

Nachrichten



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Forschungspreise der Neurowissenschaftlichen Gesellschaft 2019

Auch für 2019 hatte die NWG wieder zwei Wissenschaftspreise ausgelobt: den Schilling Forschungspreis der Neurowissenschaftlichen Gesellschaft 2019 und den Thermo Fisher Scientific Technologiepreis 2019. Beide Preise honorieren herausragende Leistungen auf einem Gebiet der Hirnforschung, wobei der Schilling-Preis eher die gesamte Forschungsleistung würdigt, während der Thermo Fisher Preis vor allem neue methodische und technologische Forschungsansätze auszeichnet. Beide Preise sollen junge Wissenschaftler/innen bis zu einem Alter von 35 Jahren unterstützen. Der/die Bewerber/in sollte in einem deutschen Labor arbeiten oder als Deutsche/r im Ausland tätig sein. Die Bewerbung kann entweder direkt oder durch Vorschlag erfolgen. Eine Mitgliedschaft in der Neurowissenschaftlichen Gesellschaft ist nicht Voraussetzung. Die Preisverleihung erfolgt auf der Göttinger Tagung der Neurowissenschaftlichen Gesellschaft vom 20. – 23. März 2019, die Preisträger wurden zu einem Hauptvortrag dort eingeladen.

Thermo Fisher Scientific Technologiepreis

Der mit 2.500 Euro dotierte Thermo Fisher Scientific Technologiepreis der Neurowissenschaftlichen Gesellschaft 2019 geht an Jonas Wietek, Arbeitsgruppe Experimentelle Biophysik an der Humboldt-Universität zu Berlin. Der Preis wird von der Firma Thermo Fisher Scientific finanziert und ist ein persönlicher Preis.

Jonas Wietek hat die ersten Licht-aktivierten Anionen-leitenden Kanalrhodopsine (ACRs) konstruiert und damit das neue Feld der photoaktivierbaren inhibitorischen Ionenkanäle initiiert. In seiner Forschung nutzt er molekularbiologische und elektrophysiologische Methoden um ACRs mit vielfältigen biophysikalischen Eigenschaften zu erschaffen, und damit geeignete Werkzeuge zur neuronalen Inhibition bereitzustellen.

Die Entwicklung und Entdeckung neuartiger ACRs hat bereits heute eine substantielle Bedeutung für die Neurowissenschaften und die Optogenetik erlangt, da die Verwendung von ACRs zur neuronalen Inhibition effizient und in allen Modellorganismen anwendbar ist. Somit ist es bereits heute möglich, Hirnareale, Netzwerke von Nervenzellen oder auch einzelne Neuronen mit hoher Präzision zu deaktivieren und somit die Funktionsweise neuronaler Strukturen detailliert zu untersuchen.



Jonas Wietek gewann den TSF Technologie-Preis 2019

Jonas Wietek hat seit August 2018 eine Postdoc-Stelle in der Arbeitsgruppe Experimentelle Biophysik an der Humboldt-Universität zu Berlin inne, wo er auch seine Masterarbeit und seine Promotion abgeschlossen hatte.

Schilling Forschungspreis

Der Schilling Forschungspreis der Neurowissenschaftlichen Gesellschaft 2019 wird von der Hermann und Lilly Schilling-Stiftung gestiftet und ist mit 20.000 Euro dotiert. Er wird an Friederike Zunke vom Biochemischen Institut der Christian-Albrechts-Universität zu Kiel verliehen.

Die Parkinson Erkrankung ist eine neurodegenerative Erkrankung, die durch den progressiven Verlust von Nervenzellen charakterisiert ist. Dieses Absterben der Neurone wird durch die Akkumulation des synaptischen Proteins α -Synuclein hervorgerufen, dessen Aggregationsmechanismen lange unklar waren.

Friederike Zunke erhält den Schilling Forschungspreis der Neurowissenschaftlichen Gesellschaft 2019 für ihren Beitrag zu einem besseren Verständnis der molekularen Ursachen der Parkinsonerkrankung. Dabei fokussiert sich ihre Arbeit insbesondere auf die Bildung der pathologischen und zelltoxischen α -Synuclein Aggregate. So konnte sie die fatalen Auswirkungen von lysosomalen Dysfunktionen und die damit verbundene Akkumulation von lysosomalen Lipiden auf die Aggregation des neurotoxischen α -Synucleins zeigen. Dieses bessere Verständnis der molekularen Krankheitsursachen ist essentiell für die Weiterentwicklung von Therapiemöglichkeiten in der Parkinson Erkrankung, die bisher unzureichend sind, da sie ein

weiteres Vorschreiten der Krankheit nicht verhindern können.

Infolgedessen sind die Arbeiten von Friederike Zunke maßgeblich an der Etablierung von Therapeutika beteiligt, die zu einer Verminderung von lysosomalen Lipiden und somit zur Reduktion von pathologischen α -Synuclein Aggregationen führen.

Friederike Zunke promovierte in der Biochemie der Christian-Albrechts-Universität zu Kiel und verbrachte währenddessen einen Forschungsaufenthalt an der Harvard Medical School/Massachusetts General Hospital. Für ihren Postdoc ging sie an das Neurologische Institut der Northwestern University in Chicago, bevor sie als Arbeitsgruppenleiterin wieder zurück ans Biochemische Institut die Universität Kiel kehrte.



Friederike Zunke ist die Schilling-Forschungspreisträgerin 2019

Die Auswahl der Preis wird durch ein Preiskomitee bestehend aus dem Vorstand der NWG und den Sektionsprechern getroffen.

Programmübersicht Göttinger Jahrestagung der NWG 2019

Wednesday, March 20, 2019

12:00 – 13:00 Plenary Lecture, Opening Lecture

Ann McKee (Boston, USA): **Chronic traumatic encephalopathy (CTE): an update including the problem with football (soccer)**

13:00 – 14:30 Postersession I

14:30 – 16:30 Symposia I (S1-S6)

S1 Common principles of spatial and temporal sensory processing, Chairs: Jan Clemens (Göttingen), Carlotta Martelli (Konstanz), Marion Silies (Mainz)

- **Berthold Hedwig** (Cambridge, UK): **Unraveling a delay-line and coincidence detector circuit for auditory pattern recognition**
- **Carlotta Martelli** (Konstanz): **Adaptive responses and population dynamics in the olfactory system of *Drosophila***
- **Karin Nordstrom** (Adelaide, Australia): **Hoverfly vision in naturalistic surrounds**
- **Barani Raman** (Saint Louis, USA): **A computational logic for olfaction**
- **Katja Sporar** (Göttingen): **Cellular and circuit mechanisms that separate luminance and contrast sensitivity in peripheral visual processing**
- **Alexander S. Chockley** (Köln): **Subgroups of femoral chordotonal organ neurons differentially affect leg movements and coordination in *Drosophila melanogaster***

S2 Optogenetics – tool development and application in neuroscience, Chair: Alexander Gottschalk (Frankfurt/M.)

- **Benjamin R. Rost** (Berlin): **Optogenetic tools for neuroscience beyond the classical application of microbial rhodopsins**
- **Soojin Ryu** (Mainz): **Optogenetic manipulation of the stress response in larval zebrafish**
- **Ofer Yizhar** (Rehovot, Israel): **Optogenetic dissection of prefrontal circuits for cognitive control**
- **Alexander Dieter** (Göttingen): **Improved spectral resolution of optogenetic vs electric stimulation of the auditory nerve**
- **Silvia Rodriguez-Rozada** (Hamburg): **Interrogation of neuronal circuit function using customized optogenetic actuators and silencers**

S3 Keeping neurons alive – erythropoietin, its variants and its receptors, Chairs: Nina Hahn (Göttingen), Ralf Heinrich (Göttingen)

- **Christel Bonnas** (Göttingen): **EV-3, an endogenous human erythropoietin isoform with distinct functional relevance**
- **Daniela Ostrowski** (Kirksville, USA): **How erythropoietin mediates its neuroprotective effects**
- **Edith Marianne Schneider Gasser** (Zürich, Switzerland): **Erythropoietin signaling in mouse angio-oligo-neurogenesis**
- **Pardes Habib** (Aachen): **Erythropoietin regulates anti-apoptotic TMBIM family members after ischemic stroke**

- **Nina Hahn** (Göttingen): **Epo-induced neuroprotection: crucial role for orthologues of the orphan cytokine receptor CRLF3**

S4 Neurological autoimmunity: the role of pathogenic autoantibodies against neuron and glia proteins,

Chairs: Christian P. Moritz (Saint Etienne/Lyon, France), Claudia Sommer (Würzburg)

- **Dominik Jäger** (Lübeck): **Development of autoantibody test systems against neural proteins**
- **Edgar Meinel** (Martinsried): **Autoantibodies against myelin oligodendrocytes glycoprotein (MOG)**
- **Claudia Sommer** (Würzburg): **Autoantibodies in peripheral neuropathies**
- **Brigitte Theresia Wildemann** (Heidelberg): **The clinical spectrum and diagnosis of AQP4-IgG-associated and MOG-IgG-associated disorders**
- **Yara Nasser** (Saint Etienne, France): **Anti-FGFR3 antibody: a biomarker of sensory neuronopathies or an active player of neuron degeneration?**

S5 Serotonin and its developmental role in shaping brain plasticity and neuropsychological phenotypes,

Chairs: Natalia Alenina (Berlin), Francesca Calabrese (Milan, Italy), Piotr Popik (Krakow, Poland)

- **Natalia Alenina** (Berlin): **Serotonin and development: the role of the peripheral serotonergic system**
- **Judith Homberg** (Nijmegen, Netherlands): **Increased maternal extracellular serotonin levels beneficially influences offspring's anxiety- and anhedonia-like behaviour**
- **Agnieszka Nikiforuk** (Kraków, Poland): **High and low serotonin: implications for neuropsychiatric disorders**
- **Sophie Scotto-Lomassese** (Paris, France): **Role of serotonin in maternal behavior**
- **Franziska E. Müller** (Hannover): **The impact of serotonergic signaling in astrocytes**

S6 Novel insights into the regulation of hypothalamic neurocircuits and functions,

Chairs: Henning Fenselau (Köln), Sophie Steculorum (Köln)

- **Cristina García Cáceres** (Garching): **UCP2 in astrocytes regulates the activation of NPY neurons to control feeding behavior**
- **Rüdiger Klein** (Martinsried): **Central amygdala circuits controlling appetitive behavior**
- **Alexey Ponomarenko** (Düsseldorf): **Temporal separation of neuronal ensembles in hypothalamus regulates innate behaviors**

- **Jan Siemens** (Berlin): **t.b.a.**
- **Tim Gruber** (Garching): **Remodeling of the hypothalamic vasculature upon hypercaloric feeding depends on astroglial HIF1 α and VEGF**
- **Hanna Elin van den Munkhof** (Köln): **Applying unsupervised machine learning to study the lateral hypothalamic circuitry underlying motivated behaviour in freely moving mice**

16:30 – 18:00 Postersession II

19:00 – 20:00 Plenary Lecture, Zülch Lecture

Giulio Tononi (Madison, USA): **Consciousness: from theory to practice**

Thursday, March 21, 2019

9:00 – 10:00 Awarding Plenary Lectures

Schilling Award Lecture

Friederike Zunke (Kiel): **Molecular disease mechanisms and therapeutic approaches in Parkinson's disease**

TFS Technology Award Lecture

Jonas Wietek (Berlin): **Encounters in anion channel-rhodopsin research – a personal perspective on the development of inhibitory optogenetic tools**

10:00 – 11:30 Postersession III

11:30 – 13:30 Symposia II (S7-S12)

S7 Short-term adaptation in early auditory processing: from synaptic depression to focal perception,

Chairs: Andrea Lingner (Martinsried), Michael Pecka (Martinsried)

- **Andrea Lingner** (Martinsried): **Time course of stimulus-history dependent adaptation of auditory spatial perception**
- **Israel Nelken** (Jerusalem, Israel): **Cortical mechanisms underlying stimulus-specific adaptation and deviance detection**
- **Henrique von Gersdorff** (Portland, USA): **Building fast and resilient inhibitory synapses with Ca²⁺ nanodomains and microdomains**
- **Matthew A. Xu-Friedman** (Buffalo, USA): **Regulation of auditory nerve synaptic function by activity**
- **Elisa G. Krächan** (Kaiserslautern): **Novel form of synaptic plasticity: rebound effect at MNTB-LSO inputs**
- **Jörg Encke** (Garching): **Adaptation to stimulus statistics enhances the separability between interaural level differences on a population basis.**

S8 From astrocytes to behaviors: searching the cellular and molecular roots of emotion dysfunctions, Chairs: Barbara Di Benedetto (Regensburg), Inga Neumann (Regensburg)

- **Oliver J. Bosch** (Regensburg): **Partner loss impairs brain oxytocin signalling: physiological and emotional consequences in monogamous prairie voles**
- **Barbara Di Benedetto** (Regensburg): **Astrocytic EphrinA impacts the distribution of synaptic AMPA receptors in health and depression**
- **Giovanni Marsicano** (Bordeaux, France): **CB1 receptor signaling in the brain: the where matters**
- **Christine R. Rose** (Düsseldorf): **Astrocyte regulation of neuronal excitability**
- **Celia Roman** (Regensburg): **Antidepressant drugs require astrocytes to prime an early synaptic pruning and remodelling in the prefrontal cortex**
- **Carl Meinung** (Regensburg): **Oxytocin rapidly affects astrocytic morphology via a Sp1-Gem axis**

S9 Resolving the cognitive function of prefrontal circuits: from neurons to behavior, Chairs: Ilka Diester (Freiburg), Ileana Hanganu-Opatz (Hamburg)

- **Sarah Rachel Heilbronner** (Minneapolis, USA): **Connectivity reveals prefrontal cortical circuit homologies between rodents and primates**
- **Christoph Kellendonk** (New York, USA): **Thalamo-prefrontal interactions in working memory**
- **Thilo Womelsdorf** (Nashville, USA): **Prefrontal cortex circuits as a hub for flexible learning and attentional filtering of goal-irrelevant information**
- **Marie Carlén** (Stockholm, Sweden): **Quantitative whole brain mapping of the monosynaptic input to four different cell types in the mouse medial prefrontal cortex**
- **Mattia Chini** (Hamburg): **Microglia inhibition rescues developmental hypofrontality in a mouse model of cognitive impairment**
- **Abhilash Dwarakanath** (Tübingen): **Low frequency oscillatory bursts in the macaque prefrontal cortex predict spontaneous transitions in the content of consciousness**

S10 Brain-machine-interface in paralysis, Chair: Niels Birbaumer (Tübingen)

- **Ramos-Murguialday, Ander** (Tübingen): **t.b.a.**
- **Gabriel Curio** (Berlin): **Non-invasive single-trial EEG detection of evoked human neocortical population spikes**

- **Eilon Vaadia** (Jerusalem, Israel): **Volitional Control of spatiotemporal patterns of neuronal synchrony via brain-machine interface**
- **John Donoghue** (Geneva, Switzerland): **Potential challenges for implantable brain computer interfaces**
- **Daniel G. Schmidt** (Ulm): **Executive eye movement impairment in presymptomatic amyotrophic lateral sclerosis mutation carriers**

S11 The 4Rs in animal-based neuroscience research: Refinement, Reduction, Replacement, Responsibility, Chairs: Roman Stilling (Münster), Stefan Treue (Göttingen)

- **Ulrich Dirnagl** (Berlin): **Navigating ethics and evidence in preclinical neuroscience research**
- **Michael Heide** (Dresden): **Brain organoids as ideal replacements of animal models in neuroscience? – Chances and limitations of a brain in a dish**
- **Malcolm R. Macleod** (Edinburgh, UK): **The Reproducibility Opportunity**
- **Stefan Treue** (Göttingen): **Responsibility includes communication and transparency about animal research**

S12 Breaking News I, Chair: Marc Spehr (Aachen)

- **Felix Clotten** (Köln): **Descending control of two coupled locomotor systems**
- **Andreea Constantinescu** (Wien, Austria): **Multiplexing motor functions and impulsive traits is molecularly dissociated by subthalamic metabotropic glutamate receptor 4**
- **Jennifer Heck** (Magdeburg): **C-terminal splicing of presynaptic calcium channels contributes to the variability of neurotransmitter release**
- **Madhura Ketkar** (Mainz): **A luminance-sensitive cell type in Drosophila facilitates visual contrast computation**
- **Özge Demet Özcete** (Göttingen): **Sound encoding at individual inner hair cell synapses**
- **Aarti Sehdev** (Konstanz): **Olfactory object recognition based on fine-scale stimulus timing in Drosophila**
- **Ahmed Shaaban** (Göttingen): **Dissecting key mechanisms of gut-to-brain signalling**
- **Sonja Sivcev** (Praha, Czech Republic): **Testosterone derivatives increase sensitivity of P2X receptors to ATP and antagonize the effect of ivermectin on deactivation**
- **Thede Witschel** (Tübingen): **Finite element simulations of active electroception**

- **Sebastian Mauricio Molina-Obando** (Göttingen): **A combination of GABA- and glutamate-gated chloride channels mediates ON selectivity in the *Drosophila* visual system**

14:30 – 16:30 Symposia III (S13-S18)

S13 Breaking News II, Chair: Marc Spehr (Aachen)

- **Margarita Anisimova** (Hamburg): **Optogenetic spike-timing-dependent plasticity (oSTDP)**
- **Marcel Brosch** (Magdeburg): **A flexible and transparent electrode array for closed-loop optogenetic stimulation**
- **Oana Constantin** (Hamburg): **Manipulation of intracellular cAMP and membrane potential using light activated adenylyl cyclases and CNG channels**
- **Sofia Elizarova** (Göttingen): **Nanosensor-based Imaging of Presynaptic Dopamine Release**
- **Raziye Karapinar** (Bochum): **Design of an ultra-fast switching mouse melanopsin variant with a narrow action spectrum**
- **Golan Karvat** (Freiburg): **Real-time neurofeedback in freely behaving rats: training a network to study a network**
- **Mauro Pulin** (Hamburg): **Chemogenetic silencing: synaptic mechanisms and long-term effects at Schaffer collateral synapses**
- **Meike Marie Rogalla** (Bremen): **Hearing colors: evaluation of frequency representation in optogenetic midbrain implants**
- **Michael Schweigmann** (Homburg): **Exploring cortical brain networks with flexible LCP microelectrode arrays in parallel to two-photon imaging of anaesthetized and awake mice**
- **Yixin Tong** (Freiburg i.Br.): **Optogenetic stimulation of VTA dopaminergic neurons in a rodent model of depression**

S14 Adaptivity and inhomogeneity in neuronal networks – two sides of the same coin?, Chairs: Ulrich Egert (Freiburg), Stefan Rotter (Freiburg)

- **Júlia V Gallinaro** (Freiburg): **Cell assembly formation and non-random connectivity in networks subject to homeostatic structural plasticity**
- **Anna Levina** (Tübingen): **Self-organization of neuronal dynamics by plasticity and adaptation**
- **Samora Okujeni** (Freiburg): **Self-organized mesoscale inhomogeneity promotes rich activity dynamics**

- **Christos Galanis** (Freiburg): **Dopamine blocks homeostatic excitatory synaptic plasticity in immature dentate granule cells of entorhino-hippocampal tissue cultures**

S15 The brain oxytocin system – its complex impact on autism, social behavior, and stress, Chairs: Benjamin Jurek (Regensburg), Adam Steven Smith (Lawrence, USA)

- **Marta Busnelli** (Milano, Italy): **Oxytocin: its signaling of action and receptor signalling in the brain**
- **Benjamin Jurek** (Regensburg): **The brain oxytocin system and its complex impact on stress and anxiety**
- **Martin Schulte-Rüther** (Aachen): **Social reinforcement learning and its neural modulation by oxytocin in autism spectrum disorder**
- **Adam Steven Smith** (Lawrence, USA): **Oxytocin and social contact reduce anxiety**
- **Magdalena Meyer** (Regensburg): **Oxytocin alters the morphology of hypothalamic neurons via the transcription factor myocyte enhancer factor 2A (MEF-2A)**
- **Dominik Fiedler** (Münster): **Brain-Derived Neurotrophic Factor modulates synaptic properties of ovBNST neurons via TrkB receptors**

S16 Mitochondrial dysfunction in neurodegeneration, Chairs: Ira Milosevic (Göttingen), Nuno Raimundo (Göttingen)

- **Thomas Langer** (Köln): **Proteolytic control of mitochondrial dynamics and neurodegeneration**
- **Elena Rugarli** (Köln): **CLUH is a post-transcriptional regulator of mitochondrial function**
- **Nektarios Tarernarakis** (Heraklion, Greece): **Mitochondrial turnover and homeostasis in ageing and neurodegeneration**
- **Patrik Verstreken** (Leuven, Belgium): **The origin of sleep defects in Parkinson disease**
- **Sindhuja Gowrisankaran** (Göttingen): **Rabconnectin-3a regulates vesicle acidification at the neuronal synapse**
- **King Faisal Yambire** (Göttingen): **Lysosomal and mitochondrial crosstalk: a case for neurodegeneration in LSDs?**

S17 Dissection of a central brain circuit: structure, plasticity and functions of the drosophila mushroom body, Chairs: André Fiala (Göttingen), Bertram Gerber (Magdeburg)

- **Yoshinori Aso** (Ashburn, USA): **Mechanisms to diversify learning rules in parallel memory circuits**
- **Stephan Sigrist** (Berlin): **Mechanisms underlying age-induced memory impairment in relation to mushroom body function**
- **Lisa Scheunemann** (Paris, France): **Serotonergic Modulation of Memory Circuits**
- **Barbara Webb** (Edinburgh, UK): **Modelling the mechanisms of learning in the mushroom body**
- **Nino Mancini** (Magdeburg): **Function of the anterior paired lateral (APL) neuron in associative olfactory learning in larval Drosophila**
- **Radostina Lyutova** (Würzburg): **Reward signaling in a recurrent circuit of dopaminergic neurons and Kenyon cells in the Drosophila larva**

S18 From normal brain development to pathology: what role does the environment play?, Chairs: Cristiana Cruceanu (München), Simone Mayer (Tübingen)

- **Claudia Buss** (Berlin): **Maternal inflammation during pregnancy and fetal brain development**
- **Cristiana Cruceanu** (München): **Stress hormones during pregnancy and fetal brain development: what we can learn from perinatal tissues and in vitro models**
- **Simone Mayer** (Tübingen): **Early active intercellular signaling networks in the developing human brain**
- **Freda Diane Miller** (Toronto, Canada): **Stem cells and growth factors: building and repairing the murine forebrain**
- **Paola Brivio** (Milano, Italy): **Alteration of serotonergic system alters neuroplastic mechanisms from postnatal development until adulthood.**
- **Rebecca Winter** (Dresden): **Prevention of schizophrenia deficits via non-invasive adolescent frontal cortex stimulation in rats**

16:30 – 18:00 Postersession IV

19:00 – 20:00 Plenary Lecture, Hertie Foundation Lecture
Onur Güntürkün (Bochum): **Cognition without a cortex**

Friday, March 22, 2019

9:00 – 10:00 Plenary Lecture, Norbert Elsner Lecture
Nachum Ulanovsky (Rehovot, Israel) **Neural codes for natural navigation in the hippocampal formation of bats**

10:00 – 11:30 Postersession V

11:30 – 13:30 Symposia IV (S19-S24)

S19 From clinical symptoms to motoneuron pathobiology: most recent insights into amyotrophic lateral sclerosis (ALS), Chairs: Jochen Weishaupt (Ulm), Albert C. Ludolph (Ulm)

- **Karin Danzer** (Ulm): **TDP-43 aggregation – implications for ALS**
- **Dorothee Dormann** (Planegg-Martinsried): **Molecular mechanisms of ALS – from nuclear transport defects to protein aggregation**
- **Jochen H. Weishaupt** (Ulm): **From ALS genes to pathogenic principles and targets for individualized therapies**
- **Albert C. Ludolph** (Ulm): **t.b.a.**
- **Alexander Nikolaevich Trofimov** (Maastricht, Netherlands): **Neuroinflammation in a mouse model of amyotrophic lateral sclerosis with FUS gene mutation and effects of standard and new therapies**
- **Diane Penndorf** (Jena): **Replicative reprogramming in the context of physiological CNS aging and age-related neurodegeneration**

S20 Subcortico-cortical loops and their role in sensory processing and perception, Chairs: Livia de Hoz (Berlin), Julio Hechavarria (Frankfurt/M.)

- **Laura Busse** (Planegg-Martinsried): **Visual processing of feedforward and feedback signals in mouse dLGN**
- **Livia de Hoz** (Berlin): **Auditory midbrain coding of temporally sparse statistics**
- **Max F. K. Happel** (Magdeburg): **Recurrent cortico-thalamic feedback in auditory cortex mediating salient auditory perception**
- **Julio Hechavarria** (Frankfurt/M.): **Understanding the auditory hierarchy: modifications to auditory processing on the way to the cortex**
- **Francisco Garcia-Rosales** (Frankfurt/M.): **Cortical oscillations aid the representation of natural vocalization streams at multiple timescales**
- **Kim Chi Le** (Aachen): **Dual-color imaging for isolating olfactory bulb output streams in mice**

S21 Behavioral decisions based on multimodal information, Chairs: Basil el Jundi (Würzburg), Martin Strube-Bloss (Würzburg)

- Marie Dacke (Lund, Sweden): **As the crow flies and the beetle rolls: straight-line orientation from behaviour to neurons**
- Markus Knaden (Jena): **Desert ant navigation by olfactory and visual cues**
- Simon Sponberg (Atlanta, USA): **Timing, multimodal integration, and coordination in the neural control of agile flight in low light**
- Matthias Wittlinger (Freiburg): **Multimodal odometry in navigating Cataglyphis desert ants**
- Robin Grob (Würzburg): **Compass systems during ant learning walks: the role of celestial cues for initial compass calibration in cataglyphis ants**
- Arne Gollin (Bielefeld): **Estimating body pitch from distributed proprioception: On the role of afferent number and distribution**

S22 The neuronal basis of tinnitus, Chair: Birgit Mazurek (Berlin), Holger Schulze (Erlangen)

- Birgit Mazurek (Berlin): **Tinnitus and comorbidities**
- Arnaud Jean Norena (Marseille, France): **The pathophysiology of tinnitus**
- Holger Schulze (Erlangen): **The fine-tuned brain: better hearing in tinnitus patients due to stochastic resonance?**
- Pim Van Dijk (Groningen, Netherlands): **Characteristics of auditory processing associated with tinnitus**
- Elouise Alexandra Koops (Groningen, Netherlands): **Cortical tonotopic maps in tinnitus and hearing loss**

S23 Early information selection for robust vision, Chair: Matthias Bethge (Tübingen)

- Katrin Franke (Tübingen): **Chromatic processing in the mouse retina**
- Ziad M. Hamed (Tübingen): **A vision for orienting in primate superior colliculus**
- Matthias Bethge (Tübingen): **t.b.a.**
- Li Zhaoping (Tübingen): **Visual selection**

S24 Form follows function? Rules and consequences of structural synaptic plasticity, Chairs: Tobias Rose (Martinsried), J. Simon Wiegert (Hamburg)

- Anthony Holtmaat (Geneva, Switzerland): **Synaptic mechanisms for plasticity in the somatosensory cortex**

- Tara Keck (London, UK): **Structural dynamics following sensory deprivation in mouse visual cortex**
- Simon Wiegert (Hamburg): **The sequence of plasticity inducing events sets the lifetime of hippocampal synapses**
- Panayiota Poirazi (Heraklion, Greece): **Memory linking through synapse clustering in active dendrites**
- Brenna C Fearey (Hamburg): **Mapping action potential back propagation using SynTagMA**

14:30 – 16:30: Symposia V (S25-S30)

S25 Go with the flow? Processing of sensory flows across modalities, Chairs: Aristides Arrenberg (Tübingen), Jan Benda (Tübingen), Annette Denzinger (Tübingen), Hanspeter Mallot (Tübingen)

- Karen Carleton (College Park, USA): **Optimal visual sensitivities: what the cichlid eye needs to tell the cichlid brain**
- Eric Scott Fortune (Newark, USA): **Close-loop control of active-sensing movements**
- Michaela Warnecke (Baltimore, USA): **Echo flow patterns influence bat flight behavior and neural activity**
- Douglas R. Wylie (Edmonton, Canada): **An eye towards hovering: species differences in the processing of optic flow in birds in relation to flight behavior**
- Dimokratis Karamanlis (Göttingen): **Natural stimuli reveal a spectrum of spatial encoding across the output channels of the retina**
- Kun Wang (Tübingen): **Binocular processing and receptive fields of motion-sensitive neurons in the zebrafish pretectum and tectum**

S26 Neural mechanisms of social decision-making (SFB 1158), Chairs: Igor Kagan (Göttingen), Arezoo Poor-esmaeili (Göttingen)

- Steve W. C. Chang (New Haven, USA): **The coordinated interplay between prefrontal areas and amygdala in social gaze dynamics and decision-making**
- Tobias Kalenscher (Düsseldorf): **Neural mechanisms of social preferences in rats**
- Alan G. Sanfey (Nijmegen, Netherlands): **Reciprocity and punishment: insights from decision neuroscience**
- Anne Christin Saulin (Würzburg): **How multiple motives affect the computation of social decisions in the human brain**

- **Caedyn Lachlan Stinson** (Berlin): **The role of differential sensory input and attributional biases in social effort perception**

S27 Neurodegenerative diseases: shaping neuronal circuits by membrane trafficking, Chairs: Natalia Kononenko (Köln), Brunhilde Wirth (Köln)

- **Michael Alan Cousin** (Edinburgh, UK): **Loss of functional huntingtin causes activity-dependent pre-synaptic defects in Huntington's disease**
- **Natalia Kononenko** (Köln): **AP-2 prevents amyloidogenic processing of APP via endocytosis-independent regulation of BACE1 trafficking in neurons**
- **Ira Milosevic** (Göttingen): **Endocytosis and autophagy dysfunction in neurodegeneration**
- **Brunhilde Wirth** (Köln): **Protective modifiers unveiled impaired endocytosis in Spinal Muscular Atrophy and opened new therapeutic options**
- **Ferdi Ridvan Kiral** (Berlin): **Decreased filopodial dynamics at autophagy-deficient photoreceptor axon terminals lead to ectopic synapse formation and neuronal miswiring**

S28 Modulatory circuits of central pain processing, Chairs: Valery Grinevich (Heidelberg), Alexander Groh (Heidelberg)

- **Alexandre Charlet** (Strasbourg, France): **Oxytocin acts on astrocytes in the central amygdala to promote comfort**
- **Luis Garcia-Larrea** (Lyon, France): **The cortical construction of pain**
- **Valery Grinevich** (Heidelberg): **Somatosensory modulation of oxytocin neurons drives social communication**
- **Alexander Groh** (Heidelberg): **Cortical control of thalamic pain processing**
- **Carla Norwig** (Würzburg): **Expression profile of tight junction proteins in a model of diabetic neuropathy**
- **Livia Asan** (Heidelberg): **The cellular basis of volumetric brain changes during chronic pain – a novel approach to correlate voxel-based morphology with in vivo microscopy**

S29 Orexin beyond sleep, Chairs: Markus Fendt (Magdeburg), Michael Koch (Bremen)

- **Fernando Berrendero** (Madrid, Spain): **Orexin regulation of fear learning and extinction**
- **Marta Carus-Cadavieco** (Köln): **Hypothalamic network oscillations and regulation of feeding behaviour**

- **Nadine Faesel** (Magdeburg): **Role of orexin deficiency in panic-like anxiety**
- **Julia Sabine Schuller** (Bremen): **Neurochemical investigation of impulse control in a rat model of binge eating disorder**
- **Archana Durairaja** (Magdeburg): **Role of orexin in cognitive flexibility**

S30 Inhibitory synapse diversity in health and disease, Chairs: Dilja Krueger-Burg (Göttingen), Theofilos Papadopoulos (Göttingen)

- **Matthias Kneussel** (Hamburg): **Neuronal GABA_A receptor trafficking and turnover underlying synaptic transmission and cognitive function**
- **Dilja Krueger-Burg** (Göttingen): **The cell adhesion molecule IgSF9b regulates inhibitory synapse function in the amygdala anxiety circuitry**
- **Jonas-Frederic Sauer** (Freiburg): **Altered prefrontal pyramidal-GABAergic interneuron circuit architecture in a genetic mouse model of psychiatric illnesses**
- **Scott Haydn Soderling** (Durham, USA): **Proteo-connectomics to discover novel mechanisms of inhibition in vivo**
- **Martin Zeller** (Tübingen): **Amygdala intercalated neurons form an interconnected and functionally heterogeneous network**

16:30 – 18:00 Postersession VI

19:00 – 20:00 Plenary Lecture, Schram Lecture

Volker Haucke (Berlin): **Mechanisms of presynapse function and assembly**

Saturday, March 23, 2019

8:30 – 10:30 Symposia VI (S31-S36)

S31 The tripartite synapse in health and disease, Chairs: Gabor Petzold (Bonn), Christine R. Rose (Düsseldorf)

- **Niklas J. Gerkau** (Düsseldorf): **Sodium loading in metabolically compromised cortex**
- **Christian Henneberger** (Bonn): **Perisynaptic astrocyte structure dynamically shapes hippocampal glutamate signalling**
- **Gabor Petzold** (Bonn): **Role of astroglial calcium changes in Alzheimer's disease and stroke**
- **Verena Untiet** (Copenhagen, Denmark): **Astroglial chloride-homeostasis in health and disease**
- **Zhou Wu** (Bonn): **Unravelling potential mechanisms causing astrocytic death during early epileptogenesis**

- **Mico Bozic** (Ljubljana, Slovenia): **Astroglial MHC class II molecules are associated with fusion of larger vesicles**

S32 Hearing system adaptation for diverse lifestyles across the animal kingdom, Chairs: Manuela Nowotny (Frankfurt/M.), Stefan Schöneich (Leipzig)

- **Jan Clemens** (Göttingen): **Acoustic communication in the wild – a shared song feature detector drives male and female responses to song in *Drosophila***
- **Manuela Nowotny** (Frankfurt/M.): **Talk to me darling – neuronal adaptations for intraspecific communication in the bushcricket ear**
- **Hannah ter Hofstede** (Hanover, USA): **Auditory adaptations for detecting echolocating predators in moths and katydids**
- **Christine Köppl** (Oldenburg): **Death on silent wings – adaptations for sound localization in the barn owl**
- **Lina Maria Jaime Tobon** (Göttingen): **Understanding sound encoding: correlation of response properties of afferent inner hair cell synapses at near physiological conditions**
- **Ajayrama Kumaraswamy** (Planegg-Martinsried): **Adaptations in an identified honeybee auditory interneuron responsive to waggle dance vibration signals**

S33 Pro-survival versus toxic NMDA receptor signaling and the fight against neurodegenerative disorders, Chairs: Hilmar Bading (Heidelberg)

- **Hilmar Bading** (Heidelberg): **The NMDA receptor paradox: pro-survival versus death signaling**
- **Giles E. Hardingham** (Edinburgh, UK): **Probing the roles of GluN2 C-terminal domain signalling in health and disease**
- **Stuart A. Lipton** (La Jolla, USA): **The novel NMDAR antagonist NitroSynapsin as therapy for hiPSC- and mouse-models of human autism spectrum disorder**
- **Lynn A Raymond** (Vancouver, Canada): **Role for extrasynaptic NMDA receptors in prodromal Huntington disease: mechanisms and therapeutic implications**
- **Liliana Rojas-Charry** (Hamburg): **Specific mutations in presenilin 1 have a differential role on mitochondrial phenotype and function**

S34 The dentate gyrus – from microcircuit function to control of behavior, Chairs: Marlene Bartos (Freiburg)

- **Marlene Bartos** (Freiburg): **In vivo imaging of stable and dynamic memory engrams in the rodent hippocampus**
- **Fritjof Helmchen** (Zürich, Switzerland): **Two-photon imaging of dentate granule cells and CA3 pyramidal cells in mouse hippocampus**
- **Christoph Schmidt-Hieber** (Paris, France): **Probing cellular mechanisms of pattern separation in the dentate gyrus**
- **Heinz Beck** (Bonn): **Mechanisms of sparse coding in the dentate gyrus**
- **Thomas Hainmueller** (Freiburg i. Br.): **Imaging the dentate gyrus circuitry during virtual navigation.**

S35 The presynaptic active zone: converging and diverging mechanisms across species, Chairs: Robert Kittel (Leipzig), Noa Lipstein (Göttingen)

- **Nadine Ehmman** (Leipzig): **Active zone physiology in the context of olfactory information processing in *Drosophila***
- **Pascal Kaeser** (Boston, USA): **Dissecting release site architecture for fast neurotransmitters and for neuromodulators**
- **Joshua M. Kaplan** (Boston, USA): **From compost to the clinic: using *C. elegans* to study psychiatric disorders**
- **Janet Elizabeth Richmond** (Chicago, USA): **Molecular machinery required for synaptic organization and release**
- **Lydia S.B. Maus** (Göttingen): **Resolving the ultrastructural organization of synaptic vesicle pools at hippocampal mossy fiber and schaffer collateral synapses**
- **Martin Baccino-Calace** (Oberengstringen, Switzerland): ***thin* promotes presynaptic homeostatic plasticity at the *Drosophila* neuromuscular junction**

S36 Beyond expression of fear: mechanisms and circuits of the extended amygdale, Chairs: Maren Denise Lange (Münster), Thomas Seidenbecher (Münster))

- **Ki Ann Goosens** (New York, USA): **Mechanisms underlying stress-enhanced fear**
- **Maren Denise Lange** (Münster): **Endocannabinoids impact on responses to predictable and unpredictable threat via CRH neurons**
- **Laura Luyten** (Leuven, Belgium): **Targeting the bed nucleus of the stria terminalis to reduce anxiety in rats and patients**

- **Stephen Maren** (College Station, USA): **The way forward is backward: BNST mediates fear to ambiguous threats**
- **Julia Winter** (Regensburg): **The transcription factor MEF-2A mediates the anxiogenic effect of chronic oxytocin**
- **Roman Kessler** (Marburg): **The watchdog won't stop barking! Top-down control of the amygdala by medial prefrontal cortex in major depression: The role of medication, genetic liability and childhood maltreatment**

10:30 – 12:00 Postersession VII

12:30 – 13:30 Plenary Lecture, Ernst Florey Lecture

Antoine Triller (Paris, France) **The synapse: memory in a fluid membrane**

13:30 – 15:00 Postersession VIII

15:00 – 16:00 Plenary Lecture, Otto Creutzfeldt Lecture
Kristin Tessmar-Raible (Vienna, Austria) **The brain as a timer: day, season and moon phase coordination in the sea**

Die Online-Registrierung ist noch bis zum **6. März 2019** möglich. Eine Registrierung vor Ort wird ebenfalls angeboten.

www.nwg-goettingen.de/2019

Reisestipendien für Göttinger Tagung 2019 vergeben

Aus den zahlreichen Einsendungen wurden die folgenden Bewerber für ein Stipendium in Höhe von 300 Euro für die Teilnahme an der Göttinger Tagung 2019 (20. – 23. März) ausgewählt:

1. Adzic, Marija (Serbia)
2. Anisimova, Margarita (Germany)
3. Božić, Mićo (Slovenia)
4. Brivio, Paola (Italy)
5. Clotten, Felix (Germany)
6. Daghani, Marwa (Tunisia)
7. Ebrahimtabar, Forough (Iran)
8. Eckert, Philipp (Germany)
9. Eiffler, Ina (Germany)
10. Fleischmann, Pauline Nikola (Germany)
11. Guedes-Dias, Pedro (USA)
12. Keine, Christian (Germany)
13. Kugler, Christof (Germany)
14. Liedtke, Maik (Germany)

15. Paschen, Enya (Germany)
16. Pentimalli, Tancredi Massimo (Italy)
17. Pina, Eneko (Germany)
18. Rodriguez-Rozada, Silvia (Germany)
19. Sathyanarayanan, Ranganayaki (India)
20. Schlüter, Annabelle (Germany)
21. Schoof, Melanie (Germany)
22. Taylor, Stephanie (Germany)
23. Winter, Julia (Germany)
24. Wu, Zhou (Germany)

Bewerben konnten sich Studenten, Doktoranden und Post-docs, die zum Zeitpunkt der Bewerbung maximal 35 Jahre alt waren und an der Göttinger Tagung mit einem eigenen Beitrag als Erstautor teilnehmen. Als Bewerbungsunterlagen waren ein kurzer Lebenslauf, eine Publikationsliste (falls vorhanden), eine Kopie des Abstracts und ein kurzes Empfehlungsschreiben gefordert.

Einladung zur Mitgliederversammlung auf der 13. Göttinger Tagung der Neurowissenschaftlichen Gesellschaft (20. – 23. März 2019)

Termin: Donnerstag, 21. März 2019, 13:30 – 14:30 Uhr
Ort: Zentrales Hörsaalgebäude, Hörsaal 11

Vorschläge für weitere Tagesordnungspunkte reichen Sie bitte **bis spätestens 8. März 2019** bei der Geschäftsstelle ein.

Vorläufige Tagesordnung:

1. Begrüßung durch den Präsidenten
2. Bestätigung des Protokolls der letzten Mitgliederversammlung
3. Bericht des Schatzmeisters
4. Mitteilungen
5. Bericht zur Göttinger Tagung
6. Wahl des neuen Vorstandes
7. Aktivitäten der Gesellschaft
8. Verschiedenes

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Offenlegung der Inhaber und Beteiligungsverhältnisse gem. § 7a Abs. 1 Ziff. 1, Abs. 2 Ziff. 3 des Berliner Pressegesetzes: Die Gesellschafter der Walter de Gruyter GmbH sind: Cram, Gisela, Rentnerin, Berlin; Cram, Elsbeth, Pensionärin, Rosengarten-Alvesen; Cram, Dr. Georg-Martin, Unternehmens-Systemberater, Stadtbergen; Cram, Maike, Wien (Österreich); Cram, Jens, Mannheim; Cram, Ingrid, Betriebsleiterin, Tuxpan/Michoacan (Mexiko); Cram, Sabina, Mexico, DF (Mexiko); Cram, Silke, Wissenschaftlerin, Mexico DF (Mexiko); Cram, Björn, Aachen; Cram, Berit, Hamm; Cram-Gomez, Susana, Mexico DF (Mexiko); Cram-Heydrich, Walter, Mexico DF (Mexiko); Cram-Heydrich, Kurt, Angestellter, Mexico DF (Mexiko); Duvenbeck, Brigitta, Oberstudienrätin i.R., Bad Homburg; Gädeke, Gudula, M.A., Atemtherapeutin/Lehrerin, Tübingen; Gädeke, Martin, Einzelunternehmer, Ingolstadt; Gomez Cram, Arturo Walter, Global Key Account Manager, Bonn, Gomez Cram, Ingrid Arlene, Studentin, Mexico, DF (Mexiko), Gomez Cram, Robert, Student, Philadelphia, PA, USA, Lubasch, Dr. Annette, Ärztin, Berlin; Schütz, Dr. Christa, Ärztin, Mannheim; Schütz, Sonja, Berlin; Schütz, Juliane, Berlin; Schütz, Antje, Berlin; Schütz, Valentin, Mannheim; Seils, Dorothee, Apothekerin, Stuttgart; Seils, Gabriele, Journalistin, Berlin; Seils, Christoph, Journalist, Berlin; Siebert, John-Walter, Pfarrer, Oberstenfeld; Tran, Renate, Mediatorin, Zürich (Schweiz).