

Biosketch

Assist.-Prof.ⁱⁿ Dr.ⁱⁿ Mag.^a Isabella Wagner

Position in CoE: Key Researcher

Personal Details

Place of birth	Graz, Austria
Nationality	Austrian
Children	–
Affiliation:	University of Vienna
E-Mail	isabella.wagner@univie.ac.at
Profile	ResearcherID: ABF-9514-2021
List of publications	ORCID: 0000-0002-4383-8204
Academic age	5 years since PhD



Academic Career and Positions Held

I have obtained my **Master's degree in Psychology** (*cum laude*) in 2011 at the **University of Graz**, Austria. Between 2010 and 2011, I have worked as a **Research Assistant** at the **Technical University of Graz** (Austria), as well as at the **New York State Department of Health** (Albany, NY, United States). In 2017, I obtained my **PhD in Medical Sciences** from the **Radboud University Nijmegen Medical Center** (The Netherlands), specializing in human cognitive neuroscience and neuroimaging. Until 2021, I have worked as a **postdoctoral researcher** at the **Radboud University Nijmegen Medical Center** and at the **University of Vienna**. Since September **2021**, I am an **Assistant Professor** and **junior group leader** at the **University of Vienna** focusing on the **cognitive neuroscience of cognition-brain-microbiome interactions**.

Scientific Achievements and Scientific Contribution to the CoE

Scientific Achievements. I have published **18 papers** in peer-reviewed journals, [almost all Q1 journals, h-index = 10/12 (Scopus/Google Scholar), cited 493/896 times (Scopus/Google Scholar)] and 1 book chapter. Moreover, I held **14 invited talks** at national and international conferences or institutions, and obtained and contributed to **7 research grants** with a total budget **~1 million €**. My research focuses on understanding **interactions** at the **interface of the brain, cognition, and the human microbiome**. Specifically, I am interested in **learning, memory and neural plasticity**, with a particular focus on the neural codes underlying human cognition. While primarily investigating healthy individuals, my group strives to understand how **age, genetic predisposition, and clinical conditions** can affect this **brain-cognition-microbiome link**, and how **targeted interventions** (antibiotics/probiotics) shape the communication between the gut and brain.

Scientific Contribution to the CoE. I have a strong background in cognitive neuroscience and mainly test my questions using functional **magnetic resonance and metabolic imaging**, combined with advanced analysis methods such as **brain connectivity techniques and pattern recognition**. In the collaborations within the CoE, we will develop new research avenues that will help to clarify the role of microbiome-brain interactions and their significance for cognition and behavior.

10 Most Important Publications (*relevant for the CoE)

1. ***Wagner, I. C.**; Konrad, B. N.; Schuster, P.; Weisig, S.; Repantis, D.; Ohla, K.; Kühn, S.; Fernández, G.; Steiger, A.; Lamm, C.; Czisch, M.; Dresler, M. *Durable Memories and Efficient Neural Coding through Mnemonic Training Using the Method of Loci*; preprint; Neuroscience, **2020**.
<https://doi.org/10.1101/2020.04.29.067561>.
2. Lengersdorff, L. L.; **Wagner, I. C.**; Lockwood, P. L.; Lamm, C. When Implicit Prosociality Trumps Selfishness: The Neural Valuation System Underpins More Optimal Choices When Learning to Avoid Harm to Others Than to Oneself. *J. Neurosci.* **2020**, *40* (38), 7286–7299.
<https://doi.org/10.1523/JNEUROSCI.0842-20.2020>.
3. **Wagner, I. C.**; Rütgen, M.; Lamm, C. Pattern Similarity and Connectivity of Hippocampal-Neocortical Regions Support Empathy for Pain. *Social Cognitive and Affective Neuroscience* **2020**, *15* (3), 273–284.
<https://doi.org/10.1093/scan/nsaa045>.
4. ***Wagner, I. C.**; van Buuren, M.; Fernández, G. Thalamo-Cortical Coupling during Encoding and Consolidation Is Linked to Durable Memory Formation. *NeuroImage* **2019**, *197*, 80–92.
<https://doi.org/10.1016/j.neuroimage.2019.04.055>.
5. *van Buuren, M.; **Wagner, I. C.**; Fernández, G. Functional Network Interactions at Rest Underlie Individual Differences in Memory Ability. *Learn. Mem.* **2019**, *26* (1), 9–19.
<https://doi.org/10.1101/lm.048199.118>.
6. Lamm, C.; Rütgen, M.; **Wagner, I. C.** Imaging Empathy and Prosocial Emotions. *Neuroscience Letters* **2019**, *693*, 49–53. <https://doi.org/10.1016/j.neulet.2017.06.054>.
7. Dresler, M.; Shirer, W. R.; Konrad, B. N.; Müller, N. C. J.; **Wagner, I. C.**; Fernández, G.; Czisch, M.; Greicius, M. D. Mnemonic Training Reshapes Brain Networks to Support Superior Memory. *Neuron* **2017**, *93* (5), 1227–1235.e6. <https://doi.org/10.1016/j.neuron.2017.02.003>.
8. ***Wagner, I. C.**; van Buuren, M.; Bovy, L.; Fernández, G. Parallel Engagement of Regions Associated with Encoding and Later Retrieval Forms Durable Memories. *J. Neurosci.* **2016**, *36* (30), 7985–7995.
<https://doi.org/10.1523/JNEUROSCI.0830-16.2016>.
9. *van Dongen, E. V.; Kersten, I. H. P.; **Wagner, I. C.**; Morris, R. G. M.; Fernández, G. Physical Exercise Performed Four Hours after Learning Improves Memory Retention and Increases Hippocampal Pattern Similarity during Retrieval. *Current Biology* **2016**, *26* (13), 1722–1727.
<https://doi.org/10.1016/j.cub.2016.04.071>.
10. **Wagner, I. C.**; van Buuren, M.; Kroes, M. C.; Gutteling, T. P.; van der Linden, M.; Morris, R. G.; Fernández, G. Schematic Memory Components Converge within Angular Gyrus during Retrieval. *eLife* **2015**, *4*, e09668. <https://doi.org/10.7554/eLife.09668>.