UNIVERSITÄTS KLINIKUM FREIBURG

THE NEURON GLIA INTERFACE

PROGRAM GUIDE

September 13.- 15. 2023

Freiburg || Germany

Welcome to Vis à vis in the Brain: The Neuron-Glia Interface

It is our great pleasure to welcome you all to our second international meeting “Vis à vis in the Brain: The Neuron-Glia Interface” organized at the Medical Center- University of Freiburg.

The human mind is conventionally recognized as only derived from neuronal activity, with the dynamic activity of neurons involved in the transfer and processing of information. Glial cells, traditionally thought of simply as the “glue” of the nervous system, were thought to be uninvolved in information processing and only ensuring homeostatic maintenance. Recent evidence has now largely recognized that these cell types play many critical roles in the development and function of the brain. Furthermore, these interactions between glia and neurons are key determinants in many neurodegenerative and neuroimmunological diseases.

With this conference, we aim to connect and foster discussions between expert medical and clinician scientists from Neuroscience, Neurotechnology, and Neuroimmunology to highlight and present the most recent developments, translational advances and unpublished discoveries.
Our program includes many excellent international speakers and provides plenty of possibilities to extend our knowledge and familiarize ourselves with approaches and expertise outside of our own domains.

We are happy to welcome you here for this exciting conference at the Medical Center-University of Freiburg, just a few minutes from the bustling city center and surrounded by the beautiful Black Forest.

ORGANIZATION

Main Organizers

Dr. Vidhya Madapusi Ravi,
Department of Neurosurgery, Medical Center-University of Freiburg

Jun. Prof. Katrin Kierdorf,
Institute of Neuropathology, Medical Center-University of Freiburg

Dr. Paolo d'Errico,
Department of Neuroanatomy, University of Freiburg

Dr. Ing. Kevin Joseph,
Department of Neurosurgery, Medical Center-University of Freiburg

KEYNOTE SPEAKERS

Michael Weller
(University Hospital Zürich, Switzerland)

Frank Winkler
(University of Heidelberg, Germany)

Angelika Rambold
(Max-Planck Institute for Immunobiology and Epigenetics, Freiburg, Germany)

CHAIRS

Lukas Amann (University of Freiburg, Germany)
Benjamin Newland (Cardiff University, United Kingdom)
Dieter Henrik Heiland (University of Freiburg, Germany)
Jürgen Beck (University of Freiburg, Germany)
Roman Sankowski (University of Freiburg, Germany)

WEDNESDAY: 13.09.2023

7.30 - 9.00	Registration - Hörsaal Killianstraße
9.00 - 9.15	Opening and Welcome *Frederik Wenz* *University Hospital Freiburg, Germany*
9.15 - 10.00	**Keynote Lecture** **Bench-to-bedside and vice versa in glioblastoma: failures and how to overcome them** *Michael Weller (University Hospital Zürich, Switzerland)*
10.00 - 10.30	Coffee Break
10.30 - 14.10	**Session I | Neuron and Glia in Health** *Chair: Lukas Amann & Katrin Kierdorf*
10.30 - 11.00	Towards a dynamic quantitative understanding of neuronal-immune interactions in the brain *Francesca Peri (University of Zurich, Switzerland)*
11.00 - 11.30	The myeloid side of the brain *Marco Prinz (University of Freiburg, Germany)*
11.30 - 12.00	Panglial gap junction coupling contributes to neuronal energy supply in the thalamus *Christian Steinhäuser (University of Bonn, Germany)*
12.00 - 13.00	Lunch Break
13.00 - 13.30	Layers of complexity - Myeloid immunity in the outer meninges *Lukas Amann (University of Freiburg, Germany)*
13.30 - 14.00	Shutting down glioblastoma: How astrocytes contribute to tumor progression *Lior Mayo (Tel Aviv University, Israel)*
14.00 - 14.10	Selected Short Talk: Microglial network dynamics are defined by the harmonic counterpoise of colonization, expansion, and morphological development systems *Lance Bosch (University of Freiburg, Germany)*
14.10 - 14.45	Coffee Break

WEDNESDAY: 13.09.2023

14.45 - 17.15	**Session II | Bench to Bedside Research** *Chair: Roman Sankowski*
14.45 - 15.15	Dopamine for neurorehabilitation after stroke – a translational approach *Jonas Hosp (University Clinic of Freiburg, Germany)*
15.15 - 15.45	Therapy-induced Cellular Plasticity in GBM: Challenge of Hitting a Moving Target *Atique Ahmed (Northwestern University, Chicago, US)*
15.45 - 16.15	Visualizing glioma-neuron interaction – bringing bench to OR *Daniel Delev (University of Aachen, Germany)*
16.15 - 16.25	Selected Short Talk: Photodynamic Therapy in Gliomas *Ioannis Vassilikos (University of Freiburg, Germany*
16.25 - 16.35	Selected Short Talk: Network analysis integrating microRNAs and clinical data to determine prognostic outcome in pediatric low-grade glioma patients *Giuseppina Catanzaro (University of Rome, Italy)*
16.35 - 16.45	Selected Short Talk: Transcriptional dysregulation of myelination in the gray matter of frontal lobe focal cortical dysplasia type II *Katharina Donkels (University of Freiburg, Germany)*
16.45 - 16.55	Selected Short Talk: Unveiling Mesenchymal-like Transition in BRAF-mutant Glioblastoma under Targeted Therapy via Autografted Human Cortical Culture System *Junyi Zhang (University of Freiburg, Germany)*
16.55 - 17.05	Selected Short Talk: 5-Aminolevulinic Acid metabolism is enriched in activated macrophages of the tumor microenvironment *Jakob Strähle (University of Freiburg, Germany)*
17.05 - 17.15	Selected Short Talk: CA2 and beyond – Exploring the epileptic network *Ute Häussler (University of Freiburg, Germany)*
17.30 - 20.30	Poster Session + Finger Food

THURSDAY: 14.09.2023

08.30 - 12.50	**Session III | Cancer Meets Neuroscience** *Chair: Jürgen Beck & Vidhya Ravi*
8.30 - 9.15	**Keynote Lecture** **How incurable brain tumors use neurodevelopmental mechanisms to thrive** *Frank Winkler (University of Heidelberg, Germany)*
9.15 - 9.45	Heterogeneity and plasticity of the Glioblastoma ecosystem upon treatment–probing patient avatars towards clinically-relevant outcomes *Anna Golebiewska (Luxembourg Institute of Health)*
9.45 - 10.00	Enabling the next generation of single cell and spatial experiments *10X Genomics (Sponsor Talk)*
10.00 - 10.30	Macrophage heterogeneity in normal and glioblastoma-bearing brain *Jo VAN Ginderachter (Vrije Universiteit Brussel, Belgium)*
10.30 - 11.00	Coffee Break
11.00 - 11.30	The role of vascular microenvironment and glioblastoma cell plasticity in resistance to radiotherapy, chemotherapy or surgical resection *Giorgio Seano (Institut Curie, Paris, France)*
11.30 - 12.00	Metabolic checkpoint blockade boosts anti-cancer immunity in brain metastasis *Lisa Sevenich (Georg Speyer Haus, Frankfurt, Germany)*
12.00 - 12.30	Spatial mapping of diffuse glioma microenvironment with multiplex-immunohistochemistry *Kirsi Rautajoki (Tampere University, Finland)*
12.30 - 12.40	Selected Short Talk: How do glioblastoma cells adapt their metabolism when escaping on neurons? *Thomas Daubon (University of Bordeaux, France)*
12.40 - 12.50	Selected Short Talk: Neural-network learning-based deconstruction of the developmental genetic programs in glioblastoma and neuroblastoma *Yizhou Hu (Karolinska Institute, Sweden)*
12.50 - 14.30	Lunch Break + Group Photo / Photo session
14.30-17.50	**Session IV | Neurodegeneration & Neuroinflammation** *Chair: Dieter Henrik Heiland & Paolo d' Errico*
14.30 - 15.00	TNF-mediated synaptic plasticity: from mice to humans *Andreas Vlachos (University of Freiburg, Germany)*
15.00 - 15.30	Regulation of phagocyte phenotypes in autoimmune CNS inflammation *Martin Kerschensteiner (LMU Munich, Germany)*
15.30 - 16.00	Gut Macrophages Modulate Brain Neuropathology in Parkinson's disease *Sebastian de Schepper (University College London, United Kingdom)*
16.00 - 16.30	Coffee Break

THURSDAY: 14.09.2023

16.30 - 17.00	Consequences of neonatal maternal separation in a rat model of prematurity *Pierrick Poisbeau (University of Strasbourg, France)*
17.00 - 17.30	Organoid-based platforms for modeling human brain environment-dependent microglia phenotypes *Simon Schäfer (TU Munich, Germany)*
17.30 - 17.40	Selected Short Talk: Microbial triggering of myelin-specific immune cells in the gut drives central nervous system inflammation *Lena Katharina Siewert (University of Basel, Switzerland)*
17.40 - 17.50	Selected Short Talk: Repetitive transcranial magnetic stimulation- (rTMS-) induced plasticity is associated with changes in N6-methyladenosine (m6A) modified RNA *Elli-Anna Balta (University of Freiburg, Germany)*
18.30 - 23.00	Invited Speaker Dinner

FRIDAY: 15.09.2023

08.30 - 12.20	**Session V| Neurotechnologies** *Chair: Kevin Joseph & Benjamin Newland*
8.30 - 9.00	Magnetic particles to the rescue: Uniting imaging and therapy with MPI *Ulrich Hofmann (University of Freiburg, Germany)*
9.00 - 9.30	Scalable, Targeted Single Cell Sequencing for Multi-Omics *Parse Biosciences (Sponsor Talk)*
9.30 - 10.00	Novel neural interfacing approaches using ultra conformable implants *Alejandro Carnicer (University of Cambridge, United Kingdom)*
10.00 - 10.30	Coffee Break
10.30 - 11.00	Human glial development in organoid models and brain cancer *Steven Sloan (Emory University, Atlanta, US)*
11.00 - 11.30	Cell-electronic biointerfaces for functional recording of neural networks, from primary culture to brain organoids *3Brains (Sponsor Talk)*
11.30 - 12.00	Challenges in cell therapies for brain repair: the host and hostile diseased brain *Sofia Grade (Austrian Academy of Sciences, IMBA, Austria)*
12.00 - 12.10	Selected Short Talk: Fabricating multifunctional hydrogels for improved neural interfaces *Christina Myra Tringides (ETH Zurich, Switzerland)*

FRIDAY: 15.09.2023

12.10 - 12.20	Selected Short Talk: Label-free, minimally invasive molecular spectroscopy in deep brain regions with vibrational fiber photometry *Filippo Pisano (Istituto Italiano di Tecnologia, Italy)*
12.20 - 14.00	Lunch Break
14.00 - 16.15	**Session VI**
14.00 - 15.00	Panel Discussion: Neuroethics in Era of AI *Philipp Kellmeyer (University of Freiburg, Germany)* *Jürgen Beck (University of Freiburg, Germany)* *Peter Reinacher (University of Freiburg, Germany)*
15.00 - 15.30	Coffee Break
15.30 - 16.15	**Keynote Lecture** **Deciphering orga-metabolic networks in health and disease** *Angelika Rambold (Max-Planck Institute for Immunobiology and Epigenetics, Freiburg, Germany)*
16.15 - 16.30	Closing Remarks and Poster Prize

ABSTRACTS AND POSTER INFORMATION

Poster Abstracts

All poster abstracts have been collected for viewing and download in an online system. You can access them using the link/ QR code provided below.

www.uniklinik-freiburg.de/ngi-freiburg/abstract-book

Best Poster Voting

NGI Freiburg 2023 - Voting for best poster presentation

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CONTACT

If you have any queries related to the conference, please contact us at the info desk, located at the entrance to the venue. If you are unable to find help, please contact at at organization@ngi-freiburg.com.

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NOTES

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