Kristina Lippmann

General Information

Lippmann, Kristina, Dr. med., *28.09.1988, female
Carl-Ludwig-Institute for Physiology
Medical Faculty
Leipzig University
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Position: Group Leader, Carl-Ludwig-Institute for Physiology, Leipzig University

Guest scientist, Institute for Physiology, University of Wuerzburg

University training and degree

Medical studies (2007-2015), Leipzig University, Germany, licensure 2015

Advanced academic qualifications

2016	Doctorate (Dr. med.): Charité-Universitätsmedizin Berlin, Germany, supervisors: Prof. Uwe Heinemann (Berlin) and Prof. Alon Friedman (Beer Sheva, Israel)
2011-2013	Visiting doctoral student in Alon Friedman´s lab, Department of Physiology, Ben-Gurion University of the Negev, Beer Sheva, Israel
2009-2010	Student assistant, “Body and Self” group, Max-Planck-Institute for Human Cognitive and Brain Sciences, Leipzig

Postgraduate professional career

2023	Whitman Fellowship, Marine Biological Laboratory, Woods Hole, USA
2022	Visiting scientist, Shigeki Watanabe´s lab, Department of Cell Biology, Johns Hopkins University, Baltimore, USA
Since 2021	Guest scientist, Institute of Physiology, University of Wuerzburg
Since 2018	Group Leader, Carl-Ludwig-Institute for Physiology, Leipzig University
2018	Visiting scientist, Jeanne Paz´s lab, Gladstone Institute of Neurological Diseases & UCSF, San Francisco, USA
2017	Grass Fellowship, The Grass Foundation, Marine Biological Laboratory, Woods Hole, USA
2016	Visiting scientist, Daniel Gitler´s lab, Department of Physiology and Cell Biology, Ben-Gurion University of the Negev, Beer Sheva, Israel
2015-2018	Postdoctoral fellow, Carl-Ludwig-Institute for Physiology, Leipzig University

Supplementary Career Information

Two children, *2021 and *2023

2021-2022	Maternity leave (9 months)
2023-2024	Maternity leave (9 months)

Engagement in the research system and scientific communication

since 2023	Review editorial board member for Frontiers in Cellular Neuroscience
2022	Organizer of the symposium ‘Minds in Mainz - Brain Dynamics and

Information Processing', Academy of Sciences and Literature (AdW) Mainz, funded by the Sybille-Kalkhof-Rose Foundation and the Bernstein Center for Computational Neuroscience

2021 Leader of the Spring Academy: "Information Processing and Neurodegenerative Diseases", German Academic Scholarship Foundation

since 2019 Speaker of the study group "Brain Dynamics and Information Processing", AdW Mainz, funded by the Sybille-Kalkhof-Rose Foundation

2018 Organizer of "Lost in Translation? Interdisciplinary Symposium on Translational Science in Life Sciences", AdW Mainz

Scientific reviewer for Nature Communication, the FASEB Journal, Neuroscience, Cells, Canadian Journal of Neurological Sciences, Molecular and Cellular Neuroscience; the German Academic Scholarship Foundation, the Grass Foundation, and the German Research Foundation (DFG).

Teaching

since 2024 Lectures, Physiology, Medical Faculty, University of Wuerzburg

since 2023 Seminars, B.Sc., Neurobiology, Faculty of Life Sciences, Leipzig University

2021 Spring Academy: "Information Processing and Neurodegenerative Diseases", German Academic Scholarship Foundation

since 2015 Lectures, Seminars, Practical courses, Physiology, Medical Faculty, Leipzig University

Doctoral supervision

since 2022 Robert Jacobi

since 2020 Josephine Kurzke

since 2018 Marie-Elisabeth Burkart

Occupational career

Medical students, funded by a stipend of the German Academic Scholarship Foundation. J.K. and M.E.B. also funded by a research stipend from the Medical Faculty. M.E.B. works now in the Clinic for Neurology, Leipzig University.

Academic distinctions/Funding

2025 Research Training Group, PI, "NeuroTune", DFG

2025 Whitman Fellowship, Marine Biological Laboratory, Woods Hole, USA

2025 Instruct-ERIC, EMBL, Heidelberg

2024 Grant by the Roland Ernst Foundation, Germany

2023 Bernard Katz Lecture, Germany/Israel (funded by Nobel Laureate Bert Sakmann)

2023 Whitman Fellowship, Marine Biological Laboratory, Woods Hole, USA

2022-2024 Junior Research Grant, Medical Faculty, Leipzig University

2017 Grass Fellowship, The Grass Foundation, at the Marine Biological Laboratory, Woods Hole, USA

2016-2020 Elected Member, Young Academy, Academy of Sciences and Literature Mainz, Germany

2016 Neurobiology Course, Marine Biological Laboratory, Woods Hole, USA, funded by the Frank Morrell Endowed Memorial Scholarship

2013-2015 Scholarship of the German Academic Scholarship Foundation

2010-2012 MD Scholarship, DFG Research Training Group 1123 "Learning and

memory" Charité-Universitätsmedizin-Berlin, associated member until 2014
2007 Honors of the German Physical Society for an excellent Physics 'Abitur'

Invited and selected talks

01/2025 Seminar, Institute of Physiology, Heidelberg University
01/2025 NeuroTune Seminar Series, Leipzig University
10/2024 CLI Seminar Series, Leipzig University
07/2023 Brown Bag Lunch Seminar, Marine Biological Laboratory, Woods Hole, USA
05/2023 29th General Assembly, Czech Learned Society, Prague, Czech Republic
11/2022 Nanosymposium "Brain Oscillations in Health & Disease", Annual Meeting of the Society for Neuroscience (SfN), San Diego, USA
11/2022 Symposium "Brain Dynamics & Information Processing", Academy of Sciences and Literature | Mainz, Germany
08/2022 Shigeki Watanabe´ laboratory, Johns Hopkins University, Baltimore, USA
10/2021 Annual meeting of the German Physiological Society: Session Chair: "Cellular Neurophysiology: from Molecular Mechanisms to System Function" and Invited Talk, Frankfurt, Germany
03/2018 Jeanne Paz´ laboratory, Gladstone Institutes/UCSF, USA
07/2017 Annual Meeting of the Marine Biological Society, Marine Biological Laboratory, Woods Hole, USA
03/2017 International Conference on Spreading Depolarizations, Berlin, Germany
03/2013 Meeting of the German Neuroscience Society, Göttingen, Germany

Publications

a) *Articles* (* equal contribution; # shared correspondence)

In preparation

Lippmann K*,#, Jacobi R*, Zettner M, Pauli M, Stigloher C, Sirén AL, Heckmann M#. The final two nanometers determine release probability.

Burkart ME*, Kurzke J, Ashcroft FM, Eilers JE, Lippmann K. K_{ATP} channels modulate the interplay between pyramidal cells and parvalbumin^{+}-interneurons for the generation of sharp-wave ripples.

Published on preprint server

Eddings CR, Fan M, Imoto Y, Itoh K, McDonald X, Eilers J, Anderson WS, Worley PF, Lippmann K#, Nauen DW#, Watanabe S#. Ultrastructural membrane dynamics of mouse and human cortical synapses. **bioRxiv** 2024.12.26.630393, under revision

Published articles

1. Lippmann K. 2024 A reduction in the readily releasable vesicle pool impairs GABAergic inhibition in the hippocampus after blood–brain barrier dysfunction. **Int J Mol Sci** *25:6862.*
2. Burkart ME*, Kurzke J*, Jacobi R, Vera J, Ashcroft FM, Eilers JE, Lippmann K. 2024 K_{ATP} channel mutation disrupts hippocampal network activity and nocturnal gamma shifts. **Brain***, awae157*
3. Lippmann K#, Klaft ZJ, Salar S, Hollnagel JO, Valero M, Maslarova A#. 2022 Status epilepticus induces chronic silencing of burster and dominance of regular firing

neurons during sharp wave-ripples in the mouse subiculum. **Neurobiol Dis** 175:105929

4. Köhler S, Winkler U, Junge T, Lippmann K, Eilers J, Hirrlinger J. 2022 Gray and white matter astrocytes differ in basal metabolism but respond similarly to neuronal activity. **Glia** 1-16
5. Vera J*, Lippmann K*. 2021 Post-stroke epileptogenesis is associated with altered intrinsic properties of hippocampal pyramidal neurons leading to increased theta resonance. **Neurobiol Dis** 156:105425
6. Kusick GF, Chin M, Raychaudhuri S, Lippmann K*, Adula KP*, Hujber E*, Vu T*, Davis MW, Jorgensen EM, Watanabe S. 2020 Synaptic vesicles transiently dock to refill release sites. **Nat Neurosci** 23(11):1329-1338
7. Wagner W*, Lippmann K*, Hornig S, Lombino F, Roesler M, Schweizer M, Polo S, Schwarz JR, Eilers J, Kneussel M. 2019 Myosin VI plays dual roles for AMPA receptor targeting in Purkinje cells and is critical for cerebellar long-term depression. **Cell Reports** 28:11-20
8. Naumann G, Lippmann K, Eilers J. 2018 Photophysical properties of Na^+ - indicator dyes suitable for quantitative two-photon fluorescence-lifetime measurements. **J Microsc** 272:136-144
9. Kim SY, Senatorov VV Jr, Morrissey CS, Lippmann K, Vazquez O, Milikovsky DZ, Gu F, Parada I, Prince DA, Becker AJ, Heinemann U, Friedman A, Kaufer D. 2017 TGFß signaling is associated with changes in inflammatory gene expression and perineural net degradation around inhibitory neurons following various neurological insults. **Sci Rep** 7:7711
10. Milikovsky D, Weissberg I, Solomon-Kamintsky L, Lippmann K, Schefenbauer O, Frigerio F, Rizzi M, Sheintuch L, Zelig D, Ofer J, Vezzani A, Friedman A. 2017 Electrocorticographic dynamics as a novel biomarker in five models of epileptogenesis. **J Neurosci** 37:4450-4461
11. Lippmann K, Kamintsky L, Kim SY, Lublinsky S, Prager O, Nichtweiß J, Salar S, Kaufer D, Heinemann U, Friedman A. 2017 Epileptiform activity and spreading depolarization in the blood-brain barrier-disrupted peri-infarct hippocampus are associated with impaired GABAergic inhibition and synaptic plasticity. **J Cereb Blood Flow Metab** 37:1803-1819
12. Salar S, Lapilover EG, Müller J, Hollnagel JO, Lippmann K, Friedman A, Heinemann U. 2016 Synaptic plasticity in area CA1 of rat hippocampal slices following intraventricular application of albumin. **Neurobiol Dis** 91:155-65
13. Maslarova A, Lippmann K, Salar S, Rösler A, Heinemann U. 2015 Differential participation of pyramidal cells in generation of spontaneous sharp wave-ripples in the mouse subiculum in vitro. **Neurobiol Learn Mem** 125:113-119
14. Salar S, Maslarova A, Lippmann K, Nichtweiss J, Weissberg I, Sheintuch L, Kunz WS, Shorer Z, Friedman A, Heinemann U. 2014 Blood-brain barrier dysfunction can contribute to pharmacoresistance of seizures. **Epilepsia** 55:1255-63
15. Lapilover EG, Lippmann K, Salar S, Maslarova A, Dreier JP, Heinemann U, Friedman A. 2012 Peri-infarct blood-brain barrier dysfunction facilitates induction of spreading depolarization associated with epileptiform discharges. **Neurobiol Dis** 48:495-506

* equal contribution / # shared correspondence

b) Other publications:

Wübbeler M, Lippmann K, Wünsch D, Docter D (Ed.) 2019 Lost in Translation? Translationsforschung in den Lebenswissenschaften. Schriftenreihe der Jungen

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