
WORKING ADDRESS

Department for Systems Neuroscience
University Medical Center Hamburg-Eppendorf (UKE)
Martinistraße 52, 20251 Hamburg, Germany

EDUCATION

- 2016-22 **Doctoral thesis at the Department of Neuropsychology**
Ruhr University Bochum, Germany

Thesis: *"The impact of cognitive, emotional, and pathological factors on neural representations"* (Summa cum laude)

Supervisor: Prof. Dr. Nikolai Axmacher, Co-Supervisor: Prof. Dr. Oliver T. Wolf
- 2013-15 **Master of Science Cognitive and Clinical Neuroscience**
Maastricht University, Netherlands

Thesis: *"Classification of older adults with and without subjective cognitive impairment based on resting-state connectivity – A machine learning approach"*

Supervisors: Prof. Dr. Silke Lux, Dr. Vincent van de Ven
- 2010-13 **Bachelor of Science Psychology**
University of Cologne, Germany

Thesis: *"Action monitoring in a force production paradigm – Effects of error processing on medial frontal negativity"*

Supervisor: Prof. Dr. Jutta Stahl

POSITIONS

- Since 2022 **Research Scientist**
Longitudinal fMRI study
Research Group: Memory and Decision Making
Department for Systems Neuroscience
University Medical Center Hamburg-Eppendorf (UKE), Germany
PI: Dr. Tobias Sommer-Blöchl
- 2015-21 **Research Assistant & Research Scientist**
fMRI and EEG studies
Department of Neuropsychology, Institute of Cognitive Neuroscience
Ruhr-University Bochum, Germany
Head: Prof. Dr. Nikolai Axmacher
- 2015-16 **Statistics Tutor**
Department of Psychological Research Methods and Experimental Psychology
University of Cologne, Germany
Head: Prof. Dr. Christoph Stahl

- 2014-15 **Research Intern & Research Assistant**
fMRI cohort study
 Institute for Neuroscience and Medicine 1
 Research Center Jülich, Germany
 Head: Prof. Dr. Katrin Amunts; Supervisor: Prof. Dr. Silke Lux
- 2013-14 **Research Assistant**
(t)DCS study
 Group for Auditory Perception and Cognition
 Maastricht University, Netherlands
 Head: Prof. Dr. Elia Formisano; Supervisor: Dr. Lars Riecke
- 2011-13 **Statistics Tutor**
 Department of Psychological Research Methods and Experimental Psychology
 University of Cologne, Germany
 Head: Prof. Dr. Christoph Stahl
- 2012 **Research Intern**
EEG study
 Department of Differential Psychology and Psychological Diagnostics
 University of Cologne, Germany
 Head & Supervisor: Prof. Dr. Jutta Stahl
- 2011 **Research Intern**
fMRI cohort study
 Institute for Neuroscience and Medicine 1
 Research Center Jülich, Germany
 Head: Prof. Dr. Katrin Amunts; Supervisor: Prof. Dr. Silke Lux
- 2010 **Student Intern**
Psychiatric hospital
 Rhein-Mosel-Fachklinik Andernach, Germany

PUBLICATIONS

- In prep **Learning of spatial locations relates to higher distinctiveness of neural representations and to changes in oscillatory power**, Bierbrauer A, Herweg N, Fellner M-C, Diersch N, Korte A, Kunz L, Zhang H, Wolbers T, Axmacher N.
- 2024 **APOE ϵ 4 and Insulin Resistance Influence Path-Integration-Based Navigation through Distinct Large-Scale Network Mechanisms**, Lopez-Vilaret KM, Fernandez-Alvarez M, Bierbrauer A, Axmacher N, Cantero JL, Atienza M. Aging Dis, *Online ahead of print*.
- 2024 **Representational formats of human memory traces**, Heinen R*, Bierbrauer A*, Wolf OT, Axmacher N. *Brain Struct Funct*, 229(3), 513-529.
- 2023 **Deep-brain stimulation of the human nucleus accumbens-medial septum enhances memory formation**, Treu S, Barcia JA, Torres C, Bierbrauer A, Gonzalez-Rosa JJ, Nombela C, Pineda-Pardo JA, Torres D, Kunz L, Hellerstedt R, Avicillas-Chasin JM,

Lara M, Navas M, Vallejo AG, García-Albea J, Oliviero A, Seijo F, Horn A, Li N, Axmacher N, Canals S, Reneses B, Strange BA. *Preprint*.

- 2023 **Dissociating effects of aging and genetic risk of sporadic Alzheimer's disease on path integration**, Colmant L, [Bierbrauer A](#), Bellaali Y, Kunz L, Van Dongen J, Slegers K, Axmacher N, Lefèvre P, Hanseeuw B. *Neurobiol Aging*, 131, 170-181.
- 2023 **Acute stress impairs visual path integration**, Akan O, [Bierbrauer A](#), Axmacher N, Wolf OT. *Neurobiol Stress*, 26, 100561.
- 2023 **Chronic stress is associated with specific path integration deficits**, Akan O, [Bierbrauer A](#), Kunz L, Gajewski P D, Getzmann S, Hengstler JG, Wascher E, Axmacher N, Wolf OT. *Behav Brain Res*, 442, 114305.
- 2021 **The memory trace of a stressful episode**, [Bierbrauer A](#), Fellner M-C, Heinen R, Wolf OT, Axmacher N. *Current Biology*, 31, 5204-5213.
- 2020 **Unmasking selective path integration deficits in Alzheimer's disease risk carriers**, [Bierbrauer A*](#), Kunz L*, Gomes CA*, Luhmann M, Deuker L, Getzmann S, Wascher E, Gajewski P, Hengstler JG, Fernandez-Alvarez M, Atienza M, Cammisuli DM, Bonatti F, Pruneti C, Percesepe A, Bellaali Y, Hanseeuw B, Strange BA, Cantero JL, Axmacher N. *Science Advances*, 6, eaba1394.
- 2019 **Hippocampal theta phases organize the reactivation of large-scale electrophysiological representations during goal-directed navigation**, Kunz L, Wang L, Lachner-Piza D, Zhang H, Brandt A, Dümpelmann M, Reinacher PC, Coenen VA, Chen D, Wang W-X, Zhou W, Liang S, Grewe P, Bien CG, [Bierbrauer A](#), Navarro-Schröder T, Schulze-Bonhage A & Axmacher N. *Science Advances*, 5, eaav8192.
- *shared first-authorship

TALKS & POSTERS

- 2023 **Psychologie und Gehirn (PuG), poster**: "Stress shapes long-term memories of real-life episodes." [Bierbrauer A](#), Werner F, Schwabe L, Sommer T. Jun 06-10; Tübingen, Germany.
- 2023 **Learning & Memory, poster**: "Stress shapes long-term memories of real-life episodes." [Bierbrauer A](#), Werner F, Schwabe L, Sommer T. Apr 26-30; Huntington Beach, CA, USA.
- 2022 **International Conference for Cognitive Neuroscience (ICON), poster**: "The memory trace of a stressful episode." [Bierbrauer A](#), Fellner M-C, Heinen R, Wolf O T, Axmacher N. May 18-22; Helsinki, Finland.
- 2019 **Society for Neuroscience (SfN), symposium talk**: "Unmasking selective path integration deficits in Alzheimer's disease risk carriers." [Bierbrauer A](#), Kunz L, Gomes C A, Luhmann M, Deuker L, Getzmann S, Wascher E, Gajewski P, Hengstler J G, Fernandez-Alvarez M, Atienza M, Cammisuli D M, Bonatti F, Pruneti C, Percesepe A, Bellaali Y, Hanseeuw B, Strange B A, Cantero J L, Axmacher N. Oct 19-23; Chicago, IL, USA.

- 2018 **Psychologie und Gehirn (PuG), symposium talk:** "Investigation of path integration in dependence on APOE genotype." Bierbrauer A, Kunz L, Gomez C A, Axmacher N. May 30-Jun 02; Gießen, Germany.
- 2018 **Reina Sofia Centre for Alzheimer's Research, invited talk:** "Investigating path integration as a function of age and APOE genotype." July 10, Madrid, Spain.
- 2018 **Grid cell meeting, poster:** "Learning of spatial representations is related to changes in distinctiveness of neural representations and changes in oscillatory power." Bierbrauer A, Fellner M-C, Korte A, Zhang H, Kunz L, Axmacher N.; May 21-22; London, England.
- 2018 **Learning & Memory, poster:** "Neural mechanisms underlying the impact of stress on memory encoding." Bierbrauer A, Fellner M-C, Zhang H, Herten N, Wolf O T, Axmacher N. Apr 18-22; Huntington Beach, CA, USA.
- 2017 **International Conference for Cognitive Neuroscience (ICON), poster:** "Neural mechanisms underlying the impact of stress on memory encoding." Bierbrauer A, Fellner M-C, Zhang H, Herten N, Wolf O T, Axmacher N. Aug 05-08; Amsterdam, Netherlands.

TEACHING

- 2019-21 **Journal Club Spatial Navigation and Episodic Memory**
 Department of Psychology, Ruhr University Bochum, Germany
Winter term 2020/21
Summer term 2020
Winter term 2019/20
- 2016-18 **fMRI Practical Course**
 Department of Psychology, Ruhr University Bochum, Germany
Winter term 2016/17
Winter term 2017/18

SUPERVISION

- | | | |
|------|---------------------|---|
| 2020 | Muriel Reuter | BA Psychology |
| 2019 | Tugce Belge | MA Cognitive Science, Ph.D. Candidate at DZNE Magdeburg |
| 2019 | Alena Bäumer | MA Psychology |
| 2019 | Thomas Lukaschewski | MA Cognitive Science, Ph.D. Candidate at RUB |
| 2018 | Silvana Wetter | MA Psychology |
| 2018 | Ronja Bouchouchi | MA Psychology |
| 2018 | Annika Korte | MA Psychology, Ph.D. Candidate at RUB |
| 2018 | Annika Rips | MA Psychology |
| 2017 | Verena Ruzas | BA Psychology |
| 2017 | Kim Dickmann | BA Psychology |