

# CHRISTOPHER GUNDLACH

Dr. rer. nat., Dipl-Psych, born 1984, Neustrelitz, Germany  
chr.gundlach@gmail.com

Research Associate  
Experimental Psychology and Methods  
Institute of Psychology – Wilhelm Wundt  
Leipzig University, Germany

## RESEARCH INTEREST

---

- Dynamics and Interactions of Perception, Cognition and Behavior
- Neural Dynamics and Computations
- Modulation of Neural Dynamics
- Neural Mechanisms of Attention

## EDUCATION

---

- 2017 Dr. rer. nat. (PhD equivalent), summa cum laude, Psychology, University of Leipzig, Leipzig, Germany (Referees: Prof. Christopher Herrmann, Prof. Matthias M. Müller, Prof. Arno Villringer)
- 2010 Diplom (MSc equivalent), Psychology, University of Leipzig, Germany
- 2003 Abitur (A-Level equivalent)

## EMPLOYMENT

---

- 2014 - Research Associate,  
Department of Experimental Psychology and Methods, Prof. M.M. Müller,  
University of Leipzig, Germany
- 2014 - Guest Scientists,  
Department of Neurology, Prof. Arno Villringer, Max Planck Institute for Human  
Cognitive and Brain Sciences, Leipzig, Germany
- 2011-2014 Doctoral Student,  
Department of Neurology, Prof. Arno Villringer, Max Planck Institute for Human  
Cognitive and Brain Sciences, Leipzig, Germany
- 2007-2010 Undergraduate research assistant,  
Department of Experimental Psychology and Methods,, Prof. M.M. Müller,  
University of Leipzig, Germany

## REVIEWS

2011- *Reviews for:*  
 Applied Physiology, Nutrition, and Metabolism; Brain Research; Cortex; European Journal of Neuroscience; Frontiers in Human Neuroscience; Frontiers in Neuroscience; International Journal of Psychophysiology; Neuroimage; Neuroscience Bulletin; Perception; PLOS One; Scientific Reports; Social Cognitive and Affective Neuroscience; The Neuroscientist

## TALKS

2019 7th MindBrainBody Symposium, Berlin, Germany  
 2018 44. Tagung "Psychologie und Gehirn", Gießen, Germany  
 2016 50. Kongress der Deutschen Gesellschaft für Psychologie, Leipzig, Germany  
 2014 Bernstein Center Freiburg, Germany  
 2013 5th International Conference on Non-invasive Brain Stimulation, Leipzig, Germany  
 Mind-Brain Symposium, Berlin, Germany

## LIST OF PUBLICATIONS

## Peer-reviewed publications

1. **Gundlach, C.** & Forschack, N. (2020). Commentary: Alpha Synchrony and the Neurofeedback Control of Spatial Attention. *Submitted to Frontiers in Human Neuroscience*.
2. Shih, P., Steele, C., Nikulin, V., **Gundlach, C.**, Kruse, J., Villringer, A. & Sehm, B. (2020). Alpha and beta frequency neural oscillations differentially reflect age-related decline in bilateral coordination. *Submitted to Cerebral Cortex*.
3. Zarubin, G.\*, **Gundlach, C.\***, Nikulin, V., Villringer, A., & Bogdan, M. (2020). Transient amplitude modulation of alpha-band oscillations by short-time intermittent closed-loop tACS. *Submitted to Frontiers in Human Neuroscience*. [[Preprint](#)]  
 \*Co-first authors.
4. Schettino, A., Porcu, E., **Gundlach, C.**, Keitel, C., & Müller, M. M. (2019). Rapid processing of neutral and angry expressions within ongoing facial stimulus streams: Is it all about isolated facial features? *Submitted to PLOS ONE*. [[Preprint](#)]
5. **Gundlach, C.**, Müller, M. M., Hoff, M., Ragert, P., Nierhaus, T., Villringer, A., & Sehm, B. (2019). Specific reduction of somatosensory functional connectivity by transcranial alternating current stimulation at endogenous mu-frequency. *Submitted to Neuroimage*.
6. **Gundlach, C.**, Moratti, S., Forschack, N. & Müller, M. M. (2020). Spatial Attentional Selection modulates early visual stimulus processing independently of visual alpha modulations. *Cerebral Cortex*.
7. Bekhtereva, V., Craddock, M., **Gundlach, C.**, & Müller, M. M. (2019). Rapid sensory gain with emotional distracters precedes attentional deployment from a foreground task. *NeuroImage*, 116115.
8. Schettino, A.\*, **Gundlach, C.\***, & Müller, M. M. (2019). Rapid extraction of emotion regularities from complex scenes in the human brain. *Collabra: Psychology*, 5(1).  
 \*Co-first authors.

9. Brummerloh, B., **Gundlach, C.**, & Müller, M. M. (2019). Attentional Facilitation of Constituent Features of an Object Does Not Spread Automatically along Object-defining Cortical Boundaries. *Journal of Cognitive Neuroscience*, 31(2), 278–287.
10. Zarubin, G., **Gundlach, C.**, Nikulin, V., & Bogdan, M. (2018). Real-time Phase Detection for EEG-based tACS Closed-loop System. In *Proceedings of the 6th International Congress on Neurotechnology, Electronics and Informatics* (pp. 13–20). Seville, Spain: SCITEPRESS - Science and Technology Publications.
11. Müller, M. M.\*, **Gundlach, C.\***, Forschack, N., & Brummerloh, B. (2018). It takes two to tango: Suppression of task-irrelevant features requires (spatial) competition. *NeuroImage*. \*Co-first authors.
12. **Gundlach, C.**, Müller, M. M., Nierhaus, T., Villringer, A., & Sehm, B. (2017). Modulation of Somatosensory Alpha Rhythm by Transcranial Alternating Current Stimulation at Mu-Frequency. *Frontiers in Human Neuroscience*, 11, 432.
13. Müller, M. M., & **Gundlach, C.** (2017). Competition for attentional resources between low spatial frequency content of emotional images and a foreground task in early visual cortex. *Psychophysiology*, 54(3), 429–443.
14. Kaminski, E., Hoff, M., Rjosk, V., Steele, C. J., **Gundlach, C.**, Sehm, B., ... Ragert, P. (2017). Anodal Transcranial Direct Current Stimulation Does Not Facilitate Dynamic Balance Task Learning in Healthy Old Adults. *Frontiers in Human Neuroscience*, 11, 16.
15. Rjosk, V., Kaminski, E., Hoff, M., **Gundlach, C.**, Villringer, A., Sehm, B., & Ragert, P. (2016). Transcranial Alternating Current Stimulation at Beta Frequency: Lack of Immediate Effects on Excitation and Interhemispheric Inhibition of the Human Motor Cortex. *Frontiers in Human Neuroscience*, 10, 560.
16. **Gundlach, C.**, Müller, M. M., Nierhaus, T., Villringer, A., & Sehm, B. (2016). Phasic Modulation of Human Somatosensory Perception by Transcranially Applied Oscillating Currents. *Brain Stimulation*, 9(5), 712–719.
17. Kaminski, E., Steele, C. J., Hoff, M., **Gundlach, C.**, Rjosk, V., Sehm, B., ... Ragert, P. (2016). Transcranial direct current stimulation (tDCS) over primary motor cortex leg area promotes dynamic balance task performance. *Clinical Neurophysiology: Official Journal of the International Federation of Clinical Neurophysiology*, 127(6), 2455–2462.
18. Dahne, S., Biessmann, F., Samek, W., Haufe, S., Goltz, D., **Gundlach, C.**, ... Müller, K.-R. (2015). Multivariate Machine Learning Methods for Fusing Multimodal Functional Neuroimaging Data. *Proceedings of the IEEE*, 103(9), 1507–1530.
19. Hove, M. J., Stelzer, J., Nierhaus, T., Thiel, S. D., **Gundlach, C.**, Margulies, D. S., ... Merker, B. (2015). Brain Network Reconfiguration and Perceptual Decoupling During an Absorptive State of Consciousness. *Cerebral Cortex*, bhv137.
20. Goltz, D., **Gundlach, C.**, Nierhaus, T., Villringer, A., Müller, M., & Pleger, B. (2015). Connections between Intraparietal Sulcus and a Sensorimotor Network Underpin Sustained Tactile Attention. *The Journal of Neuroscience*, 35(20), 7938–7949.
21. **Gundlach, C.**, & Müller, M. M. (2013). Perception of illusory contours forms intermodulation responses of steady state visual evoked potentials as a neural signature of spatial integration. *Biological Psychology*, 94(1), 55–60.
22. Sehm, B., Hoff, M., **Gundlach, C.**, Taubert, M., Conde, V., Villringer, A., & Ragert, P. (2013). A novel ring electrode setup for the recording of somatosensory evoked potentials during transcranial direct current stimulation (tDCS). *Journal of Neuroscience Methods*, 212(2), 234–236.

23. Nierhaus, T., **Gundlach, C.**, Goltz, D., Thiel, S. D., Pleger, B., & Villringer, A. (2013). Internal ventilation system of MR scanners induces specific EEG artifact during simultaneous EEG-fMRI. *NeuroImage*, *74*, 70–76.

### Poster Presentation

- 2018            14th Research Festival, Leipzig, Germany  
*Gundlach & Müller*
- 2017            61. Tagung Deutsche Gesellschaft für Klin. Neurophysiologie und Funkt. Bildgebung, Leipzig, Germany  
*Gundlach et al.*
- 2016            46th Annual Meeting of the Society for Neuroscience, San Diego, CA, USA  
*Gundlach et al., Kaminski et al.*
- 2013            43rd Annual Meeting of the Society for Neuroscience, San Diego, CA, USA  
*Gundlach et al.*  
IMPRS NeuroCom Summer School, Leipzig, Germany  
*Goltz et al.*  
5th International Conference on Non-invasive Brain Stimulation, Leipzig, Germany  
*Goltz et al.*
- 2012            18th Annual Meeting of the Organization for Human Brain Mapping, Beijing, China  
*Gundlach et al., Stelzer et al.*

## TEACHING

---

### Courses and Lecture Series

- 2015-2020    Seminar: General Psychology II (Learning, Memory, & Motivation), Leipzig, Psychology (BSc), 3<sup>rd</sup> semester
- 2015-2020    Empirical Practical Course: “Posner Paradigm”, Leipzig, Psychology (BSc), 3<sup>rd</sup> semester
- 2019/2020    Lecture Series: General Psychology, Leipzig, Psychology (BSc), 3<sup>rd</sup> semester
- 2019/2020    Seminar: General Psychology I (Attention & Emotion), Leipzig, Psychology (BSc), 3<sup>rd</sup> semester
- 2018-2019    Seminar: Methods of Cognitive Neurosciences, Leipzig, Psychology (BSc), 2<sup>nd</sup> semester
- 2015-2019    Seminar: Visual Attention, Leipzig, Psychology (MSc), Biology (MSc)

### Single lectures (BSc, MSc)

- 2017            Electrophysiology in Methods of Cognitive Neurosciences, Leipzig, Psychology (BSc), 1<sup>st</sup> semester
- 2016            Electrophysiology in Methods of Cognitive Neurosciences, Leipzig, Psychology (BSc), 1<sup>st</sup> semester
- 2015            Electrophysiology in Methods of Cognitive Neurosciences, Leipzig, Psychology (BSc), 1<sup>st</sup> semester
- 2013            Bottom-up and top-down attention and the time-course of top-down attentional shifts in General Psychology I: Attention & Emotion, Leipzig, Psychology (BSc), 3<sup>rd</sup> semester
- 2012            Background Rhythms and Attention in General Psychology I: Attention & Emotion, Leipzig, Psychology (BSc), 3<sup>rd</sup> semester

ACADEMIC MENTORING

---

**Supervised and Co-Supervised BSc/MSc theses:**

- |      |  |
|------|--|
| 2019 | Alina Berger, Untersuchung der Verhaltensbeeinflussung durch aufgabenirrelevante audiovisuelle Synchronisation auf eine Diskriminationsaufgabe (Leipzig) |
| 2017 | Theresa Elise Wege, Tracking visual spatial attention (Leipzig)  |