

Biosketch

Assoc.-Prof.ⁱⁿ Dr.ⁱⁿ Dagmar Wuebken

Position in CoE: Key Researcher

Personal Details

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| Place of birth | Langen, Germany |
| Nationality | German |
| Children | 1 (2017) |
| Affiliation: | University of Vienna |
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| Profile | ResearcherID: A-4447-2013 |
| List of publications | ORCID: 0000-0002-1314-9926 |
| Academic age | 15 years since PhD |



Academic Career and Positions Held

After obtaining my **Master's degree** in biology from the **Leibniz University**, Hannover, Germany in 2003, I was accepted into the International **Max Planck Research School** for Marine Microbiology in Bremen, Germany, for my doctoral studies (Department for Molecular Ecology). In May 2007, I finished my **PhD degree** and subsequently was a lecturer in the Microbial Diversity summer course at the Marine Biological Laboratory (MBL), in Woods Hole, USA. I then started a **postdoctoral position** in the Nutrient Group at the **Max Planck Institute for Marine Microbiology**, Bremen, Germany, and in 2008 moved to the USA for a joint **postdoctoral position** at **Stanford University/NASA Ames Research Center/Lawrence Livermore National Laboratory**, for which I was awarded a Research fellowship from the German Research Foundation (DFG). In **2012**, I accepted an offer from the **University of Vienna** as a **group leader**, became a tenure track **Professor** at the University of Vienna in 2018, and in May 2022, I was promoted to **Associate Professor**. I serve as a reviewer for multiple international funding agencies (such as the ERC Advanced Grant and Netherlands national research council (NWO)) and as a member of the **Board of Directors** of the **Young Academy of the Austrian Academy of Sciences (ÖAW)**.

Scientific Achievements and Scientific Contribution to the CoE

Scientific Achievements. Until now, I have **published 50 papers** in peer-reviewed journals (almost all Q1 journals; including 3 papers in PNAS, 1 each in Nature Climate Change, Cell, Science Advances and New Phytologist, and 8 in The ISME Journal), as well as 2 book chapters. The papers were **cited >4,800 times (current h-index of 32, Web of Science, October 2022)**. I have given more than 30 invited talks at national or international conferences and institutions and have acquired more than 3.2 million € in third-party funding, including an **ERC Starting Grant** in 2014. My key research achievements include the application of **stable isotope probing** and **single-cell activity** analysis (such as NanoSIMS and Raman microspectroscopy) in highly diverse **soil communities** that, amongst others, revealed nutrient transfer between fungi and soil bacteria, as well as elucidating physiological mechanisms for the survival and success of soil bacteria. My research achievements have been recognized by the **City of Vienna Support Prize for Natural Sciences** (2016) and by becoming an elected member of the **Young Academy of the Austrian Academy of Sciences (ÖAW)** in 2015.

Scientific Contribution to the CoE. In the context of the CoE, I will bring expertise in **plant-microbe interactions**, **stable isotope probing** and **imaging** in combination with process-level biogeochemical and **molecular analysis** (such as -omics), as well as **physiology** and **cultivation** of soil microorganisms.

10 Most Important Publications (*relevant for the CoE)

1. *Mayerhofer, W.; Schintlmeister, A.; Dietrich, M.; Gorka, S.; Wiesenbauer, J.; Martin, V.; Gabriel, R.; Reipert, S.; Weidinger, M.; Clode, P.; Wagner, M.; **Woebken, D.**; Richter, A.; Kaiser, C. Recently Photoassimilated Carbon and Fungus-delivered Nitrogen Are Spatially Correlated in the Ectomycorrhizal Tissue of *Fagus Sylvatica*. *New Phytologist* **2021**, 232 (6), 2457–2474. <https://doi.org/10.1111/nph.17591>.
2. Trojan, D.; Garcia-Robledo, E.; Meier, D. V.; Hausmann, B.; Revsbech, N. P.; Eichorst, S. A.; **Woebken, D.** Microaerobic Lifestyle at Nanomolar O₂ Concentrations Mediated by Low-Affinity Terminal Oxidases in Abundant Soil Bacteria. *mSystems* **2021**, 6 (4), e00250-21. <https://doi.org/10.1128/mSystems.00250-21>.
3. *Meier, D. V.; Imminger, S.; Gillor, O.; **Woebken, D.** Distribution of Mixotrophy and Desiccation Survival Mechanisms across Microbial Genomes in an Arid Biological Soil Crust Community. *mSystems* **2021**, 6 (1), e00786-20. <https://doi.org/10.1128/mSystems.00786-20>.
4. Giguere, A. T.; Eichorst, S. A.; Meier, D. V.; Herbold, C. W.; Richter, A.; Greening, C.; **Woebken, D.** Acidobacteria Are Active and Abundant Members of Diverse Atmospheric H₂-Oxidizing Communities Detected in Temperate Soils. *ISME J* **2021**, 15 (2), 363–376. <https://doi.org/10.1038/s41396-020-00750-8>.
5. *Gorka, S.; Dietrich, M.; Mayerhofer, W.; Gabriel, R.; Wiesenbauer, J.; Martin, V.; Zheng, Q.; Imai, B.; Prommer, J.; Weidinger, M.; Schweiger, P.; Eichorst, S. A.; Wagner, M.; Richter, A.; Schintlmeister, A.; **Woebken, D.**; Kaiser, C. Rapid Transfer of Plant Photosynthates to Soil Bacteria via Ectomycorrhizal Hyphae and Its Interaction With Nitrogen Availability. *Front. Microbiol.* **2019**, 10, 168. <https://doi.org/10.3389/fmicb.2019.00168>.
6. *Walker, T. W. N.; Kaiser, C.; Strasser, F.; Herbold, C. W.; Leblans, N. I. W.; **Woebken, D.**; Janssens, I. A.; Sigurdsson, B. D.; Richter, A. Microbial Temperature Sensitivity and Biomass Change Explain Soil Carbon Loss with Warming. *Nature Clim Change* **2018**, 8 (10), 885–889. <https://doi.org/10.1038/s41558-018-0259-x>.
7. *Zumstein, M. T.; Schintlmeister, A.; Nelson, T. F.; Baumgartner, R.; **Woebken, D.**; Wagner, M.; Kohler, H.-P. E.; McNeill, K.; Sander, M. Biodegradation of Synthetic Polymers in Soils: Tracking Carbon into CO₂ and Microbial Biomass. *Sci. Adv.* **2018**, 4 (7), eaas9024. <https://doi.org/10.1126/sciadv.aas9024>.
8. *Berry, D.; Mader, E.; Lee, T. K.; **Woebken, D.**; Wang, Y.; Zhu, D.; Palatinszky, M.; Schintlmeister, A.; Schmid, M. C.; Hanson, B. T.; Shterzer, N.; Mizrahi, I.; Rauch, I.; Decker, T.; Bocklitz, T.; Popp, J.; Gibson, C. M.; Fowler, P. W.; Huang, W. E.; Wagner, M. Tracking Heavy Water (D₂O) Incorporation for Identifying and Sorting Active Microbial Cells. *Proc. Natl. Acad. Sci. U.S.A.* **2015**, 112 (2). <https://doi.org/10.1073/pnas.1420406112>.
9. *Seedorf, H.; Griffin, N. W.; Ridaura, V. K.; Reyes, A.; Cheng, J.; Rey, F. E.; Smith, M. I.; Simon, G. M.; Scheffrahn, R. H.; **Woebken, D.**; Spormann, A. M.; Van Treuren, W.; Ursell, L. K.; Pirrung, M.; Robbins-Pianka, A.; Cantarel, B. L.; Lombard, V.; Henrissat, B.; Knight, R.; Gordon, J. I. Bacteria from Diverse Habitats Colonize and Compete in the Mouse Gut. *Cell* **2014**, 159 (2), 253–266. <https://doi.org/10.1016/j.cell.2014.09.008>.
10. ***Woebken, D.**; Burow, L. C.; Prufert-Bebout, L.; Bebout, B. M.; Hoehler, T. M.; Pett-Ridge, J.; Spormann, A. M.; Weber, P. K.; Singer, S. W. Identification of a Novel Cyanobacterial Group as Active Diazotrophs in a Coastal Microbial Mat Using NanoSIMS Analysis. *ISME J* **2012**, 6 (7), 1427–1439. <https://doi.org/10.1038/ismej.2011.200>.