Biographical Summary: Univ.-Professor Dr. rer.nat. Frank Kirchhoff

Affiliation
Molecular Physiology, Center for Integrative Physiology and Molecular Medicine (CIPMM),
University of Saarland, Building 48, 66421 Homburg.
Phone +49-6841-16-16440, mobile +49 151 1673 2156, email: frank.kirchhoff@uks.eu

Education

1998	Habilitation, Biochemistry, Free University Berlin
1990	Dr. rer. nat., Neurobiology, Institute for Neurobiology, Heidelberg University
1986	Diploma, Biochemistry, University of Hannover
1981-1986	Studies of Biochemistry, University of Hannover

Professional career

Jan. 2024	Founder of the Chengdu Center of Gender-specific Biology and Medicine (CGBM Chengdu)
since 2023	Founding member and speaker of the Center for Gender-specific Biology and Medicine (CGBM) at the Medical Faculty University of Saarland
since 2009	Full Professor (W3) for Physiology, Faculty of Medicine, University of Saarland
2021-2024	Adjunct Professor, Experimental Research Center for Normal and Pathological Aging, University of Medicine and Pharmacy of Craiova, 200349, Craiova, Romania
2000-2009	Group leader „Glial Physiology and Imaging“, Department of Neurogenetics, Max Planck Institute for Experimental Medicine, Göttingen
1998-2008	Lecturer Free University Berlin
1995-1999	Research Assistant „Cellular Neurosciences“ Max Delbrück Center for Molecular Medicine, Berlin
1991-1994	Research Assistant „Cellular Neurobiology“, Institute for Neurobiology, Heidelberg University

Academia, Honors and Awards

Jan 2025	Honorary Professor at China Pharmaceutical University Nanjing China
Oct 2024	Chair Professor, Institute of Neuroscience, Soochow University, Suzhou, China
since 2024	Member of the Pan-European Regional Committee of the International Brain Research Organization (IBRO-PERC)
since 2024	Board member of the German Brain Council
since 2023	Distinguished Professor at the Chengdu University of Traditional Chinese Medicine, Chengdu, China
2023-2025	President of the German Neuroscience Society (NWG)
Sept 2023	Health Prize of the Saarland Medical Association
2021-2023	Vice president of the German Neuroscience Society (NWG)
2018-2021	Senator of the University of Saarland
since 2016	Member Academia Europaea
2016-2021	Coordinator EU-H2020-MSCA ITN EU-GliaPhD (a European Graduate Training Network)
2014-2024	Visiting Professor at University of Medicine and Pharmacy of Craiova, Craiova, Romania
2013-2023	Coordinator of the Priority Program SPP 1757 „Glial Heterogeneity“ of the German Research Foundation (DFG)

2012-2022 Member of the International Scientific Advisory Committee of the Achucarro Basque Center for Neuroscience, Bilbao, Spain

since 2012 Faculty member of the International Astrocyte School in Bertinoro/Italy

since 2009 Member of the Editorial Board „GLIA“

1987-1989 Doctoral scholarship Boehringer Ingelheim Fonds

1981-1986 Scholarship German Academic Scholarship Foundation (Studienstiftung des deutschen Volkes)

Research Interests

Our research focuses on the molecular and cellular mechanisms of neuron-glia interaction in the central nervous system. We are pursuing the following research questions: How do glial transmitter receptors sense and modulate synaptic transmission? What is the impact for living organisms? How do glial cells respond to acute injuries within the central nervous system? How are neuron-glia interactions affected by sex/gender?

Reviewing activities

Ad hoc reviewer for scientific journals: European Journal of Neuroscience, Glia, Journal for Neuroscience, Journal of Physiology, Nature, Science, PLoS Biology, Journal of Chemical Neuroanatomy, Journal of Neuroscience Methods, Journal of Neuroscience Research, Molecular and Cellular Neuroscience, Cell Calcium, PLoS One, Science Signaling, eLife

Ad hoc reviewer for scientific grant agencies: European Research Council (ERC, EU), Deutsche Forschungs-gemeinschaft (DFG, D), German Academic Exchange Service (DAAD, DE), Agence National de la Recherche (ANR, F), Fondation Recherche Medical (FRM, F), ARSEP (F), Wellcome Trust (UK), Medical Research Council (MRC, UK), International Spinal Research Trust (ISRT, UK), Wings of Life (AU)

Selected publications (>130, H-factor 57), *WoS ResearcherID: B-9335-2008, ORCID 0000-0002-2324-2761*

1. Guo Q, Gobbo D, Zhao N, Zhang H, Awuku NO, Liu Q, Fang LP, Gampfer TM, Meyer MR, Zhao R, Bai X, Bian S, Scheller A, Kirchhoff F, Huang W. (2024) Adenosine triggers early astrocyte reactivity that provokes microglial responses and drives the pathogenesis of sepsis-associated encephalopathy in mice. **Nat Commun**. 15:6340. doi: 10.1038/s41467-024-50466-y.
2. Bai X, Zhao N, Koupourtidou C, Fang LP, Schwarz V, Caudal LC, Zhao R, Hirrlinger J, Walz W, Bian S, Huang W, Ninkovic J, Kirchhoff F, Scheller A. (2023) In the mouse cortex, oligodendrocytes regain a plastic capacity, transforming into astrocytes after acute injury. **Dev Cell** 58: 1153-1169.e5. doi: 10.1016/ j.devcel.2023.04.016.
3. Fang LP, Zhao N, Caudal LC, Chang HF, Zhao R, Lin CH, Hainz N, Meier C, Bettler B, Huang W, Scheller A, Kirchhoff F, Bai X. (2022) Impaired bidirectional communication between interneurons and oligodendrocyte precursor cells affects social cognitive behavior. **Nat Commun**. 13: 1394. doi: 10.1038/s41467-022-29020-1
4. Schweigmann M, Caudal LC, Stopper G, Scheller A, Koch KP, Kirchhoff F. (2021) Versatile Surface Electrodes for Combined Electrophysiology and Two-Photon Imaging of the Mouse Central Nervous System. **Front Cell Neurosci**. 15: 720675.
5. Huang W, Bai X, Stopper L, Catalin B, Cartarozzi LP, Scheller A, Kirchhoff F (2018) During Development NG2 Glial Cells of the Spinal Cord are Restricted to the Oligodendrocyte Lineage, but Generate Astrocytes upon Acute Injury. **Neuroscience** 385:154-165.
6. Jahn HM, Kasakow CV, Helfer A, Michely J, Verkhratsky A, Maurer HH, Scheller A and Kirchhoff F (2018) Refined protocols of tamoxifen injection for inducible DNA recombination in mouse astroglia. **Scientific Reports** 8, 5913.
7. Schwarz Y, Zhao N, Kirchhoff F, Bruns D (2017) Astrocytes control synaptic strength by two distinct v-SNARE-dependent release pathways. **Nat Neurosci** 20: 1529-1539.
8. Saab AS, Tzvetavona ID, Trevisiol A, Baltan S, Dibaj P, Kusch K, Möbius W, Goetze B, Jahn HM, Huang W, Steffens H, Schomburg ED, Pérez-Samartín A, Pérez-Cerdá F, Bakhtiari D, Matute C, Löwel S, Griesinger C, Hirrlinger J, Kirchhoff F, Nave KA (2016) Oligodendroglial NMDA Receptors Regulate Glucose Import and Axonal Energy Metabolism. **Neuron** 91:119-32.
9. Huang W, Zhao N, Bai X, Karram K, Trotter J, Goebbels S, Scheller A, Kirchhoff F (2014) Novel NG2-CreERT2 knock-in mice demonstrate heterogeneous differentiation potential of NG2 glia during development. **Glia** 62: 896-913.
10. Saab AS, Neumeyer A, Jahn HM, Cupido A, Šimek AAM, Boele HJ, Scheller A, Le Meur K, Götz M, Monyer H, Sprengel R, Rubio ME, Deitmer JW, De Zeeuw CI and Kirchhoff F (2012) Bergmann Glial AMPA Receptors are Required for Fine Motor Coordination. **Science** 337:749-53
11. Hirrlinger PG, Scheller A, Braun C, Hirrlinger J, Kirchhoff F (2006) Temporal control of gene recombination in astrocytes by transgenic expression of the tamoxifen-inducible DNA recombinase variant CreERT2. **Glia** 54:11-20.

12. Nimmerjahn A, Kirchhoff F, Helmchen F (2005) Resting microglial cells are highly dynamic surveillants of brain parenchyma in vivo. **Science** 308:1314-1318.