CIRCUIT MEDIATES THE INTERACTION BETWEEN GOAL-DIRECTED ACTIONS AND HABIT FORMATION IN *DROSOPHILA*  
*Radostina Lyutova, Silvia Marcato, Björn Brembs, Regensburg*
- T25-3A** A PERSISTENT PREFRONTAL REFERENCE FRAME ACROSS TIME AND TASK RULES  
*Hannah Muysers, Hung-Ling Chen, Jonas-Frederic Sauer, Marlene Bartos, Freiburg*
- T25-4A** A SELECTABLE EYE MARKER AFFECTS MEMORY FORMATION IN *DROSOPHILA MELANOGASTER* LARVAE  
*Hanna Rebekka Franz, Goettingen*
- T25-5A** A SPECTRAL CHRONOMETER FOR INTERVAL TIMING IN *DROSOPHILA*  
*Jan Kropf, Clifford B. Talbot, Gero Miesenböck, Oxford, UK*
- T25-6A** RETRACTED
- T25-7A** ANALYSIS OF BURST SEQUENCES IN MOUSE PREFRONTAL CORTEX DURING LEARNING  
*Hamed Shabani, Hannah Muysers, Jonas-Frederic Sauer, Marlene Bartos, Christian Leibold, Freiburg im Breisgau*
- T25-8A** THE ANTLER BRAIN REGION OF *DROSOPHILA* – MORPHOLOGICAL CLASSIFICATION OF INNERVATING NEURONS AND CONNECTOME ANALYSIS  
*Jens Goldammer, Kei Ito, Cologne*
- T25-9A** ATTACK BASED IDENTIFICATION OF MOST INFORMATIVE PATTERNS IN FMRI VISUAL STIMULI CLASSIFICATION  
*Markos Athanasiadis, Svenja Brodt, Svenja Klinkowski, Steffen Gais, Christian Leibold, Freiburg im Breisgau*

- T25-10A** AUTOMATED, UNSUPERVISED TRAINING AND TESTING FOR NON-HUMAN PRIMATES ON VISUO-ACOUSTIC TASKS  
*Jorge Cabrera-Moreno, Lena Jeanson, Jonas Grunenberg, Antonino Calapai, Marcus Jeschke, Goettingen*
- T25-11A** CAN SHORT-TERM PLASTICITY FORM ANISOTROPIC CONNECTIVITY?  
*Arash Golmohammadi, Christian Tetzlaff, Goettingen*
- T25-12A** CAPTURING DYNAMICS OF INHIBITORY SYNAPTIC CONNECTIVITY UNDERLYING LEARNING USING IN VIVO TWO-PHOTON OPTICAL IMAGING OF HIPPOCAMPAL CA1  
*Hannah Klimmt, Alessandro Ulivi, Rosa Huettl, Stefanos Somatakis, Alessio Attardo, Magdeburg*
- T25-13A** CENTRAL MODULATION IN REWARD PROCESSING  
*Ulrike Sophie Franke, Samantha Aurich, Andreas Stephan Thum, Robert Johannes Kittel, Dennis Pauls, Leipzig*
- T25-14A** CHOOSING MEMORY RETRIEVAL STRATEGIES: A CRITICAL ROLE FOR INHIBITION IN THE DENTATE GYRUS  
*Alice Weiglein, Iris Müller, Gürsel Caliskan, Oliver Stork, Anne Albrecht, Magdeburg*
- T25-15A** CODING DIFFERENCES FOR SMALL AND LARGE NUMEROSITIES IN HUMAN SINGLE NEURONS  
*Esther Friederice Kurz, Gert Dehnen, Valeri Borger, Rainer Surges, Florian Mormann, Andreas Nieder, Bonn*
- T25-16A** CONSTRUCTING AUDITORY SPACE: MODULATION OF THE SPATIAL MAP BY AUDITORY CUES AND LANDMARKS  
*Andrey Sobolev, Anton Sirota, Michael Pecka, Planegg*
- T25-17A** DISSECTING THE FUNCTION OF DIFFERENT DUNCE ISOFORMS IN *DROSOPHILA MELANOGASTER*  
*Timo Hasselmann, Marie Müller, Marcel Verbrüggen, Magdalena Gompert, Victoria Brüning, Henrike Scholz, Cologne*
- T25-18A** DISSECTING THE FUNCTION OF THE PDE4D ORTHOLOGUE DUNCE IN OLFACTORY LEARNING AND MEMORY IN THE ADULT *DROSOPHILA MELANOGASTER*  
*Duran Emre Kanaci, Henrike Scholz, Cologne*
- T25-19A** PROJECTION-SPECIFIC CONJUNCTIVE CODING OF SPACE, VELOCITY, AND APPETITIVE BEHAVIOURS BY DORSAL HIPPOCAMPUS  
*Oliver Barnstedt, Petra Mocellin, Stefan Remy, Magdeburg*

## Thursday

- T25-1B** DISSECTION OF NEURONAL CIRCUITS UNDERLYING AVERSIVE OLFACTORY SECOND-ORDER CONDITIONING  
*El Yazid Rachad, André Fiala, Goettingen*
- T25-2B** DOPAMINE'S ROLE AS AN INHIBITOR OF DOPAMINERGIC NEURONS OF THE *DROSOPHILA* MUSHROOM BODIES  
*Michael-Marcel Heim, David Oswald, Berlin*

- T25-3B** DRIFT AND STABILIZATION OF HIPPOCAMPAL RESPONSE SELECTIVITY  
*Alexander Schmidt, Fred Wolf, Yasunori Hayashi, Kotaro Mizuta, Masaaki Sato, Julian Vogel, Bernhard Bandow, Goettingen*
- T25-4B** EFFECT OF INTERNAL STATES ON MEMORY CONSOLIDATION IN *DROSOPHILA*  
*Sridhar Rajan Jagannathan, Davide Raccuglia, David Oswald, Berlin*
- T25-5B** EFFECT OF NPSR1 DEFICIENCY ON T-MAZE AND BARNES MAZE LEARNING  
*Ahmet Oguzhan Bicakci, Evelyn Kahl, Malgorzata Kolodziejczyk, Luibov Kalinicheno, Markus Fendt, Magdeburg*
- T25-6B** EFFECTS OF PYRETHROIDS ON HONEY BEE OLFACTORY PERCEPTION, LEARNING AND PROCESSING  
*Loïc Colin-Duchevet, Clémentine Hatton, Antoine Couto, Claude Collet, Pierre Charriet, Jean-Christophe Sandoz, Gif-sur-Yvette, France*
- T25-7B** IN-VIVO IMAGING OF CAMP DYNAMICS: SUBCELLULAR COMPARTMENTALIZATION UNDERLYING LEARNING AND MEMORY  
*Stephan Hubertus Deimel, André Fiala, Goettingen*
- T25-8B** EVALUATION OF SIX NEW OCTOPAMINE TROJAN EXON MUTANTS  
*Alexandra Großjohann, Ronja Badelt, Dennis Pauls, Andreas Thum, Leipzig*
- T25-9B** EYE BLINK IS AN EXCELLENT MEASURE FOR SPATIAL LEARNING IN HUMAN  
*Motoharu Takao, Hiratsuka, Japan*
- T25-10B** FEMALE VOCAL FEEDBACK IMPROVES SONG LEARNING AND ALTERS PREMOTOR ACTIVITY IN JUVENILE ZEBRA FINCHES  
*Linda Bistere, Daniela Vallentin, Seewiesen, Starnberg*
- T25-11B** FMRI REVEALS LEARNING INDUCED CHANGES IN AUDITORY-EVOKED BRAIN ACTIVATION PATTERNS IN THE MONGOLIAN GERBIL  
*Annika Michalek, Patricia Wenk, Nicole Angenstein, Eike Budinger, Magdeburg*
- T25-12B** FROM CONNECTOMIC TO BEHAVIOURAL COMPLEXITY IN LARVAL *DROSOPHILA*?  
*Edanur Sen, Juliane Thöner, Arman Behrad, Melissa Comstock, Nina Jacob, Amira El-Keredy, Nino Mancini, Bertram Gerber, Magdeburg*
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**Print:** Blankenburg Media, 16321 Bernau  
info@blankenburg.media

**Conception and Layout:** Stefanie Korthals/Meino Gibson  
korthals@mdc-berlin.de

**Cover:** Eta Friedrich, 10827 Berlin, mail@et-a.de

**Published by** Neurowissenschaftliche Gesellschaft e.V. 2023

Friday, March 24, 2023	Thursday, March 23, 2023	Wednesday, March 22, 2023	Tuesday, March 21, 2023
8:30 - 10:30 Symposia IV (S22 - S28)	8:30 - 9:30 - Norbert Elsner Lecture -	9:00 - 11:45 Satellite Symposium (Sat2) GBM e.V. Study Group	13:00 - 19:00 Satellite Symposium (Sat1) 7th Schram Foundation Symposium
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	18:15 - 19:15 Buffet	19:30 - 20:30 - Gertrud Reemisma Lecture -	
	19:15 - 20:30 Loewi Medal Awarding - Hertie Foundation Lecture -		



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