



THE  
NEURON  
GLIA  
INTERFACE

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07.09.2022-09.09.2022

Freiburg, Germany

Program Guide

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

It is our great pleasure to welcome to the first 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.

Our conference entitled “Vis à vis in the Brain: The Neuron-Glia Interface” will bring together experts from Neuroscience, Neurotechnology, and Neuroimmunology to highlight and present the most recent developments and unpublished discoveries. It will take place at the Medical Center-University of Freiburg, just a few minutes from the bustling city center. Our program includes many excellent speakers and provides plenty of possibilities to extend our knowledge and familiarize ourselves with approaches and expertise outside of our own domains.

We cordially invite everyone to join us in Freiburg, inviting participants at all career stages working to participate in this meeting, discussing and exchanging latest discoveries and findings with regards to the Neuron-Glia interface.

# ORGANIZATION

## Main Organizers

**Dr. Vidhya Madapusi Ravi,**

Department of Neurosurgery, Medical Center-University of Freiburg

**Jun. Prof. Katrin Kierdorf,**

Department 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

## Organization Team

**Daniel Ganser,** Event Management Consultant, Freiburg

**Carmen Schneider,** Neurosurgery, Medical Center-University of Freiburg

**Jonathan Göldner,** Neurosurgery, Medical Center-University of Freiburg

**Philipp Aktories,** Neuropathology, Medical Center-University of Freiburg

**Hannah Botterer,** Neuropathology, Medical Center-University of Freiburg

**Nathan Conrad,** Neurosurgery, Medical Center-University of Freiburg

**Cylia Crisand,** Neuropathology, Medical Center-University of Freiburg

**Fabian Hersperger,** Neuropathology, Medical Center-University of Freiburg

**Vatsal Jariwala,** Neurosurgery, Medical Center-University of Freiburg

**Joelle Menstell,** Neurosurgery, Medical Center-University of Freiburg

**Olivia Müller,** Neurosurgery, Medical Center-University of Freiburg

**Christian Münkel,** Neurosurgery, Medical Center-University of Freiburg

**Junyi Zhang,** Neurosurgery, Medical Center-University of Freiburg

**David N. Zimmer,** Neurosurgery, Medical Center-University of Freiburg

**Alexendar Oswald,** Neuropathology, Medical Center-University of Freiburg

**Philippe Petry,** Neuropathology, Medical Center-University of Freiburg

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# KEYNOTE SPEAKERS



Prof. Roberto Bonasio  
University of Pennsylvania



Prof. Adriano Aguzzi  
University Hospital Zurich

# MODERATORS



PD Dr. Thomas Blank  
Neuropathology  
University Clinic Freiburg



Prof. Andreas Vlachos  
Neuroanatomy  
University of Freiburg



Prof. Oliver Schnell  
Neurosurgery  
University Clinic Freiburg



Prof. Carola A. Haas  
Neurosurgery  
University Clinic Freiburg



Prof. Jürgen Beck  
Neurosurgery  
University Clinic Freiburg



Prof. Ulrich G. Hofmann  
Neurosurgery  
University Clinic Freiburg

# EVENT PROGRAM

Wednesday - 07<sup>th</sup> September 2022

12:00-17:00: Arrival and Registration

## Workshop

15:30 Sponsor Presentation: Nanostring  
Resolving Tissue and Cellular Heterogeneity in neuro samples

## Opening of the conference

17:00 Opening and Welcome  
Vidhya M. Ravi & Katrin Kierdorf

17:15 Opening Keynote Lecture  
Social Regulation of molecular and cellular plasticity in the ant brain  
Roberto Bonasio

18:00 Poster Session

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Thursday - 08<sup>th</sup> September 2022

## Session I: Neuron & Glia in Health, Chair: PD Dr. Thomas Blank

08:30 Microglia mediated synapse remodelling in brain development and disease  
Rosa C. Paolicelli

09:00 Mitophagy in neuronal physiology and pathology during aging  
Nektarios Tavernarakis

09:30 NG2-Glia: The understated players in brain function  
Leda Dimou

10:00 Regulation of CNS macrophage development and function  
Melanie Greter

10:30 Coffee Break

Thursday - 08<sup>th</sup> September 2022

Session II: Neurodegeneration & Neuroinflammation, Chair: Prof. Andreas Vlachos

- 11:00 Epigenetic control of microglial identity and function  
Jonas Neher
- 11:30 Mechanisms of astrocyte scar formation: From coagulation to strategies for brain repair  
Christian Schachtrup
- 12:00 Oligodendrocyte pathology and mitochondrial dysfunction in neuroinflammation  
Giuseppe Locateli
- 12:30 Myeloid cell heterogeneity at CNS interfaces in health and disease  
Roman Sankowski
- 13:00 Lunch Break
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Session III: Brain Tumors, Chair: Prof. Oliver Schnell

- 14:00 Advanced brain tumor models for immunotherapy studies  
Simone Niclou
- 14:30 Novel insights and therapeutic strategies against glioblastoma  
Tobias Weiss
- 15:00 Neuronal Mechanisms of glioblastoma invasion  
Varun Venkataramani
- 15:30 Strategies to challenge metastasis lethality in mice and human  
Manuel Valiente
- 16:00 Inactivation of ZBTB18 transcriptional repressor in Glioblastoma  
Roberto Ferrarese
- 16:30 Coffee Break

## Thursday - 08<sup>th</sup> September 2022

### Session IV: Applied Neuroscience/Neurophysiology, Chair: Prof. Carola Haas

- 17:00 Circuit mechanisms of Neocortical Memory  
Johannes Letzkus
  - 17:30 Neuron/Microglia interactions determine synaptic plasticity after non-invasive brain stimulation  
Maximilian Lenz
  - 18:00 Induction of primary cilia prevents glioma invasion in brain organoids  
Jay Gopalakrishnan
  - 19:00 Dinner (By Invitation Only)
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## Friday - 09<sup>th</sup> September 2022

### Session V: Clinical Neuroscience, Chair: Prof. Jürgen Beck

- 08:00 How improving accuracy in functional and stereotactic neurosurgery could leverage neuroscience  
Peter Reinacher
- 08:30 Deep spatial profiling of human COVID-19 brains reveals neuroinflammation with distinct microanatomical microglia-T cell interactions  
Marius Schwabenland
- 09:00 CAR2BRAIN Study - CAR-T/NK Cell therapy for Brain Tumors  
Michael Burger
- 09:30 Ethical considerations in research with brain tissue and organoids  
Philipp Kellmeyer
- 10:00 Coffee Break

Friday- 09<sup>th</sup> September 2022

Session VI:Neurotechnologies, Chair: Prof. Ulrich G. Hofmann

- 10:30 Miniaturized neural implants: How does size matter  
Thomas Stieglitz
- 11:00 Computational challenges in spatially resolved omics  
Dieter Henrik Heiland
- 11:30 Electrochemical sensors for neural interfaces and cell culture monitoring  
Andreas Weltin
- 12:00 Utilizing high-density microelectrode array platforms to functionally characterize neurons and for disease modelling and drug screening  
Sponsor Presentation: Martina De Gennaro (Maxwell Biosystems)

Closing of the conference

- 12:30 Closing words  
Paolo d'Errico & Kevin Joseph
- 12:45 Closing Keynote  
Discovery of neurodegenerative modifiers by arrayed genome-wide perturbations  
Adriano Aguzzi
- 13:30 End of Conference
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# ABSTRACTS AND POSTER INFORMATION

## Posters 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.



[https://ngi-freiburg.com/?page\\_id=240](https://ngi-freiburg.com/?page_id=240)

## Best Poster Voting

Awards for the best posters will be given at the end of the conference. Voting is encouraged using our online platform, which you can find at the link or the QR code provided below.



<https://forms.office.com/r/8L8xQCFf5b>

# COVID-19 REGULATIONS

We recommend that all participants attending the conference are vaccinated according to local recommendations. While at the congress, the following regulations apply within the university campus:

1. FFP2/medical masks need to be utilized while indoors.
2. 3G status verification will be carried out at the registration desk
  - Non-immunized participants are required to provide a certificate from an antigen test (last 24 hours) or a certificate of a PCR test (from the last 48 hours).
  - Immunized participants are required to bring their immunization certificate (1st, 2nd and booster), of note: if you only had a 1st and 2nd vaccination and no booster yet, the last vaccination ( or a certified recovery from a COVID infection) has to be less than three months ago

**IMPORTANT:** Without verification of your 3G status, you will not be allowed to attend the conference!

Wherever possible please try to keep the 1.5m distance to each other. If you have any known longer contacts (without masks) to infected people less than 10 days prior to the conference, you are not allowed to participate in person. If you have any symptoms of COVID such as fever, sore throat, etc., you are also not allowed to participate in person.

## SOCIAL MEDIA

We encourage everyone to post your thoughts on our conference on social media. Please make use of our conference hashtag #NGIFreiburg2022. We request you to kindly respect all participants at the conference and kindly refrain from posting images of unpublished data on your social media accounts.



@NGIFreiburg



<https://twitter.com/NGIFreiburg>

## 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](mailto:organization@ngi-freiburg.com).

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