

## Curriculum Vitae (CV)

### **Dagmar Wuebken, Dr. rer. nat.**

University of Vienna

Division of Microbial Ecology

Department of Microbiology and Ecosystem Science

Althanstrasse 14, 1090 Wien, Austria

Webpage: <http://www.microbial-ecology.net/people/dagmar-wuebken>

### **Research interest**

---

- Diversity and activity of free-living diazotrophs in terrestrial ecosystems
- Plant-associated diazotrophs
- Diversity and function of dormant microorganisms in terrestrial ecosystems
- Microbial mediated cellulose degradation
- Activity of microorganisms under microoxic conditions in terrestrial ecosystems
- Application of single-cell methods in terrestrial ecosystems

### **Scientific experience**

---

Since Jan. 2012	<b>Group Leader</b> , Division of Microbial Ecology, Department of Microbiology and Ecosystem Science, University of Vienna, Austria
2008 to 2011	<b>Postdoctoral fellow</b> , Department of Civil and Environmental Engineering, Stanford University/Exobiology Branch, NASA Ames Research Center/Lawrence Livermore National Laboratory (LLNL), USA. PIs: Prof. Alfred Spormann (Stanford University) & Dr. Peter Weber (LLNL)
2007 and 2008	<b>Teaching assistant</b> , Microbial Diversity Course, Marine Biological Laboratory (MBL), Woods Hole, USA. Directors: Prof. Thomas M. Schmidt & Prof. William Metcalf
2007 to 2008	<b>Postdoctoral fellow</b> , Nutrient Group, Max Planck Institute for Marine Microbiology, Bremen, Germany. PI: Dr. Marcel Kuypers
2004 to 2007	<b>PhD student</b> , Department for Molecular Ecology, Max Planck Institute for Marine Microbiology, Germany. Advisers: Prof. Rudolf Amann & Dr. Bernhard Fuchs

### **Education**

---

May 2007	<b>Dr. rer. nat.</b> , Department for Molecular Ecology, Max Planck Institute for Marine Microbiology/University of Bremen, Bremen, Germany Dissertation: "Diversity and <i>in situ</i> abundances of Planctomycetes in marine ecosystems" (Adviser: Prof. Rudolf Amann, finished with magna cum laude)
Summer 2006	<b>Student</b> , Microbial Diversity Course, Marine Biological Laboratory (MBL), Woods Hole, USA
2004 - 2007	<b>PhD student</b> , Department for Molecular Ecology, Max Planck Institute for Marine Microbiology/University of Bremen, Bremen, Germany
Nov. 2003	<b>Diploma in Biology</b> , Leibniz University Hannover, Hannover, Germany Diploma thesis: Department for Molecular Ecology, Max Planck Institute for Marine Microbiology, Bremen, Germany (finished with grade 1, equivalent to grade A)

2000 to 2001	<b>Exchange student</b> , Northeastern University, Boston, MA, USA Focus: Environmental microbiology (Laboratory of Prof. Slava Epstein)
1997 -2003	<b>Graduate studies</b> in biology at Leibniz University Hannover, Hannover, Germany
Sept. 1999	<b>Pre-Diploma of Biology</b> , Leibniz University Hannover, Hannover, Germany (finished with grade 1, equivalent to grade A)
1997 - 1999	<b>Undergraduate studies</b> in biology, Leibniz University Hannover, Hannover, Germany

## Academic prizes and awards

---

2016	<b>City of Vienna Award</b> (category Sciences).
2015	<b>Member</b> of the Young Academy of the Austrian Academy of Sciences (ÖAW).
2014	<b>European Research Council (ERC) Starting Grant: <i>DormantMicrobes</i></b> .
2014	<b>Focus of Excellence Award</b> , Faculty of Life Sciences, University of Vienna, Vienna, Austria.
2012	<b>Marie Curie - Career Integration grant (CIG): <i>Understanding functional drivers in two terrestrial key processes- N<sub>2</sub> fixation and cellulose degradation- by a single cell approach</i></b> .
2010	<b>German Research Foundation (DFG) Research fellowship: <i>Identifying N<sub>2</sub>-fixing microorganisms in photosynthetic microbial mats by Stable Isotope Probing (SIP) and nanometer-scale Secondary Ion Mass Spectrometry (nanoSIMS)</i></b> .
2000	<b>Graduate Student Fellowship</b> , Northeastern University, Boston, MA, USA.

## Peer-reviewed third-party funding

---

- **ERC Starting Grant: *DormantMicrobes***. Funded by the European Research Council (ERC), project No. StG\_2014\_636928 (1.49 Mio €), (Lead-PI), 2015-2020
- **Doctorate Program: *Microbial nitrogen cycling – From single cells to ecosystems***. Funded by the “FWF – Der Wissenschaftsfonds” (Austrian Science Fund), project No. W 1257-B20 (195,650 € of a total amount of 2.34 Mio €), (co-PI), 2016-2019
- **Project grant: *Investigating the function of the ubiquitous Acidobacteria in terrestrial environments***. Funded by the “FWF – Der Wissenschaftsfonds” (Austrian Science Fund), project No. P 26392-B20 (435,698 €) (Lead-PI), 2014-2017
- **Project grant: *Understanding the micro-environments of diazotrophs and their associated activities in rice***. Marie Curie Intra-European Fellowship (IEF), fellow Dr. Hannes Schmidt. Funded by Marie Curie FP7 (EU), project No. 628361 (179,137 €) (Lead-PI), 2014-2016
- **Project grant: *A functional approach to understand active non-symbiotic diazotrophs in soil***. Funded by the “FWF – Der Wissenschaftsfonds” (Austrian Science Fund), project No. P 25700-B20 (448,751 €) (Lead-PI), 2013-2016
- **Project grant: *Understanding functional drivers in two terrestrial key processes- N<sub>2</sub> fixation and cellulose degradation- by a single cell approach***. Marie Curie Career Integration Grant (CIG), fellow Dr. Dagmar Woebken. Funded by Marie Curie FP7 (EU), project No. 321742 (100,000 €), 2012-2016
- **Project grant: *NanoSIMS enabled approach to understand bacterial and fungal cellulose degraders in soils***. Marie Curie International Incoming Fellowship (IIF), fellow Dr. Stephanie A. Eichorst. Funded by Marie Curie FP7 (EU), project No. 300807 (180,191 €) (co-host), 2012-2014

- **Research fellowship:** *Identifying N<sub>2</sub>-fixing microorganisms in photosynthetic microbial mats by Stable Isotope Probing (SIP) and nanometer-scale Secondary Ion Mass Spectrometry (nanoSIMS)*. Fellow Dr. Dagmar Woebken. Funded by German Research Foundation (DFG), project No. WO 1678/1-1 (61,000 €), 2010-2011

## Teaching activities at the University of Vienna, Austria

---

since 2014	Practical Course „Molecular Microbiology, Microbial Ecology and Immunobiology - Diversity and function of uncultured microbes in medical and environmental samples“, UE 300484, 10.0 ECTS credits
since 2013	Laboratory course „Molekulare und Chemische Methoden der Ökologie“, UE 300607, 12.0 ECTS credits
since 2013	Laboratory course „Scientific Practice in Microbial Ecology“, UE 300401, 15.0 ECTS credits
since 2013	Proseminar „Microbial Ecology“, PS 300487, 5.0 ECTS credits
since 2013	Lecture series “Mikrobielle Lebensgemeinschaften”, VO 300178, 3.0 ECTS credits
since 2013	Workshop “International FISH Course”, offered to the international scientific community

## Other scientific activities

---

<b>Ad-hoc reviewer:</b>	Science, Nature Ecology & Evolution, Nature Communications, The ISME Journal, Molecular Biology and Evolution, Environmental Microbiology and Environmental Microbiology Reports, Applied and Environmental Microbiology, Microbial Ecology, PLOS One, Systematic and Applied Microbiology, Netherlands national research council “ <i>Netherlands Organisation for Scientific Research (NWO)</i> ”, Council for the Earth and Life Sciences
<b>Associate editor:</b>	Frontiers in Systems Microbiology

## Invited presentations

---

2016	International Symposium on Microbial Ecology (ISME 16), Montreal, Canada. <i>Revealing the active participants of N<sub>2</sub> fixation in photosynthetic microbial mats.</i>
2016	74th Annual Swiss Society for Microbiology Meeting, Berne, Switzerland. <i>Combining stable isotope labeling experiments and single-cell analysis to elucidate the function of microorganisms in soil.</i>
2014	International workshop “NanoSIMS in biogeochemistry from soils to sediments, from geology to microbiology”, Chair of Soil Science, TU München, Freising-Weihenstephan, Germany. <i>Application of NanoSIMS to investigate the function of microorganisms in benthic and terrestrial ecosystems.</i>
2014	Gordon Conference Environmental Sciences - Water, Holderness, USA. <i>Investigating the function of uncultivated microorganisms using stable isotopes and molecular tools – from the process-level to single cells.</i>
2013	EMBO Conference on Aquatic Microbial Ecology: SAME13, Stresa, Italy (Keynote lecture). <i>N<sub>2</sub> fixation in coastal microbial mats: From the process level to single cells.</i>
2013	International workshop “FISH: Fundamentals and Applications”, University of Porto (FEUP), Portugal. <i>New developments on FISH – linking identity with function.</i>

- 2012 Institute of Ecology, University of Innsbruck, Austria. *Identifying the active diazotrophs in coastal microbial mats by a functional single-cell approach.*
- 2011 Department of Microbial Ecology, Vienna, Austria. *Identification of a previously unknown cyanobacterial group as active diazotrophs in coastal microbial mats using NanoSIMS analysis*
- 2008 Microbial Diversity Course, Marine Biological Laboratory (MBL), Woods Hole, USA. Directors: Prof. Thomas M. Schmidt & Prof. William Metcalf. *Investigations of marine anammox bacteria – their diversity, occurrence and genomic features*
- 2007 Environmental Science & Engineering, California Institute of Technology (CalTech), USA. *Diversity and ecology of marine Planctomycetes with focus on anammox bacteria*
- 2007 Department of Civil & Environmental Engineering, Stanford University, USA. *Investigating Planctomycetes in marine oxygen minimum zones using molecular methods.*
- 2007 Department of Microbiology, Oregon State University, USA. *Genomic investigations of Planctomycetes in marine oxygen minimum zones.*
- 2007 Department of Microbiology & Immunology, University of British Columbia, Canada. *Microdiversity of marine anammox bacteria in oxygen minimum zones.*

### **Contributions to international conferences (only first, presenting or last author contributions listed)**

- Woebken D.** 2015. *Combining stable isotope labeling experiments and single-cell analysis techniques to detect active microorganisms in soil.* Ecology of Soil Microorganisms. Prague, Czech Republic, oral presentation.
- Nepel M, Angel R, Peer T, Büdel B, Wolfgang Wanek, **Woebken D.** 2015. *Identifying potential key players of N<sub>2</sub> fixation in European biological soil crusts.* Prague, Czech Republic, poster presentation.
- Schmidt H, **Woebken D.** 2015. *Diversity and spatial distribution of diazotrophs associated with micro-environments of wetland rice.* Prague, Czech Republic, poster presentation.
- Strasser F, Eichorst SA, Fuchslueger L, Schnecke J, Watzka M, Richter A, **Woebken D.** 2015. *Influences of carbon substrates and nitrogen availability on microbial-mediated cellulose degradation in an Austrian beech forest soil.* Prague, Czech Republic, poster presentation.
- Angel R, Gabriel R, Eichorst SA, **Woebken D.** 2015. *Optimizing the toolbox to investigate free-living diazotrophs in soil: from bulk measurements to single-cell analysis.* Prague, Czech Republic, poster presentation.
- Trojan D, Eichorst SA, Herbold C, Rattei T, **Woebken D.** 2015. *Investigating the ecophysiology of the ubiquitous Acidobacteria in the dynamic soil environment.* Prague, Czech Republic, poster presentation.
- Woebken D.** 2015. *Combining stable isotopes and single-cell methods to detect active microorganisms in soils.* How Dead is Dead IV conference, Zürich, Switzerland, oral presentation.
- Schmidt H, Hoefler C, **Woebken D.** *Diversity and spatial distribution of diazotrophs associated with micro-environments of wetland rice.* Rhizosphere4, Maastricht, The Netherlands, poster presentation.
- Woebken D.** 2014. *Advancements on the application of NanoSIMS to investigate microorganisms in terrestrial ecosystems.* 4th Edition NanoSIMS International Workshop, Paris, France, oral presentation.
- Woebken D.** 2014. *Elucidating active diazotrophs in complex ecosystems by combining molecular tools, <sup>15</sup>N<sub>2</sub>-stable isotope probing and high-resolution secondary ion mass spectrometry (nanoSIMS).* 11<sup>th</sup> European Nitrogen Fixation Conference (ENFC2014), Tenerife, Canary Islands, Spain, oral presentation.
- Eichorst SA, Strasser F, Woyke T, Schintlmeister A, Wagner M, **Woebken D.** 2014. *One Cell at a Time: Advancements on the application of single-cell methods, NanoSIMS and Raman microspectroscopy, in*

terrestrial environments. International Symposium on Microbial Ecology (ISME 15), Seoul, South Korea, poster presentation.

Eichorst SA, Strasser F, Fuchslueger L, Schnecker J, Watzka M, Richter A, **Woebken D**. 2014. Temporal patterns and edaphic drivers in microbial cellulose degradation in an Austrian beech forest soil. International Symposium on Microbial Ecology (ISME 15), Seoul, South Korea, poster presentation.

**Woebken D**. 2014. *Investigating the function of uncultivated microorganisms using stable isotopes and molecular tools – from the process-level to single cells*. Gordon Conference Environmental Sciences - Water, Holderness, USA, invited speaker.

**Woebken D**. 2014. Investigating N<sub>2</sub> fixation activity in photosynthetic microbial mats down to the single-cell level. BioFilm6, Vienna, Austria, oral presentation.

Eichorst SA, Strasser F, Fuchslueger L, Schnecker J, Watzka<sup>a</sup> M, Woyke T, Schintlmeister A, Richter A, **Woebken D**. 2014. *Investigating microbial cellulose degradation in an Austrian beech forest soil – from the process to the single-cell level*. DBG Workshop, Freising, Germany, oral presentation.

Eichorst SA, Strasser F, Schintlmeister A, Woyke T, **Woebken D**. 2013. *Understanding the edaphic drivers of cellulose-degrading guilds in an Austrian beech forest soil*. 2<sup>nd</sup> Thünen Symposium on Soil Metagenomics, Braunschweig, Germany, poster presentation.

**Woebken D**. 2013. *N<sub>2</sub> fixation in coastal microbial mats: From the process level to single cells*. EMBO Conference on Aquatic Microbial Ecology (SAME13), Stresa, Italy, invited keynote speaker.

**Woebken D**, Burow LC, Weber PK, Singer SW, Spormann AM, Pett-Ridge J, Bebout BM. 2012. *Revisiting N<sub>2</sub> fixation in photosynthetic microbial mats by a functional approach - <sup>15</sup>N<sub>2</sub> stable isotope probing combined with single cell analysis*. International Symposium on Microbial Ecology (ISME 14), Copenhagen, Denmark, oral presentation.

**Woebken D**, Burow LC, Prufert-Bebout L, Bebout B, Hoehler TM, Pett-Ridge J, Singer SW, Spormann AM, Weber PK. 2011. *Identification of a previously unknown cyanobacterial group as active diazotrophs in coastal microbial mats using NanoSIMS analysis*. Gordon Conference on Applied and Environmental Microbiology, South Hadley, USA, poster presentation.

**Woebken D**, Burow LC, Prufert-Bebout L, Bebout B, Hoehler TM, Pett-Ridge J, Singer SW, Spormann AM, Weber PK. 2010. *Identifying N<sub>2</sub>-fixing populations in photosynthetic microbial mats by combining biogeochemistry, molecular analysis and single cell techniques*. International Symposium on Microbial Ecology (ISME 13), Seattle, USA, poster presentation.

**Woebken D**, Singer SW\*, Burow LC, Prufert-Bebout L, Bebout BM, Pett-Ridge J, Spormann AM and Weber PK. 2010. *NanoSIP: Combining stable isotope probing and high resolution Secondary Ion Mass Spectrometry to identify diazotrophs in stratified marine microbial communities*. Goldschmidt 2010, Knoxville, USA, oral presentation (\* presenting author).

Burow LC\*, **Woebken D**\*, Prufert-Bebout L, Bebout B, Hoehler T, Pett-Ridge J, Singer SW, Spormann AM and Weber PK. 2009. *NanoSIP: Functional analysis of phototrophic microbial mat community members using high-resolution Secondary Ion Mass Spectrometry*. Genomic Science Annual Contractor-Grantee Workshop (\*joint authorship), Arlington, USA, poster presentation.

**Woebken D**, Lam P, Fuchs BM, Kuypers MMM, Naqvi SWA, Kartal B, Strous M, Jetten MSM and Amann R. 2008. *A microdiversity study of anammox bacteria reveals a novel Candidatus Scalindua phylotype in marine oxygen minimum zones*. American Society for Microbiology (ASM General Meeting), Boston, USA, poster presentation.

**Woebken D**, Fuchs BM, Lavik G, Kuypers MMM and Amann R. 2006. *Anammox bacteria and their co-occurring microbial flora in the Namibian and Peruvian upwelling systems*. VAAM, Jena, Germany, poster presentation.

**Woebken D**, Fuchs BM, Kuypers MMM, Amann R. 2006. *Anammox bacteria in oxygen minimum zones*. International Symposium on Microbial Ecology (ISME 11), Vienna, Austria, oral presentation.

Kuypers MMM, Lavik G, **Woebken D\***, Fuchs BM, Schmidt M, Jetten MSM, Jorgensen BB and Amann R. 2005. *Detection of Anammox bacteria in the Benguela Upwelling System and their impact on the nitrogen loss in this ecosystem*. ASLO Summer Meeting, Santiago de Compostela, Spain, oral presentation (\* presenting author).

**Woebken D**, Fuchs B and Amann R. 2004. *Diversity and abundance of marine bacterioplankton in the Namibian Upwelling Region*. International Symposium on Microbial Ecology (ISME 10), Cancun, Mexico, poster presentation.

## Collaboration partners

---

Prof. Dr. Burkhard Büdel	Division of Plant Ecology and Systematics, Department of Biology, University of Kaiserslautern, Germany
Prof. Noah Fierer, PhD	Department of Ecology and Evolutionary Biology, Cooperative Institute for Research in Environmental Sciences, University of Colorado at Boulder, USA
Dr. Osnat Gilor	The Jacob Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev, Be'er Sheva, Israel
Dr. Christina Kaiser	Division of Terrestrial Ecosystem Research, Department of Microbiology and Ecosystem Science, University of Vienna, Vienna, Austria
Prof. Dr. Gerhard Karrer	Department of Integrative Biology and Biodiversity Research, Institute of Botany, University of Natural Resources and Life Science, Vienna, Austria
Dr. Veronika Mayer	Division of Structural and Functional Botany, Department of Botany and Biodiversity Research, University of Vienna, Vienna, Austria
Prof. Dr. Thomas Peer	Department of Organismic Biology, University of Salzburg, Salzburg, Austria
Jennifer Pett-Ridge, PhD	Physical and Life Science Directorate, Lawrence Livermore Laboratory, Livermore, USA
Dr. Erich M. Pötsch	Agricultural Research and Education Centre Raumberg-Gumpenstein, Irdning, Austria
Prof. Dr. Andreas Richter	Division of Terrestrial Ecosystem Research, Department of Microbiology and Ecosystem Science, University of Vienna, Austria
Dr. Michael Sander	Department of Environmental Systems Science, Institute of Biogeochemistry and Pollutant Dynamics, ETH, Zurich, Switzerland
Prof. Dr. Michael Schagerl	Department of Limnology and Oceanography, University of Vienna, Vienna, Austria
Prof. Dr. Michael Wagner	Division of Microbial Ecology, Department of Microbiology and Ecosystem Science, University of Vienna, Vienna, Austria
Peter Weber, PhD	Physical and Life Science Directorate, Lawrence Livermore Laboratory, Livermore, USA
Dr. Stefanie Widder	Division of Computational Systems Biology, Department of Microbiology and Ecosystem Science, University of Vienna, Vienna, Austria
Dr. Tanja Woyke	Microbial Genomics Program Lead, DOE Joint Genome Institute, Walnut Creek, USA

## Popular scientific contributions

---

- June 2014      Video-Beitrag: Mikrobiologin Dagmar Wöbken auf Spurensuche. uni:view MAGAZIN  
<http://medienportal.univie.ac.at/uniview/forschung/detailansicht/artikel/video-beitrag-mikrobiologin-dagmar-woebken-auf-spurensuche/>
- February 2014      Im Reich der wichtigen Kleinen. uni:view MAGAZIN  
<https://medienportal.univie.ac.at/uniview/forschung/detailansicht/artikel/im-reich-der-wichtigen-kleinen/>

Last updated: 8th<sup>th</sup> August 2016